



Government of the People's Republic of Bangladesh
Ministry of Housing & Public Works
Urban Development Directorate
82, Segunbagicha, Dhaka

CONTRACT AGREEMENT FOR CONSULTANCY SERVICES

FOR

"Preparation of Development Plan for Fourteen Upazilas"

Package No: 3

[Bagmara Upazila (363.3 sq. km), District- Rajshahi; Faridpur Sadar Upazila (407.02 sq. km),
District- Faridpur & Gangni Upazila (341.98 sq. km), District- Meherpur]

BETWEEN

Urban Development Directorate (UDD)
82, Segunbagicha, Dhaka-1000.
Phone: +88-02-9562728; Fax: +88-02-9557868
Website: www.udd.gov.bd

AND

Engineering Consultants & Associates Ltd.
154 Monipuripara, Farmgate, Tejgaon, Dhaka-1215.
Phone: +88-02-8116214, 9110176, Fax: +88-02-8119761, Email: ecal@dhaka.net.

June, 2015

P

hr



ক/৮ ৮০৪৪৩৬৬

Contract Agreement

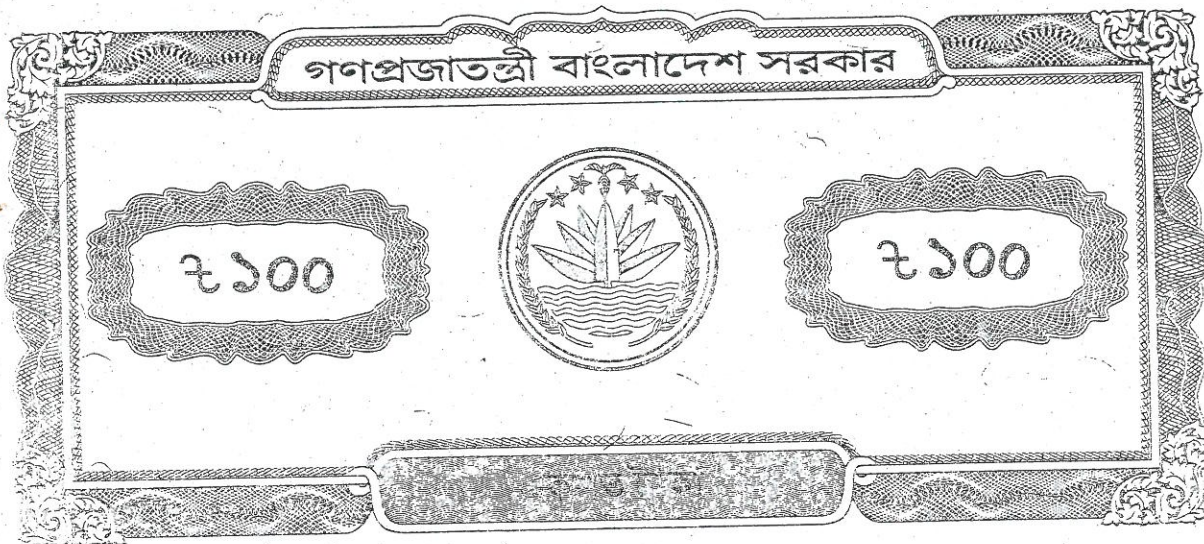
This CONTRACT (hereinafter called the "Contract") is made the 10th day of the month of June, 2015, between, on the one hand, **Urban Development Directorate (UDD)**, Ministry of Housing and Public Works (hereinafter called the "Client") and, on the other hand, **Engineering Consultants and Associates Ltd.** 154 Monipuripara, Farmgate, Tejgaon, Dhaka-1215. Phone: +88-02-8116214, +88-02-9110176, Fax: +88-02-8119761, Email:ecal@dhaka.net. (hereinafter called the "Consultant").

WHEREAS

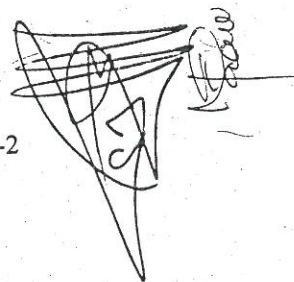
- (a) the Client has requested the Consultant to provide certain consulting services for the Preparation of Development Plan for Package 3 [Bagmara Upazila (363.3 sq.km), District-Rajshahi, Faridpur Sadar Upazila (407.02 sq.km.) District- Faridpur and Gangni Upazila (341.98 sq km), District-Meherpur] under "Preparation of Development Plan for Fourteen Upazilas" as defined in this Contract (hereinafter called the "Services");
- (b) the Consultant, having represented to the Client that they have the required professional skills, and personnel and technical resources, have agreed to provide the Services on the terms and conditions set forth in this Contract; and

NOW THEREFORE the parties hereto hereby agree as follows:

1. The following documents forming the integral part of this Contract shall be interpreted in the order of priority shown:
 - (a) The Form of Contract;
 - (b) The General Conditions of Contract (GCC),
 - (c) The Particular Conditions of Contract (PCC);
 - (d) The Appendices (1 to 6).



কস ৮০৪৪৩৬৭



Appendix 1: Description of the Services/TOR-1 & TOR-2

Appendix 2: Reporting Requirements

Appendix 3: Key Personnel and Sub-Consultants

Appendix 4: Services and Facilities to be provided by the Client

Appendix 5: Cost Estimates

Appendix 6: Minutes of Negotiation Meeting dated 21 April, 2015

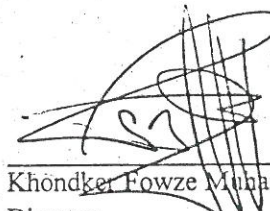
2. The mutual rights and obligations of the Client and the Consultant shall be as set forth in the Contract, in particular:
 - (a) the Consultant shall carry out the Services in accordance with the provisions of the Contract; and
 - (b) the Client shall make payments to the Consultant in accordance with the provisions of the Contract.



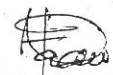
কস ৮০৪৪৩৬৫

IN WITNESS WHEREOF, the Parties hereto have caused this Contract to be signed in their respective names as of the day and year first above written.

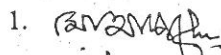

For and on behalf of Client
URBAN DEVELOPMENT DIRECTORATE (UDD),


30/6/2015.
Khondker Fowze Muhammad Bin Farid
Director
Urban Development Directorate


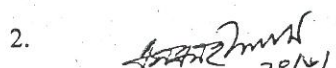
For and on behalf of the Consultant
Engineering Consultants and Associates Ltd.


18/06/15
Rashid Ahmed Khan
Managing Director
Engineering Consultants & Associates Ltd.

Witness (Consultant)

1. 
Engr. M. A. Kadet
Director, ECA
Engr. M. A. Kadet
Director
ENGINEERING CONSULTANTS AND
ASSOCIATES LTD.
2. 
Md. Anisuzzaman Khan
Manager (Admin) ECA Ltd.

Witness (Client)

1. 
10/06/15
Project Director
"Preparation of Development Plan for
fourteen Upazilas" Project, UDD
2. 
20/6/15
Md. Anisuzzaman Khan
Project Manager
"Preparation of Development Plan
for fourteen Upazilas" Project
Urban Development Directorate

A. General

1.1 In the Conditions of Contract, which include Particular Conditions and these General Conditions; the following words and expressions shall have the meanings hereby assigned to them. Boldface type is used to identify the defined terms:

- 4

F. M. Sullivan

- (o) **Member** means in case where the Consultant consists of a joint venture, consortium or association any of the entities that make up the joint venture; and "**Members**" means all these entities.
- (p) **Month** means calendar month
- (q) **Party** means the Client or the Consultant, as the case may be, and "**Parties**" means both of them. Third party means any party other than Client and Consultant.
- (r) **Personnel** mean professionals and support staff provided by the Consultant or by any Sub-Consultant and assigned to perform the Services or any part thereof; and "**Key Staff/Personnel**" means the Personnel referred to in GCC Sub Clause 23.1.
- (s) **Reimbursable expenses** mean all assignment-related costs other than Consultant's remuneration.
- (t) **Remuneration** means all costs related to payments of fees to the Consultant for the time spent by the professional and other staff on assignment related activities.
- (u) **PCC** means the Particular Conditions of Contract by which the GCC may be amended or supplemented.
- (v) **Services** means the work to be performed by the Consultant pursuant to this Contract, as described in **Appendices 1 to 6** of the Contract Agreement.
- (w) **Sub-Consultant** means any person or entity to whom/which part of the Services is sub-consulted.
- (x) **Third Party** means any person or entity other than the Government, the Client, the Consultant or a Sub-Consultant.
- (y) **Writing** means communication written by hand or machine duly signed and includes properly authenticated messages by facsimile or electronic mail.

- | | | |
|-------------------------------|-----|--|
| 2. Phased Completion | 2.1 | if phased completion is specified in the PCC, references in the GCC to the Services, the Completion Date, and the Intended Completion Date apply to any Phase of the Services (other than references to the Completion Date and Intended Completion Date for the whole of the Services). |
| 3. Communications and Notices | 3.1 | Communications between Parties (notice, request or consent required or permitted to be given or made by one party to the other) pursuant to the Contract shall be in writing to the address as specified in the PCC. |
| | 3.2 | A notice shall be effective when delivered or on the notice's effective date, whichever is later. |
| | 3.3 | A Party may change its address for notice hereunder by giving the other Party notice of such change to the address. |
| 4. Governing Law | 4.1 | The Contract shall be governed by and interpreted in accordance with the laws of the People's Republic of Bangladesh. |
| 5. Governing Language | 5.1 | The Contract shall be written in English. All correspondences and documents relating to the Contract may be written in English or Bangla . |

f

ms

[Signature]

[Signature]

Supporting documents and printed literature that are part of the Contract may be in another language, provided they are accompanied by an accurate translation of the relevant passages in English, in which case, for purposes of interpretation of the Contract, such translation shall govern.

5.2 The Consultant shall bear all costs of translation to the governing language and all risks of the accuracy of such translation.

6. Documents
Forming the
Contract in
Order of
Precedence

6.1 The following documents forming the Contract shall be interpreted in the following order of priority:

- (a) the Contract Agreement;
- (b) the Particular Conditions of Contract (PCC);
- (c) the General Conditions of Contract (GCC);
- (d) the Appendix 1 to 6; and
- (e) any other document as specified in the PCC forming part of the Contract.

7. Assignment

7.1. Neither the Client nor the Consultant shall assign, in whole or in part, their obligations under this Contract; except with prior written approval of the Client.

8. Eligible
Services

8.1 All materials, equipment, plant, and supplies used by the Consultant and services supplied under the Contract shall have their origin in the countries, except those as specified in the PCC.

FD

W

Shakeen



9. Contractual Ethics 9.1 No fees, gratuities, rebates, gifts, commissions or other payments, other than those shown in the Proposal or the contract, shall have been given or received in connection with the selection process or in the Contract execution.
10. Joint Venture (JV) 10.1 If the Consultant is a Joint Venture (JV);
- (a) each partner of the JV shall be jointly and severally liable for all liabilities and ethical or legal obligations to the Client for performance of the Contract;
 - (b) If there is a dispute that results in legal action being taken in court then action will be taken against all partners of the JV, if they are available and, if only one partner is available, then that partner alone shall answer on behalf of all partners and, if the complaint lodged is proven, the penalty shall be applicable on that partner alone as whatever penalty all the partners would have received; provided that if the other partners of the JV subsequently become available before the legal action has been completed, the Client shall have the right to take action against those other partners of that JV as well.
 - (c) the composition or constitution and legal status of the JV shall not be altered without the prior approval of the Client;
 - (d) alteration of partners, except the Leading partner, shall only be allowed if any of them is found to be incompetent or has any serious difficulties which may impact the overall performance of the Service, whereby the incoming partner shall require to possess qualifications higher than that of the outgoing partner;
 - (e) if any of the partners of JV has been debarred from participating in any procurement activity due to corrupt, fraudulent, collusive or coercive practices and, while in case, the Leading partner is found incompetent or has been debarred due to the same reasons stated herein, the Contract shall be terminated pursuant to GCC Sub Clause 60.2.
11. Authority of Member in Charge 11.1 In case the Consultant is a Joint Venture, the JV partners shall nominate the Leading Partner as REPRESENTATIVE, as specified in the PCC, being entrusted with the Contract administration and management at assignment location, as stated under GCC Sub Clause 14, who shall have the authority to conduct all business including the receipt of payments for and on behalf of all partners of the JV.
12. Authorized Representatives 12.1 Any action required or permitted to be taken, and any document required or permitted to be executed under this Contract by the Client or the Consultant may be taken or executed by the officials as specified in the PCC.
13. Relation between the Parties 13.1 Nothing contained herein shall be construed as establishing a relation of master and servant or of principal and agent as between the Client and the Consultant. The Consultant, subject to this Contract, has complete charge of Personnel and Sub-Consultants, if any, performing the Services and shall be fully responsible for the Services performed by

F
for Shahen



them or on their behalf hereunder.

- | | |
|---|---|
| 14. Location | 14.1 The Services shall be performed at such locations as are specified in Appendix 1, to the Contract and, where the location of a particular task is not so specified, at such locations as the Client may approve. |
| 15. Taxes | 15.1 The Consultant, Sub-Consultants and Personnel shall pay such taxes, duties, fees, levies and other charges under the Applicable Law, the amount of which is deemed to have been included in the Contract Price, unless otherwise exempted by the Government. |
| 16. Corrupt,
Fraudulent,
Collusive or
Coercive | 16.1 The Government requires that the Client, as well as the Consultant shall observe the highest standard of ethics during the implementation of procurement proceedings and the execution of the Contract under public funds. |

f

inc

Shahen



16.2 The Government requires that Client, as well as the Consultant shall, during the Procurement proceedings and the execution of Contracts under public funds, ensure-

- (a) strict compliance with the provisions of Section 64 of the Public Procurement Act, 2006;
- (b) abiding by the code of ethics as mentioned in the Rule 127 of the Public Procurement Rules, 2008;
- (c) that neither it, nor any other member of its staff, or any other agents or intermediaries working on its behalf engages in any such practice as detailed in GCC Sub Clause 16.2(b).

16.3 For the purposes of ITT Sub Clause 4.3, the terms set forth below as follows:

- (a) "corrupt practice" means offering, giving or promising to give, receiving, or soliciting either directly or indirectly, to any officer or employee of the Client or other public or private authority or individual, a gratuity in any form; employment or any other thing or service of value as an inducement with respect to an act or decision or method followed by the Client in connection with a procurement proceeding or Contract execution;
- (b) "fraudulent practice" means the misrepresentation or omission of facts in order to influence a decision to be taken in a procurement proceeding or Contract execution;
- (c) "collusive practice" means a scheme or arrangement between two (2) or more Persons, with or without the knowledge of the Client, that is designed to arbitrarily reduce the number of Proposals submitted or fix Proposal Prices at artificial, non-competitive levels, thereby denying the Client the benefits of competitive price arising from genuine and open competition;
- (d) "coercive practice" means harming or threatening to harm, directly or indirectly, Persons or their property to influence a decision to be taken in the Procurement proceeding or the execution of a Contract, and this will include creating obstructions in the normal submission process used for procurement proceedings.

16.4 Should any corrupt or fraudulent practice of any kind come to the knowledge of the Client, it shall, in the first place, allow the Consultant to provide an explanation and shall take actions only when a satisfactory explanation is not received. Such decision and the reasons therefore, shall be recorded in the procurement proceedings and promptly communicated to the Consultant concerned. Any communications between the Consultant and the Client related to matters of alleged fraud or corruption shall be in writing.

16.5 If corrupt, fraudulent, collusive or coercive practices of any kind determined by the Client against the Consultant alleged to have carried out such practices, the Client will :

- (a) exclude the Consultant from further participation in the

F
for Shahreen



particular Procurement proceeding, or

- (b) Declare, at its discretion, the Consultant to be ineligible to participate in further procurement proceedings, either indefinitely or for a specific period of time

16.6 The Consultant shall be aware of the provisions on corruption, fraudulence, collusion and coercion in Section 64 of the Public Procurement Act, 2006 and Rule 127 of the Public Procurement Rules, 2008.

B. Commencement, Completion and Modification

17. Effectiveness of Contract 17.1 The Contract shall come into force and effect on the date, called the "Effective Date", of the Client's notice to the Consultant instructing the Consultant to commence carrying out the Services. This notice shall confirm that the effectiveness conditions, if any, as specified in the PCC have been met.

18. Effective Date 18.1 The date the Contract comes into effect shall be as specified in the PCC.
18.2 If the Contract has not become effective within such time period after the date of the Contract signed by the Parties as specified in the GCC Clause 18.1, either Party may, by not less than twenty-eight (28) days written notice to the other Party, declare this Contract to be null and void, and in the event of such a declaration by either Party, neither Party shall have any claim against the other Party with respect hereto.

19. Commencement of Services 19.1 The Consultant shall commence carrying out the Services not later than the number of days after the Effective Date as specified in the PCC.

f
in Stalcom



20. Expiration of the Contract 20.1 Unless terminated earlier pursuant to GCC Clauses 60 to 63, this Contract shall expire at the end of such period after the Effective Date as specified in the PCC.
21. Modifications or Variations 21.1 The Client may notify the Consultant to alter, amend, omit, add to, or otherwise vary the services, provided that the changes in the Services involved are necessary for the satisfactory completion of the assignment.
- 21.2 Any modification or variation of the terms and conditions of the Contract, including any modification or variation of the Scope of the Services, may only be made by written agreement between the Parties. Each Party shall give due consideration to any proposals for modification or variation made by the other Party.
- 21.3 The Consultant shall submit to the Client an estimate for the proposed change in the Services within fifteen (15) days of receipt of such Variation Order(s) as stated under GCC Sub Clause 21.2. The estimate shall comprise the following:
- (a) an estimate of the impacts, if any, of the Variation Orders on the staffing Schedule;
 - (b) a detailed schedule for execution of the Variation Orders showing the resources to be employed and significant outputs;
 - (c) a detail costing covering the total amount of the Variation Orders; and
 - (d) a proposed revision of the schedule of payments as approved, if required.
- 21.4 Variation Orders, as stated under GCC Sub Clause 21.2, costing within fifteen (15) percent of the original Contract Price shall be approved by the Approving Authority and for cost beyond fifteen (15) percent by the authority higher than the Approving Authority, as determined by the Delegation of Financial Power and sub-delegation thereof.
- 21.5 For the purpose of determining the remuneration due for services or any other reimbursable expenses under Variation Orders as may be agreed under GCC Clause 21, the breakdown of the lump-sum price provided in Forms 5B3 and 5B4 shall be the basis.

C. Consultant's Personnel and Sub-Consultants

22. General 22.1 The Consultant shall employ and provide such qualified and experienced Personnel and Sub-Consultants as are required to carry out the Services under the Contract.
23. Description of Personnel 23.1 The title, agreed job description, precise minimum qualification and period of engagement in carrying out of the Services of each of the Consultant's Key Personnel are described in Appendix 3, to the Contract.
- 23.2 The periods of engagement of Key Personnel set forth in Appendix 3 may be increased by agreement in writing between the Client and the Consultant, if additional work is required beyond the Scope of the Services specified in Appendix 1 to the Contract. In case that will cause

f

me

Shakeen



payments under the Contract to exceed the ceiling set forth in GCC Sub Clause 44.2 of this Contract, this will follow procedures as stated under GCC Clause 21, including prior review where necessary.

24. Approval of Personnel 24.1 The Client approves the Key Personnel and Sub Consultants listed by title as well as by name in Appendix 3 to the Contract. In respect of other Personnel that the Consultant proposes to use in carrying out of the Services, the Consultant shall submit to the Client for review and approval a copy of their Curricula Vitae (CVs).
25. Removal and/or Replacement of Personnel 25.1 Except as the Client may otherwise agree, no changes shall be made in the Personnel. If, for any reason beyond the reasonable control of the Consultant, it becomes necessary to replace any of the Personnel, the Consultant shall forthwith provide as a replacement a person of equivalent or higher qualifications acceptable to the Client, including prior review where necessary.
- 25.2 If the Client
- (a) finds that any of the Personnel has committed serious misconduct or has been charged with having committed a criminal action; or
 - (b) has reasonable cause to be dissatisfied with the performance of any of the Personnel;
- then the Consultant shall, at the Client's written request specifying the grounds therefore, forthwith provide as a replacement, a person with qualifications and experience, as stated under GCC Sub Clause 25.1, acceptable to the Client.
- 25.3 Any of the Personnel provided as a replacement under GCC Sub Clause 25.1 and 25.2, the rate of remuneration applicable to such person as well as any reimbursable expenses, the Consultant may wish to claim as a result of such replacement, shall be subject to the prior written approval by the Client. Except as the Client may otherwise agree;
- (a) the Consultant shall bear all additional travel and other costs arising out of or incidental to any removal and/or replacement, and
 - (b) the remuneration to be paid for any of the Personnel provided as a replacement shall not exceed the remuneration which would have been payable to the Personnel replaced.
- 25.4 In the event that any Sub-Consultant is found by the Client to be incompetent or incapable of discharging the allocated duties, the Client may request and the Consultant shall provide a replacement, with qualifications and experience acceptable to the Client, or to resume the performance of the Services by itself.

D. Obligations of the Consultant

26. Standard of Performance 26.1 The Consultant shall perform the Services and carry out its obligations hereunder with all due diligence, efficiency and economy, in

F

W. S. S. S. S.



accordance with generally accepted professional standards and practices, and shall observe sound management practices, and employ appropriate technology and safe and effective equipment, machinery, materials and methods. The Consultant shall always act, in respect of any matter relating to this Contract or to the Services, as faithful advisers to the Client, and shall at all times support and safeguard the Client's legitimate interests in any dealings with Sub Consultants or Third Parties.

27. Conflict of Interests 27.1 The Consultant shall hold the Client's interests paramount, without any consideration for future work, and strictly avoid conflict with other assignments or their own corporate interests.
28. Consultant Not to Benefit from Commissions Discounts etc. 28.1 The remuneration of the Consultant as stated under GCC Clause 44, 45 and 46 shall constitute the Consultant's sole remuneration in connection with this Contract and, subject to GCC Sub Clause 29.1 hereof, the Consultant shall not accept for their own benefit any trade commission, discount or similar payment in connection with activities pursuant to this Contract or in the discharge of their obligations hereunder, and the Consultant shall use their best efforts to ensure that any Sub-Consultants, as well as the Personnel and agents of either of them, similarly shall not receive any such additional remuneration.
- 28.2 Furthermore, if the Consultant, as part of the Services, have the responsibility of advising the Client on the procurement of Goods, Works or Services, the Consultant shall at all times exercise such responsibility in the best interest of the Client. Any discounts or commissions obtained by the Consultant in the exercise of such procurement responsibility shall be for the account of the Client.
29. Consultant and Affiliates not to Engage in Certain Activities 29.1 The Consultant agrees that, during the term of this Contract and after its termination, the Consultant and any entity affiliated with the Consultant, as well as any Sub-Consultant and any entity affiliated with such Sub-Consultant, shall be disqualified from providing goods, works or services (other than consulting services) for any project resulting from or closely related to this consulting services.
30. Prohibition of Conflicting Activities 30.1 The Consultant shall not engage, and shall cause their Personnel as well as their Sub-Consultants and their Personnel not to engage, either directly or indirectly, in any business or professional activities in Bangladesh that would conflict with the activities assigned to them under this Contract.
31. Confidentiality 31.1 Except with the prior written consent of the Client, the Consultant and the Personnel shall not at any time communicate to any person or entity any confidential information acquired in the course of the Services, nor shall the Consultant and the Personnel make public the recommendations formulated in the course of, or as a result of, the Services.

[For the purposes of this Clause "confidential information" means any information or knowledge acquired by the Consultant and/or their Personnel arising out of, or in connection with, the performance of the Services under

F me Shahen



this Contract that is not otherwise available to the public]


**32. Liability of
the
Consultant**

- 32.1 The Consultant, in lieu of furnishing any Performance Security, shall be, liable to and required to indemnify, the Client as stated under GCC Sub Clause 32.2 thru 32.6 inclusive for due performance of the Contract.
- 32.2 The Consultant shall indemnify the Client from and against any and all claims, liabilities, obligations, losses, damages, penalties, actions, judgment, suits, proceedings, demands, costs, expenses and disbursements of whatsoever nature that may be imposed on, incurred by or asserted against the Client during or in connection with the Services by reason of:
- (a) infringement or alleged infringement by the Consultant of any patent or other protected right; or
 - (b) plagiarism or alleged plagiarism by the Consultant.
- 32.3 The Consultant shall ensure that all goods and services (including without limitation all computer hardware, software and systems) procured by the Consultant out of funds provided or reimbursed by the Client or used by the Consultant in the carrying out of the Services do not violate or infringe any industrial property or intellectual property right or claim of any third party.
- 32.4 The Consultant shall indemnify, protect and defend at their own expense the Client, and its agents and employees from and against any and all actions, claims, losses or damages arising out of Consultant's failure to exercise the skill and care required under GCC Clause 26 provided:
- (a) that the Consultant is notified of such actions, claims, losses or damages not later than the number of months after conclusion of the Services as specified in the PCC;
 - (b) that the ceiling on the Consultant's liability under GCC Clause 26 shall be limited to the amount as specified in the PCC, except that such ceiling shall not apply to actions, claims, losses or damages caused by Consultant's gross negligence or reckless conduct; and
 - (c) that the Consultant's liability under GCC Clause 26 shall be limited to actions, claims, losses or damages directly caused by such failure to exercise the said skill and care, and shall not include liability for any actions, claims, losses or damages arising out of occurrences incidental or indirectly consequential to such failure.
- 32.5 In addition to any liability the Consultant may have under GCC Clause 26, the Consultant, at their own cost and expense, upon request of Client; shall re-perform the Services in the event of Consultant's failure to exercise the skill and care required under GCC Clause 26.

F

me

Shaleen



32.6 Notwithstanding the provisions of GCC Sub Clause 32.4(a), the Consultant shall have no liability whatsoever for actions, claims, losses or damages occasioned by:

- (a) Client's overriding a decision or recommendation of the Consultant or requiring the Consultant to implement a decision or recommendation with which Consultant do not agree; or
- (b) the improper execution of the Consultant's instructions by agents, employees or independent contractors of the Client.

33.1 The Consultant

33. Insurance to
be taken out
by the
Consultant

- (a) shall take out and maintain, and shall cause any Sub-Consultants to take out and maintain, at their (or the Sub-Consultants, as the case may be) own cost, but on terms and conditions approved by the Client, insurance against the risks, and for the coverage as specified in the PCC; and
- (b) at the Client's request, shall provide evidence to the Client showing that such insurance has been taken out and maintained and that the current premiums therefore have been paid.

34. Accounting,
Inspection
and Auditing

34.1 The Consultant shall

- (a) keep accurate and systematic accounts and records in respect of the Services hereunder, in accordance with nationally/internationally accepted accounting principles and in such form and detail as will clearly identify all relevant changes in time and costs, and the bases thereof; and
- (b) periodically permit the Client or its designated representative or the Development Partner's representative, when applicable, and up to five (5) years from the expiration or termination of this Contract, to inspect the same and make copies as well as to have them audited by auditors appointed by the Client, if so required by the Client as the case may be.

34.2 The Consultant shall furnish the Client such information relating to the Services as the Client may from time to time reasonably request.

35. Consultant's
Actions
Requiring
Client's Prior
Approval

35.1 The Consultant shall obtain the Client's prior approval in writing before taking any of the following actions:

- (a) any change or addition to the Personnel listed in Appendix 3 to the Contract;
- (b) any subcontract relating to the Services to an extent and, with such specialists and entities as may be approved; and
- (c) any other action that may be specified in the PCC.

35.2 Notwithstanding any approval under GCC Sub Clause 35.1(b), the Consultant shall remain fully liable for the performance of Services by the Sub-Consultant and its Personnel and retain full responsibility for the Services.

F m Shaleen

36. Reporting Obligations
- 36.1 The Consultant shall submit to the Client the reports and documents specified in Appendix 2 to the Contract hereto, in the form, in the numbers and within the time periods set forth in the Appendix 2. Final Reports shall be delivered in CD ROM in addition to the hard copies specified in the said Appendix.
37. Proprietary Rights on Documents Prepared by the Consultant
- 37.1 All plans, maps, diagrams, drawings, specifications, designs, statistics, reports, other documents, data and software compiled or prepared by the Consultant for the Client under this Contract shall become and remain the absolute property of the Client, and the Consultant shall, not later than upon termination or expiration of this Contract, deliver all such documents to the Client, together with a detailed inventory.
- 37.2 The Consultant may retain a copy of such documents and software, and use such software for their own use with the prior written approval of the Client.
- 37.3 Other restrictions, if any, about the future use of these documents and software, if any, shall be as specified in the PCC.
38. Proprietary Rights on Equipment and Materials Furnished by the Client.
- 38.1 Equipment, tools and materials made available to the Consultant by the Client, or purchased by the Consultant wholly or partly with funds provided by the Client, shall be the property of the Client and shall be marked accordingly.
- 38.2 Upon termination or expiration of this Contract, the Consultant shall make available to the Client an inventory of such equipment and materials and shall dispose of such equipment and materials in accordance with the Client's instructions.
- 38.3 During the possession of such equipment and materials, the Consultant, unless otherwise instructed by the Client in writing, shall insure them at the expense of the Client in an amount equal to their full replacement value.

E. Obligations of the Client

39. Assistance and Exemptions
- 39.1 The Client shall use its best efforts to ensure that the Government shall:
- (a) provide the Consultant, Sub-Consultants and Personnel with documents as shall be necessary to enable the Consultant, Sub-Consultants or Personnel to perform the Services;
 - (b) issue to officials, agents and representatives of the Government all such instructions as may be necessary or appropriate for the prompt and effective implementation of the Services;
 - (c) assist the Consultant in obtaining necessary licenses and permits needed to carry out the Services; and
 - (d) provide to the Consultant, Sub-Consultants and Personnel any such other assistance as may be specified in the PCC.
40. Access to
- 40.1 The Client warrants that the Consultant shall have, free of charge, unimpeded access to all land in respect of which access is required for

f m. Shakeen



Land

the performance of the Services. The Consultant shall, however, be responsible for any damage to such land or any property thereon resulting from such access, and will indemnify the Consultant and each of the Personnel in respect of liability for any such damage, unless such damage is caused by the default or negligence of the Consultant or any Sub-Consultant or the Personnel of either of them.

41. Change in the Applicable Law Related to Taxes

41.1 If, after the date of signing of the Contract, and during the performance of the Contract, there is any change in the Applicable Law with respect to taxes which increases or decreases the cost incurred by the Consultant in performing the Services, then the amounts otherwise payable to the Consultant under this Contract shall be increased or decreased accordingly by agreement between the Parties hereto, and corresponding adjustments shall be made to the ceiling amount specified in GCC Sub Clause 44.2.

42. Services and Facilities

42.1 The Client shall make available to the Consultant, for the purposes of the Services, free of any charge, the services and facilities described in Appendix 4 to the Contract at the times and in the manner specified.

42.2 In case that such services and facilities shall not be made available to the Consultant as specified in Appendix 4, the Parties shall agree on:

- (a) any time extension that may be appropriate to grant to the Consultant for the performance of the Services;
- (b) the manner in which the Consultant shall procure any such services and facilities from other sources, and
- (c) the additional payments, if any, to be made to the Consultant as a result thereof pursuant to GCC Sub Clause 48.1.

F. Payments to the Consultants

43. Payment

43.1 In consideration of the Services performed by the Consultant under this Contract, the Client shall make to the Consultant such payments and in such manner as stated under GCC Clauses 44 to 53.

44. Cost Estimate of Services: Ceiling Amount

44.1 An estimate of the cost of the Services is set forth in Appendix 5 to the contract.

44.2 Except as may be otherwise agreed under GCC Clause 21 and subject to GCC Sub Clause 48.1, payments under this Contract shall not exceed the ceiling as specified in the GCC Sub Clause 47.1.

44.3 Notwithstanding GCC Sub Clause 44.2, if pursuant to any of the GCC Clauses 41 or 42, the Parties shall agree that additional payments as the case may be, shall be made to the Consultant in order to cover any necessary additional expenditures not envisaged in the cost estimate referred to in GCC Sub Clause 44.1 above, the ceiling set forth in GCC Sub Clause 44.2 above shall be increased by the amount of any such additional payments.

F. M. S. Al-Sagheer



45. Payments: General
- 45.1 Payments due to the Consultant in each certificate shall be made into the Bank Account, in any scheduled Bank of Bangladesh, of the legal title of the Consultant specified in the PCC, nominated by the Consultant in the currency specified in the Contract.
- 45.2 With the exception of the final payment as stated under GCC Clause 53, payments do not constitute acceptance of the Services nor relieve the Consultant of any obligations hereunder.
46. Lump-Sum Payment
- 46.1 The total payment due to the Consultant shall not exceed the Contract Price which is an all-inclusive fixed lump-sum covering all costs required to carry out the Services described in Appendix 1.
47. Contract Price
- 47.1 The Contract Price is set forth in the PCC.
48. Payment for Additional Services
- 48.1 Payment for additional Services shall be made as agreed under GCC Sub Clause 21.
49. Modes of Billing and Payment
- 49.1 Payments in respect of the Services shall be made in line with outputs according to the payment schedule as specified in GCC Clauses 50, 51 and 53.
50. Advance Payment
- 50.1 If so specified in the PCC, an Advance Payment shall be made to the Consultant, of the amount and within the number of days after the Effective Date as specified in the PCC. The Advance Payment shall be made against the provision of a Bank Guarantee by the Consultant which shall:
- (a) remain effective until the Advance Payment has been fully amortized as specified in the PCC; and
 - (b) be in the format, without any alteration, as shown in Appendix 6.
- 50.2 Advance Payments shall be amortized by the Client in the manner as specified in the PCC until fully offset.
51. Interim Payments
- 51.1 Payment will be made according to the payment schedule as specified in the PCC subject to the provision of Advance Payment stated in GCC Clause 50. Any other payment shall also be made after the conditions as specified in the PCC for such payment have been met, and the Consultant has submitted an invoice not later than fifteen (15) days after that condition met, to the Client specifying the amount due.
- 51.2 The Client shall pay the Consultant within thirty (30) days after the receipt by the Client, of the invoices.
- 51.3 If the Client has delayed payment beyond thirty (30) days after the due date, interest at the annual rate as specified in the PCC shall become

[Handwritten signature]

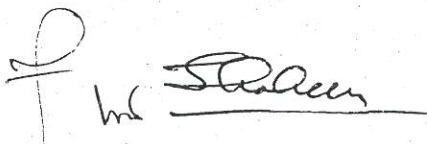
[Handwritten signature]

payable as from the above due date on any amount due by, but not paid on, such due date.

52. Amendment to Contract

52.1 The amendment to Contract shall generally include extension of time to the Intended Completion Date, increase or decrease in original Contract Price and any other changes duly approved under the Conditions of the Contract.

