



Government of the People's Republic of Bangladesh
Ministry of Housing and Public Works
Urban Development Directorate

**CONTRACT AGREEMENT
FOR
CONSULTANCY SERVICES**

For

“Preparation of Development Plan for Fourteen Upazilas”

Package-2

[Ishwargangj Upazila (286.19 sq. km.), District- Mymensingh; Raipura Upazila (408.45 sq.km.) & Shibpur Upazila (232.47 sq. km.) , District-Narsingdi]

BETWEEN

Urban Development Directorate (UDD)

82, Segunbagicha, Dhaka-1000

Phone: +88-02-9562728; Fax: +88-02-9557868

Website: www.udd.gov.bd

AND

JV of Sheltech Consultants (Pvt) Ltd & ARC Bangladesh Ltd

1/E/2 (2nd Floor) Paribagh (Mazar Road)

Shahbagh Dhaka-1000, Bangladesh

Phone: 8802-9611171; Fax: 8802-9611172

E-mail: scpl.mail@gmail.com.

January 2015

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Contract Agreement

This **CONTRACT** (hereinafter called the "Contract") is made the 5th day of the month of **January, 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, **JV of Sheltech Consultants (Pvt) Ltd & ARC Bangladesh Ltd, 1/E/2 (2nd Floor) Paribagh (Mazar Road) Shahbagh, Dhaka-1000, Bangladesh; Phone: 8802-9611171; Fax: 8802-9611172; E-mail: scpl.mail@gmail.com.** (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 2 [Ishwarganj Upazila (286.19 sq. km.), District- Mymensingh; Raipura Upazila (408.45 sq.km.) & Shibpur Upazila (232.47 sq. km.) , District-Narsingdi] 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).



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- 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 30 November 2014
and 11th December, 2014
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.




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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
URBAN DEVELOPMENT DIRECTORATE (UDD), Client


05/1/2015
Khondker Fowze Muhammed Bin Farid
Director
Urban Development Directorate

For and on behalf of JV of Sheltech Consultants (Pvt) Ltd & ARC Bangladesh Ltd,
Consulting Firm

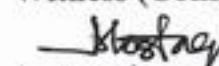
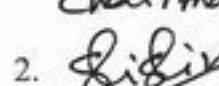

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Mrs. Afsana M Kamal
Director
Sheltech Consultants (Pvt) Ltd.


১৫/০১/১৫
Md. Shamim Hasan
Managing Director
ARC Bangladesh Ltd.

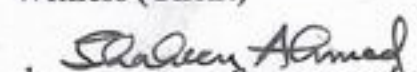
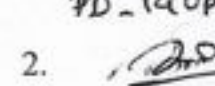
For and on behalf of each of the Members of the Consultant

JV of Sheltech Consultants (Pvt) Ltd & ARC Bangladesh Ltd. Urban Development Directorate

Witness (Consultant)

1. 
(Md. Mostaque Ahamed)
Chairman, Arc Bangladesh Ltd.
2. 
(Shishir Choudhury)
GIS Analyst, Arc Bangladesh Ltd.

Witness (Client)

1. 
Senior Planner &
PD-14 Upazila Project, UDD
2. 
Senior planner &
Project Manager-2
preparation of Development
plan for 14 Upazila project
UDD

General Conditions of Contract (GCC)

A. General

1. Definitions

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:

- (a) **Approving Authority** means the authority which, in accordance with the Delegation of Financial Powers, approves the award of Contract for the Procurement of Goods, Works and Services.
- (b) **Client/Procuring Entity** is the party named in the PCC who engages the Consultant to perform the Services.
- (c) **Completion** means the fulfilment of the Services by the Consultant in accordance with the terms and conditions set forth in the Contract.
- (d) **Completion Date** is the date of actual completion of the fulfilment of the Services certified by the Client, in accordance with GCC Clause 55.1.
- (e) **Consultant** is a person who has been short-listed to submit a Proposal for providing intellectual and professional services duly accepted by the Client; named as such in the PCC and the Contract Agreement.
- (f) **Contract Agreement** means the Agreement entered into between the Client and the Consultant together with the Contract Documents.
- (g) **Contract Documents** means the documents listed in the Agreement, including any Addendum thereto, that is these General Conditions of Contract (GCC), the Particular Conditions of Contract (PCC), and the Appendices.
- (h) **Contract Price** means the price to be paid for the performance of the Services, in accordance with GCC Clause 47.1.
- (i) **Day** means calendar day unless otherwise specified as working days.
- (j) **Effective Date** means the date on which this Contract comes into force pursuant to GCC Clause 18.1.
- (k) **GCC** mean the General Conditions of Contract.
- (l) **Government** means the Government of the People's Republic of Bangladesh.
- (m) **"Head of the Procuring Entity"** means the Secretary of a Ministry or a Division, the Head of a Government Department or Directorate; or the Chief Executive, or as applicable, Divisional Commissioner, Deputy Commissioner, Zilla Judge; or by whatever designation called, of a local Government agency, an autonomous or semi-autonomous body or a corporation, or a corporate body established under the Companies Act;
- (n) **Intended Completion Date** is the date on which it is intended that the Consultant shall complete the Services as specified in the GCC Sub Clause 20.1
- (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**. 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.

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 them or on their behalf



hereunder.

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| 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
Practices | 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. |



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 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.



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

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 26.1 The Consultant shall perform the Services and carry out its obligations

- Performance hereunder with all due diligence, efficiency and economy, in 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 thereof, 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 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.

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.

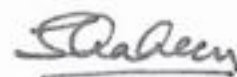
34.2 The Consultant shall furnish the Client such information relating to the Services as the Client may from time to time reasonably request.

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.

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

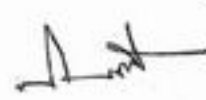
39. Assistance and
Exemptions

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 Land

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 the

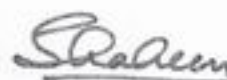


performance of the Services. The Consultant shall, however, be responsible for any damage to such land or any property thereon resulting from such access, and will indemnify the Consultant and each of the Personnel in respect of liability for any such damage, unless such damage is caused by the default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



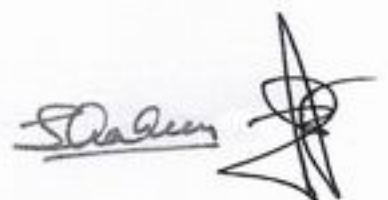
45. Payments: General
- 45.1 Payments due to the Consultant in each certificate shall be made into the Bank Account, in any scheduled Bank of Bangladesh, of the legal title of the Consultant specified in the PCC, nominated by the Consultant in the currency specified in the Contract.
- 45.2 With the exception 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
- 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 payable as from the above due date on any amount due by, but not paid on, such due date.
52. Amendment to
- 52.1 The amendment to Contract shall generally include extension of time to the Intended Completion Date, increase or decrease in original Contract



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.

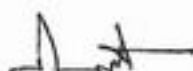
G. Time Control

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 Meetings 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 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

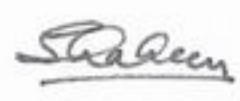


64.1

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 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.

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

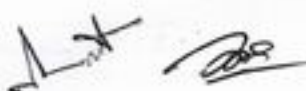
71.1 Amicable Settlement

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

- (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.



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: JV of Sheltech Consultants (Pvt) Ltd & ARC Bangladesh Ltd, 1/E/2 (2nd Floor) Paribagh (Mazar Road) Shahbagh, Dhaka-1000, Bangladesh; Phone: 8802-9611171; Fax: 8802-9611103; E-mail: scpl.mail@gmail.com</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 : Mrs. Afsana M Kamal, Director</p> <p>Address : Joint Venture of Sheltech Consultants (Pvt.) Ltd and Arc Bangladesh Ltd. 1/E/2 Paribagh (Mazar Road), Shahbagh, Dhaka-1000</p> <p>Tel : 01819-262012; Tel: 9611171</p> <p>Fax : 88-02-9611172</p> <p>e-mail address: <u>scpl.mail@gmail.com</u></p> <p><i>[If the Consultant is a Joint Venture the Contact Person shall be designated from the Leading Partner]</i></p>
GCC 6.1(e)	The following additional documents shall form the part of the Contract: None
GCC 8.1	Non-eligible countries are ISRAEL



GCC 11.1	The Member-in-Charge is: Mrs. Afsana M. Kamal, Director, Sheltech Consultants (Pvt.) Ltd. 1/E/2 Paribagh (Mazar Road), Shahbagh, Dhaka-1000
GCC 12.1	The Authorized Representatives are: For the Client : Project Director, 'Preparation of Development Plan for Fourteen Upazilas' Project For the Consultant: Mrs. Afsana M. Kamal, Director, Sheltech Consultants (Pvt.) Ltd. 1/E/2 Paribagh (Mazar Road), Shahbagh, Dhaka-1000
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 months] months after conclusion of the Services.
GCC 32.4(b)	The ceiling on Consultant's liability shall be limited to BDT 3,17,29,250.00
GCC 33.1(a)	The risks and the coverage shall be as follows: Not Applicable (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]; (b) Third Party liability insurance, with a minimum coverage of [insert amount as prevalent]; (c) Professional Liability insurance, with a minimum coverage of [insert amount equivalent to Contract Price]; (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 (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. [delete not appropriate]
GCC 35.1 (a)	The Consultant shall obtain the Client's prior approval in writing before taking any of the following actions: 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 : JV of SCPL-ABL Name of the Bank : AB Bank Ltd. Name of the Branch : Banani Account Number : 4033-792025-000 Address : House # 50, Road-11, Block-C, Banani, Dhaka-1213 Tel : 88-02-9891617 Fax : 88-02-9891312 e-mail address : saifuddin@abbl.com <i>[information furnished by the Consultant shall be substantiated by the concerned Bank and authenticated by the Client]</i>
GCC 46.1	The total payment due to the Consultant shall not exceed BDT 3,17,29,250.00 which is all inclusive fixed lump-sum covering all costs & all applicable taxes required to carry out the Services described in Appendix 1 .
GCC 47.1	The Contract Price is BDT 3,17,29,250.00 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
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

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 Meetings dated 30 November 2014 and 11 December, 2014



Appendix 1

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



URBAN DEVELOPMENT DIRECTORATE
Ministry of Housing and Public Works

TERMS OF REFERENCE (TOR)
for

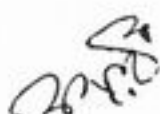
Preparation of Development Plan for Fourteen Upazilas

July, 2013

Signature of Bidder



Project Director



Director, UDD

আবুল বাকের মোঃ জৌহুর
সিনিয়র সহকারী প্রোগ্রামার
উত্তর অঞ্চলীয় বিভাগ
পল্লি উন্নয়ন কার্যক্রম
নবগাজীপুর জেলা সরকার

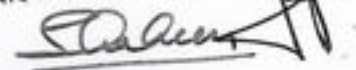


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স্বাক্ষরিত করেছেন
নিম্নলিখিত নামের
অধীনে স্বাক্ষরিত
করেছেন
স্বাক্ষরিত করেছেন

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.