52.2 The Client shall amend the Contract, incorporating the changes approved, in accordance with the Delegation of Financial Power or Sub-delegation thereof and, introduced to the original terms and conditions of the Contract, including prior review where necessary.





53. Final Payment
- 53.1 The final payment under this Clause shall be made only after the final report and a final statement, identified as such, shall have been submitted by the Consultant and approved as satisfactory by the Client. The Services shall be deemed completed and finally accepted by the Client and the final report and final statement shall be deemed approved by the Client as satisfactory sixty (60) days after receipt of the final report and final statement by the Client unless the Client, within such sixty (60) day period, gives written notice to the Consultant specifying in detail deficiencies in the Services, the final report or final statement. The Consultant shall thereupon promptly make any necessary corrections, and thereafter the foregoing process shall be repeated until such time as the final report and the final statement have been approved by the Client.
54. Suspension of Payments
- 54.1 The Client may, by written notice of suspension to the Consultant, suspend all or part of the payments to the Consultant hereunder if the Consultant fails to perform any of its obligations under this Contract, including the carrying out of the Services, provided that such notice of suspension:
- (a) shall specify the nature of the failure, and
- (b) shall request the Consultant to remedy such failure within a period not exceeding thirty (30) days after receipt by the Consultant of such notice of suspension.

- | | | |
|---|------|--|
| 55. Completion of Services | 55.1 | The Consultant shall carry out the Services in accordance with the Programme submitted by the Consultant and, as updated with the approval of the Client, and complete them in all respects by the Intended Completion Date, as specified in the GCC Sub Clause 20.1. |
| 56. Early Warning | 56.1 | If at any time during performance of the Contract, the Consultant or its Sub-Consultants should encounter events, circumstances conditions that may adversely affect the quality of the work, increase the cost of Services or delay the execution of the Services, the Consultant shall promptly notify the Client in writing of the delay, its likely duration, and its cause. As soon as practicable after receipt of the Consultant's notice, the Client shall evaluate the situation, and the Consultant shall cooperate with the Client in making and considering proposals for how the effect of such an event or circumstance can be avoided or reduced. |
| 57. Extension of the Intended Completion Date | 57.1 | In the event the Consultant is unable to complete the assignment by the Intended Completion Date it may request the Client to extend the Intended Completion Date giving reasons. The Client shall extend the Intended Completion Date if the reasons given by the Consultant, including prior review where necessary, are found acceptable. The Client shall, however, decide by how much to extend the Intended Completion Date. |
| 58. Progress | 58.1 | The Client and the Consultant shall arrange progress meetings at regular intervals to review the progress of works. The meeting may review the plans for dealing with matters raised in accordance with the |

for Stacy



Meetings

early warning procedure.

- 58.2 The Client shall record the business of progress meetings and provide copies of the record to those attending the meeting and to the Consultant for action.

H. Good Faith and Fairness

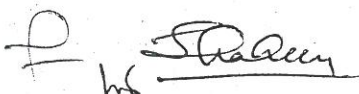
59. Good Faith and Fairness

- 59.1 The Parties undertake to act in good faith with respect to each other's rights under this Contract and to adopt all reasonable measures to ensure the realization of the objectives of this Contract.
- 59.2 The Parties recognize that it is impractical in the Contract to provide for every contingency which may arise during the life of the Contract, and the Parties hereby agree that it is their intention that this Contract shall operate fairly as between them, and without detriment to the interest of either of them, and that, if during the term of this Contract either Party believes that this Contract is operating unfairly, the Parties will use their best efforts to agree on such action as may be necessary to remove the cause or causes of such unfairness, but no failure to agree on any action pursuant to this Clause shall give rise to a dispute subject to arbitration in accordance with GCC Clause 71.2.

I. Termination and Settlement of Disputes

60. Termination for Default

- 60.1 The Client or the Consultant, without prejudice to any other remedy for breach of Contract, by notice of default sent to the other party, may terminate the Contract in whole or in part if the other party causes a fundamental breach of contract. In such an occurrence one party shall give not less than twenty-eight (28) days' written notice of termination to the other party.
- 60.2 Fundamental breaches of the Contract shall include but shall not be limited to, the following:
- (a) If the Consultant fails to remedy a failure in the performance of their obligations hereunder, as specified in a notice of suspension pursuant to GCC Clause 54, within twenty-eight (28) days of receipt of such notice of suspension or within such further period as the Client may have subsequently approved in writing;
 - (b) If the Consultant submits to the Client a statement which has a material effect on the rights, obligations or interests of the Client and which the Consultant knows to be false;
 - (c) If the Consultant, in the judgment of the Client, has engaged in corrupt, fraudulent, collusive and coercive practices in competing for or in executing this Contract;
 - (d) If the Consultant or the Client fails to comply with any final decision reached as a result of arbitration proceedings pursuant to GCC Sub Clause 71.2;
 - (e) If the Client fails to pay any money due to the Consultant pursuant to this Contract and not subject to dispute pursuant to GCC Sub Clause 71.2 within forty-five (45) days after receiving written





notice from the Consultant that such payment is overdue; or

- (f) If the Client is in material breach of its obligations pursuant to this Contract and has not remedied the same within forty-five (45) days (or such longer period as the Consultant may have subsequently approved in writing) following the receipt by the Client of the Consultant's notice specifying such breach.

61. Termination for Insolvency
- 61.1 The Client and the Consultant may at any time terminate the Contract by giving notice to the other party if:
- (a) the Client becomes bankrupt or otherwise insolvent;
 - (b) the Consultant becomes (or, if the Consultant consist of more than one entity, if any of its Members becomes) insolvent or bankrupt or enter into any agreements with their creditors for relief of debt or take advantage of any law for the benefit of debtors or go into liquidation or receivership whether compulsory or voluntary; or
 - (c) in such event, termination will be without compensation to any party, provided that such termination will not prejudice or affect any right of action or remedy that has accrued or will accrue thereafter to the other party.
62. Termination for Convenience
- 62.1 The Client, by notice sent to the Consultant, may in its sole discretion and for any reason whatsoever, terminates the Contract, in whole or in part, at any time for its convenience. The notice of termination shall specify that termination is for the Client's convenience, the extent to which performance of the Consultant under the Contract is terminated, and the date upon which such termination becomes effective.
63. Termination because of Force Majeure
- 63.1 The Client and the Consultant may at any time terminate the Contract by giving notice to the other party if, as the result of Force Majeure, the Consultant is unable to perform a material portion of the Services for a period of not less than sixty (60) days.
64. Force Majeure
- 64.1 For the purposes of this Contract, "Force Majeure" means an event which is beyond the reasonable control of a Party, is not foreseeable, is unavoidable, and its origin is not due to negligence or lack of care on the part of a Party, and which makes a Party's performance of its obligations hereunder impossible or so impractical as reasonably to be considered impossible in the circumstances, and includes, but is not limited to, war, riots, civil disorder, earthquake, fire, explosion, storm, flood, epidemics, or other adverse weather conditions, strikes, lockouts or other industrial action (except where such strikes, lockouts or other industrial action are within the power of the Party invoking Force Majeure to prevent), confiscation or any other action by Government agencies.
- 64.2 Force Majeure shall not include any:
- (a) event which is caused by the negligence or intentional action of a Party or such Party's Sub-Consultants or agents or

f
hr Shah



employees, or

- (b) event which a diligent Party could reasonably have been expected both to take into account at the time of the conclusion of this Contract, and avoid or overcome in the carrying out of its obligations hereunder.

64.3 Force Majeure shall not include insufficiency of funds or failure to make any payment required hereunder.

64.4 The Head of the Procuring Entity decides the existence of a Force Majeure that will be the basis for measures to be taken by either Party, as stated under GCC Sub Clause 66.1.

65. No Breach of Contract

65.1 The failure of a Party to fulfil any of its obligations hereunder shall not be considered to be a breach of, or default under, this Contract insofar as such inability arises from an event of Force Majeure, provided that the Party affected by such an event has taken all reasonable precautions, due care and reasonable alternative measures, all with the objective of carrying out the terms and conditions of this Contract.

66. Measures to be Taken on Force Majeure

66.1 A Party affected by an event of Force Majeure shall continue to perform its obligations under the Contract as far as is reasonably practical, and shall take all reasonable measures to minimize the consequences of any event of Force Majeure.

66.2 A Party affected by an event of Force Majeure shall notify the other Party of such event as soon as possible, and in any case not later than fourteen (14) days following the occurrence of such event, providing evidence of the nature and cause of such event, and shall similarly give written notice of the restoration of normal conditions as soon as possible.

66.3 Any period within which a Party shall, pursuant to this Contract, complete any action or task, shall be extended for a period equal to the time during which such Party was unable to perform such action as a result of Force Majeure.

66.4 During the period of their inability to perform the Services as a result of an event of Force Majeure, the Consultant, upon instructions by the Client, shall either:

- (a) demobilize, in which case the Consultant shall be reimbursed for additional costs they reasonably and necessarily incurred, and, if required by the Client, in reactivating the Services; or
- (b) continue with the Services to the extent possible, in which case the Consultant shall continue to be paid under the terms of this Contract and be reimbursed for additional costs reasonably and necessarily incurred.

F
12/6
Shahreen



67. Cessation of Rights and Obligations 67.1 Upon termination of the Contract pursuant to GCC Clause 60 to 63, or upon expiration of this Contract pursuant to GCC Clause 20, all rights and obligations of the Parties hereunder shall cease, except
- (a) such rights and obligations as may have accrued on the date of termination or expiration;
 - (b) the obligation of confidentiality set forth in GCC Clause 31;
 - (c) the Consultant's obligation to permit inspection, copying and auditing of their accounts and records set forth in GCC Clause 34; and
 - (d) any right which a Party may have under the Applicable Law.
68. Cessation of Services 68.1 Upon termination of the Contract by notice of either Party to the other pursuant to GCC Clauses 60 to 63, the Consultant shall, immediately upon dispatch or receipt of such notice, take all necessary steps to bring the Services to a close in a prompt and orderly manner and shall make every reasonable effort to keep expenditures for this purpose to a minimum. With respect to documents prepared by the Consultant and equipment and materials furnished by the Client, the Consultant shall proceed as provided, respectively, by GCC Clause 37 and or 38.
69. Payment upon Termination 69.1 Upon termination of this Contract pursuant to GCC Clause to 60 to 63, the Client shall make the following payments to the Consultant:
- (a) payment pursuant to GCC Clause 44 to 53 for Services satisfactorily performed prior to the effective date of termination;
 - (b) except in the case of termination pursuant to GCC Sub Clause 60.2 (a), (b), & (c) and GCC Sub Clause 61.1 (b), reimbursement of any reasonable cost incidental to the prompt and orderly termination of the Contract, including the cost of the return travel of the Personnel and their eligible dependents.
70. Disputes about Events of Termination 70.1 If either Party disputes whether an event specified in GCC Clause 60, 61 or 62 has occurred, such Party may, within forty-five (45) days after receipt of notice of termination from the other Party, refer the matter to arbitration pursuant to GCC Sub Clause 71.2, and this Contract shall not be terminated on account of such event except in accordance with the terms of any resulting arbitral award.
- 70.2 In the case of disagreement between the Parties as to the existence or extent of Force Majeure, the matter shall be settled according to GCC Clause 71.
71. Settlement of Disputes 71.1 Amicable Settlement
- The Client and the Consultant shall use their best efforts to settle amicably all disputes arising out of or in connection with this Contract or its interpretation.
- 71.2 Arbitration

f
inc
Shahen



(a) If the Parties are unable to reach a settlement within twenty-eight (28) days of the first written correspondence on the matter of disagreement, then either Party may give notice to the other party of its intention to commence arbitration.

(b) Any dispute or difference in respect of which a notice of intention to commence arbitration has been given in accordance with this Clause shall be finally settled by arbitration. Arbitration may be commenced prior to or after delivery of the Services under the Contract. Arbitration proceedings shall be conducted in accordance with the Arbitration Act (Act No 1 of 2001) of Bangladesh as at present in force at the location specified in the PCC.

(c) Notwithstanding any reference to arbitration herein

(i) the parties shall continue to perform their respective obligations under the Contract unless they otherwise agree ; and

(ii) the Client shall pay the Consultant any monies due the Consultant

71.3 The expiration of the Intended Completion Date under GCC Sub Clause 55.1 and, the initiation of settlement of disputes like amicable and arbitration under GCC Sub Clause 71.1 and 71.2 shall not be deemed a termination of the Contract.

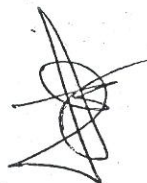
f me Shahen



Particular Conditions of Contract (PCC)

GCC Clause	Amendments of, and Supplements to Clauses of Section 3. General Conditions of Contract
<p>1.1 (b)</p> <p>1.1 (e)</p>	<p>The Client is: Director Urban Development Directorate 82, Segunbagicha, Dhaka-1000.</p> <p>Authorized representative: Shaheen Ahmed Project Director "Preparation Of Development Plan for Fourteen Upazilas" Urban Development Directorate 82, Segunbagicha, Dhaka-1000.</p> <p>The Consultant is: Engineering Consultants and Associates Ltd. 154 Monipuripara, Farmgate, Tejgaon, Dhaka-1215</p>
GCC 2.1	The assignment is to be completed in the following phases: None
GCC 3.1	<p>The Client's addresses for the purpose of Communications and Notices under this Contract is :</p> <p>Contact Person : Shaheen Ahmed, Project Director, "Preparation Of Development Plan for Fourteen Upazilas"</p> <p>Address : Room No # 407 (3rd Floor), Urban Development Directorate, 82, Segunbagicha, Dhaka-1000.</p> <p>Tel : <u>+88-02-9554925</u></p> <p>Fax : <u>+88-02-9557868</u></p> <p>e-mail address: <u>ashaheen1192@yahoo.com</u></p> <p>The Consultant's addresses for the purpose of Communications and Notices under this Contract is :</p> <p>Contact Person: Rashid Ahmed Khan, Managing Director, Engineering Consultants and Associates Ltd.</p> <p>Address : 154 Monipuripara, Farmgate, Tejgaon, Dhaka-1215</p> <p>Tel : <u>+88-02-8116214, +88-02-9111277, +88-02-9110176</u></p> <p>Fax : <u>+88-02-8119761</u></p> <p>e-mail address: <u>ecalimited@yahoo.com, ecalimitedbd@gmail.com</u></p>
GCC 6.1(e)	The following additional documents shall form the part of the Contract: None
GCC 8.1	Non-eligible countries are <i>ISRAEL</i>
GCC 11.1	The Member-in-Charge is: Rashid Ahmed Khan, Managing Director, Engineering Consultants and Associates Ltd. 154 Monipuripara, Farmgate, Tejgaon, Dhaka-1215.

f in Shaheen



GCC 12.1	<p>The Authorized Representatives are:</p> <p>For the Client : Project Director, 'Preparation of Development Plan for Fourteen Upazilas' Project</p> <p>For the Consultant: Rashid Ahmed Khan, Managing Director, Engineering Consultants and Associates Ltd.</p>
GCC 17.1	The conditions for effectiveness of the Contract are the following: NONE
GCC 18.1	The time for commencement of the Services shall be [14] days after the Effective Date of the Contract.
GCC 19.1	The Contract period shall be 21 Months after the Effective Date of the Contract.
GCC 20.1	The Contract shall expire at the end of 21 Months after the Effective Date of the Contract.
GCC 32.4(a)	The Consultant is notified of such actions, claims, losses or damages not later than [03(Three)] months after conclusion of the Services.
GCC 32.4(b)	The ceiling on Consultant's liability shall be limited to BDT 3, 27, 09,679.00 (Taka Three Crore Twenty Seven lac Nine Thousand Six Hundred Seventy Nine) only for consultant's Staff Remuneration & Reimbursable Expenses or, the proceeds the Consultants may be entitled to receive from any insurance they maintain to cover such liability whichever of these is higher.
GCC 33.1(a)	<p>The risks and the coverage shall be as follows: Not Applicable</p> <p>(a) Third Party motor vehicle liability insurance in respect of motor vehicles operated in Bangladesh by the Consultant or its Personnel or any Sub-Consultants or their Personnel, with a minimum coverage of [insert amount as prevalent];</p> <p>(b) Third Party liability insurance, with a minimum coverage of [insert amount as prevalent];</p> <p>(c) Professional Liability insurance, with a minimum coverage of [insert amount equivalent to Contract Price];</p> <p>(d) Employer's Liability and Workers' Compensation insurance in respect of the Personnel of the Consultant and of any Sub-Consultant, in accordance with the relevant provisions of the Applicable Law, as well as, with respect to such Personnel, any such life, health, accident, travel, or other insurance as may be appropriate; and</p> <p>(e) Insurance against loss of or damage to (i) equipment and materials purchased in whole or in part with funds provided under this Contract, (ii) the Consultant's property used in the performance of the Services, and (iii) any documents prepared by the Consultant in the performance of the Services.</p> <p>[delete not appropriate]</p>
GCC 35.1 (a)	The Consultant shall obtain the Client's prior approval in writing before taking any of the following actions:


F. M. S. R. Khan



	any change or addition to the Technical Expert listed in Section ITC 41.2;
GCC 35.1 (b)	The Consultant shall obtain the Client's prior approval in writing before taking any of the following actions: any subcontract relating to the Services to an extent and, with such specialists and entities as may be approved; and
GCC 35.1(c)	The other actions that shall require Client's approval are: None
GCC 37.3	The other restrictions about future use of documents and software are; "The Consultant shall not use these documents and software for purposes unrelated to this Contract without the prior written approval of the Client". "The Consultant will hand over to the Client all related documents, software, images, data base etc. in compatible format of the Client's office after completion of the Project Work".
GCC 39.1(d)	Assistance for carrying out the Services to be provided by the Client are; Client's Project team will assist in PRA Sessions, Workshop and Public Hearing etc. in the project area.
GCC 45.1	The particulars of the Bank Account nominated are as follows : Title of the Account : Engineering Consultants and Associates Ltd. Name of the Bank : Sonali Bank Ltd. Name of the Branch : Awolad Hossain Market Branch Account Number : 33001783 Address : 147/1, 2 Old Airport Road, Tejgaon, Dhaka. Tel : +88-02-9111827, +88-01730318558 Fax : e-mail address : <i>[information furnished by the Consultant shall be substantiated by the concerned Bank and authenticated by the Client]</i>
GCC 47.1	The Contract Price is BDT 4,08,87,099.00 (Taka Four Crore Eight Lac Eighty Seven Thousand Ninety Nine) including IT & VAT which is specified in Appendix-5
GCC 50.1	Advance Payment: <i>[insert percentage]</i> percent of the Contract Price shall be paid within <i>[insert number]</i> days after the Effective Date against the submission of a Bank Guarantee in prescribed format for the same: Not applicable Bank Guarantee shall remain effective until: Not applicable
GCC 50.2	Advance Payment will be amortized by the Client in the following manner: Not applicable

F. M. Shahin

GCC 51.1	<p>Payments shall be made in line with agreed-on outputs according to the following schedule:</p> <ul style="list-style-type: none"> • Mobilization Report: Ten (10) percent of the lump-sum Contract Price shall be paid upon submission of the mobilization Report duly accepted by the Client. • Inception Report: Fifteen (15) percent of the lump-sum Contract Price shall be paid upon submission of the Inception Report duly accepted by the Client. • Draft Survey Report: Submission of the Draft Survey Report and duly accepted by the Client. • Final Survey Report: Thirty-five (35) percent of the lump-sum Contract Price shall be paid upon submission of the Draft Final Report duly accepted by the Client. • Draft Final Plan with Report: Twenty (20) percent of the lump-sum Contract Price shall be paid upon submission of the Final Report duly accepted by the Client. • Final Plan with Report: Twenty (20) percent of the lump-sum Contract Price shall be paid upon submission of the Final Report duly accepted by the Client. <p>All payments are subject to Presentation of Working Papers before the Client's Project Team and approval from the TMC.</p>
GCC 51.2	The Client shall pay the Consultant within thirty (30) days after the receipt by the Client, of the invoices: Not applicable
GCC 51.3	The Consultant shall be entitled to receive financing charges for delayed payment during the period of delay at the following rate: Not applicable
GCC 71.2(b)	The place of Arbitration is: Dhaka

F. 



Appendices

Appendix 1 Description of the Services/ TOR-1 & TOR-2

Include the Terms of References (TOR-1 & TOR-2) worked out by the Client and the Consultant during Technical Proposal negotiations, dates for completion of various tasks, place of performance for different tasks, specific tasks to be approved by Client, etc

Appendix 2 Reporting Requirements

List here format, frequency, and contents of reports and working papers; dates of submission; etc. Which are clearly articulated in the attached Work Plan and Cost Estimation.

Appendix 3 Key Personnel and Sub-Consultants

List of Key Personnel and Sub-Consultants/Technical Staff including their detailed job descriptions and minimum qualifications and man-months.

Appendix 4 Services and Facilities to be provided by the Client

List of Services and Facilities to be made available to the Consultant by the Client.

Appendix 5 Cost Estimates

Appendix 6 Minutes of Negotiation Meeting dated 21April, 2015

f h Stacy



Appendix 1

Description of the Services/TOR-1 & TOR-2

F

ms

Sham

~~✗~~



URBAN DEVELOPMENT DIRECTORATE
Ministry of Housing and Public Works

TERMS OF REFERENCE (TOR)

For

Preparation of Development Plan for Fourteen Upazilas

July, 2013

F

ms

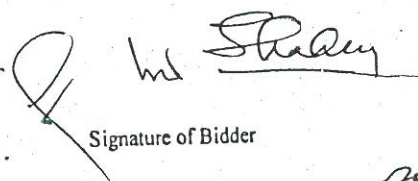
Shahin

URBAN DEVELOPMENT DIRECTORATE
Ministry of Housing and Public Works

TERMS OF REFERENCE (TOR)
for

Preparation of Development Plan for Fourteen Upazilas

July, 2013


Signature of Bidder

Project Director



Director, UDD

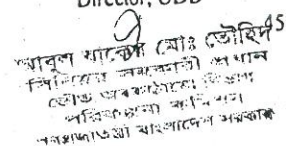

আব্দুল মান্নান মোঃ জোবির
নির্বাহী প্রকল্প পরিচালক
উপজেলা পরিকল্পনা ও
অর্থনৈতিক কার্যক্রম
নগরসংসদ ও
সংসদ সদস্য

Table of Contents

TITLE	PAGE NO.
Appendix-01: Background Information of the Project	47
Appendix-02: Scope of Work for Planning	52
Appendix-03: Scope of Work for the Intended Survey work	63
Appendix-04: Project Committees	89

Signature of Bidder

Project Director

Director, UDD

46

APPENDIX-01

BACKGROUND INFORMATION OF THE PROJECT

1 Project Background

Like most of the developing countries, development in Bangladesh takes place in and around a few major cities. Therefore, the benefits of development are enjoyed by the only limited number of urban population. This leads to national imbalance and disparity in levels of living status and development in different parts of the country. Lack of accessibility to important services can be identified as one of the major reasons of backwardness of rural areas of Bangladesh. The development of small towns should be given utmost importance in future urbanization of Bangladesh. These are towns at the urban-rural interface having some form of urban infrastructure and the rural populations have the most access to these towns. Therefore, the development of the towns/urban centers in terms of the improvement and expansion of ranges of the services will directly benefit the population of their hinterlands and at the same time will be more economically feasible.

The role and importance of the secondary towns of Bangladesh can be envisaged from the fact that the contribution of the urban sector to gross domestic product (GDP) is increased from 25 per cent to 38 per cent in 1992 and to 45 per cent in 2001 (Murtaza, 2006). These secondary towns are becoming potential areas of small and medium sized investment in business and manufacturing sub-sectors along with administrative and social services providing characters. Moreover, recent construction of national highways connecting the district headquarters and other investment on nation building projects have shaped up the secondary towns to play a catalyst role in the overall process of urbanization so as to achieve a balanced urban growth in the country.

In reality, due to lack of practicing effective urban planning, these secondary towns have been measurably failed to put in order spatially the most valuable resource i.e., the land of the towns in view of the citizens' socio economic and cultural needs of the citizens. The land is used most haphazardly. As such, the developments are taking place in unplanned and unregulated manner resulting in low living standard of the people living in the cities and towns. This situation depressingly influences the investment patterns in the secondary towns resulting not creating employment opportunities for the urban dwellers and generation funds for development and better maintenance of urban infrastructure such as roads, water supply, drainage, waste disposal and sanitation, electricity, etc. within their boundaries. Thus, the role of the secondary towns in the overall socio-economic development both at the local and the national levels are not much noteworthy. Further, it is to be agreed that the issues concerning urbanization and practicing urban planning at the secondary town level have not been duly addressed as far as the national policies and strategies are discussed.


Signature of Bidder


Project Director


Director, UDD

As per different reports of international development agencies and research organizations, it is predicted that about 50% of the total population of developing countries will live in urban areas which would be horrifying in terms of land use transformation which mainly deals with space and services (United Nations Population Division, 1995). The ties between urban and rural economies have been acting crucial in promoting wide spread development in the developed world. Rural development cannot be achieved in isolation from the cities or entirely through bottom-up approach. Greater attention must be given to diversifying economies that have been crucial in promoting a more balanced distribution of income. Economic linkages are crucial because the major markets of agricultural surpluses are in urban centers; on the other hand, most agricultural inputs come from organization in cities and many of the social, health, educational and other services that satisfy human needs in rural areas are distributed from urban centers. Therefore, an appropriate measure to control over this land use transformation in rural and urban area is a must.

According to the Sixth Five Year Plan (SFYP) the main goal of the government's land use policy and management is to ensure best possible use of land resources and delivery of land related services to the people through modernized and efficient land administration for sustainable development including accelerated poverty reduction. (SFYP, p.68)

A comprehensive development plan is required to address the required land use transformation which will not allow any unauthorized and unplanned development, either in urban area or in rural area. Due to lack of such plan, it is generally found that most of the upazilas in Bangladesh have developed with least coordinated manner possessing very little development control. Measures for the adequate provision of infrastructure, service, utility and modern amenities for maintaining a minimum standard of life, considering environment and sustainability has to be taken. Moreover, in preparing such plan, development constraints and local development potentials are to be identified clearly, and plans should be formulated addressing such development constraints and potentials of the area to make the plan practicable.

In the government's recent policy of overall administrative re-organization, the upazila has been recognized as the most significant tier of the administration. It will be planned and developed to accommodate all social, economic, administrative and infrastructure services for the region. This also reflects the national policy of bringing development, administrative and services facilities to the door step of the rural masses and to ensure better delivery of government services to the people. Initially the project area consisted of nine upazilas under Constitutional area of member of the Parliamentary Standing Committee concerning Ministry of Housing and Public works. The total Project area is 2748.37 sq. km. and total population is 2698872 (Reference Table-1). Constitutional area Dhaka-1 (Dohar-Nawabganj): 406.29 sq.km; Constitutional area Chittagong-5 (Raozan and Hathazari): 492.91 sq.km; Narsingdi-3 (Shibpur + Raipura(P)): 232.47 sq.km.; Constitutional area Mymensingh-8 (Ishwarganj): 286.19 sq.km; Constitutional area Cox's Bazar-3(Ramu): 391.71 sq.km; Constitutional area Madaripur-1(Shibchar): 321.88 sq.km; Constitutional area Rajshahi-4 (Bagmara): 363.30 sq.km. Since, Hathazari and Raozan upazilas are under the jurisdiction of Chittagong Development Authority (CDA). There exists Structure Plan, Urban Area Plan and Detailed Area Plan for the both of upazilas under Chittagong Metropolitan Master Plan 1995. Hence, development plan for the two upazilas shall not be prepared.


Signature of Bidder



Project Director



Director, UDD

According to the decision of the meeting of the Project Evaluation Committee (PEC) was held at Physical Infrastructure Division, Planning Commission, Chaired by the Honorable Member, Physical Infrastructure Division, dated on 19/12/2011 the Study Proposal has been renamed as "Preparation of Development Plan for Nine Upazilas" and recovered according to the decision made in the meeting.

Meanwhile, Honorable State Minister for the Ministry of Environment and Forest requested UDD to prepare a Structure Plan and Action Area Plan for Rangunia upazila, Chittagong 361.54 sq.km (স্মারক নং পবম/প্রতিমন্ত্রী/বিবিধ/০২/২০১০/৩৫৯, তারিখ-১২.৮.২০১০), which is under Constitutional area of Chittagong- 6 and the Mayor of Faridpur Paurashava has requested UDD to prepare a Master plan for the Paurashava (স্মারক নং ১৩৫৯, তারিখ- ০৭/১০/২০১০). The paurashava is within Faridpur Sadar Upazila, Dhaka 407.02 sq.km is under the Constitutional area of Faridpur-3. Hence, these two upazilas had been selected under 9 upazilas Development Plan, instead of Raozan and Hathazari upazila (Ref. Map-1).

Later, another meeting of the PEC was held at Physical Infrastructure Division, Planning Commission, Chaired by the Honorable Member, Physical Infrastructure Division, dated on 10/02/2013. According to the decision of the PEC meeting Sariakandi and Sonatola upazila of Bogra district, which is under Constitutional area of Bogra-1, Saghata Upazila of Gaibandha zila which is under Constitutional area of gaibandha-5, Gangni upazila of Meherpur district, which is under Constitutional area of Meherpur-2 and whole of Raipura upazila of Narsingdi district has been included in the study proposal; and the study proposal has been renamed as "Preparation of Development Plan for Fourteen Upazilas" accordingly to maintain geographical balance for preparing development plan. Area and population of the fourteen upazilas has been shown in the Table-1 and planning team for the study proposal has been shown in the Table-2 below:

Table-1: Population and Area of 14 upazilas under the Project

Sl. No.	Name of District	Name of upazila	Area (sq.km)	Urban area	Rural area	Urban Population	Rural Population	Total
1	Dhaka	Nawabganj	244.8	1.76	243.04	77590	410438	488028
2		Dohar	161.49	20.31	141.18	61793	129630	191423
3	Chittagong	Rangunia	361.54	37.08	324.46	53035	245335	298370
4	Cox bazar	Ramu	391.71	22.03	369.68	33334	169349	202683
5	Rajshahi	Bagmara	363.3	26.58	336.72	34632	285336	319968
6	Faridpur	Faridpur	407.02	23.45	383.57	101084	312401	413485
7	Mymensingh	Ishwarganj	286.19	15.82	270.37	30948	307132	338080
8	Madaripur	Shibchar	321.88	17.02	304.86	27877	296561	324438
9	Narsingdi	Shibpur	232.47	3.52	228.95	10426	303394	313820
10		Raipura	408.45	13.49	394.96	34411	420135	454546
11	Bogra	Sariakandi	432.6	3.58	429.02	17320	222763	240083
12		Sonatala	156.73	4.94	151.79	11405	156142	167547
13	Gaibanda	Saghata	225.67	6.38	219.29	15549	234720	250269
14	Meherpur	Gangni	341.98	22.86	319.12	23846	245239	269085
Total			4335.83	218.82	4117.01	504525	3359670	3864195

Source: BBS, 2001

Table 2: Planning Teams for the Project

Sl. No.	Name of Planning Team	Name of upazilas
1.	Team 1	Nawabganj, Dohar, Shibchar
2.	Team 2	Ishwarganj, Raipura, Shibpur
3.	Team 3	Bagmara, Faridpur sadar, Gangni
4.	Team 4	Saghatta, Sonatota, Sariakandi
5.	Team 5	Ramu, Rangunia

Signature of Bidder

Project Director

Director, UDD

আবুল বাকের মোঃ জৌহিদ
নিম্নোক্ত সরকারী প্রধান
কোষ প্রকল্পের প্রধান
পারদর্শন কর্মসূচি
মন্ত্রণালয় বাংলাদেশ সরকার

As a local government unit, most of the Upazila Parishad of the project area has not yet capable of integrating the rural areas with the urban area in both physical and socio-economic terms to implement planned rural-urban development. Once such integration becomes possible, this will help to utilize the valuable agricultural land properly as well as save it and guide local development in an organized manner. Thus, the overall situation of these Upazilas depicts an underdeveloped scenario which needs to be developed based on their potentialities in the field of agriculture and industry. Scope of such developments needs to be explored.

Since 1965, Urban Development Directorate (UDD) is the only physical planning agency of the national government that advises the government on matters related to urbanization, human settlement and land development in order to achieve planned physical development throughout the country by preparing different plans for urban and rural areas in the country other than the 4 (four) metropolitan cities- Dhaka, Chittagong, Khulna and Rajshahi. Master Plan for some upazila head quarters under the project area was prepared in 1985 by UDD. These Master Plans have been expired in 2005. It is worthy to mention that these Master Plan covered only little portion of the whole upazila (mostly urban areas) whereas the rest of the area will remain unplanned which is a great concern of planning point of view.

The parliamentary permanent committee related to Housing and Public Works Ministry always gives emphasis on planned development of their concerned upazila as a whole. Recently, this committee has decided to prepare master plan of the respective constitutional areas in its 10th meeting (Reference No. Sha-2/2M-2/2010/132) dated 24-02-2010. UDD was directed to prepare those Master Plans. Accordingly, UDD prepared individual Study Proposal for the respective upazila and submitted to the concerned ministry. There was a DPEC meeting at Ministry of Housing and Public Works (MoH&PW) regarding the mentioned Study Proposal on 24 May 2010. According to the decision made in the meeting, UDD was directed to combine those 07 (seven) Study Proposal and prepare a single Study Proposal which would be sent to the Planning Commission by MoH&PW. Since, master plan for Raozan and Hathazari upazilas of Chittagongj district has been prepared by Chittagongj Development Authority (CDA), these two upazilas have been dropped from the study proposal as per "Charter of Duties" of UDD.

Meeting of Project Evaluation Committee was held at Physical Infrastructure Division, Planning Commission, Charired by the Honorable Member, Physical Infrastructure Division, dated on 19/12/2011. According to the decision of the meeting of the PEC Committee the Study Proposal has been renamed as "Preparation of Development Plan for Nine Upazilas" and recovered according to the decision made in the meeting.

Later, a request letter was sent by the Honorable State Minister for Ministry of Forest and Environment for preparing master plan for Rangunia upazila, Chittagongj district and another request letter for the same was sent by Honorable Mayor, Faridpur paurashava, Faridpur district. Accordingly, Rangunia upazila and Faridpur Sadar upazila have been included in the study proposal to keep the title of the study proposal "Preparation of Study Proposal for nine Upazilas" unchanged as per decision of the PEC meeting held at Physical Infrastructure Division, Planning Commission unchanged.

Another meeting of the PEC was held at Physical Infrastructure Division, Planning Commission, Chaired by Honorable Member, Physical Infrastructure Division dated on 10.02.2013. According to the decision of the meeting of the PEC additional four upazilas namely Sariakandi and Sonatola upazila of Bogra district, Saghata Upazila of Gaibandha zila, Gangni upazila of Meherpur district

Signature of Bidder

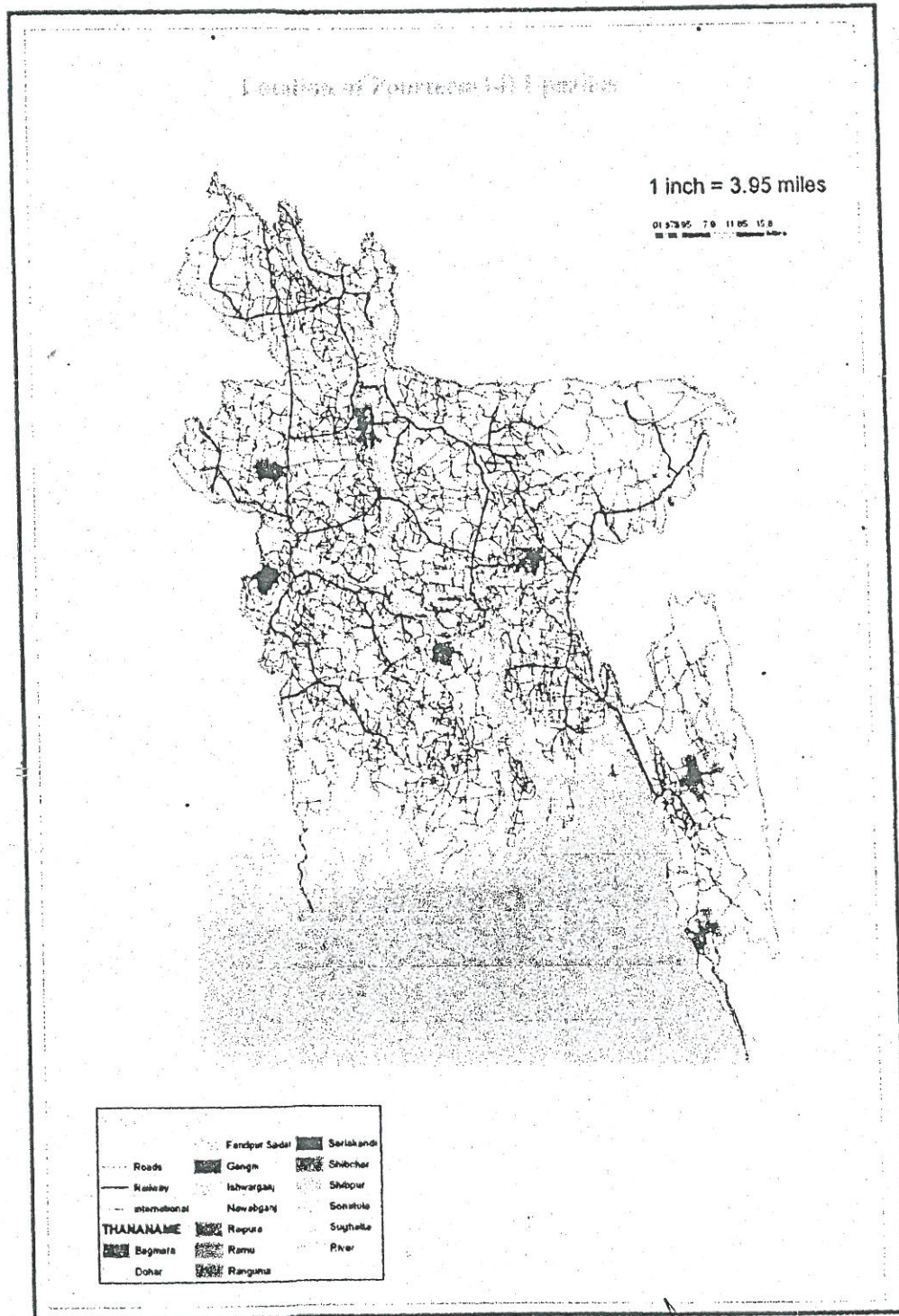
Project Director

Director, UDD

প্রাপ্তি স্বাক্ষর মোঃ তোহিদ
সিনিয়র সহকারী সচিব
উপজেলা পরিষদ, চিত্রগঞ্জ
স্বাধীনতা পল্লী, চিত্রগঞ্জ
১৩৫০

and whole of Raipura upazila of Narsingdi district have been included in the study proposal to maintain geographical balance in preparing master plan; and accordingly the study proposal has been renamed as "Preparation of Development Plan for Fourteen Upazilas".

Map-1: Proposed Project Area



Signature of Bidder

Shahid

Project Director

me

Director, UDD

51

g

RECEIVED
10/10/2011
DIRECTOR, UDD
10/10/2011

APPENDIX-02

2. Brief out line and scope of the project

The project planning area will cover the whole Upazilas of the 14 (Fourteen) upazilas which might have potential for development within the next 20 years up to 2033 A.D. The project is planned to be completed in three stages/tiers. In the first stage, there will be preparation of *Structure Plan* for the whole Upazila and surrounding areas. The second phase will be preparation of *Urban Area Plan* for problems or opportunities, which need immediate intervention. Due to heterogeneous topography containing undulating lands and water bodies, the study must be based on Geographic Information system (GIS) and images. The third stage will be preparation of *Action Area Plan/Detailed Area Plan* in the form of sectoral projects and programs for immediate intervention based on local need.

The current project would emphasise over the change in land category, land use and livelihood pattern.

Components of the Planning Package are:

A. Sub-Regional Plan

I. Strategic Plan for Eleven Districts at Sub-Regional Level: Sub-Regional Structure Plan for eleven Districts would be prepared for 20 years according to the guidelines form: National policies, Formulated and Integrated different sectoral strategies at sub regional level, spatially interpreted sectoral strategies at sub regional level, formulated Conservation Plan at sub regional level and formulated Development Plan.

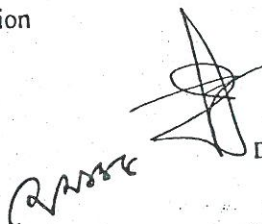
It is also necessary to figure it out the economic disparity by using "shift-share analysis" or "input-output analysis" technique among the Upazila within districts under study for drawing the future socio-economic development scenario. The Plan would also study on the following component at sub regional level:

- Lands Study:
 - Review existing Land use and Development Plans, Upazila Plan Books.
 - Change in Land Category and Land Use after FCD
 - Assessment of change in land use after construction of major infrastructure
 - Settlement Pattern
 - Hinterland, Location and level of major facilities at sub regional level
 - Hierarchy of settlements within the sub region
 - Identification of major criteria of the settlements
- Hydrology:
 - Local rivers: Hydrodynamic, Morphological, Geomorphologic development
 - Impact of FCD and FCDI at sub regional level
- Environmental studies:
 - Related Environmental Policies, Acts and Laws (in regional planning study)
 - Environmental Procedures and Guidelines (in sub regional planning study)
 - Economic, Social, Biological and Physical Environment at sub regional level
- Hazard management :
 - Review on guidelines on Hazard management at sub regional level
 - Hazard mapping considering natural hazards: Flood, water logging, drainage congestion, salinity intrusion according to guidelines on Hazard and Risk management at sub regional level
- Water Resource Management
 - Agriculture water management at sub regional level
 - Domestic water management at sub regional level
- Transport Studies (Rail, road, and water)
 - Overview of the Existing Transport Situation
 - General Situation of Road Infrastructure


Signature of Bidder




Project Director



Director, UDD

- Situation of Road Transport (Passengers)
- Road Transport (Goods)
- Water Transport
- Major Traffic Generating Centres and Areas of Congestion
- Traffic Flow Characteristics
- Road Transport Services
- River Traffic Situation
- Travel Pattern
- Road Network Development
- Situation of Rural Transport
- Location of key point installation at sub regional level
- Strategic Issues to be addressed in planning the Future Transport System
- Population Study
 - Spatial distribution of population and its changes since 1991
- Study on Basic services (major urban area):
 - Housing
 - Sanitation
 - Communication
 - Energy
 - Education
 - Health
- Economic Activities:
 - Agriculture
 - Industry
 - Fisheries
 - Forestry
 - Disparity analysis
- Anthropological and Ethnographical Study
 - Livelihood Study of local people
 - Ethnographical Study
- Heritage, Archaeology and Tourism management
 - Potentials of Tourism in the in the sub region
 - Planning Tourism in the for the sub region
 - Linkage of Tourism to Recreation and Sports
 - Potential Sites of Heritage
 - Archaeological sites

II Regional Structure Zoning Category: In order to promote and protect public safety welfare by (i) minimising adverse effect resulting from the inappropriate location or use of sites and structures, (ii) conserving limited land resources and encouraging their efficient use. To carry out the purposes and provisions of the project as they apply within the context of the Regional Structure Plan, the following land zoning category would be followed:

- Main flood flow zone
- Sub flood flow zone
- Wetland
- Forest
- Agricultural land
- Urban area
- Rural settlements
- Forest settlements
- Industrial moderate hazards
- Industrial low hazards
- Water supply protection zone
- Restricted flood protection reserve
- Restricted military / public safety

Signature of Bidder

Project Director

Director, UDD

- Restricted road / rail/ utility reserve
- Restricted special

III Conservation Plan: Major Landuse pressure is heavily depending on the ecosystems and resources of the existing nature. Land-use conflicts and clearly unsustainable uses may be found in planning areas. There is a clear need for broad-based, multi-sectoral and long term development management, including community-based initiatives in sanitation, biomass preservation and collective management of natural resources, including more detailed priorities such as ecosystem preservation of fisheries habitat, maintenance of biological diversity and productivity, forestry management, containment of saltwater intrusion and population risk management. Also needed are institutional and regulatory actions.

Contrary to some current impressions, conservation and economic development are not conflicting ideas. In fact, well-planned conservation-oriented development will add to the general economic and social prosperity of a coastal community, while bad development will sooner or later have a negative effect. With innovative management based upon sustainable use, communities may be able to achieve a desirable balance without serious sacrifice to either short-term development progress or longer-term conservation needs. In broad sense Conservation Plan would cover ecology and environment, land forms: forest, wetland, rivers and agricultural land, Major infrastructures, area of archaeological/ anthropological interest.

B. Structure Plan

The term **Structure Plan** is derived from British planning practice but has been internationally adopted. The principal components of such a plan are:

- An inventory of existing physical, demographic, economic, social and infrastructure features.
- An analysis of the major existing problems.
- An estimation of trends and changes likely in future (for the next 20 years).
- The identification of the major constraints on and opportunities for development.
- Consideration of the major development options and policies.
- An indication of the most suitable areas for such development.
- The identification of the priorities in each sector and the major activities needed to implement the development strategy.

The structure plan concentrates on the broad structure of the *Upazila* and is not concerned with the details of physical layout or individual development details which cannot be implemented until the later stages of the planning period.

In those areas and sectors where action is anticipated or proposed within a relatively short time however, more detail may be needed than is provided in the structure plan. Such appropriate level of detail is provided in the action plan.

The Structure Plan for the *Upazila* for 20 years: It would cover upto 2033 with the content and meaning of the development policy of Planning Commission and guidelines laid in the Poverty Reduction Strategy Paper (PRSP), National Water Management Plan (NWMP), Disaster Management Plan, Wetland Protection Act, Environmental Laws, etc. This will bridge the gap between National level policy and local level plan (Diagram I).

Signature of Bidder

Project Director

Director, UDD

The Structure Plan would include studies on:

- Hydrological study on the of the *Upazila* and connecting rivers (Hydrodynamic characteristics, Morphological characteristics, Geomorphologic development, Dominant Hydrodynamic and Morphologic process)
- Disaster management: Flood, water logging, drainage congestion,
- Water Resource Management
- Lands Study: Change in Land Use
- Livelihood Study
- Settlement Pattern
- Population Study
- Housing, Water supply and sanitation
- Communication, energy, education and health
- Agriculture and fisheries
- Transport system(road and water)
- Ecology and Environment

These sectoral studies would provide planning guidelines for land use and physical infrastructure. Land use, physical feature and spot level survey would be carried over the whole project area

There is a need for a legal instrument in order to regulate land use in a manner that would encourage orderly urban and rural settlements in accordance with the strategic policies of the Structure Plan. This is in order to promote and protect public safety welfare by (i) minimising adverse effect resulting from the inappropriate location or use of sites and structures, (ii) conserving limited land resources and encouraging their efficient use. To carryout the purposes and provisions of the project as they apply within the context of the Structure Plan, the following land zoning category would be followed:

- Main flood flow zone
- Sub flood flow zone
- Water supply protection zone
- Mixed use planned zone
- Mixed use spontaneous zone
- Rural settlements
- Industrial low hazards
- Restricted flood protection reserve
- Restricted military / public safety
- Restricted road / rail/ utility reserve
- Restricted special

Components:

- Translation of outputs of upper stages of planning in more specific terms:
 - ❖ Settlement: Rural and urban
 - ❖ Transportation infrastructure: Road, rail, water, air
 - ❖ Infrastructure: All sectors of both physical and social depending on local condition
- Requirements:
 - ❖ Final Delineation of :
 - Agriculture
 - Non-agriculture: urban, rural and special (both natural and man-made)
- Sensitivity to flood and drought

Signature of Bidder

Project Director

Director, UDD

55

আবুল বাকের মোঃ তোহিদ
সিনিয়র সহকারী প্রোগ্রামার
জাতীয় প্রকল্প পরিচালনা
পারিকল্পনা বিভাগ
গণপ্রজাতন্ত্রী বাংলাদেশ সরকার

Output:

- Conservation plan (primary, secondary and tertiary flood)
- Delineation of the structure of different infrastructures: Point, Linear and Area
- Interpretation of proposal of upper level policies
- To guide long term growth and development
- To provide basis from coordinating decision, development action within the urban area
- Provide guidance for development control
- Framework for local plan
- Focus planning issues of the urban area to the govt. and public

Composite Structure Plan reflects the complexity of the area.

Scale: R.F. 1: 10000, Period: 20 Years

C. Urban Area Plan

Urban Area Plan (UAP) provides an interim mid-term strategy for 10 years and covers for the development of urban areas within the project area. Generally, UAP contains an explanatory report, resource maps, interim management report, planning rules, urban area plan and a multi-sectoral investment program. In the present project, Content of Urban Area Plan is decided to be as follows:

1. Existing Land Use Survey: The land use survey will indicate the use of each plot of land and each building in the urban area and its immediate neighborhood. The Surveyors will visit each and every site to record existing usage with specified notation and colours as per direction of the Survey-in-charge. The output of this Survey will be one or more maps showing existing Residential, Commercial, Administrative and Cultural zones, nature of Town/City land (high, lower), water courses and water bodies, principal streets lanes and bye lanes demarcating the main zones and plantation or agricultural uses.

Scale of Survey: The survey should be conducted on maps of RF 1:3960.

Notation or colour—Survey information shall be recorded and presented in any colours as specified by Urban Development Directorate.

2. Survey of Development Activities: Site plan, land acquisition plans of new development projects shall have to be collected and presented in the map of RF 1: 3960.

3. Population Survey: The population statistic shall have to be collected from all possible sources, such as:

(a) Census. (b) Municipal Record,

Analysis of existing population should bring out the following characteristics—

(i) Male/Female ratio, (ii) Age-sex pyramid, (iii) Reasons for population growth/decline (Birth rates, Death rates, Immigration, emigration)/extension of Municipal boundary, etc and (iv) General economic conditions of the people.

4. Traffic Survey: Regarding Traffic problem three types of surveys will have to be conducted;

(a) Statistical analysis of the past trends in growth. Types and Numbers of different Vehicles:

(b) The Traffic flow in major arterial roads should be surveyed and presented with sufficient maps and charts showing origin and destination.

(c) Critical traffic Junctions should be separately studied and conditions illustrated graphically.

(d) Trip generation survey.

Signature of Bidder

Project Director

~~Director, UDC~~

56

আবুল কাবের মোঃ তোহিদ
সিনিয়র সহকারী প্রধান
কর্তৃপক্ষ
কর্তৃপক্ষ
কর্তৃপক্ষ

5. Road Surveys: In this survey details of existing roads like type and condition of pavement, existing width and possibility for future extension should be studied and presented with appropriate explanatory notes.

6. Industrial Surveys:

- (a) Details of location, size and capacity of the existing industries should be surveyed in any appropriate proforma suitable for this purpose and as per direction of the Survey in-charge.
 - (b) Details of labour statistics with the housing conditions should be collected and presented.
 - (c) Labour statistics from directorate of labour and labour Unions should be collected and presented.
- All these information shall have to be presented with proper explanatory notes, graphs and charts showing the future trend.

7. Recreational and Open Space: Parks, playgrounds should be surveyed to find out its details like location, size and attached facilities. This should be presented in proper maps with proper explanatory notes like population, open space, relationships, etc.

8. Water Supply Data:

- (a) Source and extend of existing supplies shall have to be recorded on maps and its future programme of expansion should be shown side by side in different colours.
- (b) The capacity and system of water supply and future programme of expansion from municipality or public Health Engineering Department or any other appropriate agency.

9. Power Supply:

- (a.) Capacity of the existing power supply sources and probable future expansion shall have to be presented in appropriate maps.
- (b) Existing supply lines and the future probable lines should be presented on the same map side by side preferably in different colours.

10. Telephone Service:

- (a) Types of Telephones Exchange and future programme.
- (b) Existing Communication lines and future probable expansion shall be shown side by side.

11. Growth of the Town: Historical background with graphic materials on the existing Municipal area along with proposal for future expansion should be collected and presented with detail information.

12. Health Facilities: Dispensaries, health centres and Hospitals showing their location and capacity should be collected and presented with explanatory notes.


13. Educational Facilities: Information on different categories of schools and colleges with the location, sizes and capacity shall be collected and presented with appropriate explanatory notes graphs and charts. Information on dropouts at primary and secondary levels may be collected.


14. Shopping: Shops and Commercial establishments differentiated into wholesale and retail shopping should be recorded. Growth or decline of shopping during the last 10 years should be collected and presented with explanatory notes on the causes for growth or decline.

15. Municipal Budget: Municipal Budget for last five years should be collected and presented with explanatory notes on the capacity of Municipality with respect to their development activities.

16. Municipal Achievements: Maps and publications on the town itself in the form of books and book-lets, etc. should be collected and presented.


Signature of Bidder


Project Director


Director, UDD

17. Disposal Services: The methods of collection and disposal of garbage should be surveyed and presented with comments. The graveyards, Cremation ground, etc. should, be surveyed and presented. The methods of sewage disposal should be surveyed and presented with comments with probable location of treatment plant.

18. Physical Feature Surveys: Engineering surveys like physical feature and spot level survey will have to be conducted wherever needed.

Presentation:

(a) Survey result should be presented in two forms: first on the map of RF 1: 3960; secondly in report form. The design of the map should be appropriate in size so that it is not difficult for handling. If the maps are too large it should be cut into standard sizes, which can be fitted during any kind of discussion and presented without any inconvenience. The colours and indications to be used should be obtained from Urban Development Directorate.

(b) Final survey results shall be analysed, interpreted and presented in Report form. The maps in this Report or report should be advantageous size for publications and the graphs, charts, etc., and appropriate to match with the report shape.

D. Rural Area Plan

Rural Area Plan (RAP) provides a long-term strategy for 20 years and covers for the development of rural areas within the project area. Generally, RAP contains an explanatory report, resource maps, conservation and management report, planning rules, rural area plan and a multi-sectoral investment program. In the present project, Content of Rural Area Plan is decided to be as follows:

1. Existing Land Use Survey: The land use survey will indicate the use of each plot of land and each homestead in the rural area and its immediate neighborhood. The Surveyors will visit each and every site to record existing usage with specified notation and colours as per direction of the Survey-in-charge. The output of this Survey will be one or more maps showing existing Residential, Commercial, Administrative and Cultural zones, nature of rural land (high, lower), water courses and water bodies, principal streets lanes and bye lanes demarcating the main zones and plantation or agricultural uses.

Scale of Survey: The survey should be conducted on maps of RF 1: 3960.

Notation or colour—Survey information shall be recorded and presented in any colours as specified by Urban Development Directorate.

2. Survey of Development Activities: Site plan, land acquisition plans of new development projects shall have to be collected and presented in the map of RF 1: 3960.

3. Population Survey: The population statistic shall have to be collected from all possible sources mainly from Census data.

Analysis of existing population should bring out the following characteristics—

- (i) Male/Female ratio, (ii) Age-sex pyramid, (iii) Reasons for population growth/decline (Birth rates, Death rates, Immigration, emigration)/extension of Municipal boundary, etc and
- (iv) General economic conditions of the people.

4. Traffic Survey: Regarding Traffic problem three types of surveys will have to be conducted;

(a) Statistical analysis of the past trends in growth. Types and Numbers of different Vehicles.

(b) The Traffic flow in rural roads should be surveyed and presented with sufficient maps and charts showing origin and destination.

(c) Critical traffic Junctions (if any) should be separately studied and conditions illustrated graphically.

(d) Trip generation survey.


Signature of Bidder


Project Director


Director, UDD

(e) Traffic and commodity flow at river port, *kheya ghat/gudara ghat*.

5. Road Surveys: In this survey details of existing roads like type and condition of road, existing width and possibility for bridging missing links should be studied and presented with appropriate explanatory notes.

6. Industrial Surveys:

(a) Details of location, size and capacity of the existing industries (if any) should be surveyed in any appropriate proforma suitable for this purpose and as per direction of the Survey in-charge.

(b) Details of labour statistics with the housing conditions should be collected and presented.

(c) Labour statistics from directorate of labour and labour Unions should be collected and presented.

All these information shall have to be presented with proper explanatory notes, graphs and charts showing the future trend.

7. Agricultural: agricultural land should be surveyed for earmark the agricultural and for conservation. Moreover, high land, low land, delineation of land according to single, double and triple cropping and productivity as well.

8. Sources of Potable Water:

Sources of potable water including distance from homestead, no of users, quality of water etc. to be collected.

9. Power Supply:

(a.) Capacity of the existing power supply sources and probable future expansion shall have to be presented in appropriate maps.

(b) Existing supply lines and the future probable lines should be presented on the same map side by side preferably in different colours.

10. Growth of the village: Historical background with graphic materials on the existing village along with proposal for future development should be collected and presented with detail information.

11. Health Facilities: Dispensaries, health centres and Hospitals showing their location and capacity should be collected and presented with explanatory notes.

12. Educational Facilities: Information on different categories of educational institutes both formal and informal with the location, sizes and capacity shall be collected and presented with appropriate explanatory notes graphs and charts. Information on dropouts at primary and secondary levels may be collected.

13. *Hats/Bazars/Shopping*: *Hats/Bazars/Shops* and Commercial establishments differentiated into wholesale and retail shopping should be recorded. Growth or decline of shopping during the last 10 years should be collected and presented with explanatory notes on the causes for growth or decline.

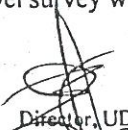
17. Sanitation Facilities: Existing sanitation facilities should be surveyed and presented with comments.

18. Graveyard/Cremation Facilities: The graveyards, Cremation ground, etc. should, be surveyed and presented.

19. Physical Feature Surveys: Engineering surveys like physical feature and spot level survey will have to be conducted wherever needed.


Signature of Bidder


Project Director


Director, UDD

59
আবুল বাক্কর মোঃ ভৌহিদ
সিনিয়র সহকারী প্রধান
ভৌত অবকাঠামো বিভাগ
পরিকল্পনা কমিশন
গণপ্রজাতন্ত্রী বাংলাদেশ সরকার

Presentation:

(a) Survey result should be presented in two forms: first on the map of RF 1: 3960; secondly in report form. The design of the map should be appropriate in size so that it is not difficult for handling. If the maps are too large it should be cut into standard sizes, which can be fitted during any kind of discussion and presented without any inconvenience. The colours and indications to be used should be obtained from Urban Development Directorate.

(b) Final survey results shall be analysed, interpreted and presented in Report form. The maps in this Report or report should be advantageous size for publications and the graphs, charts, etc., and appropriate to match with the report shape.

E. Action Area Plan

The Action Plan is a separate document covering the first five-year period of the structure plan. It examines, in the context of the structure plan, those items that might be implemented in this period and thus contains more detail on a more limited range of subjects than the structure plan. It tries to provide the Upazila with guidance in deciding between priorities.

The Action Area Plan (AAP) guides land use and infrastructure within the area potential for immediate intervention based on public demand and necessity. It is prepared on 5 years interval. The preparation of Action Area Plan (AAP) will be formulated through participatory approach involving the local people. It will contain problem analysis using participatory approach, stakeholder analysis, Potential analysis (Basic and derived potentials), Identification of possible projects, Priority ranking of projects, Strategy formulation for prioritized projects. Action Area Plan will provide prioritized projects consisting location of project, goal & objectives, activities, tasks, actors, resources, cost and assumptions/constraints.

The action plan consists of three parts, a summary of resources available, project selection and project evaluation. The analysis of available resources looks at the past availability of funds, insofar as this is possible for such a recent institution as an Upazila and attempts to assess funds likely to be available for the Upazila itself for development in the action plan period. Project selection summarises existing guidelines as they affect five-year plans and lists the criteria used in selection before identifying priorities in each sector and proposing projects to address these priorities.

Project evaluation looks at projects, which might be locally funded over the five-year period, given budgetary and other constraints, looks at projects which cannot be locally funded but which might be considered by national agencies operating locally and makes preliminary assessments of larger scale projects, which would need larger investment.

The purpose of a plan is to lessen uncertainty about what presently exists and what is likely to happen in future and to provide a basis for different agencies, public and private, to proceed on the basis of a common goal by providing a framework for overall development.

The structure plan examined the existing situation, drew attention to key problems, assessed likely changes and their implications and proposed how some major problems might be tackled. Very briefly, the structure plan notes an anticipated population increase of some 30% in the Upazila by the end of the plan period and assesses the implications of this growth. Amongst its major proposals are the needs for more modern inputs to sustain agricultural productivity, the need for new non-agricultural jobs, improved infrastructure. It concentrates on the framework and not the details of layout or individual development. Where action is anticipated or proposed within a relatively short time however, more detail may be needed than is provided in the structure plan. The structure plan identified the major actions needed to bring about development in accordance with its recommendations. Its final chapter consists of a development programme, listing, for five-year phases, the projects needed in each sector to bring about

Signature of Bidder

Project Director

Director, UDD

60

আবুল হাক্কর মোর তোহিদ
জিলাধীশ্বর সার্বভৌমিক প্রশাসন
উপজেলা প্রশাসন
আবুল হাক্কর মোর তোহিদ
উপজেলা প্রশাসন

development along the lines proposed. This programme for the first five-year period forms the starting point for the action plan.

The objective of the action plan is to evaluate those projects, which should be implemented during the first five years life of the structure plan. It thus contains more detail on a more limited range of subjects. It consists of four parts:

Project Selection: This consists, basically, of the actions listed for the first five-year period in the implementation chapter of the structure plan. While the importance of maintenance has been stressed throughout the structure plan, maintenance activities by themselves, except where they form a part of a development project, are not included in the action plan.

All the projects listed are needed in the first 5-year phase. Their selection is based on a variety of criteria. These include the maintenance of existing provision levels, the need to develop new areas and to address the worst problems. In other instances, they are the first increment in meeting standards selected for the year 2026. There are however financial restraints, which mean that priorities have to be established even for such a small list. After the projects have been evaluated therefore, availability of resources is considered and some priorities drawn.

Project Evaluation: Project evaluation is done for the projects, which might be locally funded, and for those unlikely to be locally funded but which are the responsibility of a Ministry or another central agency. Ideally, funds would be made available for implementing priority projects following evaluation. This unfortunately is not the case but the evaluations will assist the local agencies in deciding upon priorities for using local development funds and in pressing for action by national agencies.

The evaluations vary according to information available but overall are more qualitative than quantitative. They cover the following aspects:

- Nature of project
- Location
- Justification (why project needed)
- Approximate cost including maintenance element
- Beneficiaries, direct and indirect
- Agency responsible
- Risk/difficulties/problems anticipated

Analysis of Resources: Though most of the development that takes place will be carried out by private individuals, the single most important developer is likely to be the Paurashava /Upazila followed by other public agencies. This analysis looks at the past availability of funds (insofar as this is possible) and assesses the sum likely to be available for development during the action plan period. This can only be done for the local agencies funds, as it is not possible to estimate how a ministry or central agency's fund is apportioned between various towns, as other priorities in other areas are not known. Proposals can however be made on their own merit and the appropriate agency and action identified.


Establishing Priorities: It is worth repeating that all the actions/projects selected and evaluated are required to bring about development along the lines advocated in the structure plan. Nevertheless, constraints make it difficult to carry out all these activities in even such a small programme. Where possible, therefore, priorities are recommended. It is the funding authority concerned, which should decide upon priorities, but the evaluations can assist in this decision.

Signature of Bidder


Project Director

Director, UDD

There are limits also to recommending priorities. They can only be made within sectors e.g. construction of road A favoured over road B and not between sectors e.g. between clinic A and school B. It may however be pointed out that the absence of one precludes the other e.g. a road to develop a new area is needed before a school should be provided in that area. Even within a sector, while the relative importance of projects can be assessed, priorities cannot be recommended if the source of funding is different.


Signature of Bidder


Project Director


Director, UDD

APPENDIX-03

Scope of Work for the Intended Survey work

Methodology for Accomplishing the Intended All Survey Work

Consulting firm shall prepare the planning package along with conducting necessary surveys studies as described in the ToR. The planning package has been splitted into two stages. At the first stage, the consulting firm shall conduct all necessary surveys and studies as described in the ToR. The consulting firm shall be responsible for quality of data and information collected, data processing, cleaning and editing, and presentation into tabular form including preparation of working paper as required by PD. The consulting firm shall deliver all raw and processed data along with working papers containing guidelines for preparing the planning package. After successful completion of survey part, UDD shall allow the consulting firm to prepare planning package for the project. If the consulting firm fails to maintain the quality of surveyed data and information; and also fails to deliver all the surveyed data and information along with working paper duly as required by PD, UDD may cancel the contract; and may select a new consulting firm for competing the planning package. In this respect the formerly consulting firm shall make necessary corrections of the surveyed data and information including working paper as required by PD.

The Consulting firm shall have to follow the following step-wise integrated activities for the stated scope of work on the intended different survey works. He/she would have to interlink the intended survey activity with different steps of other related activities conducted by other different Consulting firm. A detailed methodology of the specific survey work including procedure for relating its output with that of other different surveys and activities (both attribute and spatial data of physical feature, topographic, land use, transportation, hydrological, socio-economic and other required hard and soft data), has to be mentioned clearly in the proposed technical proposal. The Consulting firm has to combine the rural database with that of database (GIS database) of municipality area. A presentation of the proposed methodology shall have to make before the Project Evaluation Committee (PEC) as part of technical proposal evaluation. The bidder has to make the presentation by using his/her own hardware and software along with valid licence. The Client may visit the premise of the firm without providing prior notice (if necessary).

After successful completion of survey part of the planning package, the Consulting firm shall be allowed to prepare different plans for the proposed planning package.

Typology for Different Types of Surveys, Studies and Activities

Bench Mark Pillar Establishment, Satellite Image Processing, Existing Land Use, Physical Feature and Topographic Survey

A. Construction and Establishment of Bench Mark (BM)/Ground Control Point (GCP): Pillars covering the project area including approximately 5 km. grid in rural area (pillar 10"X10", Base 3'X 3', height 5'). RCC pillars are to be constructed marking unique identification number Coordinate X, Y of these pillars along with Z value is to be marked on base map for future reference.

B. Preparation of Base Map through Satellite Image Processing by using Photogrammetric Method: Base map shall be prepared with the help of photogrammetric system by using 3-D image (four band) with resolution 0.5m accuracy by the consulting firm under the supervision of PD. The base map shall be presented at the scale of 1: 3960. The consulting firm shall geo-reference the base map, which would be prepared from image processing, with CS map with the scale of 1: 3960/1980 as available from the source.

Signature of Bidder

Project Director

Director UDD

C. Existing Land Use Survey: The land use survey (both attribute and spatial) will indicate the use of each plot of land and each building in the rural area and rural-urban fringe area. The Surveyors will visit each and every site to record existing usage with specified notation and colours as per direction of the PD. The output of this Survey will be one or more maps showing existing Gross Rural agricultural land use, Residential, Commercial, Administrative and Cultural zones, nature of rural area or rural urban fringe area (high, lower), water courses and water bodies, roads demarcating the main zones and plantation/vegetations as per direction of PD.

Scale of Survey: The survey should be conducted on maps of RF 1: 3960 or as per direction of PD.

Notation or colour—Survey information shall be recorded and presented in any colours as specified by Urban Development Directorate.

D. Physical Feature Surveys: Physical feature survey will have to be conducted for the whole of project (rural or rural-urban fringe) area. Location and dimension (X, Y, Z value) of all existing structures including building type, height, floor type and use of each floor, homestead boundary, all water control structures including khal (natural and man-made), embankments, dykes, box culvert, sluice gate etc., vegetation cover, culmination between flood Plain and homestead, ground water harvesting devise, river ghat/ganj, railway station and railway line, all type of roads, location of all existing exposed light/electric, telephone posts and national electric grid/towers, gas, water, sewerage line etc.

E. Topographic Survey: The Topographic database shall be obtained from geo-referenced 3-D (four band) image and further cross-checked and ground truthing by using RTK-GPS and Total Station to obtain and verify 3-D data (X,Y,Z value) on location and alignment of all data obtained from physical feature survey including roads, flood embankments and other drainage divides. Location and alignment of all drainage and irrigation channels/canals showing depth and direction of flow. Closed boundary/outline of homestead, water bodies, swamps, forest etc. junctions, spot heights or land levels at roughly 10 m intervals for the whole project area and close interval as and when required such as dyke, embankment, roads, rail-roads, river bank, rail line etc.

Other Surveys and Studies

A. Socio-Economic Survey, Study of Urban and Rural Economy, and Social Infrastructure:

a-1. Socio-Economic Survey: Preparation of socio-economic questionnaire in SPSS and other compatible format, editing, piloting, finalization and printing of questionnaire by the consulting firm. Then, a questionnaire survey shall be conducted both in urban and rural areas in consultation with PD, and shall check the quality of the field level surveyed data and enter the surveyed data into computer. The attribute data of surveyed households shall be linked with spatial data collected from physical feature and land use survey. He/She would also ensure the quality of database (data editing, data cleaning) and would perform data analysis, tabulation, present it in graphs and figures, and preparation of report.

a-2. Study of Urban and Rural Economy: Preparation of questionnaire for studying urban and rural economy covering trade, commerce, shopping and other related activities in SPSS and other compatible format, editing, piloting, finalization and printing of questionnaire by the consulting firm. Then, a questionnaire survey shall be conducted both in urban and rural areas in consultation with PD, and shall check the quality of the field level surveyed data and enter the surveyed data into computer. The attribute data of surveyed commercial and industrial enterprises shall be linked with spatial data collected from physical feature and land use survey. He/She would also ensure the quality of database (data editing, data cleaning) and would perform data analysis, tabulation, present it in graphs and figures, and preparation of report.