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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.

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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/অতিমন্ত্রী/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, Sonatola, Sariakandi
5.	Team 5	Ramu, Rangunia

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পাটনাবাদী কমিশন
গণপ্রজাতন্ত্রী 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 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.

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, Chittagong 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

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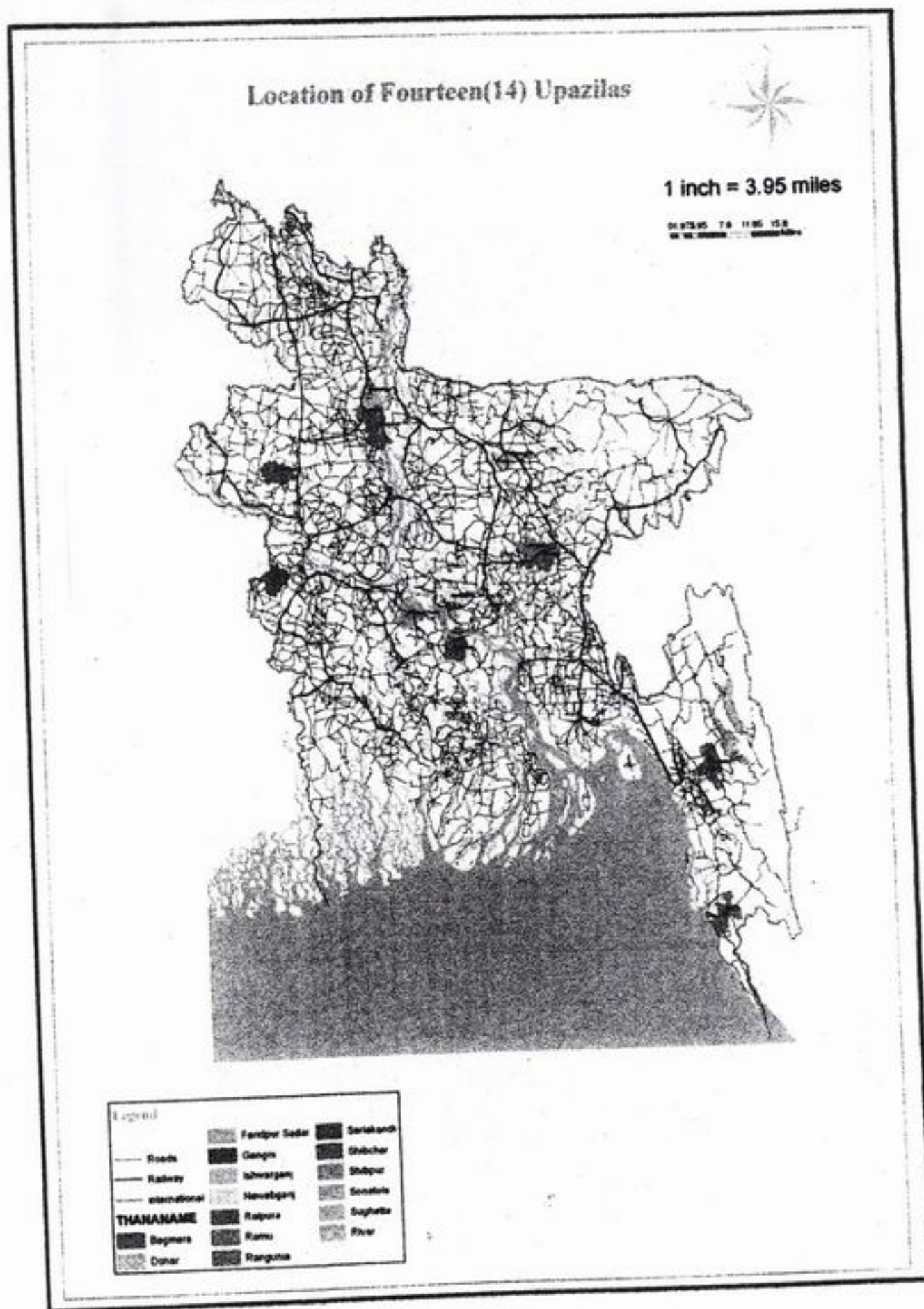
Project Director

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সিনিয়র সহকারী প্রোগ্রামার
জাতীয় পরিকল্পনা কমিশন
আবাসনিক ও পরিবহন
সহকারী সচিব

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



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স্বাক্ষরিত হয়েছে
নিম্নলিখিত সাক্ষরকারী
০৫/০৫/২০০৬
নথী রাখার তারিখঃ
০৫/০৫/২০০৬

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

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- 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

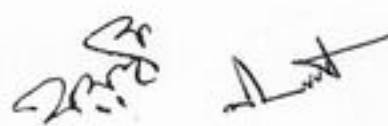
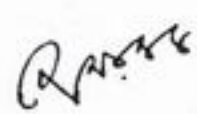
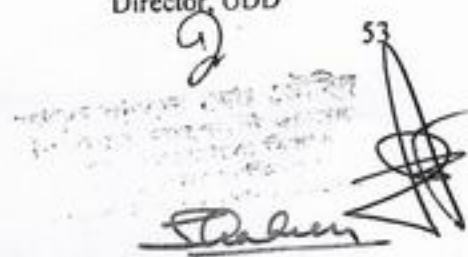
II Regional Structure Zoning Category: In order to promote and protect public safety welfare by (i) minimising adverse effect resulting from the inappropriate location or use of sites and structures, (ii) conserving limited land resources and encouraging their efficient use. To carry out the purposes 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

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- 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.

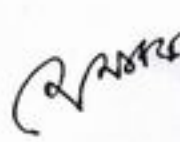
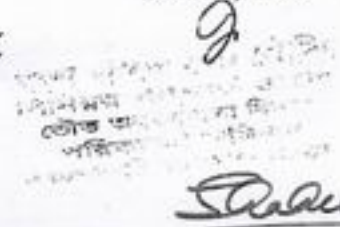
The Structure Plan for the *Upazila* for 20 years: It would cover upto 2033 with the content and meaning of the development policy of Planning Commission and guidelines laid in the Poverty Reduction Strategy Paper (PRSP), National Water Management Plan (NWMP), Disaster Management Plan, Wetland Protection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

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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

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ভৌত অবকাঠামো: ইকো-
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.

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Project Director

Director, UDD

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আবুল কাবীর মোঃ জৌহিদ
সিনিয়র সহকারী সচিব
উপসচিব
নগরসংস্কারী বাংলাদেশ সরকার

Shabir

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.

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আবুল কালাম মোরতুজাউল হক
জিলাধিকার মহাপরিদর্শক
মৌলভীবাজার জেলা প্রশাসন
আবুল কালাম মোরতুজাউল হক
মৌলভীবাজার জেলা প্রশাসন

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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.

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(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.

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আবুল বাকের মোঃ তোহিদ
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 contains 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.

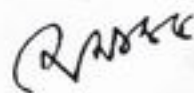
The structure plan examined the existing situation, drew attention to key problems, assessed likely changes and their implications and proposed how some major problems might be tackled. Very briefly, the structure plan notes an anticipated population increase of some 30% in the *Upazila* by the end of 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

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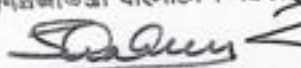
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আবুল বাকের মোঃ তোহিদ
নিজস্ব সরকারী প্রধান
কর্তা
উপজেলা পরিষদ
লালমোহন
স্বাক্ষরিত



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:

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.

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

- 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.

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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.

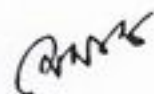
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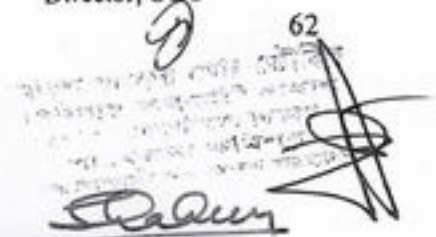
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APPENDIX-03

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.

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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.

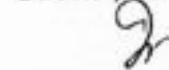
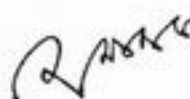
a-2. Study of Urban and Rural Economy: Preparation of questionnaire for studying urban and rural economy covering trade, commerce, shopping and other related activities in SPSS and other compatible format, editing, piloting, finalization and printing of questionnaire by the consulting firm. Then, a questionnaire 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

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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.

(a) Statistical analysis of the past trends in growth on the basis of types and numbers of different Vehicles.


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

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.

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.