Trade encompassing banking and other financial institutions, shopping centres and shop, and commercial establishments differentiated into wholesale and retail shopping should be recorded. Growth or decline in economy during the last 10 years should be collected and presented in a report with explanatory notes on

Signature of Bidder

Project Director

Director, UDD

the causes for growth or decline covering a possible quality of existing and future trade, commerce and shopping facilities for the project area with tentative pedestrian linkage (missing link) considering manmade and natural disasters for the Project area. All the collected attribute and spatial economic data shall be linked with other spatial database by the consulting firm.

a-3. Study of Social Infrastructure (Education, Religious, Sports, Recreation, Community and Socio-Cultural Services/Facilities etc.): Preparation of questionnaire for studying social infrastructure in SPSS and other compatible format, editing, piloting, finalization and printing of questionnaire by the consulting firm. Then, a questionnaire survey shall be conducted both in urban and rural areas in consultation with PD, and shall check the quality of the field level surveyed data and enter the surveyed data into computer. The attribute data of surveyed social infrastructure shall be linked with spatial data collected from physical feature survey. He/She would also ensure the quality of database (data editing, data cleaning) and would perform data analysis, tabulation, present it in graphs and figures, and preparation of report.

B. Traffic Survey: Regarding Traffic problem three types of surveys will have to be conducted;

- (a) Statistical analysis of the past trends in growth on the basis of types and numbers of different Vehicles.
- (b) The Traffic flow and O-D survey in major roads, river *ghats*, and railway stations both day and night time for peak and off-peak period should be surveyed and presented with sufficient maps and charts showing origin and destination.
- (c) Critical traffic Junctions should be separately studied and conditions illustrated graphically.
- (d) Trip generation survey at different locations in consultation with PD.

The consulting firm shall prepare report on the basis of output of the surveyed data showing a prediction model of 20-year period for Project area. All the collected attribute and spatial transportation data shall be linked with other spatial database by the consulting firm.

C. Hydrological Study: Identification of water bodies including pond, ditch, beels, haors etc. (both perennial and seasonal), direction of flow of the river, khal/canals, precipitation analysis, delineation of catchments area, encroachments and blockage in the river, khal/canals, identification of water control structures including operational condition and reason for non-operational condition (in case of non-operational water control structures).

The consulting firm shall prepare report on the basis of output of the obtained data showing a prediction model of long, medium and short term (100, 50, 20 and 5-year period) for Project area. All the collected attribute and spatial hydrological data shall be linked with other spatial database by the consulting firm.

D. Formal and Informal Industrial Survey: Preparation of questionnaire for studying formal and informal industries in SPSS and other compatible format, editing, piloting, finalization and printing of questionnaire by the consulting firm. Then, a questionnaire survey shall be conducted both in urban and rural areas in consultation with PD, and shall check the quality of the field level surveyed data and enter the surveyed data into computer. The attribute data of surveyed commercial and industrial enterprises shall be linked with spatial data collected from physical feature and land use survey. He/She would also ensure the quality of database (data editing, data cleaning) and would perform data analysis, tabulation, present it in graphs and figures, and preparation of report. The questionnaire shall contain the following:

- (a) Details of location, size and capacity of the existing
- (b) Details of labour statistics with the housing conditions and their quality of life
- (c) Other relevant data and information as directed by PD

Signature of Bidder

Project Director

Director, UDD

65

আবুল কাবির মোঃ তোহিদ
নিম্নলিখিত সরকারি প্রধান
কর্তার কার্যালয়ে
স্বাক্ষর করা হবে
গণপ্রজাতন্ত্রী বাংলাদেশ সরকার

the causes for growth or decline covering a possible quality of existing and future trade, commerce and shopping facilities for the project area with tentative pedestrian linkage (missing link) considering manmade and natural disasters for the Project area. All the collected attribute and spatial economic data shall be linked with other spatial database by the consulting firm.

a-3. Study of Social Infrastructure (Education, Religious, Sports, Recreation, Community and Socio-Cultural Services/Facilities etc.): Preparation of questionnaire for studying social infrastructure in SPSS and other compatible format, editing, piloting, finalization and printing of questionnaire by the consulting firm. Then, a questionnaire survey shall be conducted both in urban and rural areas in consultation with PD, and shall check the quality of the field level surveyed data and enter the surveyed data into computer. The attribute data of surveyed social infrastructure shall be linked with spatial data collected from physical feature survey. He/She would also ensure the quality of database (data editing, data cleaning) and would perform data analysis, tabulation, present it in graphs and figures, and preparation of report.

B. Traffic Survey: Regarding Traffic problem three types of surveys will have to be conducted;

- (a) Statistical analysis of the past trends in growth on the basis of types and numbers of different Vehicles.
- (b) The Traffic flow and O-D survey in major roads, river *ghats*, and railway stations both day and night time for peak and off-peak period should be surveyed and presented with sufficient maps and charts showing origin and destination.
- (c) Critical traffic Junctions should be separately studied and conditions illustrated graphically.
- (d) Trip generation survey at different locations in consultation with PD.

The consulting firm shall prepare report on the basis of output of the surveyed data showing a prediction model of 20-year period for Project area. All the collected attribute and spatial transportation data shall be linked with other spatial database by the consulting firm.

C. Hydrological Study: Identification of water bodies including pond, ditch, beels, haors etc. (both perennial and seasonal), direction of flow of the river, khal/canals, precipitation analysis, delineation of catchments area, encroachments and blockage in the river, khal/canals, identification of water control structures including operational condition and reason for non-operational condition (in case of non-operational water control structures).

The consulting firm shall prepare report on the basis of output of the obtained data showing a prediction model of long, medium and short term (100, 50, 20 and 5-year period) for Project area. All the collected attribute and spatial hydrological data shall be linked with other spatial database by the consulting firm.

D. Formal and Informal Industrial Survey: Preparation of questionnaire for studying formal and informal industries in SPSS and other compatible format, editing, piloting, finalization and printing of questionnaire by the consulting firm. Then, a questionnaire survey shall be conducted both in urban and rural areas in consultation with PD, and shall check the quality of the field level surveyed data and enter the surveyed data into computer. The attribute data of surveyed commercial and industrial enterprises shall be linked with spatial data collected from physical feature and land use survey. He/She would also ensure the quality of database (data editing, data cleaning) and would perform data analysis, tabulation, present it in graphs and figures, and preparation of report. The questionnaire shall contain the following:

- (a) Details of location, size and capacity of the existing
- (b) Details of labour statistics with the housing conditions and their quality of life
- (c) Other relevant data and information as directed by PD

Signature of Bidder

Project Director

Director, UDD

65

আবুল কাবির মোঃ জেহিদ
নিম্নলিখিত সরকারি প্রধান
কর্তার কার্যালয়ে
স্বাক্ষর করবেন।
নগরস্বাস্থ্য ও পরিচ্ছন্নতা
সংক্রান্ত বিষয়ে

The consulting firm shall prepare report on the basis of output of the surveyed data showing industrial prosperity and recommendation for Project area. All the collected attribute and spatial transportation data shall be linked with other spatial database by the consulting firm.

(E). Recreational Open Space: Parks, playgrounds, river bank, historical space, and other open spaces should be surveyed to find out its details like location, size and attached facilities. This should be presented in proper maps with proper explanatory notes like population, open space, relationships, etc.

The consulting firm shall prepare report on the basis of output of the obtained surveyed data showing a possible quality of existing and future recreational facilities with tentative pedestrian linkage (missing linkage) for Project area. All the collected attribute and spatial transportation data shall be linked with other spatial database by the consulting firm.

F. Health Facilities including Community Health Facilities: Dispensaries, health centres and Hospitals showing their location and capacity should be collected and presented with a report covering explanatory notes by showing a possible quality of existing and future health facilities including community health for the project area with tentative emergency linkage (missing link) considering manmade and natural disasters for Project area. All the collected attribute and spatial transportation data shall be linked with other spatial database by the consulting firm.

G. Educational Facilities: Information on different categories of schools, colleges, university and other education related institutions with the location, sizes and capacity shall be collected and presented with appropriate explanatory notes graphs and charts. Information on dropouts at primary and secondary levels may be collected.

The consulting firm shall prepare report on the basis of output of the surveyed data showing a proposal of 20-year period for Project area. All the collected attribute and spatial transportation data shall be linked with other spatial database by the consulting firm.

H. Agricultural Land Demarcation Survey: The agricultural land demarcation survey would be based on height of land, cropping pattern, cropping type, land utilization and flood level. Growth or decline of agricultural land during the last 10 years should be collected and presented in a report with explanatory notes on the causes for growth or decline covering a possible quality of existing and future agricultural land for the project area. All the collected attribute and spatial transportation data shall be linked with other spatial database by the consulting firm.

I. Archaeological Study: Location of archaeological site, detailed design and history of the archaeological feature should be collected from the site. A report with explanatory notes on the history and causes for rise and decline of the site covering existing quality of the site and possible measures for future archaeological preservation and conservation and economic value of cultural tourism for the project area. All the collected attribute and spatial archaeological data shall be linked with other spatial database by the consulting firm.

J. Pollution Study: Study of noise and waste (solid/liquid including household and industry; night soil) pollution, ambient air quality during peak hour, quality assessment of drinking and surface water, quality assessment of top soils.

The consulting firm shall prepare report on the basis of output of the obtained surveyed and studied data showing a possible quality of existing and possible future pollution in the project area with tentative remedial measures and adaptation for Project area. All the collected environmental pollution and disaster related attribute and spatial data shall be linked with other spatial database by the consulting firm.

Signature of Bidder

Project Director

Director, UDD

Presentation:

- (a) All type of survey result should be presented in two forms: first on the map of RF 1: 7920/3960/1980 as directed by the PD; secondly in report form. The design of the map should be appropriate in size so that it is not difficult for handling. If the maps are too large it should be cut into standard sizes, which can be fitted during any kind of discussion and presented without any inconvenience. The colours and indications to be used should be obtained from Urban Development Directorate.
- (b) Final survey results shall be analysed, interpreted and presented in Report form. The maps in this Report or report should be advantageous size for publications and the graphs, charts, etc., and appropriate to match with the report shape.

(C) Scale of Survey and Notation or colour shall be determined in consultation with PD.

STEP WISE ACTIVITIES FOR THE SURVEY AND PLANNING WORK

STEP 1 MOBILIZATION, RECONNAISSANCE SURVEY, PROJECT DESIGN AND SUBMISSION OF INCEPTION REPORT

Deployment of Key Personnel and supporting staff for the intended project. The consulting firm shall conduct reconnaissance survey; initiate the collection of maps and other secondary materials.

STEP 2 COLLECTIONS OF MAPS, BASIC STATISTICS AND INFORMATION

To start the planning process the existing situation of the planning area has to be represented in a set of maps and in a collection of basic statistics and information.

Step 2-I Collection of Geo-physical maps and reports Includes

- Geology (sedimentation, stratification, fault lines, lineaments etc.)
- Hydrology (contour lines, water bodies/courses, embankments, pump house, related structure etc.)
- Soils major type.
- As a first 'overlay' to the, base map the geo-physical situation of the planning area has to be given.

Step 2-II Collection of Topographical maps and reports Includes

- Physical features (land/water, urban/rural, built-up/open, landmarks, bridge/culvert, and embankment/floodwall, sluice gate)
- Infrastructure (drainage, roads, public transportation and utilities)
- Land use (in broad categories such as residential, industrial, commercial, agricultural, flood flow, etc. each differentiated according to density and quality)
- As a second overlay the existing topographical features has to be shown.
- Most of the information can be derived from existing sources (desk research).
- At this stage field visits by the consulting firms' are useful to get a general impression of the character and the quality of the planning area.

STEPS 2-III Collection of Basic statistics: present activities

- Number of inhabitants/households, differentiated according to income level/type/density and quality of housing
- Production and employment (formal/informal, number and size of establishments, type of production/activity, income/education level)

Signature of Bidder

Project Director

Director UDD

আবুল বাকের মোঃ তোহিদ
নির্বাহী সহকারী প্রধান
উদ্ভিদ বন্যজাতকোষ বিভাগ
পল্লীশিক্ষা কার্যালয়
গণপ্রজাতন্ত্রী বাংলাদেশ সরকার

- Public services (education, health, security etc.) and utilities (drinking water, sewerage/sanitation, garbage disposal, gas, electricity, telecommunication); administrative institutions
- Commercial activities (shops, markets both formal and informal)
- Transportation facilities (roads, public transportation, parking facilities, waterways, railway, foot path)

Step 2-IV Submission of Inception Report

The report should include the following (with necessary maps/figures/diagrams/graphs etc.)

- (1) An introduction narrating the purpose of the study, objectives and scope of services and activities to be performed.
- (2) A brief of the Sixth Five Year Development Plan and PRSP with principal objectives of the development plan within the broad scope of Urban and Regional Planning, Water Supply and Housing Sector of the National Development Plan.
- (3) A Review of the work plan, time schedule, input and management plan.
- (4) An assessment of the actual provision of inputs in relation to the expected outputs.
- (5) Analysis and findings from reconnaissance survey including problems and possible solutions to the survey activities and prospects of development. This would also include results of tea stall meeting, courtyard meeting and focus group discussion (FGD) in the project area.
- (6) Review of all relevant reports, documents and other materials, which will form the base for the contract indicating those items already acquired and those requiring official assistance for acquisition.
- (7) An assessment of all additional data collected and survey works to be carried out for completion of the database for the contract. This should be accompanied by a detailed program for the collection of the remaining data.
- (8) Development of methodology for each component of the structure plan.

STEP 3: PREPARATION AND COMPILATION OF BASE MAP AND DEMARCATION OF PROJECT BOUNDARY OF PROJECT BOUNDARY/AREA/LOCATION

- (1) A review of the work plans and time schedule for the remaining period of the contract.
- (2) Activities to be performed by the consulting firms for Survey Report:

- Establishment of Ground Control Point (GCP)
- Digitization and Geo-referencing of Mouza Map Sheet Boundaries
- Completion of satellite image processing

Step-wise detailed activities to be performed by the consulting firms are described below:

STEP 3-I Selection of Ground Control Point (GCP)

- At least 4 nos. of GCP (Tic) should be selected in ground for each of mouza sheet for conducting GCP survey. The joint team of UDD and consulting firms will select the GCP. Geo-referenced (x, y, z) permanent Bench Mark (BM) pillars uniformly distributed covering the project area have to be established to carry out the total topographic, physical feature and land use survey. Design, drawing of BM pillars have to be approved by the Project Director (PD)

STEP 3-II Edit Plot Checking of Digitized Mouza Maps and Geo-referencing with Image

- After digitisation of mouza maps edit plots will be produced containing all the features in different colours. The digitised mouza maps will be checked and verified by superimposing on the original mouza maps using the light table. This checking will be done with the joint team of UDD and the respective consulting firm. By this edit plot check all possible errors (missing arcs, dislocated arcs,

Signature of Bidder

Project Director

Director UDD

68

আবুল কাবির মোঃ জোহিদ
নিম্নোক্ত প্রকল্পের প্রধান
কর্মসম্পাদক হিসেবে
কর্তৃপক্ষের পক্ষে
স্বাক্ষর করছেন।
১৫/০৩/২০১৫

wrong or missing polygon labels, tic location and ID etc) will be solved and final digitised mouza maps will be prepared. After finalisation of digitisation of mouza maps, all data both soft and hard copy will be submitted to Project Director (PD)

STEP 4: Satellite Image Processing by using Photogrammetric method

- Photogrammetric method uses satellite/aerial stereo images to create Digital Elevation Model and make geospatial database more effectively. With the advent of latest trends in the technologies and unique customer requirements, photogrammetry is now the leading technology for mapping. The field of photogrammetry is a rapid science with new technologies being developed constantly. Within a short period of time, the practice of photogrammetry has changed from analog to digital. The development of digital aerial cameras has advanced significantly over the past 4-5 years. The use of digital aerial images would be more advantageous for all map and image production especially for Digital vector data and Orthophoto generation.

Step 4-I Methodology

- Since the internal precision of extracted DEMs is strictly related to the mean scale of photographs, image quality, pixel dimension and, obviously, morphology of the area, *Image Collection* is a crucial part of the project. Image will be collected from Satellite image provider.
- The Satellite image in 0.5-meter panchromatic and 1.0-meter multi spectral four-band images in stereo pairs will be procured for town area. The 0.5-meter pan and 1.74-meter multi spectral imagery will also be fused to yield 0.5-meter colour imagery (pan-sharpened) and 2.5-meter stereo image will also be collected for country area.

Step 4-II Image Processing

- Image processing will be done after collecting raw digital images. The tasks involved in image processing are
 - Epi-polar Correction
 - Color Balance
 - Contrast Adjustment
 - Sharpening
 - Pyramid
 - Bit Rate Setting

Step 4-III GCP Collection

- Ground control points will be selected by photo identification of existing ground features. Considerable number of GCP will be collected as required for the whole study area. All GCPs will be collected by conducting field survey using RTK GPS method. After collecting GPS data of the GCP, post processing will be done day to day in the sites. Accuracy level will be maintained within 10 cm.

Step 4-IV Aerial Triangulation

- Aerial Triangulation is a mathematical process used to determine the real world position, height from mean sea level and orientation of each photograph. Aerial Triangulation will provide the accurate stereo (3D) model of image. One of the most advanced aerial triangulation is Inpho Match-AT.

Input for AT	Output of AT
<ul style="list-style-type: none"> - IMU, RPC data - GPS (on board) - GCP (collected from field) - Image 	Georeferenced Stereo Model

Signature of Bidder

Project Director

Director, UDD

Step 4-V Digital Mapping from Stereo Model

• After the orientation of stereo models, digital mapping will be carried out. We propose ArcGIS Geodatabase/ shapefile model for storing geo-spatial data. The proposed Geodatabase and its Feature classes will be designed based on the followings:

- Projection Parameters of the Coordinate System
- Name and type of layer (feature classes)
- Structure of Attribute Tables of the Feature classes
- Digital Photogrammetric Workstation e.g. Datam Summit Evolution (DPW) will be used as the platform for acquiring features from digital stereo images (model).
- Feature registration will be done considering and measuring the position of the object under its accuracy level. The Summit Evolution & Stereo Plotter of DAT/EM will be used for identifying and registration of the objects and ArcGIS 9.2 or higher version of ESRI will be used for vector data storing and editing.

Step 4-VI Attribute Data Collection

- Attribute data of the features will be collected from the field after producing base map. It will be a step by step procedure.

Step 4-VII Map Updating

- Attribute data collected from the field, will be incorporated into the features in this stage.

Step 4-VIII Field Check

- Field checking will be done check the following:
 - Dimension and shape of the features
 - Accuracy of feature's attributes
 - Missing objects.
 - Data will be collected by total station where cloud will be found in the image or some object which is not able to identify in image.

Step 4-IX DTM/DEM/TIN/Contour Generation

- **DTM Point:** Digital photogrammetry is able to acquire 3D points for high spatial resolution DEM generation through semi-automatic procedures, overcoming the problems of process. In the approach, DTM Points will be generated from Stereo Pair images by the software, and editing of the software generated DTM points will be done by the Photogrammetrist comparing them with stereo model. Creating and editing of Breaklines will be done after this stage.
- **Contour:** After creating DTM Points, Contour lines will be produced. The contour lines will be delivered in 1 km x 1 km or 5 km x 5 km blocks or one single file for the project area.
- **DEM:** Using DTM Points DEM will be generated at a resolution of 10 meters in 1 km x 1 km or 5 km x 5 km blocks or one single file for the project area.
- **TIN:** Using DTM Points TIN will be generated and delivered in 1 km x 1 km or 5 km x 5 km blocks for the project area.
- **OrthoPhoto:** An orthophoto or orthophotograph is a photograph which terrain corrected ("orthorectified") such that the scale is uniform: the photo has the same lack of distortion as a map. Orthophotographs are commonly used in the creation of a Geographic Information System (GIS).
- a. **Ortho-rectification of Images**
Orthorectification is a process by which image distortions caused by topography and image orientation are geometrically corrected by the incorporation of a terrain model.
Ortho-rectification of every image will be carried out using digital photogrammetric system based on result of aerial triangulation and the generated DEM.


Signature of Bidder


Project Director


Director, WDD

b. Mosaicing of OrthoPhoto

Individual rectified photograph will be assembled to form seamless mosaic.

Mosaicing of OrthoPhoto includes the following tasks

- i) Seam line Drawing: Drawing the boundary of the image delineating which part of the image will go which image.
- j) Balancing of Color and Contrast withing different images
- k) Feathering

Step 4-X Submission of Report on Image Processing

- Study Area Map (Digital copy in ARC/INFO format & Hard Copy) along with report stating the status of collected information, procedure of establishment of permanent Ground Control Point (GCP) and Temporary Ground Control Point (TGCP), Scanning, digitization and compilation of Mouza Map, demarcation of study area boundary including the technical specifications have to be submitted.

STEP 5. SURVEY ACTIVITIES (Field Survey information in original format have to be submitted to the Project Director (PD) at the end of every week.)

(1) A review of the work plans and time schedule for the remaining period of the contract.

(2) Activities to be performed by the consulting firm for Survey Report:

- All survey data including
 - Topographic Survey
 - Physical Feature Survey
 - Land Use Survey
 - Other related survey (Socio-Economic Survey, traffic survey, bathymetric report studies, hydro-geological survey, survey of Urban and Rural Economy, environment studies, disaster studies, social space studies, etc.)
 - Collection of Socio Economic data from published sources

Step-wise detailed activities to be performed by the consulting firms are described below:

Step 5-I Topographical Ground Truthing Survey

- Topographic survey will cover the following features:
- Topographic survey by using RTK-GPS and Total Station to obtain 3-D data (X,Y; Z value)-location and alignment of all roads, flood embankments and other drainage divides. Location and alignment of all drainage and irrigation channels/canals showing depth and direction of flow. Closed boundary/outline of homestead, water bodies, swamps, forest etc. junctions, spot heights or land levels at roughly 10 m intervals for urban area and 20 m intervals for rural areas.
- All collected raw data shall be submitted to PD before processing.
- Generating contours at 0.5 meter intervals with denser intervals for undulations.
- Alignment and crest levels (not exceeding 50meter) of road, embankment, dykes and other drainage divides.
- Alignment of rivers, lake, canal and drainage channels etc
- Outline of bazaars, water body, swamps etc.

Step 5-II Physical Infrastructure Survey

- All existing structures position and dimension (3-D-X,Y, Z value).
- Cross section, long section, type, width, length and name of road, road level above datum, flooding, land slopes, borrow pit.
- Identification of any bridge or culvert on the road and their length, width and span of the bridge, condition of abutments, condition of the dyke, wing walls abutment.

Signature of Bidder

Project Director

Director, D&D

- Type, size, depth, inlet and outlet location of drain along with flow direction width and depth of the canal, place of encroachment.
- Type of sewer system, size, type and location of sewerage line, location of bins, identification of any other sewerage collection system.
- Identification of the water supply system, location of deep tubes well, overhead water tank and its capacity, catchment area of overhead tank.
- Identification, location and capacity of electric substation, telephone exchange, Titas gas sub station etc. Treatment plant and waste disposal facilities.
- Identification, location and capacity of electricity, telephone, gas, and waste disposal and treatment system.

Step 5-III LAND USE SURVEY UPDATING

- Land use information have to be extracted from physical feature survey as per specification of TOR After completion of data processing and draft mapping, land use survey have to be updated through field verification.

Step 5-IV SOCIO ECONOMIC SURVEY AND STUDY OF URBAN & RURAL ECONOMY AND SOCIAL INFRASTRUCTURE)

STEP 4-IV-A House -hold Sample survey will be done using the approved Questionnaire based on specified Questionnaire format indicated in TOR. Sample size will be minimum 5% of total household (sample size shall be determined in consultation with PD).

STEP 4-IV-B Case Studies will be conducted highlighting the issues like tourism development, housing for disadvantaged group, informal economic activity, traffic congestion, drainage, water logging, unauthorized encroachment, waste disposal, play ground and park, stakeholders participation for planning and development control.

Step 4-IV-C Inventory of survey will have to be prepared as per format. Data processing, analysis of survey data, mapping and reporting will be made as per requirement of TOR.

Step 5-V Other Related Surveys

Other related surveys and studies (traffic survey, hydrological studies, bathymetric report studies, environment studies, disaster studies, social space studies etc.) shall also be conducted in consultation with PD.

Step 5-VI Submission of Final Survey Report along with maps and chart (physical feature, land use & socio-economic) for approval.

Step 5-VII Relating all collected spatial and attribute data with other spatial database.

The Consulting firm shall conduct RTK-GPS based Survey (as and when necessary is consultation with the PD) for proper joining of the both dataset.

Step 6 Data Processing, Analysis, Interpretation, Presentation and Formulation of Working Paper

(1) A review of the work plans and time schedule for the remaining period of the contract.

(2) Activities to be performed by the consulting firms for Interim Report :

- Preparation of working paper for all relevant components of the planning package including, but not limited to the following:

Signature of Bidder

Project Director

Director, UDD

- Topography, physical feature and undulation of the area
- Land Use including spatial quality, and trends and patterns of growth
- Housing and socio-economic condition
- Social and Urban Infrastructure
- Agriculture
- Utilities and Services including water supply, sanitation, sewerage disposal,
- Transportation and traffic
- Hydrology and bathymetric studies (if any)
- Geology including both engineering and hydro-geology
- Urban and Rural Economy including informal economic and industrial sector
- Environment, Disaster Risk Assessment, Waste Management and Pollution
- People's participation and Social space
- Historical Importance, archaeology and Tourism

Interim report containing requisite working papers (if more than above stated required) shall be prepared by the consultants as directed by the PD.

Step 6-I: All the working papers shall contain analysis of existing situation and local demand; people's view, attitude and opinion regarding development problem.

Step 6-II: Identification of problem area and requirement on space and analyzing them with respect to surveyed data and information.

Step 6-III: Formulation of planning standard with respect to spatial variation in character and natural setting.

Step 6-IV: Formulation of policies for planning package and development alternate strategies to attain the policies;

Step 6-V: Analysis of alternative strategies and selection of most appropriate option among the development alternatives for preparing the planning package.

Step 7 Preparation of Planning Package for the Project

- (1) A review of the work plans and time schedule for the remaining period of the contract.
- (2) Activities to be performed by the consulting firms for preparing Planning Package:

- Preparation of planning package shall consist of the following steps:

Step 7-I-A: Preparation of Sub-Regional Strategic Plan for eleven Districts would be prepared for 20 years according to the guidelines from: National policies, Formulated and Integrated different sectoral strategies at sub regional level, spatially interpreted sectoral strategies at sub regional level, formulated Conservation Plan at sub regional level and formulated Development Plan.

Step 7-I-B: The economic disparity among the Upazila within districts under study shall be figured out by using "shift-share analysis" and "input-output analysis" technique for drawing the future socio-economic development scenario.

Step 7-I-C: The sub-regional plan shall be formulated on the basis of regional (i) lands study, (ii)


Signature of Bidder


Project Director


Director, UDD

Step 7-I-D: Regional Structure Zoning Category would be determined following (i) Main flood flow zone, (ii) Sub flood flow zone, (iii) Wetland, (iv) Forest, (v) Agricultural land, (vi) Urban area, (vii) Rural settlements, (viii) Forest settlements, (ix) Industrial hazards, (x) Restricted flood protection reserve, (xi) Restricted military / public safety etc.

Step 7-II: Structure plan shall be prepared based on the outputs of sub-regional plan and other surveys and studies to develop the indicative plans for the upazilas. The structure plan would establish inter and intra-regional connectivity, economic base the upazlia, set policies and develop strategies to achieve the policies. The plan would identify the urban areas and different rural centres of the upazila; and would also determine the planning requirements for the urban area, rural centers and rural area. The plan would also come up with a basis for preparing urban area plan, rural area plan and detailed plan for the upazila.

Step 7-IV: Rural Area plan shall be prepared for the rural areas of the upazila; and based on the planning requirements for the rural areas, which would be determined at the structure planning stage.

The Project Team of the Consulting firm should be constituted as Follows

A. Survey Expert- 1 Person (1x3 = 3 mm.)

Experience: Minimum 5 years practical experience in Digital Geo-referenced physical feature and topographic survey and 3-D surveying.

B. Photogrammetric Expert- 1 Person (1x4= 4 mm.)

Experience: At least 5 years professional experience in relevant field. Advance knowledge in 3-D Mapping using GIS, remote sensing and experience in planning and implementation of Stereo mapping logistics as well as advance knowledge in the use of, ArcGIS 9 or later version.


Signature of Bidder

W

Director, UDD

আবুল বাকের মোঃ তোহিদ
 বিনিয়োগ সহকারী প্রধান
 বঙ্গবন্ধো বিশ্ববিদ্যালয়
 লক্ষ্মীপুর জেলা কার্যালয়
 লক্ষ্মীপুর-১২১০

(i) To prepare topographic, physical feature, land use and other related map of the area, (ii) To prepare, supervise, manage and monitor digital database (Spatial and attribute) of the project. (iii) Installation and troubleshooting of GIS in UDD project office and head office; (iv) Ensure the quality of the map and related work. (v) To work with a multi-disciplinary team environment to synchronize the multi-sectoral data into GIS database. (vi) *Preparation of working paper, reports and plan of the project as assigned by the PD;* (vii) Any other related Jobs as assigned by PD.

C. GIS Expert- 1 Person (1x6= 6 mm.)

Qualification: Bachelor in Geography, Geo-informatics, GIS, Bachelor Degree in Urban/Regional Planning and related discipline

Experience: At least 5 years professional experience in relevant field. Advance knowledge in Mapping using GIS, remote sensing, relational database management and Geo-database modelling and experience in planning and implementation of field mapping logistics as well as advance knowledge in the use of, ArcGIS 9, RTK GPS for gathering field data is essential.

Responsibility:

(i) To prepare topographic, physical feature, landuse and other related map of the area, (ii) To prepare, supervise, manage and monitor digital database (Spatial and attribute) of the project. (iii) Installation and troubleshooting of GIS in UDD project office and head office; (iv) Ensure the quality of the map and related work. (v) To work with a multi-disciplinary team environment to synchronize the multi-sectoral data into GIS database. (vi) *Preparation of working paper, reports and plan of the project as assigned by the PD;* (vii) Any other related Jobs as assigned by PD.

D. Agricultural Scientist – 1 Person (1x2=2 mm.)

Qualification: Post Graduate Degree in Agricultural Science or equivalent. Having experience in agricultural land classification, agricultural water management and working with multidisciplinary team as well.

Experience: At least 08 (eight) years' experience in agricultural land and water management, and planning.

Responsibility: (i) To prepare questionnaire and other necessary arrangements for conducting surveys and studies. (ii) To conduct, monitor and supervise agriculture related data collection process and ensure quality of data collected. (iii) To classify the agricultural land by land type including cropping pattern, productivity, utilization and other related parameter as directed by the PD. (iv) To review and identify the characteristics of agricultural production of the region. (v) To determine the agricultural water demand for the region. (vi) To identify the potential characteristics of farmland and agro-based industries on the basis of character of the agricultural production of the region, agricultural water demand and other related parameters. (vii) To work in a multi-disciplinary team to integrated agriculture related issues in to the planning package. (viii) To work closely with the GIS/RS analyst to include the agriculture related data into GIS database. (ix) Preparation of working paper, sand analytical report based on study and survey (x) Any other related jobs assigned by PD.

E. Economist – 1 Person (1x2=2 mm.)

Qualification: Master's degree in Economics, Development Studies or related discipline.

Experience: Extensive experience in economic analysis including particularly in urban sector. The candidate must have at least 08 (eight) years working experience in economic analysis of both urban and rural areas.

Responsibility: (i) To prepare questionnaire and other necessary arrangements for conducting surveys and studies related to urban and rural economy. (ii) To conduct, monitor and supervise urban and rural economy related data collection process and ensure quality of data collected. (iii) To review and analyse economic growth variables of the town in the last six decades and forecast future trends in relation to the region to identify economic potential of the area. (iv) To prepare multi-sectoral investment program. (v) To conduct feasibility studies of urban and rural development project/action area plans (vi) To work with

Signature of Bidder

Project Director

Director, UDD

members of the consulting team to relate the results of such analyses with other parameters of urban and regional planning to form an inter-active multi-sectoral development criteria matrix. (vii) To assist other consulting team members to the translate the trends and patterns of urban and rural economic activities in space. (viii) To conduct various economic analysis including economic viability analysis and calculation of opportunity cost for the bankable projects in the area to prepare Action Plan. (ix) Preparation of working paper, and analytical report based on study and survey (x) Any other assignment pertaining to urban and rural economic activities and analysis as assigned by PD.

F. Transport Planning Expert – 1 Person (1x2=2 mm.)

Qualification: Post graduation transportation planning or traffic Engineering

Experience: Eight years experience in urban and regional traffic engineering/transportation planning.

Responsibility: (i) To conduct different traffic surveys and studies, and also analyze transportation network of the project area and ensure quality of data collected. (ii) To propose a transportation network to establish an efficient inter and intra town circulation system and also establish rural-urban linkage for the project area. (iii) To develop traffic prediction model of 20-year period for the project area. (iv) To work with a multidisciplinary team to integrate the output of the traffic surveys and transportation studies with both attribute and spatial data of different other components of the project. (iv) Preparation of working paper, and analytical report based on study and survey; and (vi) Any other related Jobs as assigned by PD.

G. Urban Planner– 1 Person (1x6=6 mm)

Qualification: At least Bachelor of Urban and Rural/Regional Planning (BURP) or equivalent.

Experience: 08 (eight) years working experience in Spatial Development planning particularly in urban environment.

Responsibility: (i) To supervise and monitor land use, socio-economic, physical feature, topographic and other related surveys and studies; and coordinate among the consultant team; (ii) To review the existing plans and implementation problems; (iii) To prepare land use planning guidelines considering hydrological, physiographic, agricultural land classification, soils condition, ecological and environmental, socio-economic and livelihood pattern and other relevant characteristics; (iv) To prepare land category for the project area; (v) To prepare land use matrix; (vi) To identify and plan development project for the area; (vii) To interpret the recommendations of sectoral studies into spatial form (viii) To formulate plan implementation strategy and policy; (ix) To prepare report, working papers, sectoral studies and prepare report for submission to the PD; (v) *Preparation of working paper, reports and plan of the project as assigned by the PD;* (x) To assist the UDD team members in preparing land use plan according to sectoral studies of the Structure Plan, (xi) To be responsible for Knowledge transfer to Project Personnel and Preparation of working paper, and analytical reports; and (xii) Any other related Jobs as assigned by PD.

H. Socio-economic Expert- 1 Persons (1x3=3 mm.)

Qualification: Master's Degree in Social Science/Economics/Urban & Regional Planning and related subject.

Experience: 5 years experience in relevant field.