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

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নিম্নলিখিত সহকারী প্রধান
একটি বক্তৃতা করে যেখানে
স্বয়ং প্রজন্মের কালিদাস
গণপ্রজাতন্ত্রী বাংলাদেশ সরকার


(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.

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.

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.

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.

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.

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আবুল হাকের মোঃ তোহিদ
মিঃ আবদুল হক
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জাতিসংঘ
বাংলাদেশ

(Signature)

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 ^{Mobilization} 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.

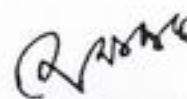
STEPS 2-III Collection of Basic statistics: present activities

- 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)

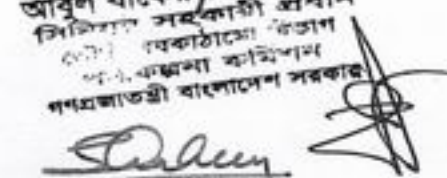
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আবুল বাকের মোঃ তোহিদ
সিভিল সার্কারী অফিস
১০১/১ বেকারগঞ্জ বিভাগ
১০১/১ বেকারগঞ্জ বিভাগ
গণপ্রজাতন্ত্রী বাংলাদেশ সরকার



- 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,

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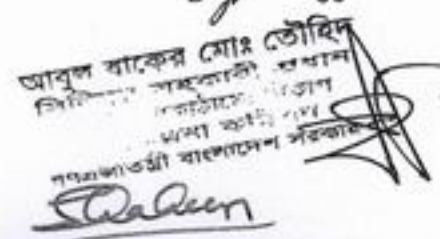
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আবুল বাকের মোঃ জৌহিদ
নির্বাহী প্রকল্প পরিচালক
জাতীয় পানি উন্নয়ন
অধিদপ্তর
গণপ্রজাতন্ত্রী বাংলাদেশ সরকার

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

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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. Datem 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.

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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.

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- 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:

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আবুল হাকের মোঃ তোহিদ
নিম্নোক্ত আনুমানিক আর্থিক
হিসাব প্রস্তুতকৃত হইবে
পরিচালনা কমিটি
দায়িত্বভার গ্রহণ করিতে

- 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 develop 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 consisting 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)

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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.

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(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.

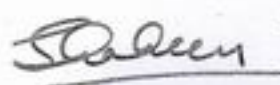
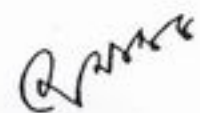
Responsibility: (i) To prepare questionnaire and other necessary arrangements for conducting surveys and studies related to urban and rural economy. (ii) To conduct, monitor and supervise urban and rural economy related data collection process and ensure quality of data collected. (iii) To review and 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

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সিনিয়র প্রকল্প পরিচালক
উদ্ভিদ উৎপাদন ও
সহযোগী কার্যক্রম
সহকারী প্রকল্প পরিচালক



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.

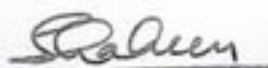
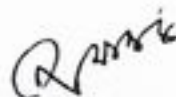
Experience: 5 years experience in relevant field.

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

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আবুল বাকের মোঃ জৌহির
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জৌহর ব্যবস্থাপনা বিভাগ
পল্লীকল্যাণ কর্মসূচী
গণস্বাস্থ্য কেন্দ্র

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 from 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 from UDD Project Team; and coordinate among all the consultant team; (ii) To assist the team leader in

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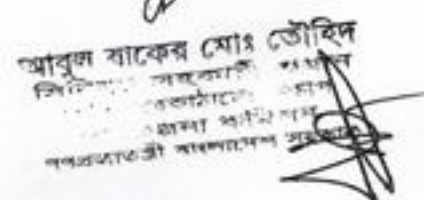
Project Director

Director, UDD

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আবুল কাবের মোঃ জৌহিদ
জিও-ইনফরম্যাটিক্স
সহকারী প্রকল্প পরিচালক
উদ্ভিদ প্রকল্প
স্বাধীনতা পল্লী
স্বাধীনতা পল্লী



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 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.

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Project Director

Director, UDD

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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

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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.




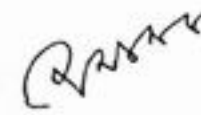

If the consulting firm fails to maintain the quality of data or deliver the data within the scheduled time frame, then it may be treated as "Breach of Contract". In such cases, the consultant shall be make necessary corrections as directed by PD. Another consulting firm may be employed to complete the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

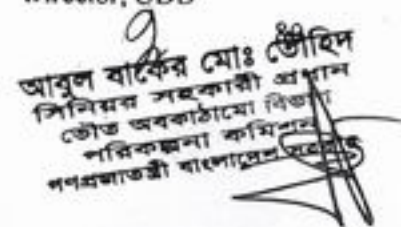
- *Data, personnel, facilities and local services to be provided by the Client, and*
The client, UDD will provide necessary data and maps only

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Project Director

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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		Name, width
3	3. Drainage Channels			x		x		Name, width
4	4. River/khal centreline		x			x		
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

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Project Director

Director, UDD

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আবুল বাকের মোঃ জোব্বার
সিনিয়র সহকারী প্রকল্প
জৌফ আবকাঠানে ডিগ্রা
পরিবহন বাহিনী
গণপ্রজাতন্ত্রী বাংলাদেশ সরকার

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

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Project Director

Director, UDD

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আবুল কালাম মোঃ হোসেন
 জিলা পরিষদ, সাতক্ষীরা জেলা
 জেলা প্রশাসক, সাতক্ষীরা জেলা
 পরিদপ্তর, সাতক্ষীরা জেলা
 নগরসংসদ, সাতক্ষীরা জেলা

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

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আবুল বাকের মোঃ জোহিদ
সিনিয়র সহকারী প্রধান
জৌক 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.

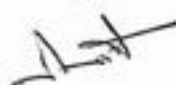
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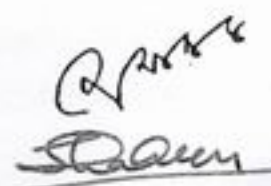
Project Director

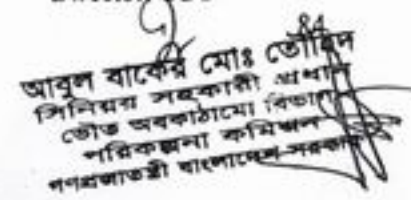
Director UDD










 আবুল বাকির মোঃ তোহিদ
 জি.এস.আই. অফিস
 জাতীয় অর্থনৈতিক পরিষদের
 কার্যালয়
 নগরসংসদ ভবন, ঢাকা

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

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আবুল বাকের মোঃ তৌকি
সিনিয়র সহকারী প্রোগ্রামার
ভৌত অবকাঠামো বিভাগ
পল্লিকল্পনা কমিশন
গণপ্রজাতন্ত্রী বাংলাদেশ সরকার

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	O	C	P	N						
LAND USES														
AGRICULTURE, FORESTRY & GRAZING	O	O	O	O	N	N	N	N	O					
AQUACULTURE & FISHERIES	O	O	O	O	N	N	N	N	O					
BRICKFIELDS	O	O	O	O	N	N	N	N	N					
CAUSEWAYS: ROAD, RAILWAY	O	O	O	O	O	O	O	O	N					
CEMETARIES / GRAVEYARD	N	N	N	N	C	C	C	C	N					
CINEAMAS	N	N	N	N	C	C	N	N	N					
CLINICS, MEDICAL	N	N	N	N	O	O	O	C	N					
CLUBS, PRIVATE	N	N	N	N	O	O	C	N	O					
COLLEGES & UNIVERSITIES	N	N	N	N	P	P	N	N	N					
DOCKS & JETTIES	O	O	O	O	O	O	O	O	N					
DWELLINGS, FARM	N	O	O	O	O	O	N	N	O					
DWELLINGS, MINIMAL HOUSING	N	C	N	N	O	O	C	N	N					
DWELLINGS, SINGLE/MULTI FAMILY	N	C	N	N	O	O	N	N	N					
EMBASSIES, HIGH COMMISSIONS	N	N	N	N	O	O	N	N	N					
EXPLOSIVES MANUFACTURE & STORAGE	N	C	N	N	N	N	N	C	N					
FLOOD MANAGEMENT STRUCTURES	O	O	O	O	O	O	O	O	O					
GOLF COURSES	P	P	P	P	N	N	N	N	P					
HOSPITALS (WITH MORGUE)	N	N	N	N	P	P	N	N	N					
HOTEL GUEST HOUSE	N	N	N	N	O	O	N	N	N					
HOTEL INTERNATIONAL CLASS	N	N	N	N	P	P	N	N	N					
INDUSTRIAL CLASS 2	N	N	N	N	C	C	O	O	N					
INDUSTRIAL CLASS 3	N	C	N	N	N	N	C	O	N					
INDUSTRIAL CLASS 4	N	N	N	N	N	N	N	O	N					
INSTITUTIONS	N	O	N	N	O	O	O	N	N					
MAJOR DEVELOPMENT	N	N	N	N	C	C	C	C	N					
OFFICES / SERVICES	N	N	C	O	O	O	C	C	N					
PARKING FACILITIES, COMMERCIAL	N	N	N	N	C	C	O	O	N					
PETROL STATIONS	N	C	N	N	C	C	O	O	N					
PRISONS	N	P	N	P	P	P	N	N	N					
PUBLIC USES & STRUCTURES	N	O	O	O	O	O	O	O	N					
RECREATION FACILITIES, OUTDOOR	O	O	O	O	O	O	O	N	O					
RELIGIOUS USES & STRUCTURES	N	O	O	O	O	O	O	N	O					
REPAIR SHOPS, MAJOR	N	N	N	N	N	N	O	O	N					
REPAIR SHOPS, MINOR	N	O	N	O	O	O	O	O	N					
RETAIL SHOPS & RESTAURANTS	N	C	N	O	O	O	C	C	N					
RETENTION PONDS	N	N	N	N	O	O	O	O	O					
SALVAGE, SCRAP STORAGE & PROCESSING	N	N	N	N	N	N	C	C	N					
SCHOOLS, PRIVATE	N	N	N	N	C	C	N	N	N					
SCHOOLS: GOVERNMENT, RELIGIOUS	N	N	N	N	O	O	N	N	N					
SHIP & BOAT SERVICING	N	O	N	N	N	N	O	O	N					
SHOPPING CENTRES / LARGE MARKETS	N	N	N	N	P	P	N	N	N					
STADIUM, SPORTS	N	N	N	N	P	P	N	N	N					
TERMINALS. TRAIN, BUS, FREIGHT	N	P	N	P	P	P	N	N	N					
TRADE CENTRES	N	N	N	N	P	P	N	N	N					
UTILITY INSTALLATIONS TYPE A	N	O	O	O	O	O	O	O	N					
UTILITY INSTALLATIONS TYPE B	O	O	O	P	P	P	P	N	N					
WAREHOUSING & DISTRIBUTION	N	N	N	N	C	C	O	O	N					
WASTE DISPOSAL & PROCESSING/MINERATOR	N	N	N	N	N	N	P	P	N					

Signature of Bidder

Project Director

Director, UDP

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আবুল কালাম মোঃ হোসেন
প্রকল্প পরিচালক, ঢাকা
জাতীয় পানীয় সরবরাহ প্রকল্প
পানীয় সরবরাহ অধিদপ্তর
কম্পিউটার প্রোগ্রামার

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		

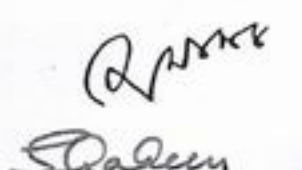
Note: Copies of valid license of the equipment and software has to be attached with the technical proposal.

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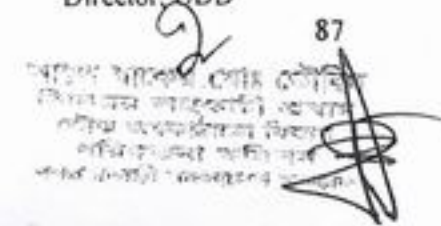
Project Director

Director, UDD





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Minimum specification of the required Hardware and Software

1. RTK GPS:

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

2. Total Station

- At least 2" angular accuracy

3. GIS & RS Software:

- Arc GIS/Arc Info with License
- GPS data Processing Software with License
- Photogrammetric stereo Image processing Software

Requirements:

4. Selection Criteria

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

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আবুল বাকের মোঃ জেহিদ
জিএসআর সহকারী প্রকল্প
জাতীয় 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.

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উপ-সহকারী প্রকল্প
পরিচালনা কমিশন
গণপ্রজাতন্ত্রী বাংলাদেশ সরকার

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

Project Director

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আবুল বাকির হোসেন
সিনিয়র সহকারী প্রোগ্রামার
জাতীয় অস্বচ্ছতা বাদনা
পরিদর্শন কমিশন
গণপ্রজাতন্ত্রী বাংলাদেশ সরকার

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সিনিয়র সহকারী প্রকল্প পরিচালক
জাতীয় সড়ক পরিবহন অধিদপ্তর
পাবনা বিভাগ
পাবনা

1.1. Project Background

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

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.

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উত্তর অঞ্চলসমূহ বিভাগ
পরিকল্পনা কমিশন
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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".

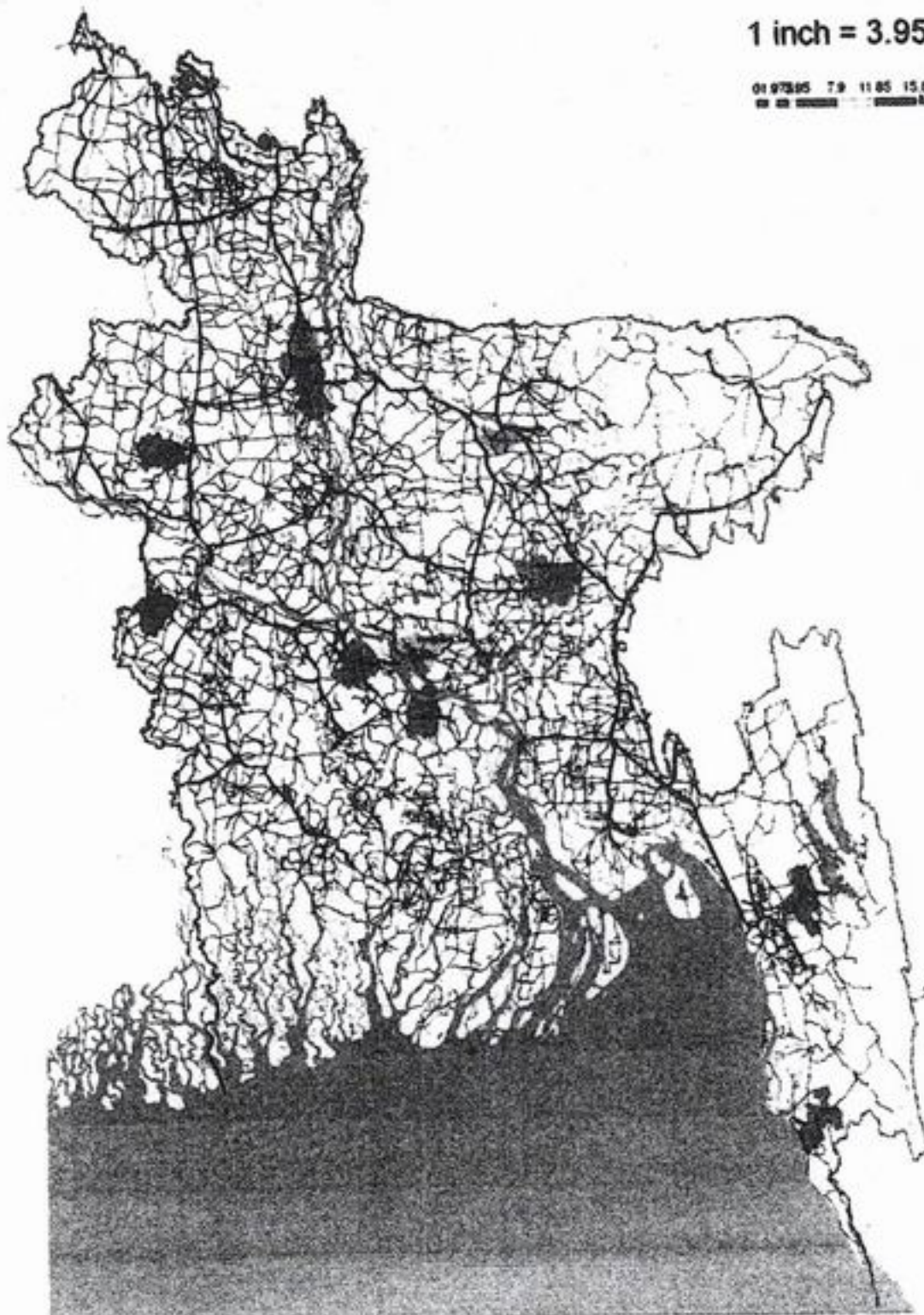
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নির্বাহিত সার্বজনীন প্রশাসন
জাতীয় সংসদ নির্বাচন
পারিকল্পনা অধিদপ্তর
গণপ্রজাতন্ত্রী বাংলাদেশ সরকার

Location of Fourteen(14) Upazilas

01.97305 7.9 11.85 15.8
 02.97305 7.9 11.85 15.8

Legend

 Roads	 Faridpur Sadar	 Sariakandi
 Railway	 Gangni	 Shibcher
 International	 Ishwarganj	 Shibpur
THANANAME	 Nawabganj	 Sonatola
 Bagmara	 Raipura	 Sughatta
 Dohar	 Ramu	 River
	 Rangunia	

Director, UDD

[illegible]

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.

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আবুল কালাম মোসাদ্দিক
উপপরিচালক, জাতীয়
কল্যাণ কর্মসূচী
উপকেন্দ্র, ঢাকা
১৩০০

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 ($V_s > 100m$ depth)	Single Microtremor ($V_s > 100m$ 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.

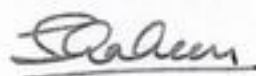
- (GSB) would drill some boreholes with SPT in all investigated area during the preparation of geological/geomorphological maps
- Site selection for borehole drilling & numbers, PS logging, MASW and SSMM, Microtremor array and Single microtremor should be made with the consultation of UDD & Geological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

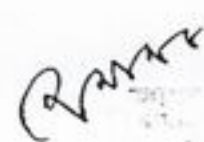
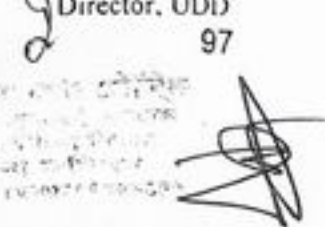
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- Soil sampling: SPT should be conducted at each 1.5m interval depth. When SPT N values exceed 100 times in consecutive 2/3 measurements, SPT can be stopped. Disturbed samples have to be collected during SPT for physical soil test (grain size analysis, 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 $V_s \approx 700\text{m/s}$
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.

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পল্লীশিক্ষা কেন্দ্র
পল্লীশিক্ষা কেন্দ্র

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, ferros scanner, 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.

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Project Director

Director, UDD
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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.

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নির্বাহী প্রকল্প পরিচালক
জাতীয় প্রকল্প পরিচালনা, কুমিল্লা
পাটনগর কলোনি
কলকাতা-৭০০০১৬

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.