Responsibility: (i) To prepare, piloting, editing and finalization of socio-economic and other related questionnaire; and make necessary arrangements for PRA in consultation with the Team Leader and PD. (ii) To conduct, supervise and monitor socio-economic and other related questionnaire surveys including PRA for the project area. (iii) To supervise and monitor data entry, editing and presentation of data in tabular form. (iv) To analyze the data as directed by the Team Leader and PD and presentation in graphs and figures. (v) Preparation of working paper, reports with recommendation as assigned by PD; (vi) Preparation of Socio-economic

Signature of Bidder

Project Director

Director UDD

76
আবুল বাকের মোঃ জৌহিদ
সিনিয়র সহকারী প্রধান
জৌঃ সরকারী কার্যালয়
পরিচালনা কমিশন
জনস্বাস্থ্য ও পরিবার কল্যাণ
সংসদ

development model for the project area for the next 20-years. (vii) To work with a multidisciplinary team to integrate the outputs of socio-economic and other questionnaire surveys and PRA as well with attribute and spatial data of other components of the project in GIS database (vii) Any other related Jobs as assigned by the Team Leader and PD.

II. During Planning Period

A. Team Leader- 1 Person (1x13 = 13 mm)

Qualification: Minimum Post Graduation in Urban and Rural/Regional Planning (MURP) or equivalent.

Experience: 15 (fifteen) years working experience in Development planning particularly in urban environment.

Responsibility: (i) To take over the charges on all surveyed data and information form UDD Project Team; and coordinate among all the consultant team; (ii) To review the land use planning guidelines developed during survey part of the project, considering hydrological, physiographic, agricultural land classification, soils condition, ecological and environmental, socio-economic and livelihood pattern and other relevant characteristics; and make necessary corrections in consultation with PD. (iii) To review land category and land use matrix for the project area; and make necessary corrections in consultation with the PD. (iv) To identify and plan development project for the area; (v) To review the recommendations on sectoral studies into spatial form, and plan implementation strategy and policy; and make necessary corrections in consultation with the PD. (vi) To coordinate preparation of different planning components including analytical reports, prepared by different consultants, for the planning package (structure plan, urban area plan, rural area plan, and action plan). (vii) To compile different planning components including analytical reports, prepared by different consultants, for the planning package; and prepare and finalize the planning package (structure plan, urban area plan, rural area plan, action plan) and report for the upazilas. (viii) To be responsible for Knowledge transfer to Project Personnel to the UDD Project Team; and (xii) Any other related Jobs as assigned by PD.

B. GIS Expert- 1 Person (1x13= 13 mm.)

Qualification: Bachelor in Geography, Geo-informatics, GIS, Bachelor Degree in Urban/Regional Planning and related discipline

Experience: At least 08 (eight) years professional experience in relevant field. Advance knowledge in Mapping using GIS, remote sensing, relational database management and Geo-database modelling and experience in planning and implementation of field mapping logistics as well as advance knowledge in the use of, ArcGIS 9, RTK GPS for gathering field data is essential.

Responsibility:

(i) To take over the charges of prepare topographic, physical feature, landuse and other related map of the area, (ii) To conduct GIS based analysis for preparation of the planning package for the project as directed by Team Leader and the PD. (iv) Installation and troubleshooting of GIS in UDD project office and head office; (iv) Ensure the quality of the map and related work. (v) To support consulting team members to prepare multi-sectoral planning component by using GIS and integrate these components into the planning package. (vi) Preparation of reports and plan of the project as assigned by the PD; (vii) Any other related Jobs as assigned by PD.

C. Urban Planner- 1 Person (1x8= 8 mm)

Qualification: Bachelor of Urban and Rural/Regional Planning (BURP) with Master of Urban and Regional Planning (MURP) or equivalent.

Experience: 10 (ten) years working experience in Spatial Development planning particularly in urban environment.

Responsibility: (i) To assist the team leader to take over the charges on all surveyed data and information form UDD Project Team; and coordinate among all the consultant team; (ii) To assist the team leader in

Signature of Bidder

Project Director

Director, UDD

reviewing the existing plans and implementation problems; (iii) To assist the team leader in reviewing land use planning guidelines considering hydrological, physiographic, agricultural land classification, soils condition, ecological and environmental, socio-economic and livelihood pattern and other relevant characteristics; (iv) To assist the team leader in reviewing land category for the project area; and also to prepare land use matrix; (vi) To assist the team leader to identify and plan development project for the area; and also to interpret the recommendations of sectoral studies into spatial form (v) To assist the team leader in formulating plan implementation strategy and policy; (vi) *Preparation of reports and plan for the project as assigned by the PD;* (vii) To be responsible for Knowledge transfer to Project Personnel; and (xii) Any other related Jobs as assigned by PD.

D. Urban Economist – 1 Person (1x2=2 mm.)

Qualification: Master's degree in Economics, Development Studies or related discipline.

Experience: Extensive experience in economic analysis including particularly in urban sector. The candidate must have at least 08 (eight) years working experience in economic analysis of both urban and rural areas.

Responsibility: (i) To review the results of questionnaire and other necessary surveys and studies related to urban and rural economy. (ii) To review the analyses of economic growth variables of the town in the last six decades and forecast future trends in relation to the region to identify economic potential of the area and make necessary corrections. (iii) To prepare multi-sectoral investment program. (iv) To review the results of feasibility studies of urban and rural development project/action area plans; and develop and finalize the action plans. (v) To work with members of the consulting team to relate the results of such analyses with other parameters of urban and regional planning to form an inter-active multi-sectoral development criteria matrix. (vii) To assist other consulting team members and GIS Expert in particular to the translate the trends and patterns of urban and rural economic activities in space. (viii) To conduct various economic analysis including economic viability analysis and calculation of opportunity cost for the bankable projects in the area to prepare Action Plan. (ix) Preparation of analytical report and economic development model for the project area for the next 20-years based on study and survey (x) Any other assignment pertaining to urban and rural economic activities and analysis as assigned by the Team Leader and PD.

E. Transport Planning Expert – 1 Person (1x2=2 mm.)

Qualification: Post graduation transportation planning or traffic Engineering

Experience: 08 (Eight) years' experience in urban and regional traffic engineering/transportation planning.

Responsibility: (i) To take over the charges on different traffic surveys and studies data and information, review them, make necessary corrections (if necessary). (ii) To propose a transportation network to establish an efficient inter and intra town circulation system and also establish rural-urban linkage for the project area. (iii) To develop traffic prediction model of 20-year period for the project area. (iv) To work with a multidisciplinary team to integrate the output of the traffic surveys and transportation studies with both attribute and spatial data of different other components of the project. (iv) Preparation analytical report and knowledge transfer to the Project Personnel; and (vi) Any other related Jobs as assigned by the Team Leader and PD.

F. Socio-economic Expert- 1 Persons (1x3=3 mm.)

Qualification: Master's Degree in Social Science/Economics/Urban & Regional Planning and related subject.

Experience: 5 years experience in relevant field.


Signature of Bidder


Project Director


Director, UDD

Responsibility: (i) To prepare, piloting, editing and finalization of socio-economic and other related questionnaire; and make necessary arrangements for PRA in consultation with the Team Leader and PD. (ii) To conduct, supervise and monitor socio-economic and other related questionnaire surveys including PRA for the project area. (iii) To supervise and monitor data entry, editing and presentation of data in tabular form. (iv) To analyze the data as directed by the Team Leader and PD and presentation in graphs and figures. (v) Preparation of working paper, reports with recommendation as assigned by PD; (vi) Preparation of Socio-economic development model for the project area for the next 20-years. (vii) To work with a multidisciplinary team to integrate the outputs of socio-economic and other questionnaire surveys and PRA as well with attribute and spatial data of other components of the project in GIS database (vii) Any other related Jobs as assigned by the Team Leader and PD.

Transfer of Knowledge (training) (when appropriate)

- Presentation on technical proposal along with relevant licensed hardware and software in front PEC
- On job training programme for Project Personnel

Report Submission Schedule and Mode of Payment

Report submission schedule and Mode of Payment for Image Processing, Physical Feature, Topographic, Land Use and Other Related Surveys

Reports shall be presented and illustrated in a clear and concise professional manner, including maps, plans, diagrams and other graphics. Schedule of submission:


Report	Language	Copy	Period of Submission	Binding Status	Mode of Payment (% of Contract amount)
Mobilisation Report	English	20	Within 15 days of Signing contract	Spiral Binding	Not more than 10%
Inception Report	English	20	End of 1 st month	Spiral Binding	Not more than 15%
Draft Survey Report	English	20	End of 9 th month	Spiral Binding	-
Final Survey Report	English	20	End of 10 th Month	Spiral Binding	Not more than 35%
Draft Final Plan with Report	English	20	End of 22 th Month	Spiral Binding	Not more than 20%
Final Plan with Report	English	20	End of 24 th month	Hard Binding	Not more than 20%

Progress Reports: Progress Reports shall have to be submitted to UDD by consulting firms in every 3 (three) month on the basis of the approved working schedule.

- Medium of language of the progress report shall be English.
- Both soft copy and hard copy shall be submitted by the consulting firm.
- Progress report shall be submitted within 1st week of the next quarter


Signature of Bidder


Project Director


Director UDD

- (i) The consulting firm requires to gather 3-D data (all feature's vertex must have Z value) to identify flood flow zone (Main/sub), water logging, drainage system, drainage congestion, to get profile of road (any where), identify features more correctly and accurately and also to create precise DEM, it is very much needed to have 3D data.
- (ii) All vehicles, equipments and other inconsumable materials procured for consulting firms by the UDD under this project must be returned to UDD after completion of the project.
- (iii) After completion of survey works and after submission of Final Report a Seminar / Workshop should be arranged by the consulting firm with the local elite, Public representative businessmen, professionals etc. of the region.
- (iv) Penalty shall be imposed or cancellation of contract shall be made by UDD on the consulting firm who will violate the TOR or for any other misconduct by the consulting firm.
- (v) No payment will be made to the consulting firm before accepting the Reports by the Technical Committee.
- (vi) Full time consulting firms must stay in the consulting firm's office.
- (vii) All reports & detailed area plans will be prepared by the consulting firms within the quoted price.
- (viii) The final report including all database (raw data, edited data in tabular form) composed of in a DVD and supplied to UDD.
- (ix) The client reserves the right to accept any or reject any or all tenders within assigning any reason thereof.
- (x) The client reserves the right to increase or decrease any item or specifications in the schedule
- (xi) Scale, dimension and quality of Map/3-D map shall be determined in consultation with the PD.
- (xii) The consulting firm's team members shall be permanent employee of the consulting firm's firm and shall have practical knowledge experience as first and knowledge.
- (xiii) The consulting firm shall submit Legal software license documents (License Number) in the proposal to prove their technical strength and capabilities.
- (xiv) An inventory shall be made on the logistics of the consulting firm's firm (if necessary).
- (xv) The consulting firm shall present the technical proposal before PEC.

List of Reports, Schedule of Deliveries, Period of Performance by the Consulting Firm

The Consulting firm has to submit work programme within 15 days of signing contract. The consulting firm has to submit working paper after completion of the assignment as directed by the PD and also require submitting fortnightly progress report to the PD on the assigned task.

If the consulting firm fails to maintain the quality of data or deliver the data within the scheduled time frame, then it may be treated as "Breach of Contract". In such cases, the consultant shall be make necessary corrections as directed by PD. Another consulting firm may be employed to complete the planning package for the project.

- *Data, personnel, facilities and local services to be provided by the Client, and*

The client, UDD will provide necessary data and maps only


Signature of Bidder


Project Director


Director UDD

আবুল বাকের মোঃ জেহিদ
সিনিয়র সহকারী প্রধান
ভৌত অবকাঠামো বিভাগ
পল্লীকল্যাণ কমিশন
গণপ্রজাতন্ত্রী বাংলাদেশ সরকার

SURVEY FORMAT

Physical Infrastructure Survey Format

Sl. No	Physical Feature Name	Data Type			Z Value (Z measurement level)			Description
		Point	Line	Polygon	On Top	On Ground/level	Not Required	
1A. Water bodies								
1	1. River Edge			x		x		
2	2. Khal Edge			x		x		
3	3. Drainage Channels			x		x		Name, width
4	4. River/khal centreline		x			x		Name, width
5	5. Flow direction	x					x	
6	6. Ponds/Tanks/Dishes			x		x		
7	7. Coastline		x			x		
B. Building/Structure Pucca / Semi pucca / stories Building area > 15 sqm (Depending on map Scale)								
8	1. House			x	x			Residential Building
9	2. Industry			x	x			Industrial Building
10	3. Commercial			x	x			Commercial Building
11	4. Mixed			x	x			Mixed Use
12	5. Boundary Wall		x		x			Wall use as boundary
C. Roads								
13	1. Road Pucca		x	x		x		Asphalt Road
14	2. Road HBB		x	x		x		HBB Road
15	3. Road Katcha		x	x		x		Katcha Road
16	4. Path Pucca		x	x		x		Pucca Path
17	5. Path Katcha		x	x		x		Katcha Path
18	6. Traffic Island/ Divider		x	x		x		
19	8. Road/Path Centreline		x			x		Name, width
D. Railways								
20	1. Railway Row Line		x			x		
21	2. Railway centreline		x			x		
22	3. Railway Junction Points	x				x		
E. Other Structure and Flood works Length, width, condition of abutments and wing-walls								
23	1. Bridge / Culverts			x	x			Type, area, Name
24	2. Embankments			x	x			Name, length

Signature of Bidder

Project Director

Director UDD

25	3. Pump Station for Flood			x		x		Name
26	4. Sluice Gates		x		x			Name
27	5. Bus/Trucks Terminals			x		x		Indicate right way and areas
28	Harbor/ Bathing/boat Jetty		x		x			Harbor, Boat jetty
F. Natural Features								
29	1. Forest			x	x			Area > 2500 Sqm
30	2. Group of trees			x	x			Area < 2500 Sqm
31	3. Group of Trees Point	x			x			
32	4. Wetlands / Bog/ Marshland/ Flood prone area			x		x		Area > 2500 Sqm
33	5. Sand/Sand Dunes			x		x		Area > 2500 Sqm
34	Significant Single Tree	x				x		Easily identified single tree
E. Utility Services								
35	1. High voltage Electric Line		x		x			National/regional grid
36	2. Telephone Line		x		x			
37	3. Gas Line		x			x		
38	4. Utility Substation	x				x		Electric, Telephone exchange, Gas
39	5. Overhead Water Tank			x	x			Name, Capacity
40	4. Waste disposal and treatment points	x				x		A dustbin of municipality and other informal points
41	3. Water work			x		x		
42	5. Deep Tube well Stations	x				x		R.C.C EPHE and other deep tube well stations and output
F. Area Polygon								
43	Residential Area			x		x		Planned, Unplanned, Density (High, Middle, Low)
44	Commercial Area			x		x		Established markets with ancillary shop, groups of shops including small workshops

Signature of Bidder

Project Director

Director, UDD

45	Institutional, Educational, Health Govt office			x		x	School/college/madrassa, clinics, hospital, govt office
46	Industrial (as classified by acts and rules)			x		x	Main activity, type of waste effluent
47	Agricultural Area			x		x	All types of agricultural uses
48	Recreation / sports			x		x	Parks/play/sports ground, indoor facilities, zoological garden. Stadium area
49	Religious / cemetery			x		x	Mosques, Temples, Church, Mazar and others
49	Graveyard. Cemetery			x		x	Sites
51	Historic Place			x		x	Sites
52	Borrow Pits			x		x	Areas cut for filling material
53	Vacant Land			x		x	Vacant land with no apparent use
54	Public gathering			x		x	Place of public meeting, open-air cultural performance and religious gathering
55	Garden			x		x	Indication Rea, pineapple etc
56	Disaster prone areas			x		x	Flood, (indicating the flood affected area in 1998) Earthquake and fault line

Signature of Bidder

Project Director

Director UDD

83

আবুল বাকের মোঃ জৌহির
সিনিয়র সহকারী প্রধান
ভৌত অবকাঠামো বিভাগ
পরিকল্পনা কমিশন
গণপ্রজাতন্ত্রী বাংলাদেশ সরকার

Spot Level Survey Format

Sl. No		Survey Item	Illustrated			
		Special DEM Object	Map object which may be used if registered with a view to DEM use			
			As break line	As terrain points	For delimitation of unsurveyed	For Mask Areas
		Spot height	Road Pucca		Coastline	Building
		Special elevation point	Road Katcha		Pond	Pond
		Contour line	Path Pucca			Wetland/bog/marsh land
		Break line	Path Katcha			
		Mask Area	River Edge			
		Unsurveyed Area	Khal Edge			
		DEM Boundary	Pond			
			Drain channel			

Note: Name of settlements, village, roads, khals, markets, etc. must be clearly indicated in the physical features maps.

Signature of Bidder

Project Director

Director, UDD

আবুল বাকের মোঃ তোহিদ
সিনিয়র সহকারী প্রধান
ভৌত অবকাঠামো বিভাগ
পাবনা কমিশন
গণপ্রজাতন্ত্রী বাংলাদেশ সরকার

Occupancy Type and Use Class

Occupancy Type		Code	Nature of Use or Occupancy
A:	Residential	A1	Detached single family dwelling
		A2	Flats or apartments
		A3	Mess, boarding house dorms, hostels
		A4	Minimum standard housing
		A5	Hostels & lodging hours
B:	Educational	B1	Educational facilities
		B2	Pre-school facilities
C:	Institutional	C1	Child care Institutional
		C2	Custodial institutions for physically handicapped
		C3	Custodial institutions for physically capable
		C4	Penal mental institutions
D:	Health care	D1	Normal medical facilities
		D2	Emergency medical facilities
E:	Assembly	E1	Large assembly with fixed seat
		E2	Small assembly with fixed seat
		E3	Large assembly with fixed seat
		E4	Small assembly with fixed seat
		E5	Sports facilities
F:	Business Mercantile	F1	Offices
		F2	Small shops & markets
		F3	Large shops & markets
		F4	Garages & petrol stations
		F5	Essential services
		F6	Footloose business/ mechanism
G:	Industrial	G1	Low hazard industries
		G2	Moderate hazard industries
H:	Storage	H1	Less fire risk storage
		H2	Moderate fire risk storage
J:	Hazardous	J1	Explosion hazard buildings
		J2	Chemical hazard buildings
K:	Misc.	K1	Private garages & special structures
		K2	Fences, tanks & towers
L:	Open Space	L1	Cropping including forestry
		L2	Fishing
		L3	Livestock
		L4	Recreational
		L5	Reserved
M:	Mixed use	M1	As applicable

Signature of Bidder

Project Director

Director, UDD

85

আবুল বাকের মোঃ তৌহিদ
সিনিয়র সহকারী প্রধান
মৌজা অফিসারের দপ্তর
পরিকল্পনা কমিশন
নবাবসাহাবুজ্জামান সড়ক

Summary of Permitted and Conditional Uses

LEGENDS	PLANNING ZONES	MAIN FLOOD FLOW	SUB FLOOD FLOW	WATER SUPPLY PROTECTION	USE- MIXED PLANNED	USE- MIXED SPONTANEOUS	INDUSTRIAL-LOW HAZARD	INDUSTRY-MODERATE HAZARD	OPEN SPACE	RESTRICTED-AIRPORT	RESTRICTED-FLOOD PROTECTION	RESTRICTED-MILITARY/PUBLIC	RESTRICTED-ROAD/UTILITY	RESTRICTED-SPECIAL
PERMITTED USE														
CONDITIONAL USE														
PLAN REVIEW REQUIRED														
NOT PERMITTED														
LAND USES														
AGRICULTURE, FORESTRY & GRAZING		O	O	O	Z	Z	Z	Z	O					
AQUACULTURE & FISHERIES		O	O	O	Z	Z	Z	Z	Z					
BRICKFIELDS		O	O	O	Z	Z	Z	Z	Z					
CAUSEWAYS: ROAD, RAILWAY		O	O	O	O	O	O	O	O					
CEMETARIES / GRAVEYARD		Z	Z	Z	C	C	C	C	C					
CINEAMAS		Z	Z	Z	C	C	Z	Z	Z					
CLINICS, MEDICAL		Z	Z	Z	O	O	O	C	Z					
CLUBS, PRIVATE		Z	Z	Z	O	O	C	Z	O					
COLLEGES & UNIVERSITIES		Z	Z	Z	P	P	Z	Z	Z					
DOCKS & JETTIES		O	O	O	O	O	O	O	Z					
DWELLINGS, FARM		Z	O	O	O	O	Z	Z	O					
DWELLINGS, MINIMAL HOUSING		Z	C	Z	O	O	C	Z	Z					
DWELLINGS, SINGLE/MULTI FAMILY		Z	C	Z	O	O	Z	Z	Z					
EMBASSIES, HIGH COMMISSIONS		Z	Z	Z	O	O	Z	Z	Z					
EXPLOSIVES MANUFACTURE & STORAGE		Z	C	Z	Z	Z	Z	C	Z					
FLOOD MANAGEMENT STRUCTURES		O	O	O	O	Z	O	O	O					
GOLF COURSES		P	P	P	Z	Z	Z	Z	P					
HOSPITALS (WITH MORGUE)		Z	Z	Z	P	P	Z	Z	Z					
HOTEL GUEST HOUSE		Z	Z	Z	O	O	Z	Z	Z					
HOTEL INTERNATIONAL CLASS		Z	Z	Z	P	P	Z	Z	Z					
INDUSTRIAL CLASS 2		Z	Z	Z	C	C	O	O	Z					
INDUSTRIAL CLASS 3		Z	C	Z	Z	Z	C	O	Z					
INDUSTRIAL CLASS 4		Z	Z	Z	Z	Z	Z	O	Z					
INSTITUTIONS		Z	O	Z	O	O	O	Z	Z					
MAJOR DEVELOPMENT		Z	Z	Z	C	C	C	C	Z					
OFFICES / SERVICES		Z	Z	Z	O	O	O	O	Z					
PARKING FACILITIES, COMMERCIAL		Z	Z	Z	C	C	O	O	Z					
PETROL STATIONS		Z	C	Z	C	C	O	O	Z					
PRISONS		Z	P	Z	P	P	P	Z	Z					
PUBLIC USES & STRUCTURES		Z	O	O	O	O	O	O	Z					
RECREATION FACILITIES, OUTDOOR		O	O	O	O	O	O	Z	O					
RELIGIOUS USES & STRUCTURES		Z	O	O	O	O	O	Z	O					
REPAIR SHOPS, MAJOR		Z	Z	Z	Z	Z	O	O	Z					
REPAIR SHOPS, MINOR		Z	O	Z	O	O	O	O	Z					
RETAIL SHOPS & RESTAURANTS		Z	C	Z	O	O	O	O	Z					
RETENTION PONDS		Z	Z	Z	O	O	O	O	O					
SALVAGE, SCRAP STORAGE & PROCESSING		Z	Z	Z	Z	Z	C	C	Z					
SCHOOLS, PRIVATE		Z	Z	Z	C	C	Z	Z	Z					
SCHOOLS: GOVERNMENT, RELIGIOUS		Z	Z	Z	O	O	Z	Z	Z					
SHIP & BOAT SERVICING		Z	O	Z	Z	Z	O	O	Z					
SHOPPING CENTRES / LARGE MARKETS		Z	Z	Z	P	P	Z	Z	Z					
STADIUM, SPORTS		Z	Z	Z	P	P	Z	Z	Z					
TERMINALS: TRAIN, BUS, FREIGHT		Z	P	Z	P	P	P	P	Z					
TRADE CENTRES		Z	Z	Z	P	P	Z	Z	Z					
UTILITY INSTALLATIONS TYPE A		Z	O	O	P	P	O	P	Z					
UTILITY INSTALLATIONS TYPE B		O	O	O	P	P	P	P	Z					
WAREHOUSING & DISTRIBUTION		Z	Z	Z	C	C	O	O	Z					
WASTE DISPOSAL & PROCESSING/MINARATOR		Z	Z	Z	Z	Z	P	P	Z					

Signature of Bidder

Project Director

Director, JDD

Checklist for logistics of the Consulting firm for the proposed Activity

	Item	Description	Tools
1	BM Installation	XYZ (reference to sob BM) with network adjustment processing Report	RTK GPS
2	Mouza Collection& Scanning	Original Mouza sheet collection and Scanning with 300 dpi in Dram scanner	Dram scanner
3	Mouza Geo-reference	At least 4 GCP need to collect per sheet and GCP should be taken in known place like Mouza BM/Pillar/Traverse Station/old Building/or any other permanent structure exists in Mouza Map	RTK GPS
4	Mouza database	Mouza sheet must be scan in 300 DPL in dram scanner and digitize should be at fixed scale and that would be at 1:500 scale	GIS Soft ware with License
5	Satellite Image Processing	Image ortho rectification	GIS Soft ware with License
		Image Geo-reference with adequate GCP	RTK GPS
		Areal Triangulation	GIS Soft ware with License
6	Topographic Map	Spot level (10m interval) with break line	Photogrammetric stereo Image processing, RTK GPS and total station
		DEM/TIN	
		Contour 0.3m	
		Cross Section& Long Section af Road, Lake, River and other linear feature (30 meter)	
			GIS Soft ware with License
			GIS Soft ware with License
7	Physical feature Map	Building Structure	Photogrammetric stereo Image processing, RTK GPS and total station
		Transport& Communication Network	
		Water bodies	
		Alignment of Linear Feature	
8	Land use Map	From the physical feature survey Existing Land use Map will be prepared,	GIS Soft ware with License
9	Socio economic survey		
10	Transport survey		

Note: Copies of valid license of the equipment and software has to be attached with the technical proposal.


Signature of Bidder


Project Director


Director UDD

Minimum specification of the required Hardware and Software

1. RTK GPS:

- a. Dual frequency receiver
- b. External Radio transmitting facilities at least 5KM.
- c. L1, L2 & L5 carrier
- D. Receiver with GLONASS & GALILEO satellite signal receiving capacity

2. Total Station

- a. At least 2" angular accuracy

3. GIS & RS Software:

- a. Arc GIS/Arc Info with License
- b. GPS data Processing Software with License
- c. Photogrammetric stereo Image processing Software

Requirements:

4. Selection Criteria

- a. Company experience 3 years
- b. Proper hardware (Survey Equipment's: RTK GPS & Total Station) and software (Survey data processing, GIS and Photogrammetric)
- c. Related Experience (Survey Photogrammetric mapping, Socioeconomic and transport Survey)
- d. Resources (office space, Strength, computer, manpower)
- e. Technical manpower (proper technical Manpower)

Institutional arrangements

The Consulting firms should have their own office premises having all necessary hardware and valid Software as stated in the ToR. The members of PEC will visit the office premise of the consulting firms during evaluation without any prior notice.

Signature of Bidder

Project Director

Director, UDD

88

আবুল কাফের মোঃ জৌহিদ
নির্বাহক সহকারী প্রধান
ভৌত অবকাঠামো বিভাগ
পরিকল্পনা কমিশন
গণপ্রজাতন্ত্রী বাংলাদেশ সরকার

APPENDIX-04 PROJECT COMMITTEES

4.1 Technical Management Committee (TMC)

Sl.No.	Person	Position
1	Director, Urban Development Directorate	Chairperson
2	Representative from Roads and Highways Department	Member
3	Representative from Bangladesh Railway	Member
4	Representative from District Administration, Concerned district	Member
5	Representative from BIWTA	Member
6	Representative from Water Resources Planning Organization	Member
7	Representative from Survey of Bangladesh	Member
8	Representative from Department of Environment	Member
9	Representative from LGED	Member
10	Representative from Concerned Upazila Authority	Member
11	Representative from Concerned Paurashava	Member
11	Representative from MOHPW	Member
12	Representative from Physical Infrastructure Division, Planning Commission	Member
13	Project Director	Member-Secretary

Terms of Reference of TMC

1. To evaluate the progress of the project, detection of technical problems and to provide necessary guidance to mitigate the problems.
2. The committee would meet once in two months.
3. The committee may co-opt new member if necessary.

4.2 Steering Committee (SC)

Sl. No.	Person	Position
1	Secretary, Ministry of Housing and Public Works	Chairperson
2	Director, Urban Development Directorate, Dhaka	Member
3	Joint Chief, Physical Infrastructure Division, Planning Commission	Member
4	Director General, I M E D	Member
5	Director General, WARPO	Member
6	Joint Secretary (Dev.), Local Government Division, Dhaka	Member
7	Joint Secretary, Finance Division, Ministry of Finance	Member
8	Joint Secretary, Economic Relation Division, Dhaka	Member
9	Joint Secretary, (Roads and Highways), Ministry of Communication, Dhaka	Member
10	Joint Secretary, (Railway Division), Ministry of Communication, Dhaka	Member
11	Joint Secretary (Dev.), Ministry of Home Affairs, Dhaka	Member
12	Joint Secretary (Dev.), Ministry of Water Resources Development	Member
13	Joint Secretary, Ministry of Law	Member
14	Joint Secretary (Dev.), Ministry of Environment and Forest	Member
15	Joint Secretary (Dev.), Ministry of Land	Member
16	Joint Secretary (Dev.), Ministry of Energy and Mineral Resources	Member
17	Joint Secretary, Ministry of Civil Aviation and Tourism	Member
18	Joint Secretary (Dev.), Ministry of Housing and Public Works	Member
19	Divisional Commissioner, Concerned Division	Member
20	Chairman, Bangladesh Water Development Board, Dhaka	Member
21	Deputy Chief (Planning and Implementation Cell), Ministry of Housing and Public Works, Dhaka	Member
22	Project Director	Member-secretary

Terms of Reference of SC

1. Provide sectoral decisions; minimize sectoral conflict; approve sectoral options.
2. The committee would meet after Interim Report and Final Report.


Signature of Bidder


Project Director


Director UDD

URBAN DEVELOPMENT DIRECTORATE

Ministry of Housing and Public Works

**TERMS OF REFERENCE (TOR)
FOR**

**Earthquake Hazard, Vulnerability and Risk assessment for Fourteen (14) Upazilas
under
Different Survey Works**

July, 2013

Signature of Bidder

Signature of Bidder

Project Director

Project Director

আবুল হাফিজুর রহমান
জিনিয়ার্স সার্কেল: ৯০৮৮
ভৌত অধিকাংশে বিভাগ
১০/৭/১৩
১০/৭/১৩

1 Introduction

1.1. Project Background

In the government's recent policy of overall administrative re-organization, the upazila has been recognized as the most significant tier of the administration. It will be planned and developed to accommodate all social, economic, administrative and infrastructure services for the region. This also reflects the national policy of bringing development, administrative and services facilities to the door step of the rural masses and to ensure better delivery of government services to the people. Initially the project area consisted of nine upazilas under Constitutional area of member of the Parliamentary Standing Committee concerning Ministry of Housing and Public works. The total Project area is 2748.37 sq. km. and total population is 2698872 (Reference Table-1). Constitutional area Dhaka-1 (Dohar-Nawabganj): 406.29 sq.km; Constitutional area Chittagong-5 (Raozan and Hathazari): 492.91 sq.km; Narsingdi-3 (Shibpur + Raipura(P)): 232.47 sq.km.; Constitutional area Mymensingh-8 (Ishwarganj): 286.19 sq.km; Constitutional area Cox's Bazar-3(Ramu): 391.71 sq.km; Constitutional area Madaripur-1(Shibchar): 321.88 sq.km; Constitutional area Rajshahi-4 (Bagmara): 363.30 sq.km. Since, Hathazari and Raozan upazilas are under the jurisdiction of Chittagong Development Authority (CDA). There exists Structure Plan, Urban Area Plan and Detailed Area Plan for the both of upazilas under Chittagong Metropolitan Master Plan 1995. Hence, development plan for the two upazilas shall not be prepared.

According to the decision of the meeting of the Project Evaluation Committee (PEC) was held at Physical Infrastructure Division, Planning Commission, Chaired by the Honorable Member, Physical Infrastructure Division, dated on 19/12/2011 the Study Proposal has been renamed as "Preparation of Development Plan for Nine Upazilas" and recovered according to the decision made in the meeting.

Meanwhile, Honorable State Minister for the Ministry of Environment and Forest requested UDD to prepare a Structure Plan and Action Area Plan for Rangunia upazila, Chittagong 361.54 sq.km (স্মারক নং পবম/প্রতিমন্ত্রী/বিবিধ/০২/২০১০/৩৫৯, তারিখ-১২.৮.২০১০), which is under Constitutional area of Chittagong- 6 and the Mayor of Faridpur Paurashava has requested UDD to prepare a Master plan for the Paurashava (স্মারক নং ১৩৫৯, তারিখ- ০৭/১০/২০১০). The paurashava is within Faridpur Sadar Upazila, Dhaka 407.02 sq.km is under the Constitutional area of Faridpur-3. Hence, these two upazilas had been selected under 9 upazilas Development Plan, instead of Raozan and Hathazari upazila (Ref. Map-1).

Later, another meeting of the PEC was held at Physical Infrastructure Division, Planning Commission, Chaired by the Honorable Member, Physical Infrastructure Division, dated on 10/02/2013. According to the decision of the PEC meeting Sariakandi and Sonatola upazila of Bogra district, which is under Constitutional area of Bogra-1, Saghata Upazila of Gaibandha zila which is under Constitutional area of gaibandha-5, Gangni upazila of Meherpur district, which is under Constitutional area of Meherpur-2 and whole of Raipura upazila of Narsingdi district has been included in the study proposal; and the study proposal has been renamed as "Preparation of Development Plan for Fourteen Upazilas" accordingly to maintain geographical balance for preparing development plan. Area and population of the fourteen upazilas has been shown in the Table-1 and planning team for the study proposal has been shown in the Table-2 below:

Signature of Bidder

Project Director

Director, UDD

1 Introduction

1.1. Project Background

In the government's recent policy of overall administrative re-organization, the upazila has been recognized as the most significant tier of the administration. It will be planned and developed to accommodate all social, economic, administrative and infrastructure services for the region. This also reflects the national policy of bringing development, administrative and services facilities to the door step of the rural masses and to ensure better delivery of government services to the people. Initially the project area consisted of nine upazilas under Constitutional area of member of the Parliamentary Standing Committee concerning Ministry of Housing and Public works. The total Project area is 2748.37 sq. km. and total population is 2698872 (Reference Table-1). Constitutional area Dhaka-1 (Dohar-Nawabganj): 406.29 sq.km; Constitutional area Chittagong-5 (Raozan and Hathazari): 492.91 sq.km; Narsingdi-3 (Shibpur + Raipura(P)): 232.47 sq.km.; Constitutional area Mymensingh-8 (Ishwarganj): 286.19 sq.km; Constitutional area Cox's Bazar-3(Ramu): 391.71 sq.km; Constitutional area Madaripur-1(Shibchar): 321.88 sq.km; Constitutional area Rajshahi-4 (Bagmara): 363.30 sq.km. Since, Hathazari and Raozan upazilas are under the jurisdiction of Chittagong Development Authority (CDA). There exists Structure Plan, Urban Area Plan and Detailed Area Plan for the both of upazilas under Chittagong Metropolitan Master Plan 1995. Hence, development plan for the two upazilas shall not be prepared.