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আবুল কালাম মোঃ জাহিদ
জিআইআর অফিসার্স অ্যান্ড
সার্ভে অফিসার্স ডিভিশন
পল্লী-গ্রামের আওতাধীন
স্বত্বস্বত্বাধীন অফিসার্স ডিভিশন

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/ Kutcha 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>
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আবুল বাকের মোঃ জৌহিদ
সিনিয়র সহকারী প্রধান
জৌত অবকাঠামো বিভাগ
পরিকল্পনা কমিশন
গণপ্রজাতন্ত্রী বাংলাদেশ সরকার

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. Kutchha 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
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Table 4: Building occupancy class

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সিনিয়র সহকারী প্রকল্প
জাতীয় আবাসিক প্রকল্প
পরিকল্পনা অধিদপ্তর
গণপ্রজাতন্ত্রী বাংলাদেশ সরকার

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 thereof 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

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আবুল খালেক মোঃ হোসেন
নিম্নলিখিত স্বাক্ষরকারী
কর্তৃপক্ষের অধীনস্থ
পরিচালক/অতিরিক্ত
সহকারী পরিচালক

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+	

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SI 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.

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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	

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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 	

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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 database 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 	

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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

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সিনিয়র সহকারী প্রোগ্রামার
জৌদ আবদুল্লাহ
পরিচালনা দপ্তর
গণপ্রজাতন্ত্রী বাংলাদেশ 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

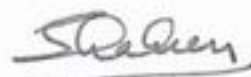
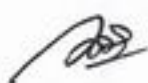
Project Director

Director, UDB

আবুল হকের মিয়া
সিনিয়র সহকারী প্রকৌশলী
জ্যেষ্ঠ অফিসার (প্রকল্প)
পরিচালনা কমিশন
পল্লভাট্টা বাগানসেতু সরকার

Appendix 2

Reporting Requirements



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 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.

Work Plan/Schedule

Preparation of Development Plan for Package-2: Ishwarganj Upazila, Raipura Upazila, Shibpur Upazila under "Preparation of Development Plan for Fourteen Upazilas" Project.
Form 5A5 : Work Schedule

ID	Task Name	Duration	Start	Finish	Inter	1st Quarter		3rd Quarter		1st Quarter		3rd Quarter		1st Quarter	
						Oct	Jan	Apr	Jul	Oct	Jan	Apr	Jul	Oct	Jan
1	Mobilization Stage	22 days	Mon 05/01/15	Tue 03/02/15											
2	Commencement of the Assignment (Contract Agreement)	1 day	Mon 05/01/15	Mon 05/01/15											
3	Team Mobilization	5 days	Thu 08/01/15	Wed 14/01/15											
4	Assessment of the Project (Boundary) Area	7 days	Thu 08/01/15	Sun 18/01/15											
5	Reconnaissance Field Survey	3 days	Thu 08/01/15	Mon 12/01/15											
6	Preparation of Mobilization Report	9 days	Thu 08/01/15	Tue 20/01/15											
7	Workshop (one in each Upazila)	6 days	Thu 22/01/15	Thu 29/01/15											
8	Preparation of inception Report	9 days	Thu 22/01/15	Tue 03/02/15											
9	Operational Stage	453 days	Sun 11/01/15	Tue 04/10/16											
10	Collection and Review Preliminary Database	45 days	Sun 11/01/15	Thu 12/03/15											
11	Collection of Mauza Maps	25 days	Sun 11/01/15	Thu 12/02/15											
12	Collection of Geo-Physical Maps and Reports	25 days	Sun 11/01/15	Thu 12/02/15											
13	Collection of Topographical Maps and Reports	25 days	Sun 11/01/15	Thu 12/02/15											
14	Collection of Basic Statistics with Present Activities	25 days	Sun 11/01/15	Thu 12/02/15											
15	Procurement of Satellite Image	45 days	Sun 11/01/15	Thu 12/03/15											
16	Preparation of Study Area Base Map	74 days	Mon 12/01/15	Thu 23/04/15											
17	Scanning of Mauza Maps	45 days	Mon 12/01/15	Sun 15/03/15											
18	Digitization of Mauza Maps	45 days	Mon 12/01/15	Sun 15/03/15											
19	Edit Plot Checking by Joint Team of UDD and Consultants	45 days	Mon 09/02/15	Sun 12/04/15											
20	Selection of GCP on Mauza Sheets by Joint Team of UDD and Consultants	45 days	Mon 09/02/15	Sun 12/04/15											
21	GCP Survey	45 days	Mon 09/02/15	Sun 12/04/15											
22	Geo-referencing of Mauza Maps	45 days	Mon 16/02/15	Sun 19/04/15											
23	Joining of Mauza Maps and Demarcation of SP and AAP area	45 days	Mon 16/02/15	Sun 19/04/15											
Package-2		Task	External Tasks	Manual Task	Finish-only										
		Split	External Milestone	Duration-only	Deadline										
		Milestone	Inactive Task	Manual Summary Rollup	Progress										
		Summary	Inactive Milestone	Manual Summary											
		Project Summary	Inactive Summary	Start-only											

Preparation of Development Plan for Package-2: Ishwarganj Upazila, Raipura Upazila, Shibpur Upazila under "Preparation of Development Plan for Fourteen Upazilas" Project.
Form 5A5 : Work Schedule

ID	Task Name	Duration	Start	Finish	Quarter	1st Quarter	3rd Quarter	1st Quarter	3rd Quarter	1st Quarter
					Oct	Jan	Apr	Jul	Oct	Jan
24	Preparation of GIS Map Lay Out	45 days	Mon 16/02/15	Sun 19/04/15						
25	Finalization of Study Area Map with Project Boundary	45 days	Sun 22/02/15	Thu 23/04/15						
26	Submission of Working Paper on GIS Mapping	1 day	Mon 20/04/15	Mon 20/04/15						
27	Training of UDD Officials and Staff on GIS Based Mapping	3 days	Tue 21/04/15	Thu 23/04/15						
28	RS Analysis of Satellite Image	63 days	Sun 15/03/15	Tue 09/06/15						
29	Image Pan Sharpening	40 days	Sun 15/03/15	Thu 07/05/15						
30	Image Processing & Georeferencing	40 days	Sun 15/03/15	Thu 07/05/15						
31	Aerial Triangulation using Info Match AT	40 days	Sun 05/04/15	Thu 28/05/15						
32	Digital feature Mapping from Stereo Model using DATEM/ARCGIS	40 days	Mon 06/04/15	Sun 31/05/15						
33	DTM/DEM/TIN/Contour Generation	40 days	Thu 09/04/15	Wed 03/06/15						
34	Ortho-rectification of Images	40 days	Thu 09/04/15	Wed 03/06/15						
35	Mosaicking of OrthoPhoto	40 days	Thu 09/04/15	Wed 03/06/15						
36	Submission of Working Paper on RS Analysis of Satellite Image	1 day	Thu 04/06/15	Thu 04/06/15						
37	Training of UDD Officials and Staff on RS Analysis of Satellite Imag	3 days	Sun 07/06/15	Tue 09/06/15						
38	Preparation of Survey	100 days	Mon 20/04/15	Sun 06/09/15						
39	Identification/selection of BM Location/Control Points	45 days	Mon 20/04/15	Sun 21/06/15						
40	Construction and Installation of BM Pillars	45 days	Mon 20/04/15	Sun 21/06/15						
41	Establishment of BM/Control Point Network	12 days	Mon 22/06/15	Tue 07/07/15						
42	Baseline Survey using RTK-GPS Static Method/and from Satellite Image	12 days	Mon 22/06/15	Tue 07/07/15						
43	Baseline Data Processing and Network Adjustment	12 days	Mon 22/06/15	Tue 07/07/15						
44	Topographical Survey	35 days	Thu 04/06/15	Wed 22/07/15						
45	Submission of Working Paper on Topographic & RTK GPS Survey	1 day	Thu 23/07/15	Thu 23/07/15						

Package-2	Task		External Tasks		Manual Task		Finish-only	
	Split		External Milestone		Duration-only		Deadline	
	Milestone		Inactive Task		Manual Summary Rollup		Progress	
	Summary		Inactive Milestone		Manual Summary			
	Project Summary		Inactive Summary		Start-only			

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Preparation of Development Plan for Package-2: Ishwarganj Upazila, Raipura Upazila, Shibpur Upazila under "Preparation of Development Plan for Fourteen Upazilas" Project.
Form 5A5 : Work Schedule

ID	Task Name	Duration	Start	Finish	Quarter	1st Quarter			3rd Quarter			1st Quarter			3rd Quarter			1st Quarter		
						Oct	Jan	Apr	Jul	Oct	Jan	Apr	Jul	Oct	Jan	Apr	Jul	Oct	Jan	Apr
46	Training of UDD Officials and Staff on Topographic & RTK GPS Survey	2 days	Sun 26/07/15	Mon 27/07/15																
47	Physical Infrastructure Survey	35 days	Sun 07/06/15	Thu 23/07/15																
48	Landuse Survey Updating	35 days	Sun 07/06/15	Thu 23/07/15																
49	Submission of Working Paper on Physical Feature & Landuse Survey	1 day	Sun 26/07/15	Sun 26/07/15																
50	Training of UDD Officials and Staff on Physical Feature & Landuse Survey	3 days	Mon 27/07/15	Wed 29/07/15																
51	Socio-Economic Survey (considering housing and squatter settlement survey, investment & employment survey, and population & migration survey)	35 days	Thu 04/08/15	Wed 22/07/15																
52	Submission of Working Paper on Socio-Economic Survey (considering housing and squatter settlement survey, investment & employment survey, and population & migration survey)	2 days	Thu 23/07/15	Sun 26/07/15																
53	Training of UDD Officials and Staff on Socio-Economic Survey (considering housing and squatter settlement survey, investment & employment survey, and population & migration survey)	4 days	Thu 23/07/15	Tue 28/07/15																
54	Traffic and Transport Survey	15 days	Thu 18/06/15	Wed 08/07/15																
55	Submission of Working Paper on Traffic and Transport Survey	1 day	Sun 12/07/15	Sun 12/07/15																
56	Training of UDD Officials and Staff on Traffic and Transport Survey	2 days	Mon 13/07/15	Tue 14/07/15																
57	Geological Survey, Environmental Studies, Hydrological Studies, Disaster Related Survey & Studies, Bathymetric report and Studies	15 days	Mon 22/06/15	Sun 12/07/15																
58	Submission of Working Paper on Geological Survey, Environmental Studies, Hydrological Studies, Disaster Related Survey & Studies, Bathymetric report and Studies	2 days	Mon 13/07/15	Tue 14/07/15																

Package-2	Task		External Tasks		Manual Task		Finish only	
	Split		External Milestone		Duration only		Deadline	
	Milestone		Inactive Task		Manual Summary Rollup		Progress	
	Summary		Inactive Milestone		Manual Summary			
	Project Summary		Inactive Summary		Start-only			

Preparation of Development Plan for Package-2: Ishwarganj Upazila, Raipura Upazila, Shibpur Upazila under "Preparation of Development Plan for Fourteen Upazilas" Project.
Form 5A5 : Work Schedule

ID	Task Name	Duration	Start	Finish	Inter	1st Quarter			3rd Quarter		1st Quarter		3rd Quarter		1st Quarter
						Oct	Jan	Apr	Jul	Oct	Jan	Apr	Jul	Oct	Jan
59	Training of UDD Officials and Staff on Geological Survey, Environmental Studies, Hydrological Studies, Disaster Related Survey & Studies, Bathymetric report and Studies	4 days	Wed 15/07/15	Mon 20/07/15											
60	Survey of Urban and Rural Economy, Formal and Informal Industrial Survey, Archaeological Study, Agriculture Survey, Population Survey, Social Space Studies, Groth of the Human Settlement	15 days	Sun 28/06/15	Thu 16/07/15											
61	Submission of Working Paper on Survey of Urban and Rural Economy, Formal and Informal Industrial Survey, Archaeological Study, Agriculture Survey, Population Survey, Social Space Studies, Groth of the Human Settlement	2 days	Sun 19/07/15	Mon 20/07/15											
62	Training of UDD Officials and Staff on Survey of Urban and Rural Economy, Formal and Informal Industrial Survey, Archaeological Study, Agriculture Survey, Population Survey, Social Space Studies, Groth of the Human Settlement	4 days	Tue 21/07/15	Sun 26/07/15											
63	Boreholes 3 boreholes/sq. km. of urban area (total 98 Borehole)	15 days	Thu 04/06/15	Wed 24/06/15											
64	Submission of Working Paper on Boreholes 3 boreholes/sq. km. of urban area (total 98 Borehole)	1 day	Thu 25/06/15	Thu 25/06/15											
65	Training of UDD Officials and Staff on Boreholes 3 boreholes/sq. km. of urban area (total 98 Borehole)	2 days	Sun 28/06/15	Mon 29/06/15											
66	PRA Session (one in each Union/Ward, total 53)	60 days	Mon 20/04/15	Sun 12/07/15											
67	Submission of Working Paper on PRA Session	2 days	Mon 13/07/15	Tue 14/07/15											
68	Training of UDD Officials and Staff on PRA Session	2 days	Wed 15/07/15	Thu 16/07/15											
69	Preparation of database and GIS Map Layout	40 days	Sun 14/06/15	Thu 06/08/15											
70	Preparation of Draft Survey Report	10 days	Sun 09/08/15	Thu 20/08/15											
71	Preparation of Final Survey Report	11 days	Sun 23/08/15	Sun 06/09/15											

Package-2	Task		External Tasks		Manual Task		Finish-only	
	Split		External Milestone		Duration-only		Deadline	
	Milestone		Inactive Task		Manual Summary Rollup		Progress	
	Summary		Inactive Milestone		Manual Summary			
	Project Summary		Inactive Summary		Start only			

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Preparation of Development Plan for Package-2: Ishwarganj Upazila, Raipura Upazila, Shibpur Upazila under "Preparation of Development Plan for Fourteen Upazilas" Project.
Form SA5 : Work Schedule

ID	Task Name	Duration	Start	Finish	Inter	1st Quarter	3rd Quarter	1st Quarter	3rd Quarter	1st Quarter
					Oct	Jan	Apr	Jul	Oct	Jan
72	Seismic hazard vulnerability and risk assessment of urban areas	33 days	Thu 04/06/15	Mon 20/07/15						
73	Morphotectonic and neotectonic mapping	30 days	Thu 04/06/15	Wed 15/07/15						
74	Time- predictable fault modeling	30 days	Thu 04/06/15	Wed 15/07/15						
75	Engineering geological mapping	30 days	Thu 04/06/15	Wed 15/07/15						
76	Seismic Hazard assessment	30 days	Thu 04/06/15	Wed 15/07/15						
77	Vulnerability assessment	30 days	Thu 04/06/15	Wed 15/07/15						
78	Risk assessment	30 days	Thu 04/06/15	Wed 15/07/15						
79	Submission of Working Paper on Seismic hazard vulnerability and risk assessment of urban areas	1 day	Thu 16/07/15	Thu 16/07/15						
80	Training of UDD Officials and Staff on Seismic hazard vulnerability and risk assessment of urban areas	2 days	Sun 19/07/15	Mon 20/07/15						
81	Detailed building inventory database preparation particularly in urban areas	33 days	Thu 04/06/15	Mon 20/07/15						
82	Building and lifeline inventory in Project area	30 days	Thu 04/06/15	Wed 15/07/15						
83	Building inventory mapping in Project Area	30 days	Thu 04/06/15	Wed 15/07/15						
84	Landuse mapping and guideline preparation to integrate disaster risk reduction with landuse map	30 days	Thu 04/06/15	Wed 15/07/15						
85	Submission of Working Paper on Detailed building inventory database preparation particularly in urban areas	1 day	Thu 16/07/15	Thu 16/07/15						
86	Training of UDD Officials and Staff on Detailed building inventory database preparation particularly in urban areas	2 days	Sun 19/07/15	Mon 20/07/15						
87	Workshop (one in each upazila)	6 days	Sun 09/08/15	Sun 16/08/15						
88	Preparation of database and GIS Map Layout	40 days	Sun 14/06/15	Thu 06/08/15						

Package-2	Task		External Tasks		Manual Task		Finish-only	
	Split		External Milestone		Duration only		Deadline	
	Milestone		Inactive Task		Manual Summary Rollup		Progress	
	Summary		Inactive Milestone		Manual Summary			
	Project Summary		Inactive Summary		Start-only			

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Preparation of Development Plan for Package-2: Ishwarganj Upazila, Raipura Upazila, Shibpur Upazila under "Preparation of Development Plan for Fourteen Upazilas" Project.
Form SAS : Work Schedule

ID	Task Name	Duration	Start	Finish	Quarter	1st Quarter			3rd Quarter		1st Quarter			3rd Quarter		1st Quarter
						Oct	Jan	Apr	Jul	Oct	Jan	Apr	Jul	Oct	Jan	
89	Preparation of Draft Survey Report	10 days	Sun 09/08/15	Thu 20/08/15												
90	Preparation of Final Survey Report	11 days	Sun 23/08/15	Sun 06/09/15												
91	Approach to Plan Preparation	279 days	Sun 06/09/15	Wed 28/09/16												
92	Analysis of the surveys for structure plan, urban area plan and action plan	25 days	Sun 06/09/15	Thu 08/10/15												
93	Formulation of Strategies for structure plan and action plan	25 days	Sun 06/09/15	Thu 08/10/15												
94	Review of Previous Plans and Success and Assessment of Failure with Lesson Learning	40 days	Sun 06/09/15	Thu 29/10/15												
95	Interpretation of Higher Level Frameworks	40 days	Sun 06/09/15	Thu 29/10/15												
96	Review of the Existing Problems and Proposed Initiatives	40 days	Sun 06/09/15	Thu 29/10/15												
97	Stakeholder's Consultation	75 days	Sun 20/09/15	Thu 31/12/15												
98	Sub-Regional Plan	150 days	Mon 12/10/15	Sun 08/05/16												
99	Regional Structure Zoning Category	150 days	Mon 12/10/15	Sun 08/05/16												
100	Conservation Plan	150 days	Mon 12/10/15	Sun 08/05/16												
101	Determination of Present and Future Functional Structure of the Town/Study Area and Formulation of the Structure Plan	150 days	Mon 12/10/15	Sun 08/05/16												
102	Urban Area Plan	150 days	Mon 12/10/15	Sun 08/05/16												
103	Rural Area Plan	150 days	Mon 12/10/15	Sun 08/05/16												
104	Action Area Plan	150 days	Mon 12/10/15	Sun 08/05/16												
105	Public Hearing	30 days	Mon 09/05/16	Sun 19/06/16												
106	Stakeholder's (Beneficiaries and Utility Providing Agencies) Consultation	10 days	Mon 20/06/16	Sun 03/07/16												
107	Formulation of Bankable Project	15 days	Mon 04/07/16	Sun 24/07/16												
108	Preparation of Draft final Report including Structure Plan and Master Plan	50 days	Mon 20/06/16	Sun 28/08/16												
109	Preparation of Final Report including Structure Plan and Master Plan	22 days	Mon 29/08/16	Tue 27/09/16												

Package-2	Task		External Tasks		Manual Task		Finish-only	
	Split		External Milestone		Duration-only		Deadline	
	Milestone		Inactive Task		Manual Summary Rollup		Progress	
	Summary		Inactive Milestone		Manual Summary			
	Project Summary		Inactive Summary		Start-only			