According to the decision of the meeting of the Project Evaluation Committee (PEC) was held at Physical Infrastructure Division, Planning Commission, Chaired by the Honorable Member, Physical Infrastructure Division, dated on 19/12/2011 the Study Proposal has been renamed as "Preparation of Development Plan for Nine Upazilas" and recovered according to the decision made in the meeting.

Meanwhile, Honorable State Minister for the Ministry of Environment and Forest requested UDD to prepare a Structure Plan and Action Area Plan for Rangunia upazila, Chittagong 361.54 sq.km (স্মারক নং পবম/প্রতিমন্ত্রী/বিবিধ/০২/২০১০/৩৫৯, তারিখ-১২.৮.২০১০), which is under Constitutional area of Chittagong- 6 and the Mayor of Faridpur Paurashava has requested UDD to prepare a Master plan for the Paurashava (স্মারক নং ১৩৫৯, তারিখ- ০৭/১০/২০১০). The paurashava is within Faridpur Sadar Upazila, Dhaka 407.02 sq.km is under the Constitutional area of Faridpur-3. Hence, these two upazilas had been selected under 9 upazilas Development Plan, instead of Raozan and Hathazari upazila (Ref. Map-1).

Later, another meeting of the PEC was held at Physical Infrastructure Division, Planning Commission, Chaired by the Honorable Member, Physical Infrastructure Division, dated on 10/02/2013. According to the decision of the PEC meeting Sariakandi and Sonatola upazila of Bogra district, which is under Constitutional area of Bogra-1, Saghata Upazila of Gaibandha zila which is under Constitutional area of gaibandha-5, Gangni upazila of Meherpur district, which is under Constitutional area of Meherpur-2 and whole of Raipura upazila of Narsingdi district has been included in the study proposal; and the study proposal has been renamed as "Preparation of Development Plan for Fourteen Upazilas" accordingly to maintain geographical balance for preparing development plan. Area and population of the fourteen upazilas has been shown in the Table-1 and planning team for the study proposal has been shown in the Table-2 below:

Signature of Bidder

Project Director

Director, UDD

Table-1: Population and Area of 14 upazilas under the Project

Sl. No.	Name of District	Name of upazila	Area (sq.km)	Urban area	Rural area	Urban Population	Rural Population	Total
1	Dhaka	Nawabganj	244.8	1.76	243.04	77590	410438	488028
2		Dohar	161.49	20.31	141.18	61793	129630	191423
3	Chittagong	Rangunia	361.54	37.08	324.46	53035	245335	298370
4	Cox bazar	Ramu	391.71	22.03	369.68	33334	169349	202683
5	Rajshahi	Bagmara	363.3	26.58	336.72	34632	285336	319968
6	Faridpur	Faridpur	407.02	23.45	383.57	101084	312401	413485
7	Mymensingh	Ishwarganj	286.19	15.82	270.37	30948	307132	338080
8	Madaripur	Shibchar	321.88	17.02	304.86	27877	296561	324438
9	Narsingdi	Shibpur	232.47	3.52	228.95	10426	303394	313820
10		Raipura	408.45	13.49	394.96	34411	420135	454546
11	Bogra	Sariakandi	432.6	3.58	429.02	17320	222763	240083
12		Sonatala	156.73	4.94	151.79	11405	156142	167547
13	Gaibanda	Saghata	225.67	6.38	219.29	15549	234720	250269
14	Meherpur	Gangni	341.98	22.86	319.12	23846	245239	269085
Total			4335.83	218.82	4117.01	504525	3359670	3864195

Table 2: Planning Teams for the Project

Sl. No.	Name of Planning Team	Name of upazilas
1.	Team 1	Nawabganj, Dohar, Shibchar
2.	Team 2	Ishwarganj, Raipura, Shibpur
3.	Team 3	Bagmara, Faridpur sadar, Gangni
4.	Team 4	Saghata, Sonatota, Sariakandi
5.	Team 5	Ramu, Rangunia

As a local government unit, most of the Upazila Parishad of the project area has not yet capable of integrating the rural areas with the urban area in both physical and socio-economic terms to implement planned rural-urban development. Once such integration becomes possible, this will help to utilize the valuable agricultural land properly as well as save it and guide local development in an organized manner. Thus, the overall situation of these Upazilas depicts an underdeveloped scenario which needs to be developed based on their potentialities in the field of agriculture and industry. Scope of such developments needs to be explored.

The parliamentary permanent committee related to Housing and Public Works Ministry always gives emphasis on planned development of their concerned upazila as a whole. Recently, this committee has decided to prepare master plan of the respective constitutional areas in its 10th meeting (Reference No. Sha-2/2M-2/2010/132) dated 24-02-2010. UDD was directed to prepare those Master Plans. Accordingly, UDD prepared individual Study Proposal for the respective upazila and submitted to the concerned ministry. There was a DPEC meeting at Ministry of Housing and Public Works (MoH&PW) regarding the mentioned Study Proposal on 24 May 2010. According to the decision made in the meeting, UDD was directed to combine those 07 (seven) Study Proposal and prepare a single Study Proposal which would be sent to the Planning Commission by MoH&PW. Since, master plan for Raozan and Hathazari upazilas of Chittagong district has been prepared by Chittagong Development Authority (CDA), these two upazilas have been dropped from the study proposal as per "Charter of Duties" of UDD.

Signature of Bidder

Project Director

Director, UDD
আবুল কাবীর মোঃ জৌহিদ
নিমিত্ত সহকারী প্রধান
ভৌত অবকাঠামো বিভাগ
পরিকল্পনা কমিশন
গণপ্রজাতন্ত্রী বাংলাদেশ সরকার

Meeting of Project Evaluation Committee was held at Physical Infrastructure Division, Planning Commission, Charired by the Honorable Member, Physical Infrastructure Division, dated on 19/12/2011. According to the decision of the meeting of the PEC Committee the Study Proposal has been renamed as "Preparation of Development Plan for Nine Upazilas" and recovered according to the decision made in the meeting.

Later, a request letter was sent by the Honorable State Minister for Ministry of Forest and Environment for preparing master plan for Rangunia upazila, Chittagonj district and another request letter for the same was sent by Honorable Mayor, Faridpur paurashava, Faridpur district. Accordingly, Rangunia upazila and Faridpur Sadar upazila have been included in the study proposal to keep the title of the study proposal "Preparation of Study Proposal for nine Upazilas" unchanged as per decision of the PEC meeting held at Physical Infrastructure Division, Planning Commission unchanged.

Another meeting of the PEC was held at Physical Infrastructure Division, Planning Commission, Chaired by Honorable Member, Physical Infrastructure Division dated on 10.02.2013. According to the decision of the meeting of the PEC additional four upazilas namely Sariakandi and Sonatola upazila of Bogra district, Saghata Upazila of Gaibandha zila, Gangni upazila of Meherpur district and whole of Raipura upazila of Narsingdi district have been included in the study proposal to maintain geographical balance in preparing master plan; and accordingly the study proposal has been renamed as "Preparation of Development Plan for Fourteen Upazilas".

Signature of Bidder

Project Director

Director, UDD

উদ্ভিদ সম্পদ উন্নয়ন
বিভাগ, ঢাকা
পরিচালক (উদ্ভিদ)
পরিচালক (উদ্ভিদ)
পরিচালক (উদ্ভিদ)

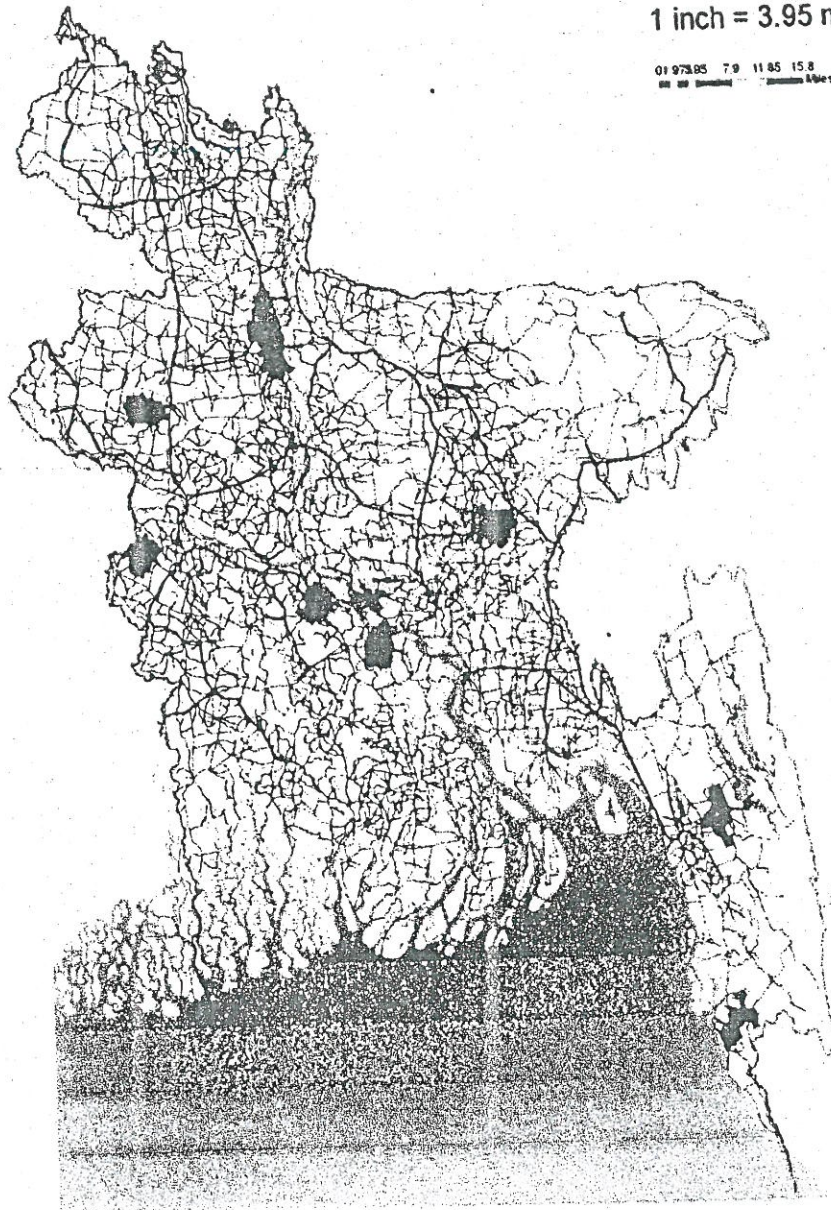
Map-1: Project Area

Location of Fourteen(14) Upazilas



1 inch = 3.95 miles

01 97895 7.9 11.85 15.8
in 00 000000 000000 Miles



Legend		
•	Faridpur Sadar	Sariatkandi
— Roads	Gangra	Shibchar
— Railway	Ishwarganj	Shibpur
— International	Newabganj	Sonatala
THANAHNAME	Raipura	Bughatta
Bagrama	Ramu	River
Dohar	Rangunia	

Signature of Bidder

Project Director

Director, UDD 95

Shirun

[Handwritten signature]

[Handwritten signature]

[Handwritten signature]

95
[Small text and stamps]

1.2. Scope of Work

Within the outcomes of Fourteen Upazilas project, risk reduction is a potential thematic area that comprise of reducing risk for urban & rural populations through structural and non-structural interventions, improved awareness of natural hazard events that targeted the specifically extreme poor. This area covers the assessment and management of earthquake, landslide, and hydrometeorological hazards in pre-dominantly urban context.

Considering the earthquake threat of the populated urban areas of the project, UDD will have to be taken many initiatives for earthquake preparedness of the Project area. This component mainly addresses the following areas:

- a) Earthquake hazard, vulnerability, risk and loss assessment for Project area.
- b) Detailed building inventory of (01) Paurashava area of fourteen upazilas, (02) Growth centres of fourteen upazilas.
- d) Development of scenario-based spatial earthquake contingency plan for Project's urban areas.
- e) Preparation of ward-based spatial contingency plan for Project area.

1.3. Purpose of Document

This document, which states the Terms of Reference is part of a Request for Proposal (RFP), and is intended to specify services to be procured according to the Public Procurement Regulations (PPR) of the Government of Bangladesh.

2. Request For Proposal (RFP-I):

RFP-I: (I) Earthquake hazard, vulnerability and risk assessment for Project areas and (II) Detailed building inventory survey of Project area. The ultimate objectives of developing the earthquake risk assessment are to prepare the contingency plan for earthquake preparedness, emergency response and awareness development of the said cities. In order to accomplish the assignments, the following sub-activities need to be carried-out:

2.1. Sub-activities of seismic hazard, vulnerability and risk assessment:

The sub-activities under the assignment on earthquake hazard, vulnerability and risk assessment for Project area are given below:

2.1.1. Regional morphotectonic and neotectonic mapping for potential earthquake source area identification

Geological structural elements (plate boundary, fault lines) that are capable to generate potential earthquake are the regional tectonic features. Some regional and local geomorphologic features bear the signatures of on-going tectonic processes. While there is generally no damage from smaller earthquakes, it is important to detect them as they may indicate faults that are not observed at the surface. Bangladesh Meteorology Department (BMD) has four broad-band seismometers over the country. BMD has been recording earthquake last couple of years. It is necessary to analyze the available earthquake records because the observation of the small earthquakes helps to better interpreting the seismo-tectonics of the region, and thus leads to a better understanding of possible larger faults.

Differential Global Positioning System (DGPS) reading are used to apply for identifying the field of tectonic strain accumulation. Geology Department, Dhaka University has the couple of DGPS set-up in the country to monitor the strain accumulation across the geological structural elements.

Signature of Bidder

Project Director

Director UDD

96

Neotectonics is defined as the study of geologically recent motions of the earth's crust, particularly those produced by earthquakes. Neotectonic activities can also be depicted using DGPS reading and small earthquake events. Objective of identifying the morphotectonic set-up and neotectonic activities to figure-out the contribution of potential seismic sources for the distribution of seismic hazards in regional to local context. Morphotectonic map should represent the imprints of surface expression indicating recent tectonism (neotectonic). Adequate satellite images, aerial photo/corona image interpretations with ground truthing should be well-represented in the document of morphotectonic/neotectonic reporting.

Deliverable: Preparation of morphotectonic and neotectonic report of Bangladesh and its surrounding areas using all available necessary data

2.1.2. Engineering geological mapping

Objective of the preparation of engineering geological map is to develop the geotechnical and geophysical characteristics of the shallow relatively soft sub-surface sedimentary rock which caused damages to the infrastructures. These information are often use for foundation engineering, landuse mapping and seismic hazard assessment. The purpose of engineering geology map is to generate AVS30-map for the investigated areas. The investigated are would be differentiated into number of grid size having the size of around from 100m*100m to 500m*500m. AVS30 shall be calculated for each grid of the investigated areas.

Awarded agency would be requested to maintain close collaboration with GSB and collect all necessary information available to GSB. Once other parameter maps and information are collected, following investigations (X nos. will be fixed with consultation of PD) in Table 2 should be conducted for the preparation of engineering geological maps:

Table 1: Geotechnical investigation to be carried-out in the investigated towns

Name of towns	Name of investigations				
	Borelog with SPT(borehole- 30m and 03 borehole- 50m depth, method-mechanical)	PS logging (30m depth)	MASW and SSMM (30m depth)	Microtremor array (Vs>100m depth)	Single Microtremor (Vs>100m depth)
Urban areas of fourteen upazilas	X	X	X	X	X
Growth Centres of fourteen upazilas	X	X	X	X	X

It is to be noted that secondary data of any types can be used for improving and comparing the findings. But data quality should be assessed before using them.

- (GSB) would drill some boreholes with SPT in all investigated area during the preparation of geological/geomorphological maps
- Site selection for borehole drilling & numbers, PS logging, MASW and SSMM, Microtremor array and Single microtremor should be made with the consultation of UDD & Geological Survey of Bangladesh (GSB).

Signature of Bidder

Project Director

Director, UDD
97

- Soil sampling: SPT should be conducted at each 1.5m interval depth. When SPT N values exceed 100 times in consecutive 2/3 measurements, SPT can be stopped. Disturbed samples have to be collected during SPT for physical soil test (grain size analysis, natural moisture contents, unit weight, specific gravity, atterberg test for clayey soil) in laboratory. Cyclic triaxial test for soil liquefaction analysis should be conducted in each study area. Geology Department, Dhaka University has the equipment for cyclic triaxial testing.
- PS logging analysis: Waveform data, travel curve data with V_p and V_s are shall be iduring analysis. Depth interval should be 1m. CDMP has provided PS logging equipment to Geology Department, Dhaka University. Consultant can take support from Geology Department for conducting PS logging.
- Single Microtremor measurement: Measurement should be conducted during night or quiet time for measuring more than 5 minutes continuous recording. The results should be assessed considering geomorphology and soil layers comparing with V_s data.

Compiling all results on soil, geology/geomorphology and geophysical investigations, and some relation for V_s -N value etc. and comparison of some V_s values from different methods, AVS30 distribution for each grid of all investigated area would be developed as the Engineering Geological Map.

Deliverable: (I) Submission of all geotechnical and geophysical data as well as analysis, (II) Report on engineering geological maps of the cities

2.1.3. Seismic hazard assessment

Seismic hazard map would be prepared using the concept of microzoning. By soil microzoning mapping, the spatial variability of the soil can be figured-out for the purpose of estimating localized damage potential and developing landuse regulations. The seismic hazard maps of the towns should be prepared following probabilistic and deterministic approaches. Seismic motion estimation is the main of seismic hazard assessment and other collateral hazards of liquefaction and slope failure are used to consider for risk assessment. Since, all the towns for which seismic hazard will be prepared are almost flat, slope failure need not to consider for hazard estimation in this case. Detailed requirement of seismic hazard mapping is given below:

1. Nature of seismic motions:
 - a) Deterministic seismic motion:
Values of seismic motion should be PGA, PGV, $S_a(T)$ of 5% damping at 0.3 and 1.0 second periods for each scenario earthquake, at each grid considering risk assessment process.
 - b) Probabilistic seismic motion: PGA, PGV, $S_a(T)$ of 5% damping at 0.3 and 1.0 second periods values of 2% and 10% exceedance probability during next 50 years should be calculated at each grid.
 - c) Target layer: ground surface and engineering bed layer with $V_s \approx 700$ m/s
2. Attenuation equations for engineering bed layer seismic motion estimation: Next Generation Attenuation Equations (NGA2008) can be used in this study. This attenuation formula has been used in CDMP-I. It is to be noted that different attenuation formula can be adapted having discussion with CDMP/Technical Advisory Group (TAG).
3. Site amplification analysis: Amplification relation during subsurface layers should be NEHRP relation to AVS30 which also consider non-linearity for both deterministic and probabilistic cases.

Signature of Bidder

Project Director

Director UDD

Shahen

আবুল বাকের মোঃ তোহিদ
সিনিয়র সহকারী প্রধান
ভৌত অর্থকায়ন বিভাগ
পরিকল্পনা কমিশন

4. Liquefaction susceptibility and probability:

The liquefaction potential would be evaluated considering geologic /geomorphic condition, PGA, magnitude (Mw) and groundwater depth. At first, liquefaction susceptibility shall be evaluated by geologic/geomorphic data and information of geological age. Later, liquefaction probability shall be estimated integrating PGA, Mw and groundwater level with the above evaluated liquefaction susceptibility map.

Note: Awarded agency need to take care to integrate the contribution of all seismic sources that are able to generate potential earthquake during the preparation of seismic hazard map.

Deliverable: Seismic hazard assessment for peak ground motion and soil liquefaction

2.1.4. Vulnerability assessment

The objective of vulnerability assessment is to address the seismic vulnerability characteristics of the existing building stock, essential facilities, and lifeline facilities. In order to achieve this objective, there need to develop the base map, building stock database, lifeline and essential database considering the vulnerability factors associated with them. Inventory surveys were conducted into 3 levels: Level-1, level-2, and level-3 surveys based on CDMP-I Project.

The building attributes collected at this **survey level-1** were: number of stories, occupancy class, structural type, number of occupants during the day and the night, age of the building, presence of soft story (yes/no, presence of heavy overhangs (yes/no), shape of the building in plan view (rectangular, narrow rectangular, irregular, shape of the building in elevation view (regular, setback, and narrow tall), pounding possibility (yes/no), building in slope land (yes/no), visible ground settlement (yes/no), presence of short columns (yes/no), visible physical condition (poor/average/good).


For **concrete buildings**, the building attributes acquired during the **Level-2 survey** are: torsional irregularity (non-rectangular shape, unsymmetrical infill, unsymmetrical shear wall, short column (less than 25% of floor height, 25-50% of floor height, more than 50% of floor height, Diaphragm discontinuity (mezzanine floor, floor opening, slab system (cast insitu, pre-cast), key dimensions (plan dimensions, typical column size, no. of bays, span length, shear wall dimensions. For **masonry buildings**, the building attributes acquired during the **Level-2 survey** are: wall thickness, maximum unsupported length of wall, corner separation (yes/no), anchorage of wall to floor (yes/no), anchorage of roof with wall (yes/no), wall to wall anchorage (yes/no), bracing of flexible floor/roof (yes/no), existence of gable wall (yes/no), horizontal band (yes/no) and vertical post (yes/no).


Level-3 survey was conducted to measure the dynamic behavior of the buildings with respect to strong ground motion. In CDMP-I, for dynamic measurement of RCC buildings, microtremor, schmidt hammer, ferrocanner, vibration shaker were used. For masonry building shear strength test of binding mortar of masonry walls was done using Hydraulic Jack with Deflection Meter.

The **lifeline database** mainly consists of transportation system and utility system. The **transportation system** consists of (1) highway transportation system, (2) railway transportation system, (3) bus transportation system, and (4) ferry transportation system.

While **utility system** consists of (1) portable water system, (2) natural gas system, (3) electricity power system, and (4) communication system, and for Dhaka (5) waste water or sewage network.


Signature of Bidder


Project Director


Director UDD
আবুল বাকের মোহাম্মদ
সিনিয়র সহকারী প্রধান
ভৌত আবকাঠামো বিভাগ
পারিকল্পনা কমিশন
গণপ্রজাতন্ত্রী বাংলাদেশ সরকার

The essential facility system consists of 3 categories: (1) Medical care facilities, i.e. hospital and medical clinic, (2) Emergency response facilities, i.e. police station, fire station and emergency operation center and (3) Schools.

Based on the building and lifeline inventory, vulnerability maps which show the characteristics of the buildings, essential facilities, and lifelines that make them susceptible to the damaging effects of earthquake were developed. Table 3 below illustrates the outlines of database

Table: 2 Outline of database

List of Features	Updated Information Required
Building Information	Number of stories, Occupancy class, Structural type Number of occupants during the day and the night, Age of the building, Presence of soft story, Presence of heavy overhangs, Shape of the building in plan view, Shape of the building in elevation view, Pounding possibility etc.
Road	Type, Width, with or without footpath
Lifeline facilities	Location of electric pole, cable orientation, location of water pump & sluice valve, water supply and gas network detail with joint points. Underground facilities should be updated based on the information from respective service provider agency

*Deliverable: (I) Report of different level of building survey, lifelines and essential facilities system
(II) Seismic vulnerability assessment of the buildings, lifelines and essential facilities system*

2.1.5. Damage and Risk assessment


In CDMP-I, damage and risk assessment has been estimated using Hazard United States (HAZUS) software. HAZUS was developed by the United States Federal Emergency Management Agency (FEMA) and National Institute of Building Sciences (NIBS). HAZUS risk assessment methodology include interdependent modules of (1) potential earth science hazard assessment, (2) inventory of buildings, essential facilities and lifelines, (3) direct physical damage calculation, (4) induced physical damage calculation (5) direct economic/social losses and (6) indirect economic losses.

It is to be noted that, the seismic performance of buildings in Bangladesh is different from that of United States. As a result, a new set of building capacity spectrum and fragility functions were developed in CDMP-I, based on the vulnerability factors of the building and numerical analyses. UDD will follow the same procedures as mentioned in HAZUS modules and developed by CDMP-II to assess damage and risk in all sectors. If other method better than HAZUS in getting the desired results is available, consultant can use that one having prior permission of UDD. All the modules and respective sub-sections as described in HAZUS must be analyzed and reported through risk analysis.

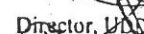
Deliverable: Damage and Risk assessment of the potential scenario earthquakes

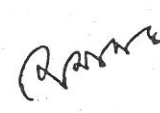
2.2. Detailed building inventory database preparation of Fourteen Upazilas

While conducting Topographic survey and database preparation in the project, the building inventory database has been carried-out by delineating the building footprints using high resolution (0.5meter) satellite images and collecting secondary data under TOR-01. Then, random surveys (Level-1, Level-2 and Level-3) were carried-out in each ward of the city differentiating each ward into number of clusters. Cluster development aims to get more detailed physical characteristics using statistical approach to come to know the vulnerability of an area. In the level-1 building survey, side walk and questionnaire surveys were carried out to collect major general and necessary information of the buildings. Level-2 and Level-3 survey were done mostly for seismic vulnerability assessment.


Signature of Bidder


Project Director


Director, UDD


আবুল কাবের মোঃ জেহিদ
নির্বাহী প্রকল্প পরিচালক
জাতীয় আবহাওয়া কেন্দ্র
ঢাকা

Consulting firm should plan to make a more detail building inventory survey not only for earthquake vulnerability assessment, but also to make the building inventory for other purposes: like for tax collection by City Corporation, instant physical vulnerability assessment by RAJUK etc. Moreover, city police administration can use the data for having the information of housing pattern and road-network of a locality for security concern. Beside this, once each and every household information is generated, police can collect each family information of a building in order to track urban security issues. In this context, there need to make one-to-one building survey to develop a details database of the buildings for the purpose of multi-uses of the buildings and other infrastructures of fourteen Upazilas. The attributes of the database will be:

- Holding number
- Owner name
- Size of the land
- Soil condition
- Foundation information
- Landuse (Table-4)
- Accessibility (road width, type etc)
- Local settlement patterns
- Utility services available or not
- Vulnerability from utility services
- Area of building footprint
- Number of stories
- Occupancy class (Table 5)
- Structural type (Table 6)
- Number of occupants during the day and the night
- Age of the building
- Presence of soft story (yes/no)
- Presence of heavy overhangs (yes/no).
- Shape of the building in plan view (rectangular, narrow rectangular, irregular)
- Shape of the building in elevation view (regular, setback, and narrow tall)
- Pounding possibility (yes/no)
- Building in slope land (yes/no)
- Visible ground settlement (yes/no)
- Presence of short columns (yes/no)
- Visible physical condition (poor/average/good)

Beside these, UDD can make request to collect more information of the buildings while conducting surveys. Another objective of this activity is to prepare a GIS-based landuse map of fourteen upazilas area using the attribute database. The landuse can be classified following Table-4 (can be modified with consultation of PD) with required modification upon consultation with UDD. It is important to determine the trend of spatial development/growth of a city/town in order to know the future possible extension that would help the decision makers to guide the city development that ultimately helps to reduce possible disaster risks. Present practice is to integrate Disaster Risk Reduction into spatial planning (landuse/master plan) of the targeted city/towns. A guideline (city specific) has to be developed to integrate disaster risk reduction approaches into landuse/master plan.

Deliverables: (I) Preparation of detailed building inventory database, (II) Preparation of landuse map (III) Guideline to integrate Disaster Risk Reduction into landuse / master plan.

Signature of Bidder

Project Director

Director, UDD

[Signature]

[Signature]

[Signature]

[Signature]

[Signature]
10

Table 3: Landuse classification

<p>0000 Residential/Homestead</p> <p>0001. Single structure, privately owned 0002. Single structure, Govt. owned 0003. Multi structure, privately owned 0004. Multi structure, Govt. owned 0005. Apartment Housing: Privately owned 0006. Apartment Housing: Government owned 0007. Student Hostel, Mess. Rest House, Dak Bungalow etc. 0008. Bustee 0009. Orphanage 0010. Rural Homestead (with dwelling, Kitchen, Latrine, Out house, Kitchen garden, courtyard etc.) 0011. Others (specify).</p> <p>0100 Agricultural Use</p> <p>0101. Cropland; 0102. Orchard ; 0103. Horticulture ; 0104. Sericulture. 0105. Panboroz.; 0106. Dairy Farm; 0107. Poultry Farm ; 0108. Pisciculture (fish) Farm</p> <p>0200. Educational and Research</p> <p>0201. Primary Schools; 0202. Secondary Schools. Boys 0203. Secondary Schools, Girls 0204. Intermediate and Degree College 0205. Technical Schools (Survey, Polytechnic) 0206. Teachers Training College 0207. Physical Training Institute 0208. University 0209. Civic and Social Organizations (Other than recreation) 0210. Medical College 0211. Madrasha, Maktab 0212. Libraries and Similar Buildings 0213. Research Organization 0214. Museum and Art Galleries 0215. Kinder Garden 0216. Vocational Institution. 0217. Coaching Center 0218. Others (specify). 0300. Business and Mercantile (Commercial) 0301. General Merchandise store (including groceries and stationeries) 0302. Food Market/ Kutch bazar 0303. Books and Office Supplies 0304. Cloth and Garments store</p>	<p>0700. Industrial Use and Storage</p> <p>0701. Food products (Sweet making etc.) 0702. Agro-processing Mills (Rice/Wheat/Oil seeds) 0703. Ice Plant 0704. Tobacco manufacturing 0705. Sugar Mills 0706. Textile (Cotton and Silk) 0707. Jute Products 0708. Wood products (Saw mill, furniture and other products) 0709. Pottery and related products 0710. Leather and leather related products 0711. Rubber and plastic products 0712. Paper printing and publishing 0713. Match factory 0714. Go down 0714. Others (specify).</p> <p>0800. Open Space</p> <p>0901. Play ground (including stadium) 0902. Parks.</p> <p>0900. Assembly</p> <p>0901. Clubs and Similar Buildings 0902. Community Centre 0903. Gynasium 0904. Cinema Halls 0905. Theatres 0906. Town Hall 0907. Mosque 0908. Mondir 0909. Charch 0910. Restaurant.</p> <p>1000. Security/Defence</p> <p>1001. Army 1002. BDR 1003. Police 1004. Ansar. 1005. BNCC. 1006. Jailkhana</p> <p>1100. Public Utilities, Communications and Transport</p> <p>1101. Postal Services 1102. Fire Services 1103. Telephone Exchange Building 1104. Sewerage system treatment/disposal Area</p>
--	--

Signature of Bidder

Project Director

Director, BDD

102


আবুল বাকের মোঃ জেহিদ
সিনিয়র সহকারী প্রধান
ভৌত অবকাঠামো বিভাগ
কমিশন

0305. Confectionary 0306. Drugs, chemicals, and allied products (including paints and varnishes) 0307. Foot ware 0308. Electrical & Electronics goods 0309. Sports goods 0310. Hardware and Building Materials 0311. Furniture and Wood products 0312. Wholesale Business 0313. Laundries and dying 0314. Studies (Photographic) 0315. Tailors shops 0316. Barber shops 0317. Banking and Insurance 0318. Repair Shops (Automobile, Electric goods, Watch, Cycle, Shoe and Leather goods etc.) 0319. Gold Smith, Black smith, Locksmith shops 0320. Weilding Shops 0321. Physician and Surgeons offices 0322. Lawyers office 0323. Dental and Medical Laboratories 0324. Engineering and Architectural Services (Contractor office) 0325. Others (specify). 0400. Public Administration 0401. Divisional Commissioner's Office 0402. Deputy Commissioner's Office 0403. Court Building 0404. Other Govt./Semi Govt. Office 0405. Others (specify). 0500. Institution 0501. Social Welfare Organizations 0502. Healthcare 0503. Others (specify). 0600. Mixed Use 0601. Commerce/Residential/ Processing 0602. Service Industries (10 or less workers) 0603. Others (specify).	1105. Waste Disposal Area 1106. Water supply (treatment plant/intake point sets) 1107. Power Station 1108. Radio Station 1109. Rail way (include right of the way) 1110. Railway Station 1111. Bus, Truck, Taxi, Terminals 1112. Rickshaw/Tom Tom Stand 1113. Launch/Boat/Steamer Terminals (Ghats) 1114. Airfields 1115. Biman Office/Other Air Office 1116. Graveyard 1117. Cremation 1118. Others (specify). 1200. Road 1201. Pucca Road 1202. Semi Pucca Road 1203. Kutcha Road 1300. Railway 1400. Brick Field 1500. Wet Land 1600. Vacant Land 1601. Vacant private land (Buildable-having a maximum depth of 4-5 ft. within the Municipal area) 1602. Vacant private land (not buildable) 1603. Vacant Govt. land (buildable) 1604. Vacant Govt. land (not buildable). 1700. Water body 1800. Char Land 1900. Urban Reserve
---	---

Table 4: Building occupancy class


Signature of Bidder


Project Director


Director, DD
103
স্বাক্ষরিত করিয়া
সিদ্ধি করা হয়েছে
তারিখ: ১০/০৩/১৮
অফিস: ১০৩









Sl No.	Occupancy	Description
1	RES1	These shall include any building, detached from neighboring buildings by distances required by code and having independent access which is used for private dwelling by members of a single family
2	RES2	These shall include any building in which one or more families are housed, specifically built for minimum standard accommodation of lower income families, in which the minimum requirements for hygiene and safety are maintained for example multi-storied complexes, cluster houses and rehabilitation housing or housing undertaken by private low income groups approved by the authority
3	RES3	Include any building or portion there of or group of buildings in which living quarters are provided for more than one family, living independently of each other, with independent cooking facility for each family. Flats or apartments may be located in walk up buildings, high rise buildings or in housing complexes
4	RES4	Include any building or group of buildings under single management in which sleeping and living accommodation, with or without dining facilities but without cooking facilities for individuals is provided for hire on transient or permanent basis. Example, hotels, motels, rest house, lodging house, inns and clubs.
5	RES5	Include any building in which sleeping and living accommodations are provided for groups of unrelated persons with or without common dining facilities and with common cooking facilities under management control or with individual or group cooking facilities. Examples, mess houses, dormitories, boarding houses, hostels and students' halls of residence.
6	RES6	These are sub-standard housings
7	COM1	Include any building or portion thereof used for purpose of display and sale of merchandise, either wholesale or retail or without incidental storage and service facilities with an area not exceeding 300 sq m. Example; large shops, markets, departmental stores, super markets and hyper markets.
8	COM2	Include any building or portion thereof used for purpose of display and sale of merchandise, either wholesale or retail or without incidental storage and service facilities with an area more than 300 sq m. Example; large shops, markets, departmental stores, super markets and hyper markets.
9	COM3	These are personal and repair services shop. Examples; photocopy shop, automobile workshop etc.
10	COM4	These are professional or technical services offices
11	COM5	These are financial institutions or organizations. Examples; banks, money exchange etc.
12	COM6	Include any building or portion thereof used for purpose of providing essential medical facilities having surgery, emergency and casualty treatment areas which is equipped and designated to handle post disaster emergency and is required to remain operational after disaster.
13	COM7	Include any building or portion thereof used single management in which general and specialized medical, surgical and other treatment is provided to persons sufferings from physical limitations because of health. Example; medical office or clinic.
14	COM8	These buildings are entertainment and recreation facilities. Example: restaurants, bars, snooker club etc.
15	COM9	These buildings are theaters
16	COM10	These are mixed occupancy buildings such as residential with

Signature of Bidder

Project Director

Director

Sl No.	Occupancy	Description
		commercial uses.
17	IND1	Buildings are heavy industrial factories. Example: large rubber industry, plastic factory and car industry.
18	IND2	Buildings include light industry. Example; small textile & garments factory, jewelry industry.
19	IND3	Buildings include food, drugs or chemicals industries. Example; soft drink, ice cream, pharmaceuticals etc.
20	IND4	Buildings metals or minerals processing factories. Example: iron & steel industry, brick or cement factories.
21	IND5	The buildings are high technology industries. Example; computer or electrical apparatus factories.
22	IND6	These are buildings under construction.
23	REL1	These are religious buildings like mosques, churches, temples and other non-profit associations.
24	GOV1	These are government general service buildings such as government office like post office or municipal building.
25	GOV2	These are government emergency service buildings such as government office like police or fire service.
26	EDU1	These buildings are grade schools, religious schools or libraries.
27	EDU2	These are college or university buildings

Table 5: Building structural type

Sl No.	Structure Type	Label	Height .		Description
			Name	Stories	
1	C1	C1L	Low-Rise	1-3	Concrete moment frames are buildings with reinforced concrete columns and beams and designed by engineers. The building in this class contains no significant volume of wall that contributes to total stiffness of the building
		C1M	Mid-Rise	4-7	
		C1H	High-Rise	8+	
2	C2	C2L	Low-Rise	1-3	Concrete Shear Walls are buildings that lateral force resisting system are mainly from shear walls. The examples for shear wall are including lift core and structural wall.
		C2M	Mid-Rise	4-7	
		C2H	High-Rise	8+	
3	C3	C3L	Low-Rise	1-3	Concrete frame with masonry infill walls are buildings with reinforced concrete columns and beams and designed by engineers. The building in this class contains the significant amount of masonry in filled wall that contribute to total stiffness of the building.
		C3M	Mid-Rise	4-7	
		C3H	High-Rise	8+	
4	C4	C4L	Low-Rise	1-3	Concrete Slab-Column Frames are reinforced concrete building which its lateral force resisting system consisted of slab and column.
		C4M	Mid-Rise	4-7	
		C4H	High-Rise	8+	

Signature of Bidder

Project Director

Director, UDD
105

Shabeen

Project Director

Director, UDD

Sl No.	Structure Type	Label	Height		Description
			Name	Stories	
5	SI	SIL	Low-Rise	1-3	Steel Moment Frame are similar to concrete moment frame however columns and beams are made of steel in stead of reinforced concrete
		SIM	Mid-Rise	4-7	
		SIH	High-Rise	8+	
6	S3	S3	Low-Rise	1	Steel truss with steel column consists of the roof truss and the steel column. Gravity load of the roof truss are transferred to ground by steel column. The weak link of this structure usually found in the connection between roof truss and steel column.
7	LC	LCL	Low-Rise	1-3	Lightly reinforced concrete frames are those reinforce concrete building that contains the minimum structural members to sustain the gravity loading. These buildings are not usually designed by engineer. The main characteristics of these building are small column sizes (usually 9-10") and heavily overhanging.
		LCM	Mid-Rise	4-7	
		SIH	High-Rise	8+	
8	BC	BCL	Low-Rise	1-3	Brick in cement mortar masonry with concrete floor are masonry buildings with concrete slab and structural masonry wall and no confined reinforced concrete column.
		BCM	Mid-Rise	4-7	
9	BF	BFL	Low-Rise	1-3	Brick in cement mortar masonry with flexible roof are similar to the one with concrete floor. However, due to lacking of rigid diaphragm that confines the masonry wall, its seismic behavior is considerer poorer.
10	STC	STC	Low-Rise	1	Steel truss with concrete column consists of the roof truss and the concrete column. Gravity load of the roof truss are transferred to ground by concrete column. The weak link of this structure usually found in the connection between roof truss and concrete column.
11	STM	STM	Low-Rise	1	Steel truss with masonry wall consists of the roof truss and the masonry wall. Gravity load of the roof truss are transferred to ground by masonry wall. The weak link of this structure usually found in the connection between roof truss and masonry wall.
12	TSL	TSL	Low-Rise	1-3	Tin shed is minimum standard structure constructed by tin shed for wall and roof.
13	BAL	BAL	Low-Rise	1-3	Bamboo refers to building which use bamboo as structural component to resist both the lateral and gravity loads.