Preparation of Development Plan for Package-2: Ishwarganj Upazila, Raipura Upazila, Shibpur Upazila under "Preparation of Development Plan for Fourteen Upazilas" Project.
Form SAS : Work Schedule

ID	Task Name	Duration	Start	Finish	Quarter	1st Quarter	3rd Quarter	1st Quarter	3rd Quarter	1st Quarter
					Oct	Jan	Apr	Jul	Oct	Jan
110	Submission of Reports	445 days	Tue 20/01/15	Tue 04/10/16						
111	Mobilization Report	0 days	Tue 20/01/15	Tue 20/01/15		20/01				
112	Inception Report	0 days	Wed 04/02/15	Wed 04/02/15		04/02				
113	Draft Survey Report	0 days	Thu 20/08/15	Thu 20/08/15			20/08			
114	Final Survey Report	0 days	Sun 06/09/15	Sun 06/09/15			06/09			
115	Draft Final Report	0 days	Sun 28/08/16	Sun 28/08/16				28/08		
116	Final Report: (English and Bengali)	0 days	Mon 03/10/16	Mon 03/10/16				03/10		
117	Progress Reports	392 days	Sun 05/04/15	Mon 03/10/16						
118	1st Progress Report	0 days	Sun 05/04/15	Sun 05/04/15		05/04				
119	2nd Progress Report	0 days	Sun 05/07/15	Sun 05/07/15			05/07			
120	3rd Progress Report	0 days	Sun 04/10/15	Sun 04/10/15				04/10		
121	4th Progress Report	0 days	Mon 04/01/16	Mon 04/01/16					04/01	
122	5th Progress Report	0 days	Mon 04/04/16	Mon 04/04/16					04/04	
123	6th Progress Report	0 days	Mon 04/07/16	Mon 04/07/16					04/07	
124	7th Progress Report	0 days	Mon 03/10/16	Mon 03/10/16					03/10	

Package-2	Task		External Tasks		Manual Task		Finish-only	
	Split		External Milestone		Duration-only		Deadline	
	Milestone		Inactive Task		Manual Summary Rollup		Progress	
	Summary		Inactive Milestone		Manual Summary			
	Project Summary		Inactive Summary		Start-only			

Appendix 3

Key Personnel and Sub-Consultants



Sl No.	Name with Position	Qualification	Detailed Job Description	Staff Month
1.	Dr. Nurul Islam Nazem Team Leader	<ul style="list-style-type: none"> • Ph.D., Urban -Rural Interaction from Durham University, UK, 1994 • M.Sc., Urban Planning from Asian Institute of Technology (AIT), Bangkok, 1985 • M.Sc., Geography from University of Dhaka, 1978 	(i) To take over the charges on all surveyed data and information from 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.	13
2.	Md. Khayer Ali GIS Expert	<ul style="list-style-type: none"> ▪ M.S.S. in Geography & Environmental Studies (1998), University of Rajshahi, Rajshahi ▪ B.S.S. (Hon's) in Geography & Environmental Studies (1997), University of Rajshahi, Rajshahi 	(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.	21

Sl No.	Name with Position	Qualification	Detailed Job Description	Staff Month
3.	Shahina Akter Photogrammetric Expert	<ul style="list-style-type: none"> Master of Philosophy (M.Phil) in Urban Planning from University of Dhaka, 2013. M.Sc (Master of Science) in Geography and Environment from Jahangirnagar University, 2001. B.Sc (Honors) in Geography and Environment from Jahangirnagar University, 1999 	(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.	4
4.	Tripal Kumar Sen Survey Expert	<ul style="list-style-type: none"> Master of Science in Geography, National University, Gazipur, B.Sc., Chittagong University, 1992. 	(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.	3
5.	1. Madhuri Rani Roy Urban Planner 2. K. M. Abul Bashar Urban Planner	<ul style="list-style-type: none"> Masters of Urban and Regional Planning, Khulna University, 2010 Bachelor of Urban and Regional Planning, Khulna University, 2004 Bachelor of Urban and Regional Planning, Khulna University, 2006 	(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.	8 8

Sl No.	Name with Position		Detailed Job Description	Staff Month
6.	Md. Ashraf Ul Abedin Transport Planning Expert	<ul style="list-style-type: none"> Post graduate degree in on SOILS, CONCRETE and BITUMEN from NEWZEALAND under Colombo plan during the year 1986-1987 (One year). B.Sc. Engineering Civil, Bangladesh University of Engineering & Technology, Dhaka, 1979.. 	(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.	4
7.	Md. Naziruzzaman Civil Engineer Cum Hydrologist	<ul style="list-style-type: none"> Master's in Civil Engg (which is later renamed as Civil & Environmental Engineering) , BUET, 1999 B.Sc. in Civil Engg., Bangladesh University of Engineering and Technology (BUET), 1984 	(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.	4
8.	Md. Rezoyan Mahmud Geologist	<ul style="list-style-type: none"> M.Sc on Geology from University of Dhaka, 1991 B.Sc (Hons) on Geology from University of Dhaka, 1990 	(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.	4
9.	Md. Abdul Latif Social Expert	<ul style="list-style-type: none"> Master in Social Science (MSS) in Economics, Department of Economics, Dhaka University, 1981 Bachelor in Arts (Hons in Economics), Department of Economics, Dhaka University, 1977 	(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	6

Sl No.	Name with Position	Qualification	Detailed Job Description	Staff Month
			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.	
10.	Dr. Md. Ghulam Murtaza Economist	<ul style="list-style-type: none"> Ph.D. from University of Rajshahi, Bangladesh in 2001. Master in Urban & Regional Planning (MURP) from Bangladesh University of Engineering & Technology, Dhaka and University of Sheffield, United Kingdom (a joint Master's Degree Programme under fellowship of the United Nations) in 1979 M.A in Economics from University of Chittagong, 1973 B.A Hon's in Economics from University of Chittagong, 1971 	(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 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.	4
11.	Md. Shamsuddoha Agricultural Scientist	<ul style="list-style-type: none"> MS in Crop Botany, Bangladesh Agricultural University, Mymensingh, 2002 B.Sc. in Agriculture, Bangladesh Agricultural University, Mymensingh, 1999 	(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	2

Sl No.	Name with Position	Qualification	Detailed Job Description	Staff Month
			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.	
12.	Md. Khairul Kabir Associate Geologist	<ul style="list-style-type: none"> • Master of Geology, University of Dhaka, 1991 • Bachelor of Geology, University of Dhaka, 1990 	(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.	4
13.	Md. Muzibul Aktar Geological Survey Technician	<ul style="list-style-type: none"> ▪ Diploma in Civil Engineers from Khulna Polytechnic College. 	(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.	2

FROM 5A7: STAFFING SCHEDULE
PREPARATION OF DEVELOPMENT PLAN FOR FOURTEEN UPAZILAS
Package 2

DESIGNATION	NAME	Staff-month input by Month																					Total Staff Input			
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	Home	Field	Total	
		i	ii	i	ii	i	ii	i	ii	i	ii	i	ii	i	ii	i	ii	i	ii	i	ii	i				ii
Professional Staff (Survey Period)																										
1. Survey Expert	Tripal Kumar Sen	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2	3
2. GIS Expert	Md. Khyer Ali	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	2	8
3. Agricultural Scientist	Md. Shamsuddoha	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	2
4. Economist	Dr. Md. Ghulam Murtaza	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	0	2
5. Transport Planning Expert	Md. Ashraf Ul Abedin	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	2
6. Geologist	Md. Rezoyan Mahmud	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	2
7. Associate Geologist	Md. Khairul Kabir	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	2
8. Geological Survey Tecnician	Md. Muzibul Aktar	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	2
9. Civil Engineer Cum Hydrologist	Md. Naziruzzaman	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	2
10. Urban Planner	S. M. Abul Bashar	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	2	8
11. Photogrammetric Expert	Shahina Akter	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	1	4
12. Socio-Economic Expert	Md. Abdul Latif	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	1	3
																								26	14	40
Professional Staff (Planning Period)																										
1. Team Leader	Dr. Nurul Islam Nazem	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11	2	13
2. GIS Expert	Md. Khyer Ali	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11	2	13
3. Urban Planner	Madhuri Rani Roy	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	2	8
4. Civil Engineer Cum Hydrologist	Md. Naziruzzaman	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	2
5. Urban Economist	Dr. Md. Ghulam Murtaza	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	0	2
6. Geologist	Md. Rezoyan Mahmud	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	2
7. Associate Geologist	Md. Khairul Kabir	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	2
8. Transport Planning Expert	Md. Ashraf Ul Abedin	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	2
9. Socio-Economic Expert	Md. Abdul Latif	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	1	3
																								36	11	47

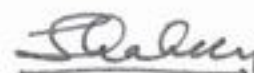
Appendix 4

Services and Facilities to be provided by the Client



Appendix 4 Services and Facilities to be provided by the Client

As described in the supplied RFP.



Appendix 5

Cost Estimates

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Form 5B2: Summary of Costs

Cost Component	Costs (Taka)
Staff Remuneration	73,10,000.00
Reimbursable Expenses	1,80,73,400.00
Sub-total	2,53,83,400.00
Total VAT and Taxes	63,45,850.00
Grand Total	3,17,29,250.00

In Words: Three Crore Seventeen Lakh Twenty Nine Thousand Two Hundred Fifty Taka Only.