Signature of Bidder

Project Director

Director, U.D.

186

3. Task and Timeframe:

Given the statement of work described above, the task and timeframe of the assignment are given below:

Table 6: Task and timeframe (will be finalized after consultation with PD) under the sub-activities

Activity	Sub-activities	Tasks	Timeframe
Activity 1 Seismic hazard vulnerability and risk assessment of urban areas of fourteen upazilas	Morphotectonic and neotectonic mapping	▪ Mapping of morphotectonic and neotectonic features	
		▪ Analyze available DGPS and small earthquake record	
		▪ Identify the possible potential sources	
	Time-predictable fault modeling	▪ Active fault interpretation and updating CDMP-I report	
		▪ Conduct geological trench	
		▪ Conduct geophysical exploration	
		▪ Conduct drilling	
		▪ C14 dating of the sample	
		▪ Final Fault modeling	
	Engineering geological mapping	▪ Conduct geotechnical investigations	
		▪ Conduct geophysical investigations	
		▪ Analyze data	
		▪ Engineering geological mapping	
	Seismic Hazard assessment	▪ Assessment of motion in engineering bed rock	
		▪ Conduct ground amplification	
		▪ Seismic hazard mapping (scenario development)	
	Vulnerability assessment	▪ Building and lifeline inventory mapping	
		▪ Vulnerability analysis of building, lifelines and essential facilities	
		▪ Fragility function development	
		▪ Vulnerability mapping	
	Risk assessment	▪ Determination of risk environment	
		▪ Risk analysis	
		▪ Risk mapping and assessment	
Activity 2 Detailed building inventory database preparation of fourteen upazilas particularly in urban areas	Building and lifeline inventory in Project area	▪ Inventory in Dhaka	
		▪ Inventory in Chittagong	
		▪ GIS-based final building and lifeline inventory database	
	Building inventory mapping in of fourteen upazilas	▪ Building footprint mapping	
		▪ GIS inventory for buildings	
		▪ GIS inventory for lifelines	

Signature of Bidder

Project Director

Director, UDD

Activity	Sub-activities	Tasks	Timeframe
	Landuse mapping and guideline preparation to integrate disaster risk reduction with landuse map	<ul style="list-style-type: none"> Landuse map of the urban areas of the project area Guideline preparation to integrate risk reduction approach with landuse/master plan 	

4. Deliverables

Timely delivery and compliant content are crucial. Noncompliance may affect payment, according to the contract. In the onset of the contract, the SIA will have to produce an inception report which will consist of conceptual and methodological development of the tasks to be accomplished.

The outlines of the deliverables and the timeframe for their submission are given in the table below. The outline represents the minimum contents that should be included in the report. Any innovative methods, concepts and ideas beyond the outlines of the deliverables can be included in the work and corresponding reports.

Table 7: List of deliverables with their outlines and timeframe (Not available) of assignment

Activities/sub-activities	Deliverables	Outlines of the deliverables	Time frame
Conceptual and methodological development of the work	Inception report	<ul style="list-style-type: none"> Introduction Method and materials for each activity Description of sub-activities Required resources within organization Conclusion 	
Preparation of morphotectonic and neotectonic map	Report on morphotectonic and neotectonic mapping	<ul style="list-style-type: none"> Introduction Literature review Satellite image analysis for identifying the morphotectonic and neotectonic features Field investigations and corresponding updating of report Conclusion 	
	Study report of historical earthquake at project area	<ul style="list-style-type: none"> Introduction Historical earthquake causing damage in Bangladesh Intensity distribution of historical earthquake Source are identification/reinterpretation Conclusion 	
	Potential earthquake source areas identification	<ul style="list-style-type: none"> Introduction Literature review Analysis of report of DGPS and small earthquake data for potential earthquake sources Conclusion 	

Signature of Bidder

Project Director

Director, UDA

Activities/sub-activities	Deliverables	Outlines of the deliverables	Time frame
Prepare engineering geological maps for towns, including the areas under future expansion	Report on Geotechnical investigation	<ul style="list-style-type: none"> ▪ Introduction ▪ Methods to conduct geotechnical investigation ▪ Description of the sub-surface properties ▪ Determine the sub-surface properties of the soil ▪ Conclusion 	
	Report on geophysical investigation	<ul style="list-style-type: none"> ▪ Introduction ▪ Methods to conduct geotechnical investigation ▪ Description of the sub-surface properties ▪ Determine the sub-surface properties of the soil ▪ Conclusion 	
Final Engineering geological maps and reports		<ul style="list-style-type: none"> ▪ Introduction ▪ Prepare and describe engineering geological maps and units ▪ Determination of soft quaternary sediment layer over engineering bed-rock ▪ Relationship of engineering geological units with strong ground motions ▪ Relationship of engineering geological units with urbanization ▪ Conclusion 	
Prepare seismic hazard and vulnerability maps for towns by providing information on vulnerability conditions of critical infrastructure	Seismic hazard assessment report	<ul style="list-style-type: none"> ▪ Introduction ▪ Description of seismic hazard ▪ Setting attenuation formula ▪ Method of seismic hazard mapping ▪ Seismic motion at engineering bed rock ▪ Ground amplification ▪ Prepare peak ground acceleration maps ▪ Prepare intensity maps ▪ Prepare soil liquefaction maps ▪ Conclusion 	
	Vulnerability assessment report	<ul style="list-style-type: none"> ▪ Introduction ▪ Inventory for building, life lines and essential facilities ▪ Investigation carried-out for vulnerability assessments ▪ Vulnerability analysis of the building, lifelines and essential facilities ▪ Conclusion 	
	Risk assessment report	<ul style="list-style-type: none"> ▪ Introduction ▪ Methods of risk assessment ▪ Calculation under HAZUS for damage assessment ▪ Description of damages for all sectors ▪ Conclusion 	
Detail building and lifeline inventory of project area	Building and lifeline inventory report of project area and preparation of landuse mapping	<ul style="list-style-type: none"> ▪ Introduction ▪ Methods of inventory ▪ Building inventory database ▪ Lifeline inventory database ▪ Applications of the data developed for different agencies ▪ Conclusion 	
Building and lifeline inventory and landuse mapping for fourteen upazilas	Building inventory and landuse mapping of the cities	<ul style="list-style-type: none"> ▪ Introduction ▪ Inventory as per landuse classification ▪ Preparation of landuse map ▪ Application of landuse map ▪ Conclusion 	
Guideline for integrating disaster risk reduction into landuse plan	Guideline of landuse plan with disaster risk reduction approach	<ul style="list-style-type: none"> ▪ Introduction ▪ General background of introducing disaster risk reduction with landuse map including examples of other countries 	

Signature of Bidder

Project Director

Director, BOD

Activities/sub-activities	Deliverables	Outlines of the deliverables	Time frame
	of urban clusters	<ul style="list-style-type: none"> ▪ Template of urban disaster risk reduction ▪ Disaster risk reduction approaches for the cities (city specific) considering landuse pattern ▪ Conclusion 	

5. Some important notes:

- Noteworthy, consultant can make any change in collecting data and selecting methodology (procedure, equation etc) to achieve the best results with the consultation of GSB and UDD without influencing financial agreement
- Any report should properly describe the definition, methodology, procedures/steps, reason for accepting/avoiding relevant equation, detail sources of any references, in-depth description of the result, proper way of writing bibliography etc. Report should be provided in doc. format, rather than pdf of other format. Before submitting the report English (spelling, sentence making etc.) should be varied and edited properly. All references (article, chapter of the book, report etc.) used in the report should be provided to UDD with the submission of each deliverable.
- All data (in excel, access, GIS etc.) used in the text or as reference should be provided with the each deliverable
- The awarded agency/consortium shall record progress of activities through video, still photographs and stories (as appropriate) and must submit the same to UDD as on when required.
- The awarded agency/consortium shall follow all the conditions and provisions stated in this document and in case of any confusion regarding any of those, explanation provided by UDD shall be deemed as final.

6. QUALIFICATION, EXPERIENCE AND RESPONSIBILITY OF GEOLOGICAL SURVEY FIRM

6.1 Qualifications, Experience and Responsibility of Key Personnel of Survey Firm:

A. Geologist (2+2 mm.)

Qualification: M. Sc. in Geology.

Experience: 05 experience in engineering and hydro- geological survey and analysis

Responsibility: (i) To conduct and supervise boreholes for geological surveys for the study area; (ii) To check and monitor the accuracy of the borehole preparation process, collected sample and data for the geological survey; (iii) To conduct lab test of the collected samples and interpretation of the results of lab test; (iv) To prepare seismic hazard, vulnerability, damage and risk assessment map for the area, (v) To prepare macro zonation map for the area. (vi) Any other related jobs assigned by PD.

B. Civil Engineer (2+2 mm.)

Qualification: B.Sc. Engineering in civil

Experience: 5 years working experience in engineering and hydro geological survey and analysis.

Responsibility: (i) To work the geologist for conducting engineering and hydro-geological survey and analysis for the study; (ii) To assess the strength of road, buildings and other infrastructures to measure seismic vulnerability; (iii) To assist the geologist in conducting aquifer

Signature of Bidder

Project Director

Director, UDD

[Signature]

[Signature]

[Signature]

আবুল কাবের মোঃ তোহিদ
নিম্নোক্ত সহকারী প্রধান
ভৌত অবকাঠামো
পরিকল্পনা দপ্তর
সরকার

test for delineating the area for ground water harvesting; (iv) Any other related Jobs (v) Assist PD and PM in preparing plans and reports

C. Associate Geologist (2+2 mm.)

Qualification: M. Sc. in Geology.

Experience: 03 experience in engineering and hydro- geological survey and analysis

Responsibility: (i) To assist the geologist in conducting and supervising boreholes for geological surveys for the study area; (ii) To assist the geologist in checking and monitoring the accuracy of the borehole preparation process, collected sample and data for the geological survey; (iii) To assist the geologist in conducting lab test of the collected samples and interpretation of the results of lab test; (iv) To assist the geologist in preparation of seismic hazard, vulnerability, damage and risk assessment map for the area, (v) To assist the geologist in preparation of macro zonation map for the area. (vi) Any other related jobs assigned by PD.

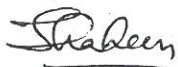
D. Geological Survey Technician (2+2 mm.)

Qualification: Minimum B. Sc. in Geology or Diploma in Civil Engineering.

Experience: 03 experience in engineering and hydro- geological survey and analysis

Responsibility: (i) To prepare boreholes for geological surveys for the study area; (ii) To collect samples and data for the geological survey; (iii) To assist the geologist in conducting lab test of the collected samples; (iii) Any other related jobs assigned by PD.

Signature of Bidder




Project Director





Director, UDD


আবুল বাকের মোঃ তোহিদ
নির্বাহক প্রকল্প পরিচালক
জাতীয় আবাসিক উন্নয়ন
প্রকল্প পরিচালনা

Appendix 2
Reporting Requirements

P

Shahen

W



Appendix 2 Reporting Requirements

Reports shall be presented and illustrated in a clear and concise professional manner, including maps, plans, diagrams and other graphics. Schedule of submission:

Report	Language	Copy	Period of Submission	Binding Status	Mode of Payment (% of Contract amount)
Mobilization Report	English	20	Within 15 days of Signing contract	Spiral Binding	Not more than 10%
Inception Report	English	20	End of 1 st month	Spiral Binding	Not more than 15%
Draft Survey Report	English	20	End of 9 th month	Spiral Binding	-
Final Survey Report	English	20	End of 10 th Month	Spiral Binding	Not more than 35%
Draft Final Plan with Report	English	20	End of 22 th Month	Spiral Binding	Not more than 20%
Final Plan with Report	English	20	End of 24 th month	Hard Binding	Not more than 20%

Progress Reports: Progress Reports shall have to be submitted to UDD by consulting firms in every 3 (three) month on the basis of the approved working schedule.

- Medium of language of the progress report shall be English.
- Both soft copy and hard copy shall be submitted by the consulting firm.
- Progress report shall be submitted within 1st week of the next quarter

Working Papers:

Consulting firm has to submit **working papers** at different stages of work specified in the **Work Plan/Schedule** attached herewith. For example: one working paper after completing the digitization of the Mouza maps, one working paper after completing 3D image processing, one working paper after completing the socio-economic survey etc. Each and every survey should be reported by submitting **working paper**. Every working paper has to be accompanied with

P

Shakeen

W



training provided to the client's project team. Working papers will be reviewed by the client's project team and information will be included in the **Draft Final Report** and **Final Plan Report**.

If the consulting firm fails to maintain the quality of data or deliver the data within the scheduled time frame, then it may be treated as "Breach of Contract". In such cases, the consultant shall be make necessary corrections as directed by PD.

f

Shahid

me



FIGURE-5.3: Work Schedule for Package-3

No	Activity	Total Days	Start Date	End Date	Months (10th June 2015 to 10th June, 2017)																											
					J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J			
					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25			
	Task Name																															
1	Task 1: Contract Sign after Notification of Order	1 day	Wed 6/10/15	Thu 6/11/15																												
2	Task-2: Team formation and Submission of Mobilization Report	14 days	Wed 6/10/15	Tue 6/30/15																												
3	Task-3: Collection Map, Reports, literature review and submission of inception report	15 days	Tue 6/16/15	Tue 7/7/15																												
4	Task-4: PRA Session with Local People	90 days	Tue 6/30/15	Mon 11/9/15																												
5	Task-5: Preparation and Completion of Base Map and Demarcation of Project Boundary	89 days	Mon 6/22/15	Thu 10/29/15																												
6	Task-6: Satellite Image Processing by using Photogrammetric Method	150 days	Mon 5/18/15	Tue 12/22/15																												
7	Task-7: Physical Survey Activities	123 days	Thu 9/10/15	Sun 3/6/16																												
8	Task-8: Socio-economic Survey	137 days	Thu 8/20/15	Thu 3/3/16																												
9	Task-9:Housing, Slum and Squatter Survey	137 days	Thu 8/20/15	Thu 3/3/16																												
10	Task-10:Population and Migration Survey/Study	137 days	Thu 8/20/15	Thu 3/3/16																												
11	Task-11:Urban and Rural Economic Survey	122 days	Thu 9/10/15	Thu 3/3/16																												
12	Task-12:Study of Social Infrastructure	122 days	Thu 9/10/15	Thu 3/3/16																												
13	Task-13:Transportation survey	122 days	Thu 9/10/15	Thu 3/3/16																												
14	Task-14:Hydrological study	122 days	Thu 9/10/15	Thu 3/3/16																												
15	Task-15:Formal and Informal Industry survey	122 days	Thu 9/10/15	Thu 3/3/16																												
16	Task-16:Other Survey	122 days	Thu 9/10/15	Thu 3/3/16																												
17	16.1 Recreational Open space	62 days	Thu 9/10/15	Tue 12/8/15																												
18	16.2 Health facilities including community health facilities	62 days	Thu 9/10/15	Tue 12/8/15																												
19	16.3 Educational facilities	62 days	Thu 9/10/15	Tue 12/8/15																												
20	16.4 Agricultural Land Demarcation Survey	62 days	Thu 9/10/15	Tue 12/8/15																												
21	16.5 Archaeological study	62 days	Thu 9/10/15	Tue 12/8/15																												
22	16.6 Pollution Study	62 days	Thu 9/10/15	Tue 12/8/15																												
23	16.7 Data input in GIS+ SPSS (spatial and attribute)	77 days	Thu 9/10/15	Thu 12/31/15																												
24	16.8 Completion analysis of data	50 days	Tue 12/1/15	Thu 3/1/16																												
25	16.9 Preparation of survey report and printing of maps	65 days	Tue 12/1/15	Thu 3/3/16																												
26	Task-17:Earthquake loss assessment	122 days	Thu 9/10/15	Thu 3/3/16																												
27	Task-18:All Survey Report Compilation	22 days	Thu 3/3/16	Mon 4/4/16																												
28	18.1 Draft Report	0 days	Thu 3/3/16	Thu 3/3/16																												
29	18.2 Final Report	22 days	Thu 3/3/16	Mon 4/4/16																												
30	Task-19: Data Processing, Analysis, Interpretation, Presentation and Formulation of Working Papers	65 days	Wed 4/6/16	Wed 7/6/16																												
31	Task-20: Preparation of Planning Package for the Project	104 days	Wed 7/6/16	Tue 11/29/16																												
32	Task-21: Submission of Draft Final Report	88 days	Tue 11/29/16	Sun 4/2/17																												
33	Task-22: Submission of Final Report & Maps	41 days	Sun 4/2/17	Mon 5/29/17																												

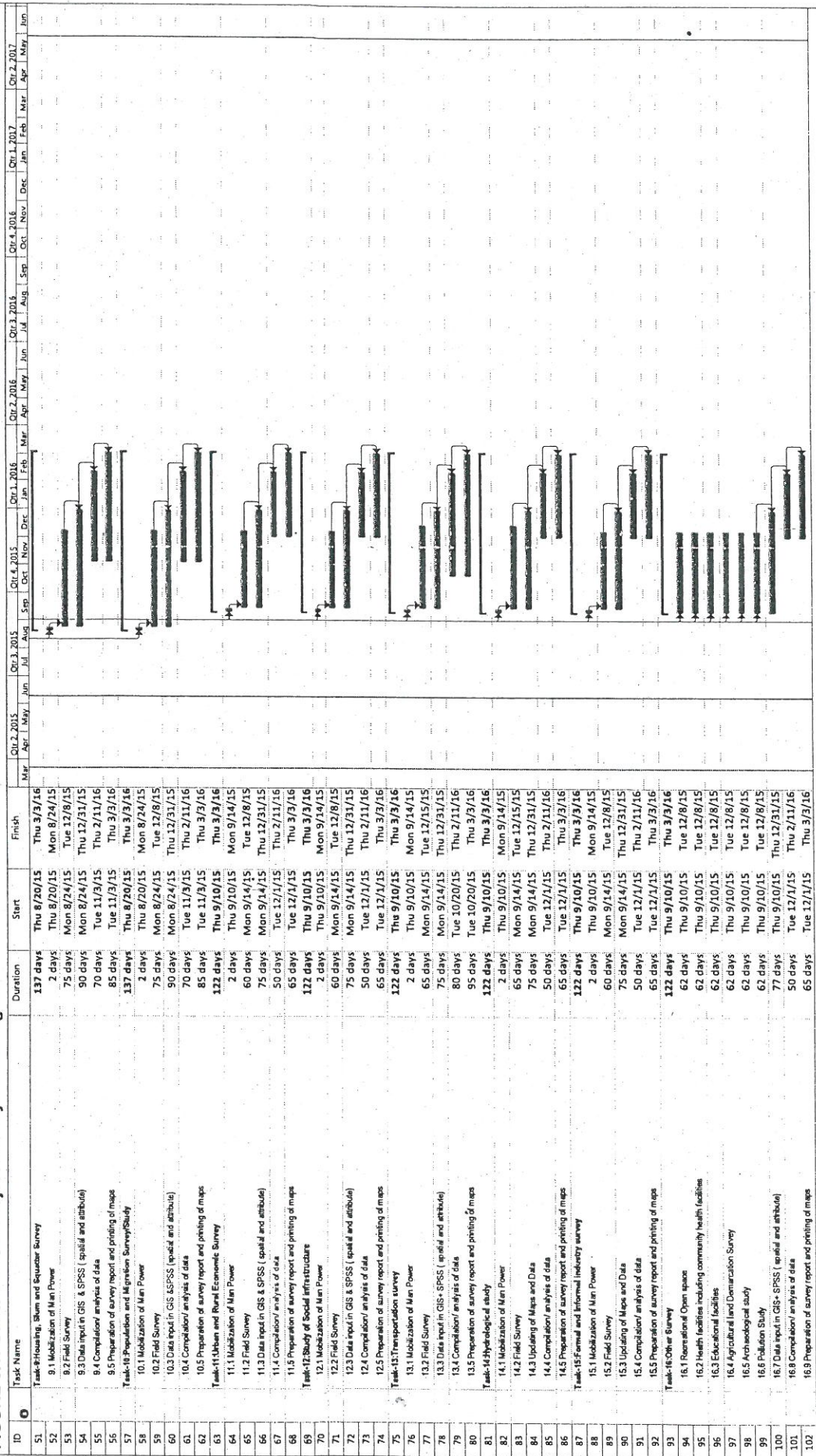
W

Shabir

[Signature]

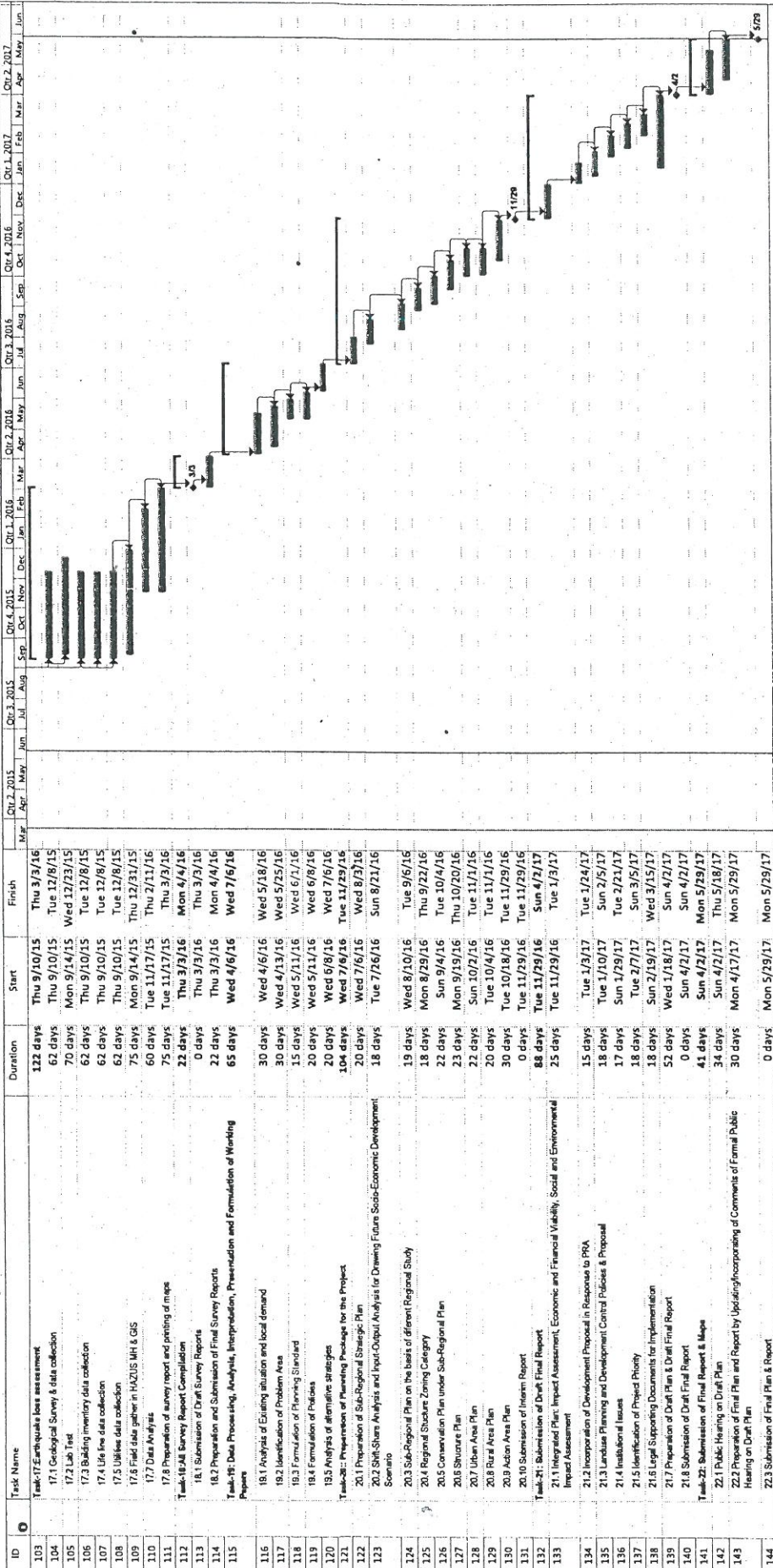
7

FIGURE 5.1: Gantt Chart of Project Activity for Package-3



Project: EM Date: Tue 8/18/15	Task Split Milestone Summary	Project Summary			Manual Task			Start-only			Finish-only			External Tasks			External Milestone			Deadline		
		Project Summary			Manual Task			Start-only			Finish-only			External Tasks			External Milestone			Deadline		
		Project Summary			Manual Task			Start-only			Finish-only			External Tasks			External Milestone			Deadline		
		Project Summary			Manual Task			Start-only			Finish-only			External Tasks			External Milestone			Deadline		

FIGURE 5.1: Gantt Chart of Project Activity for Package-3



Project EM Date: Tue 5/29/17	Task Split Milestone Summary	Project Summary			Manual Task			Start-only			Deadline		
		Inactive Task	Inactive Milestone	Inactive Summary	Duration-only	Manual Summary Rollup	Manual Summary	Finish-only	External Tasks	External Milestone	Progress	Manual Progress	

6.2 STAFFING SCHEDULE AS PER FORM 5A7

NAME OF STAFF	POSITION	Man-month	Survey Phase (Man-month)								Planning Phase (Man-month)												Total Staff-month Input						
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Office	Field	Total
Survey Team:	Key Professionals																												
Shamaun-Al-Noor	Team Leader	2																									0.50	0.5	1.00
Torikul Alam	Survey Expert	3																									1.00	2.0	3.00
Md.Zamal Uddin	Urban Planner	8																									3.00	5.0	8.00
Amanullah Bin Mohamood	GIS Expert	8																									6.00	2.0	8.00
Md.Shohidul Islam	Agricultural Scientist	2																									1.00	1.0	2.00
Dr.Mond. Sher Ali	Economist	2																									1.00	1.0	2.00
Md. Abul Kashem	Transport Planning Expert	2																									1.00	1.0	2.00
Mohammed Jamal Uddin	Geologist	2																									1.00	1.0	2.00
Fansab Mustahid	Associate Geologist	2																									1.00	1.0	2.00
Md.Tokon	Geological Survey Technician	2																									0.50	1.5	2.00
Md.Wahid Polash	Civil Engineering cum Hydrologist	2																									1.50	0.5	2.00
Ahasanul Haque	Photogrammetric Expert	6																									5.50	0.5	6.00
Md.Ziaul Haque	Social Expert	3																									2.00	1.0	3.00
Planning Team:	Key Professionals																										-	-	-
Shamaun-Al-Noor	Team Leader	14																									11.00	3.0	14.00
Md.Zamal Uddin	Urban Planner	8																									6.00	2.0	8.00
Md.Wahid Polash	Civil Engineering cum Hydrologist	2																									1.00	1.0	2.00
Dr.Mond. Sher Ali	Urban Economist	2																									1.00	1.0	2.00
Amanullah Bin Mohamood	GIS Expert	13																									11.00	2.0	13.00
Mohammed Jamal Uddin	Geologist	2																									1.50	0.5	2.00
Fansab Mustahid	Associate Geologist	2																									1.50	0.5	2.00
Md. Abul Kashem	Transport Planning Expert	2																									1.50	0.5	2.00
Md.Ziaul Haque	Socio-economic Expert	3																									2.0	1.0	3.00
TOTAL =																											91.00		

Non Continuous:

Supporting Staffs																													
Office Assistant																													
Accountant																													
Surveyor																													
Survey Assistant																													
CAD Operator																													
Junior Planner																													
MLSS																													

Appendix 3

Key Personnel and Sub-Consultants

ht

Shirley

~~X~~

P

List of Key Personnel and Sub-Consultants/Technical Staff including their detailed job descriptions and minimum qualifications and man-months

I. During Survey Period:

Sl No	Name Of the Consultant	Position	Job Description	Minimum Qualification	Man-months	Remarks
A.	Md.Toriquil Alam	Survey Expert	(i) To design different surveys for the project (ii) To conduct, coordinate and monitor physical feature, topographical and land use, survey; (ii) Ensure quality and accuracy of survey data; (iii) To compile all the survey data into digital format; (iv) Experienced in RTK GPS/Total Station/Digital Level survey and processing; (v) To arrange survey trainings for Project staff. (iv) Preparation of working paper, reports and plan of the project as assigned by the PD; (vii) Any other survey and studies related Jobs as assigned by PD.	BURP, MURP	3	
B.	Ahasanul Haque	Photogrammetric Expert	(i) . To prepare topographic, physical feature, land use and other related map of the area, (ii) To prepare, supervise, manage and monitor digital database (Spatial and attribute) of the project. (iii) Installation and troubleshooting of GIS in UDD project office and head office; (iv) Ensure the quality of the map and related work. (v) To work with a multi-disciplinary team environment to synchronize the multi-	BSc, Msc (Environment Sc) MSc (RS)	4	

F m Shahen



			sectoral data into GIS database. (vi) Preparation of working paper, reports and plan of the project as assigned by the PD; (vii) Any other related Jobs as assigned by PD.			
C.	Md. ZIAUL KARIM	GIS Expert	(i) To prepare topographic, physical feature, landuse and other related map of the area, (ii) To prepare, supervise, manage and monitor digital database (Spatial and attribute) of the project. (iii) Installation and troubleshooting of GIS in UDD project office and head office; (iv) Ensure the quality of the map and related work. (v) To work with a multi-disciplinary team environment to synchronize the multi-sectoral data into GIS database. (vi) Preparation of working paper, reports and plan of the project as assigned by the PD; (vii) Any other related Jobs as assigned by PD.	M.Sc Geograpy and Environmental Studies	8	
D.	Md. Shohidul Islam	Agricultural Scientist	(i) To prepare questionnaire and other necessary arrangements for conducting surveys and studies. (ii) To conduct, monitor and supervise agriculture related data collection process and ensure quality of data collected. (iii) To classify the agricultural land by land type including cropping pattern, productivity,	B.Sc. , M.Sc.(Ag)	2	

P

Wb Shahen



			utilization and other related parameter as directed by the PD. (iv) To review and identify the characteristics of agricultural production of the region. (v) To determine the agricultural water demand for the region. (vi) To identify the potential characteristics of farmland and agro-based industries on the basis of character of the agricultural production of the region, agricultural water demand and other related parameters. (vii) To work in a multi-disciplinary team to integrated agriculture related issues in to the planning package. (viii) To work closely with the GIS/RS analyst to include the agriculture related data into GIS database. (ix) Preparation of working paper, sand analytical report based on study and survey (x) Any other related jobs assigned by PD.			
E.	Dr. Mohd. Sherali	Urban Economist	(i) To prepare questionnaire and other necessary arrangements for conducting surveys and studies related to urban and rural economy. (ii) To conduct, monitor and supervise urban and rural economy related data collection process and ensure quality of data collected. (iii) To review and analyse economic growth variables of the	BA honr.(Eco), MA(Eco) ,P.hd	2	

f w Shahid



			town in the last six decades and forecast future trends in relation to the region to identify economic potential of the area. (iv) To prepare multi-sectoral investment program. (v) To conduct feasibility studies of urban and rural development project/action area plans. (vi) To work with members of the consulting team to relate the results of such analyses with other parameters of urban and regional planning to form an inter-active multi-sectoral development criteria matrix. (vii) To assist other consulting team members to the translate the trends and patterns of urban and rural economic activities in space. (viii) To conduct various economic analysis including economic viability analysis and calculation of opportunity cost for the bankable projects in the area to prepare Action Plan. (ix) Preparation of working paper, and analytical report based on study and survey (x) Any other assignment pertaining to urban and rural economic activities and analysis as assigned by PD.			
F.	Md.Abul Kashem	Transport Planning Expert	(i)To conduct different traffic surveys and studies, and also analyze transportation network of the project area and ensure quality of data	BSS, MSS (Economics)	2	

7

14

Signature

Signature

			collected. (ii) To propose a transportation network to establish an efficient inter and intra town circulation system and also establish rural-urban linkage for the project area. (iii) To develop traffic prediction model of 20-year period for the project area. (iv) To work with a multidisciplinary team to integrate the output of the traffic surveys and transportation studies with both attribute and spatial data of different other components of the project. (iv) Preparation of working paper, and analytical report based on study and survey; and (vi) Any other related Jobs as assigned by PD.			
G.	Md. Zamal Uddin	Urban Planner	(i) To assist the team leader to take over the charges on all surveyed data and information form UDD Project Team; and coordinate among all the consultant team; (ii) To assist the team leader in reviewing the existing plans and implementation problems; (iii) To assist the team leader in reviewing land use planning guidelines considering hydrological, physiographic, agricultural land classification, soils condition, ecological and environmental, socio-economic and livelihood pattern and other relevant characteristics;; (iv) To	BURP, PGD, MDS	8	

PD Mr. Shaleen



			<p>assist the team leader in reviewing land category for the project area; and also to prepare land use matrix; (vi) To assist the team leader to identify and plan development project for the area; and also to interpret the recommendations of sectoral studies into spatial form (v) To assist the team leader in formulating plan implementation strategy and policy; (vi) <i>Preparation of reports and plan for the project as assigned by the PD;</i> (vii) To be responsible for Knowledge transfer to Project Personnel; and (xii) Any other related Jobs as assigned by PD.</p>			
H.	Md. Abdul Gafur	Socio economic Expert/ Social Expert	<p>(i) To prepare, piloting, editing and finalization of socio-economic and other related questionnaire; and make necessary arrangements for PRA in consultation with the Team Leader and PD. (ii) To conduct, supervise and monitor socio-economic and other related questionnaire surveys including PRA for the project area. (iii) To supervise and monitor data entry, editing and presentation of data in tabular form. (iv) To analyze the data as directed by the Team Leader and PD and presentation in graphs and figures. (v)</p>	M.S.S. Social welfare	3	

f. md. Shaker



			Preparation of working paper, reports with recommendation as assigned by PD; (vi) Preparation of Socio-economic development model for the project area for the next 20-years. (vii) To work with a multidisciplinary team to integrate the outputs of socio-economic and other questionnaire surveys and PRA as well with attribute and spatial data of other components of the project in GIS database (vii) Any other related Jobs as assigned by the Team Leader and PD.			
I.	Mohammed Jamal Uddin	Geologist	(i) To conduct and supervise boreholes for geological surveys for the study area; (ii) To check and monitor the accuracy of the borehole preparation process, collected sample and data for the geological survey; (iii) To conduct lab test of the collected samples and interpretation of the results of lab test; (iv) To prepare seismic hazard, vulnerability, damage and risk assessment map for the area, (v) To prepare macro zonation map for the area. (vi) Any other related jobs assigned by PD.	M. Sc. in Geology.	2	
J.	Md. Sadequr Rahman Bhuiyan	Civil Engineer cum Hydrologists	(i) To work the geologist for conducting engineering and hydro-geological survey and analysis for the study; (ii) To assess the strength of road, buildings and other infrastructures to measure seismic	M.Sc in Water Resources Development. B.Sc Civil Engg.	2	

f

me

Sadequr

~~X~~

			vulnerability; (iii) To assist the geologist in conducting aquifer test for delineating the area for ground water harvesting; (iv) Any other related Jobs (v) Assist PD and PM in preparing plans and reports			
K.	Fansab Mustahid	Associate Geologist	(i) To assist the geologist in conducting and supervising boreholes for geological surveys for the study area; (ii) To assist the geologist in checking and monitoring the accuracy of the borehole preparation process, collected sample and data for the geological survey; (iii) To assist the geologist in conducting lab test of the collected samples and interpretation of the results of lab test; (iv) To assist the geologist in preparation of seismic hazard, vulnerability, damage and risk assessment map for the area, (v) To assist the geologist in preparation of macro zonation map for the area. (vi) Any other related jobs assigned by PD.	M. Sc. in Geology.	2	
I.	Nasim Ferdous	Geological Survey Technician	(i) To prepare boreholes for geological surveys for the study area; (ii) To collect samples and data for the geological survey; (iii) To assist the geologist in conducting lab test of the collected samples; (iii) Any other related jobs assigned by PD.	M.Sc (Geology)	2	

f

W. Shaker



II. During Planning Period

Sl No	Name Of the Consultant	Position	Job Description	Minimum Qualification	Man-months	Remarks
A.	Shamaun-Al-Noor	Team Leader	(i) To take over the charges on all surveyed data and information form UDD Project Team; and coordinate among all the consultant team; (ii) To review the land use planning guidelines developed during survey part of the project, considering hydrological, physiographic, agricultural land classification, soils condition, ecological and environmental, socio-economic and livelihood pattern and other relevant characteristics; and make necessary corrections in consultation with PD. (iii) To review land category and land use matrix for the project area; and make necessary corrections in consultation with the PD. (iv) To identify and plan development project for the area; (v) To review the recommendations on sectoral studies into spatial form, and plan implementation strategy and policy; and make necessary corrections in consultation with the PD. (vi) To coordinate preparation of different planning components including analytical reports, prepared by different consultants, for	M Phill, BURP	13	Also responsible for conducting different TMC/SC metting.

F

Shabeer

~~X~~

			the planning package (structure plan, urban area plan, rural area plan, and action plan). (vii) To compile different planning components including analytical reports, prepared by different consultants, for the planning package; and prepare and finalize the planning package (structure plan, urban area plan, rural area plan, action plan) and report for the upazilas. (viii) To be responsible for Knowledge transfer to Project Personnel to the UDD Project Team; and (xii) Any other related Jobs as assigned by PD.			
B.	Md. ZIAUL KARIM	GIS Expert	(i) To take over the charges of prepare topographic, physical feature, landuse and other related map of the area, (ii) To conduct GIS based analysis for preparation of the planning package for the project as directed by Team Leader and the PD. (iv) Installation and troubleshooting of GIS in UDD project office and head office; (iv) Ensure the quality of the map and related work. (v) To support consulting team members to prepare multi-sectoral planning component by using GIS and integrate these components into the planning package. (vi)	M.Sc Geograpy and Environmental Studies	13	

f

mt Shaden

~~X~~

			<i>Preparation of reports and plan of the project as assigned by the PD; (vii) Any other related Jobs as assigned by PD.</i>			
C.	Md. Zamal Uddin	Urban Planner	(i) To assist the team leader to take over the charges on all surveyed data and information form UDD Project Team; and coordinate among all the consultant team; (ii) To assist the team leader in reviewing the existing plans and implementation problems; (iii) To assist the team leader in reviewing land use planning guidelines considering hydrological, physiographic, agricultural land classification, soils condition, ecological and environmental, socio-economic and livelihood pattern and other relevant characteristics;; (iv) To assist the team leader in reviewing land category for the project area; and also to prepare land use matrix; (vi) To assist the team leader to identify and plan development project for the area; and also to interpret the recommendations of sectoral studies into spatial form (v) To assist the team leader in formulating plan implementation strategy and policy; (vi) <i>Preparation of reports</i>	BURP, PGD, MDS	8	

F

ht

Shaden

~~X~~

			and plan for the project as assigned by the PD; (vii) To be responsible for Knowledge transfer to Project Personnel; and (xii) Any other related Jobs as assigned by PD.			
D.	Dr. Mohd. Serali	Urban Economist	(i) To review the results of questionnaire and other necessary surveys and studies related to urban and rural economy. (ii) To review the analyses of economic growth variables of the town in the last six decades and forecast future trends in relation to the region to identify economic potential of the area and make necessary corrections. (iii) To prepare multi-sectoral investment program. (iv) To review the results of feasibility studies of urban and rural development project/action area plans; and develop and finalize the action plans. (v) To work with members of the consulting team to relate the results of such analyses with other parameters of urban and regional planning to form an inter-active multi-sectoral development criteria matrix. (vii) To assist other consulting team members and GIS Expert in particular to the translate the trends and patterns of urban and rural economic activities	BA, MA(Economics), P.hd	2	

P

mt Sherali

~~X~~

			<p>in space. (viii) To conduct various economic analysis including economic viability analysis and calculation of opportunity cost for the bankable projects in the area to prepare Action Plan. (ix) Preparation of analytical report and economic development model for the project area for the next 20-years based on study and survey (x) Any other assignment pertaining to urban and rural economic activities and analysis as assigned by the Team Leader and PD.</p>			
E.	Md.Abul Kashem	Transport Planning Expert	<p>(i) To take over the charges on different traffic surveys and studies data and information, review them, make necessary corrections (if necessary). (ii) To propose a transportation network to establish an efficient inter and intra town circulation system and also establish rural-urban linkage for the project area. (iii) To develop traffic prediction model of 20-year period for the project area. (iv) To work with a multidisciplinary team to integrate the output of the traffic surveys and transportation studies with both attribute and spatial data of different other components of the</p>	BSS, MSS (Economics)	2	

W. Shaleen

			project. (iv) Preparation analytical report and knowledge transfer to the Project Personnel; and (vi) Any other related Jobs as assigned by the Team Leader and PD.			
F.	Md. Abdul Gafur	Socio economic Expert	(i) To prepare, piloting, editing and finalization of socio-economic and other related questionnaire; and make necessary arrangements for PRA in consultation with the Team Leader and PD. (ii) To conduct, supervise and monitor socio-economic and other related questionnaire surveys including PRA for the project area. (iii) To supervise and monitor data entry, editing and presentation of data in tabular form. (iv) To analyze the data as directed by the Team Leader and PD and presentation in graphs and figures. (v) Preparation of working paper, reports with recommendation as assigned by PD; (vi) Preparation of Socio-economic development model for the project area for the next 20-years. (vii) To work with a multidisciplinary team to integrate the outputs of socio-economic and other questionnaire surveys and PRA as well with attribute and spatial data of other	M.S.S. Social welfare	3	

f

W Sadman

~~X~~

			components of the project in GIS database (vii) Any other related Jobs as assigned by the Team Leader and PD.			
G.	Ahsanul Haque	Photogrammetric Expert	(i) To prepare topographic, physical feature, land use and other related map of the area, (ii) To prepare, supervise, manage and monitor digital database (Spatial and attribute) of the project. (iii) Installation and troubleshooting of GIS in UDD project office and head office; (iv) Ensure the quality of the map and related work. (v) To work with a multi-disciplinary team environment to synchronize the multi-sectoral data into GIS database. (vi) Preparation of working paper, reports and plan of the project as assigned by the PD; (vii) Any other related Jobs as assigned by PD.	BSc, Msc (Environment Sc) MSc (RS)	2	
H.	Mohammed Jamal Uddin	Geologist	(i) To conduct and supervise boreholes for geological surveys for the study area; (ii) To check and monitor the accuracy of the borehole preparation process, collected sample and data for the geological survey; (iii) To conduct lab test of the collected samples and interpretation of the results of lab test; (iv) To prepare seismic hazard, vulnerability, damage and risk assessment map for the area, (v) To prepare	M. Sc. in Geology.	2	

P

W

Shakeen

~~Shakeen~~

			macro zonation map for the area. (vi) Any other related jobs assigned by PD.			
I.	Md. Sadequr Rahman Bhuiyan	Civil Engineer cum Hydrologists	(i) To work the geologist for conducting engineering and hydro-geological survey and analysis for the study; (ii) To assess the strength of road, buildings and other infrastructures to measure seismic vulnerability; (iii) To assist the geologist in conducting aquifer test for delineating the area for ground water harvesting; (iv) Any other related Jobs (v) Assist PD and PM in preparing plans and reports	M.Sc in Water Resources Development. B.Sc Civil Engg.	2	
J.	Fansab Mustahid	Associate Geologist	(i) To assist the geologist in conducting and supervising boreholes for geological surveys for the study area; (ii) To assist the geologist in checking and monitoring the accuracy of the borehole preparation process, collected sample and data for the geological survey; (iii) To assist the geologist in conducting lab test of the collected samples and interpretation of the results of lab test; (iv) To assist the geologist in preparation of seismic hazard, vulnerability, damage and risk assessment map for the area, (v) To assist the geologist in preparation of macro zonation map for the area. (vi) Any other related jobs assigned by PD.	M. Sc. in Geology.	2	

D

for Sadequr

~~Signature~~

Appendix 4

Services and Facilities to be provided by the Client

P

W

Shahen

~~X~~

Appendix 4 Services and Facilities to be provided by the Client

As described in the supplied RFP.

F Mr. Shahen

~~Signature~~

Appendix 5
Cost Estimates

7

hr

Stacy

~~Stacy~~

Form 5B2 Summary Of Costs

<i>Cost Component</i>	<i>Amount (Corrected / Evaluated)</i>
<i>Staff Remuneration</i>	78,65,000.00
<i>Reimbursable Expenses</i>	2,48,44,679.00
<i>Total Contract Amount (Excluding Taxes & VAT)</i>	32709679.00 (Taka Three Crore Twenty Seven lac Nine Thousand Six Hundred Seventy Nine) only.
<i>Local Taxes 10%</i>	3270968.00
<i>VAT 15%</i>	4906452.00
<i>Total IT & VAT</i>	81, 77,420.00
<i>Total Contract Amount (Including Taxes & VAT)</i>	40887099.00 (Taka Four Crore Eight Lac Eighty Seven Thousand Ninety Nine)

F W Staden



Form 5B3 Breakdown of Staff Remuneration

Name	Position	Staff-month Rate	Input (Staff-months)	Sub Cost for each staff
Shamaun-Al-Noor	Team Leader	110000.00	13	1430000.00
Md.Toriqul Alam	Survey Expert	60000.00	3	180000.00
Md. ZIAUL KARIM	GIS Expert	70000.00	21	1470000.00
Md. Shohidul Islam	Agricultural Scientist	50000.00	2	100000.00
Dr. Mohd. Sher Ali	Economist	70000.00	4	280000.00
Md. Abul Kashem	Transport Planner	70000.00	4	280000.00
Mohammed Jamal Uddin	Geologist	70000.00	4	280000.00
Fansab Mustahid	Associate Geologist	70000.00	4	280000.00
Md. Sadequr Rahman Bhuiyan	Civil Engineer cum hydrologist	70000.00	4	280000.00
Md. Zamal Uddin	Urban Planner	70000.00	16	1120000.00
Ahsanul Haque	Photogrammetric Expert	70000.00	6	420000.00
Md. Abdul Gafur	Social Expert	70000.00	6	420000.00
Nasim Ferdous	Geological Survey Technician	40000.00	2	80000.00
Subtotal (A)				6620000.00
Jr. Urban Planner((8 Months X 2 Persons)		20000.00	16	320000.00
Asst. GIS (8 Months X 4 Persons)		20000.00	32	640000.00
Office Manager cum Accountant		15000.00	19	285000.00
Sub-total(B)				1245000.00
Total(A+B)				7865000.00

f

ht Shakeen



Form 5B4: Breakdown of Reimbursable Expenses

SL No.	Description (as per ITC Sub Clause 25.1 (b) of Proposal Data Sheet, page 67 of RFP)	Unit	Unit Cost (Taka)	Quantity	Sub-cost (Unit cost X Quantity) (Taka)
1	Mouza Maps Procurement & Digitization				
	i. Procurement of Mouza Maps	Lump-Sum	-	-	306,600.00
	ii. Scanning, digitizing, Editing, Referencing	number	800.00	511	408,800.00
2	Procurement of Satellite Image and Processing				
	i. Procurement of Satellite Image for Urban Area (0.5 m Resolution)	Sq. km	4,400.00	300.00	1,320,000.00
	ii. Procurement of Satellite Image for Rural Area (1.0 m Resolution)	Sq. km	3,000.00	812.30	2,436,900.00
	iii. Image Processing, 3D-Digitization, Database Preparation and Geo-Referencing (Aerial Triangulation), DEM Preparation	Sq. km	3,000.00	1,112.30	3,336,900.00
3	Conducting Survey and Studies				
	i. Socio-economic Survey considering housing & squatter settlement survey, Investment & employment, population & migration study etc. and Data Entry	household	150.00	6,600.00	990,000.00
	ii. Transport, Growth of human settlement, social studies, geological survey, survey of urban & rural economy, formal & informal industrial survey, hydrological studies, pollution studies, Bathymetric report study, environmental studies, Disaster Studies, Archaeological Study, Agricultural land demarcation Study etc.	acre	10.00	274849.3	2,748,493.00
	iii. Topographic Survey & RTK GPS Survey	acre	10.00	274849.3	2,748,493.00
	iv. Physical Feature and Land use Survey	acre	10.00	274849.3	2,748,493.00
4	Hydro-Geological Survey (Urban Area)				
	i. Boreholes and Test	number	20,000.00	219	4,380,000.00
5	Establishment of BM Pillars				
	i. BM Pillars in Urban Area & Rural Area	number	6,000.00	66	396,000.00
6	Production of Reports				
	i. Mobilisation Report	number	1,000.00	20	20,000.00
	ii. Inception Report	number	1,200.00	20	24,000.00
	iii. Draft Survey Report with Maps	number	2,000.00	20	40,000.00
	iv. Final Survey Report with Maps	number	2,000.00	20	40,000.00
	v. Draft Final Report with Maps	number	2,000.00	20	40,000.00
	vi. Final Plan Report: English & Bengali Lether Binding	number	2,500.00	20	50,000.00
	vii. Printing of Maps (One Copy of each Set Different Types of Maps and Physical Feature and Landuse Survey Checking Maps)	Lump-Sum	-	-	100,000.00
7	Workshop (2 Workshop/Upazila)	no.	50,000.00	6	300,000.00
8	Public Hearing (1 Public Hearing/Upazila)	no.	50,000.00	3	150,000.00
9	Conduction PRA Session				
	i. PRA Session (Total 26 Union and 9 Pourashava Ward=34 PRA Session)	no.	10,000.00	63	630,000.00
10	Rent of Project Site Office				
	a. Office Accomodation (Dhaka Office)	month	15,000.00	13	195,000.00
	b. Office Accomodation Field (3 Field)	month	10,000.00	8	240,000.00
	c. Office Furniture (3 site offices)	Lump-Sum	-	-	200,000.00
	d. Utilities Service (Electricity, Water etc)	month	5,000.00	21	105,000.00
	e. Cost of Communication (Tele, fax, I. Net etc.)	month	5,000.00	21	105,000.00
11	Travelling and Perdiem	Trips	1,500.00	270	405,000.00
13	Office Stationatry and other survey materials	Lump-Sum	-	-	80,000.00
14	Training Cost	Lump-Sum	-	-	200,000.00
15	Others	Lump-Sum	-	-	100,000.00
Total					24,844,679.00



Rashid Ahmed Khan
Managing Director
Engineering Consultants and
Associates Limited

Appendix 6

Minutes of Negotiation Meeting dated 21 April, 2015

f

me

Shabir

~~SS~~

Government of the People's Republic of Bangladesh
 "Preparation of Development Plan for Fourteen Upazilas" Project
 Urban Development Directorate
 82, Segunbagicha, Dhaka

Preparation of Development Plan for Fourteen Upazilas Project, UDD

(Contract Package No. 3)

MINUTES OF CONTRACT NEGOTIATION

With

The Consulting Firm:
 Engineering Consultants & Associates Ltd. 154 Monipuripara, Farmgate, Tejgaon, Dhaka-1215.
 Phone: +88-02-8116214, 9110176, Fax: +88-02-8119761, Email: ecal@dhaka.net.

For

Selection of Consulting Firm for "Consultancy Services for Preparation of Development Plan for Package 3 [Bagmara Upazila (363.3 sq. km), District- Rajshahi; Faridpur Sadar Upazila (407.02 sq. km), District- Faridpur & Gangni Upazila (341.98 sq. km), District- Meherpur] under "Preparation of Development Plan for Fourteen Upazilas" Project

ms. Jazira
 f. ms. Jazira
 Jazira
 Jazira
 Jazira
 Jazira

Government of the People's Republic of Bangladesh
Urban Development Directorate
82, Segunbagicha, Dhaka-1000
Website:-www.udd.gov.bd

**Minutes of Contract Negotiation
With**

The Consulting Firm:

Engineering Consultants & Associates Ltd. 154 Monipuripara, Farmgate, Tejgaon, Dhaka-1215.

Phone: +88-02-8116214, 9110176, **Fax:** +88-02-8119761, **Email:** ecal@dhaka.net.

On Dated: April 21, 2015 at 10.30 a.m.

SUBJECT: Selection of Consulting Firm for "Consultancy Services for Preparation of Development Plan for Package 3 [Bagmara Upazila (363.3 sq. km), District- Rajshahi; Faridpur Sadar Upazila (407.02 sq. km), District- Faridpur & Gangni Upazila (341.98 sq. km), District- Meherpur] under "Preparation of Development Plan for Fourteen Upazilas" Project

PRESENT:

For the Preparation of Development Plan for Fourteen Upazilas Project and Members of PEC

1. Mr. Shaheen Ahmed : Project Director,
"Preparation of Development Plan for Fourteen Upazilas" Project, Urban Development Directorate,
82, Segunbagicha, Dhaka-1000 & Chairman, PEC.
2. Mr S. M. Sadekul Islam : Sub Divisional Engineer, Population Project Cell
(PPC), PWD, Dhaka & Member, PEC.
3. Mr Uday Sankar Das : Senior Planner & Project Manager-2 ,
"Preparation of Development Plan for Fourteen Upazilas" Project, Urban Development Directorate,
82, Segunbagicha, Dhaka-1000 & Member, PEC.
4. Mrs. Fauzia Sharmin Tithi : Planner & Project Manager-1, "Preparation of
Development Plan for Fourteen Upazilas " Project,
Urban Development Directorate, 82, Segunbagicha,
Dhaka-1000 & Member, PEC.
5. Mr. Mohammad Nurul Islam : Assistant Engineer & Project Manager-3,
"Preparation of Development Plan for Fourteen Upazilas" Project, Urban Development
Directorate, 82, Segunbagicha, Dhaka-1000 &
Member Secretary, PEC.

For the Consultant

1. Mr. Rashid Ahmed Khan : Managing Director,
Engineering Consultants & Associates Ltd.
154 Monipuripara, Farmgate, Tejgaon, Dhaka-1215,
Bangladesh

Mr. Shaheen Ahmed
Mr. S. M. Sadekul Islam
Mr. Uday Sankar Das
Mrs. Fauzia Sharmin Tithi
Mr. Mohammad Nurul Islam

Mr. Rashid Ahmed Khan

Mr. Shaheen Ahmed

Mr. S. M. Sadekul Islam

Minutes of the Contract Negotiation

Introduction

The negotiation meeting took place including the PEC members and the representatives of consulting firm of Package 3 i.e.-Engineering Consultants & Associates Ltd. 154 Monipuripara, Farmgate, Tejgaon, Dhaka-1215. Bangladesh of this project to review the activities that would require mutual contributions and feedbacks based upon which the assignment would be completed successfully. During the contract negotiation meetings the following were discussed and decisions were made.

1. Opening Remarks

Mr. Shaheen Ahmed, Project Director, Preparation of Development Plan for Fourteen Upazilas" Project, UDD, Dhaka and Chairman of the PEC, welcomed the representatives of consulting firm and the PEC members to the contract negotiation.

On behalf of the Consulting firm, Mr. Rashid Ahmed Khan, Managing Director of Engineering Consultants & Associates Ltd. 154, Monipuripara, Farmgate, Tejgaon, Dhaka-1215, Bangladesh expressed his thanks for being invited to contract negotiation for the above-mentioned project/assignment.

Then the issues for negotiations were discussed by the PEC members which are as follows:

2. Terms of Reference (TOR):

The scope of works of the TOR was thoroughly reviewed and agreed without any changes.

3. Availability of Key Professional Staff:

The Client expressed its major concern as to the availability of proposed key staff in the proposed position to conduct the proposed activities following the proposed approach and methodology. In the Technical Proposal proposed key staff for Social Expert & Geological Survey Technician should be replaced by following the instructions stated in RFP. Managing director of ECAL also proposed for replacing of GIS Expert & Civil Engineer cum Hydrologist due to unavailability of concerned experts at present and PEC accept his proposal. The Consulting firm assured and confirmed that other key staffs which they proposed in the technical proposal will remain unchanged and Social Expert, GIS Expert, Civil Engineer cum Hydrologist & Geological survey Technician would be replaced. There was a consensus that the Consulting firm will provide Contract Agreement in Tk. 300/- non-judicial stamp of all Professional staff to ensure availability of key staff both in central office as well as project site office.

4. Financial Terms

The committee reviewed the Consulting firm's financial proposal of BDT- 3, 27, 09,679.00 (Taka Three Crore Twenty Seven lac Nine Thousand Six Hundred Seventy Nine) only which excludes IT and VAT. The PEC indicated several items of RFP & ToR which need to be included in reimbursable items of proposed Financial Proposal. The PEC also suggested re-casting the proposed work plan including sector wise training schedule. The Consulting firm agreed on this and they will submit re-casted & realistic work plan as well as reimbursable expenses by keeping the total amount same which is proposed in original financial proposal. Moreover, the consulting firm agreed to complete the whole assignment as per TOR and work plan within their total financial offered for Staff Remuneration and Reimbursable Expenses. Therefore, PEC calculated VAT & IT which is described in item No. 5.

If there need any extra time inputs (man-months) beyond the proposal to complete the whole assignment the Consulting firm will do the same without claim any extra charged. It was also agreed that the consulting firm can engage additional staff (if necessary) beyond the scope of the TOR to complete the assignment without any extra charge.

Mr. Shaheen Ahmed
Mr. Rashid Ahmed Khan
Mr. Shaheen Ahmed

5. Negotiated Contract Amount

Comparative statement showing the Financial Proposal submitted by the Consulting Firm and the amount Negotiated is furnished below:

Cost Component	Amount as per Financial Proposal	In BDT Amount (Corrected / Evaluated)
Staff Remuneration	78,65,000.00	78,65,000.00
Reimbursable Expenses	2,48,44,679.00	2,48,44,679.00
Total Contract Amount (Excluding Taxes & VAT)	32709679.00 (Taka Three Crore Twenty Seven lac Nine Thousand Six Hundred Seventy Nine) only.	32709679.00 (Taka Three Crore Twenty Seven lac Nine Thousand Six Hundred Seventy Nine) only.
Local Taxes 10%	3270967.90	3270967.90
VAT 15%	4906451.85	4906451.85
Total IT & VAT	81,77,419.75 Say, 81,77,420.00	81,77,420.00
Total Contract Amount (Including Taxes & VAT)	40887099.00 (Taka Four Crore Eight Lac Eighty Seven Thousand Ninety Nine)	40887099.00 (Taka Four Crore Eight Lac Eighty Seven Thousand Ninety Nine)

6. IT & VAT

The payments of IT & VAT were determined applying Government's existing rates (IT: 10% and VAT: 15%) on the negotiated amount. As per calculation, the following amount of IT and VAT has already been included in the total negotiated contract amount.

Negotiated contract amount (excluding IT & VAT) : BDT 3,27,09,679.00

Estimated IT and VAT on negotiated contract amount : BDT 81,77,420.00

Total Contract Amount (including IT and VAT) : BDT 4,08,87,099.00

(Taka Four Crore Eight Lac Eighty Seven Thousand Ninety Nine only)

Any subsequent change with IT & VAT by the government would be adjusted as per Government's Rule.

7. Payment

Payment schedule will remain unchanged as stated in the TOR and PCC of the RFP.

8. Responsibility of the Consulting firm

It is agreed that the Consulting firm will be responsible for the consultancy services of Package 3 under "Preparation of Development Plan for Fourteen Upazilas" Project. Moreover, the consulting firm must inform the client on any field visit /activities in advance and in written form.

9. Liability of the Consulting firm

The Consulting firm will fall under professional liability which will be interpreted according to PPA-2006, PPR-2008 and PCC. The risks and coverage shall solely be the liability of the consulting firm.



10. Commencement date

It was agreed that the activity is expected to commence on May 2015. The target date of commencement is subject to signing of contract and issuance of Letter of Intent.

11. Duration of the Contract

The duration of the assignment will be up to 21 months from signing date of the contract subject to the extension of the project period.

12. Draft Negotiated Contract

Based on this negotiation a "Draft Negotiated Contract" will be prepared & signed by the respective personnel for further action.

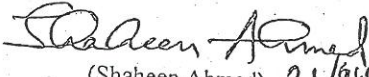
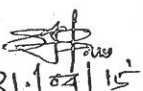
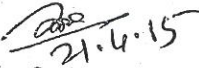
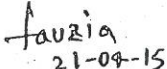
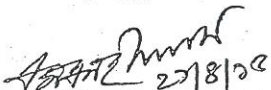
13. Minutes of Negotiation Meeting


It was agreed that minutes of today's negotiation meeting will be part & parcel of the Contract Agreement.

As there were no other points for discussion, the negotiation ended with exchange of thanks by both the team

PEC

Consultants

1. 
(Shaheen Ahmed) 21/04/15
Project Director, "Preparation of Development
Plan for Fourteen Upazilas" Project, UDD,
Dhaka and Chairman, PEC
2. 
(S. M. Sadekul Islam)
Sub Divisional Engineer, Population Project Cell
(PPC), PWD, Dhaka & Member, PEC.
3. 
(Uday Sankar Das)
Senior Planner & Project Manager-2,
"Preparation of Development Plan for Fourteen
Upazilas" Project, Urban Development
Directorate, 82, Segunbagicha, Dhaka-1000 &
Member, PEC.
4. 
(Fauzia Sharmin Tithi)
Planner & Project Manager-1,
"Preparation of Development Plan for Fourteen
Upazilas" Project, Urban Development
Directorate, 82, Segunbagicha, Dhaka-1000 &
Member, PEC.
5. 
(Mohammad Nurul Islam)
Assistant Engineer & Project Manager-3
"Preparation of Development Plan for Fourteen
Upazilas" Project, Urban Development
Directorate, 82, Segunbagicha, Dhaka-1000 &
Member-Secretary, PEC.

1. 
(Rashid Ahmed Khan)
Managing Director,
Engineering Consultants & Associates Ltd.
154, Monipuripara, Farmgate,
Tejgaon, Dhaka-1215.



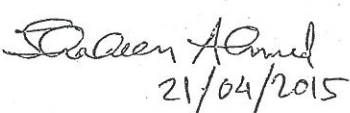
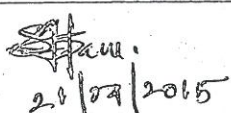
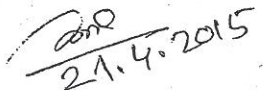
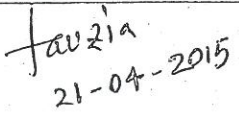
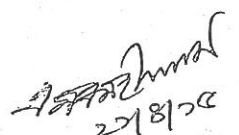
Attendance of the Proposal Evaluation Committee (PEC) Members

For the Contract Negotiation Meeting of Package 3

Name of the Services: Consultancy Services for Preparation of Development Plan of Package 3 under "Preparation of Development Plan for Fourteen Upazilas" Project, UDD.

Venue of Negotiation: Seminar Room, (3rd Floor), UDD Bhaban, Segunbagicha, Dhaka.

Date of Negotiation: April 21, 2015. **Time of Meeting:** 10:30 a.m.

Sl. No.	Name & Designation	Signature with Date
1.	Mr. Shaheen Ahmed Project Director, "Preparation of Development Plan for Fourteen Upazilas" Project, Urban Development Directorate, 82, Segunbagicha, Dhaka-1000 & Chairman, PEC.	 21/04/2015
2.	Mr. Dr. Md. Musleh Uddin Hasan Associate Professor, Department of URP, BUET, Dhaka & Member, PEC.	A
3.	Mr S. M. Sadekul Islam Sub Divisional Engineer, Population Project Cell (PPC), PWD, Dhaka & Member, PEC.	 21/04/2015
4.	Mr. Mahmudur Rashid Mazumder Assistant Engineer, BRWSSP, DPHE, Dhaka & Member, PEC.	A
5.	Mr Uday Sankar Das Senior Planner & Project Manager-2, "Preparation of Development Plan for Fourteen Upazilas" Project, Urban Development Directorate, 82, Segunbagicha, Dhaka-1000 & Member, PEC.	 21.4.2015
6.	Mrs. Fauzia Sharmin Tithi Planner & Project Manager-1, "Preparation of Development Plan for Fourteen Upazilas" Project, Urban Development Directorate, 82, Segunbagicha, Dhaka-1000 & Member, PEC.	 21-04-2015
7.	Mr. Mohammad Nurul Islam Assistant Engineer & Project Manager-3, "Preparation of Development Plan for Fourteen Upazilas" Project, Urban Development Directorate, 82, Segunbagicha, Dhaka-1000 & Member Secretary, PEC.	 21/4/15

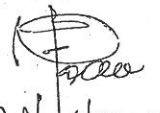
P M 

Attendance of the Representatives of Consulting Firms
For the Contract Negotiation Meeting of Package 3

Name of the Service: Consultancy Services for Preparation of Development Plan of Package 3 under
"Preparation of Development Plan for Fourteen Upazilas" Project, UDD.

Venue of Negotiation: Seminar Room, (3rd Floor), UDD Bhaban, Segunbagicha, Dhaka.

Date of Negotiation: April 21, 2015. **Time of Meeting:** 10:30 a.m.

Sl. No.	Consulting Firm	Name, Designation , Contact Number & e-mail	Signature with Date
1.	Engineering Consultants & Associates Ltd. 154 Monipuripara, Farmgate, Tejgaon, Dhaka-1215.	RASHID AHMED KHAN 61713129594. ecalimited@yahoo.com	 21/04/2015