Form 5B3: Breakdown of Staff Remuneration

A. Survey Period				
Name	Position	Staff-month Rates (Taka)	Inputs (S/M)	Sub-cost for each Staff (Taka)
Tripal Kumar Sen	Survey Expert	70,000	3	210,000
Md. Khyer Ali	GIS Expert	80,000	8	640,000
Md. Shamsuddoha	Agricultural Scientist	80,000	2	160,000
Dr. Md. Ghulam Murtaza	Economist	80,000	2	160,000
Md. Ashraf Ul Abedin	Transport Planning Expert	80,000	2	160,000
Md. Rezoyan Mahmud	Geologist	70,000	2	140,000
Md. Khairul Kabir	Associate Geologist	60,000	2	120,000
Md. Muzibul Aktar	Geological Survey Technician	50,000	2	100,000
Md. Naziruzzaman	Civil Engineer cum Hydrologist	80,000	2	160,000
K.M. Abul Bashar	Urban Planner	80,000	8	640,000
Shahina Akter	Photogrammetric Expert	90,000	4	360,000
Md. Abdul Latif	Social Expert	80,000	3	240,000
Sub Total (A)				3,090,000
B. Planning Period				
Name	Position	Staff-month Rates (Taka)	Inputs (S/M)	Sub-cost for each Staff (Taka)
Dr. Nurul Islam Nazem	Team Leader	120,000	13	1,560,000
Md. Khyer Ali	GIS Expert	80,000	13	1,040,000
Madhuri Rani Roy	Urban Planner	80,000	8	640,000
Md. Naziruzzaman	Civil Engineer cum Hydrologist	80,000	2	160,000
Dr. Md. Ghulam Murtaza	Urban Economist	80,000	2	160,000
Md. Rezoyan Mahmud	Geologist	70,000	2	140,000
Md. Khairul Kabir	Associate Geologist	60,000	2	120,000
Md. Ashraf Ul Abedin	Transport Planning Expert	80,000	2	160,000
Md. Abdul Latif	Social Expert	80,000	3	240,000
Sub Total (B)				4,220,000
Total (A+B)				73,10,000.00

In Words: Seventy Three Lakh Ten Thousand Taka Only.

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 & Digitize				
	i Procurement of Mouza Maps	Lump-Sum			300000
	ii Scanning, digitizing, Editing, Referencing	Lump-Sum			525000
2	Procurement of Satellite Image and Processing				
	i. Procurement of Satellite Image for Urban Area (0.5 m Resolution)	Sq. km	3126	300	937800
	ii. Procurement of Satellite Image for Rural Area (1.0 m Resolution)	Sq. km	1945	627.11	1219729
	iii. Image Processing, 3D-Digitization, Database Preparation and Geo-Referencing (Aerial Triangulation), DEM Preparation	Sq. km	300	927.11	278133
3	Conducting Survey and Studies				
	i. Socio-economic Survey considering housing and squatter settlement survey, investment and employment survey and population and Migration. Study etc. (Shibpur, Raipura & Ishwarganj Upazila: Urban area= 32.83 sq.km. & Rural Area = 894.28 sq.km)	household	550	927.11	509910.5
	ii. Traffic and Transport Survey, Geological Survey, environmental studies, Survey of Urban and Rural Economy , Formal & Informal Industrial Survey , Hydrological Studies , Disaster Related Survey & Studies, Archaeological Study, Agricultural Survey, Pollution Study, Bathymetric report and studies, social space studies, growth of the human settlement etc.	acre	7	229098	1603686
	iii. Topographic Survey & RTK GPS Survey	acre	14	229098	3207372
	iv. Physical Feature and Land use Survey	acre	14	229098	3207372
4	Hydro-Geological Survey (Urban Area)				
	i. Boreholes 3 boreholes/ sq. km of urban area Total urban area 32.83 Sq.Km	number	5000	98	490000
5	Establishment of BM Pillars				
	i. BM Pillars in Urban Area 1 BM Pillar per 5 sq.km urban area} Number of BM Pillar = $32.83/5 = 6.566 \approx 7$	number	5000	7	35000
	ii. BM Pillars in Rural Area 1 BM Pillar per 20 sq.km in rural area, Number of BM Pillar = $894.28/20 = 44.714 \approx 45$	number	5000	45	225000
6	Production of Reports				
	i. Mobilization Report	number	750	20	15000
	ii. Inception Report	number	850	20	17000
	iii. Draft Survey Report	number	1150	20	23000
	iv. Final Survey Report	number	1250	20	25000
	v. Draft Final plan with Report	number	1500	20	30000
	vi. Final Plan Report: English and Bengali-Lether Binding	number	2000	20	40000
	vii. Printing of Maps (One Copy of each Set Different Types of Maps and Physical Feature and Landuse Survey Checking Maps)	Lump-Sum			750000
	viii. Working papers	No.	15000	10	150000






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)
7	Workshop (2 Workshop/Upazila)	no.	150000	6	900000
8	Public Hearing (Public Hearing/Upazila)	no.	150000	3	450000
9	Conduction PRA Session				
	PRA Session Ishwarganj: Union-11 Ward-9, Raipura: Union-24,- Shibpur: Union-9 (Total 53 PRA Session)	no.	20000	53	1060000
10	Rent of Project Site Office				
	a. Office Accommodation (Dhaka Office)	month	50000	21	1050000
	a. Office Accommodation Field (2 Field)	month	20000	6	120000
	b. Office Furniture	Lump-Sum			194398
	c. Utilities Service (Electricity, Water etc)	month	10000	21	210000
	d. Cost of Communication (Tele, fax, I. Net etc.)	month	10000	21	210000
11	Travelling and Perdiem	Trips	5000	20	100000
12	Office Stationary and other survey materials	Lump-Sum			150000
13	Training cost (For both Officers & Staffs)	Lump-Sum			40000
Total					1,80,73,400.00

In Words: One Crore Eighty Lakh Seventy Three Thousand Four Hundred Taka Only.

Form 5B5: Breakdown of Taxes

Sl.No.	Description	Unit	Unit Cost (Taka)	Quantity	Cost (Taka)
1	Income Tax	%	10	25,383,400	25,38,340.00
2	VAT	%	15	25,383,400	38,07,510.00
Total					63,45,850.00

In Words: Sixty three Lakh Forty Five Thousand Eight Hundred Fifty Taka Only.

Appendix 6

Minutes of Negotiation Meeting dated 30th November,
2014 and 11th December, 2014



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

Preparation of Development Plan for Fourteen Upazillas Project, UDD

(Contract Package No. 2)



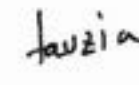



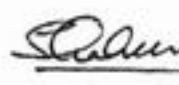


MINUTES OF CONTRACT NEGOTIATION

With

The Consulting Firm: JV of Sheltech consultants (Pvt) Ltd & ARC Bangladesh Ltd, 1/E/2 (2nd Floor) Paribagh (Mazar Road) Shahbagh, Dhaka-1000, Bangladesh; Phone: 8802-9611171; Fax: 8802-9611103; scpl.mail@gmail.com.


For

Selection of Consulting Firm for "Consultancy Services for Preparation of Development Plan for Package 2 (Ishwarganj Upazila (286.19 sq. km), District-Mymensingh, Raipura (408.45 sq. km) & Shibpur (232.47 sq. km) Upazila, District- Narsingdi.) under "Preparation of Development Plan for Fourteen Upazilas" Project

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**Minutes of Contract Negotiation
With**

The Consulting Firm: JV of Sheltech Consultants (Pvt) Ltd & ARC Bangladesh Ltd, 1/E/2 (2nd Floor) Paribagh (Mazar Road) Shahbagh, Dhaka-1000, Bangladesh; Phone: 8802-9611171; Fax: 8802-9611103; scpl.mail@gmail.com.

On Dated: November 30, 2014 at 11.00 a.m.

SUBJECT: Selection of Consulting Firm for "Consultancy Services for Preparation of Development Plan for Package 2 (Ishwarganj Upazila (286.19 sq. km), District-Mymensingh, Raipura (408.45 sq. km) & Shibpur (232.47 sq. km) Upazila, District- Narsingdi.) under "Preparation of Development Plan for Fourteen Upazilas" Project

PRESENT:

For the Preparation of Development Plan for Fourteen Upazillas 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.
2. **Mr Mahmudur Rashid Mazumder** : Assistant Engineer, BRWSSP, DPHE, 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.	Ms. Afsana Kamal	:	Director, Sheltech Consultants (Pvt.) Ltd. 1/E/2 Paribagh (Mazar Road) Shahbagh, Dhaka-1000
2.	Mr. Md. Shahim Hasan	:	Managing Director, ARC Bangladesh Ltd. 6/5 Lalmatia, Block-B Dhaka-1207, Bangladesh

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[Handwritten signatures and initials]

Minutes of the Contract Negotiation

Introduction

The negotiation meeting took place including the PEC members and the consulting firm of Package 2 i.e.: JV of Sheltech Consultants (Pvt) Ltd & ARC Bangladesh Ltd, 1/E/2 (2nd Floor) Paribagh (Mazar Road) Shahbagh, Dhaka-1000, 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, Ms. Afsana Kamal, Director of Sheltech Consultants (Pvt.) Ltd. 1/E/2 Paribagh (Mazar Road) Shahbagh, Dhaka-1000 expressed her thanks for being invited to contract negotiation for the above-mentioned project/assignment. She informed the chairperson of PEC that due to unavoidable circumstance most of their team members will not be able to attend the meetings dated 30 December, 2014(annex). She assured the availability of team members in next meeting date which was agreed to be on 11 December, 2014 at 10:30 a.m. in the same venue.

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

2. Terms of Reference (TOR):


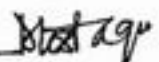

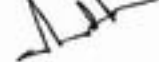
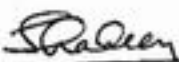

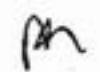

The scope of works of the TOR was thoroughly reviewed and agreed without any changes.

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 Agricultural Scientist should be replaced by following the instructions stated in RFP and also permission from the appropriate authority of Urban Economist should be submitted. The Consulting firm assured and confirmed that all key staffs which they proposed in the technical proposal will remain unchanged and Agricultural Scientist would be replaced. She also confirmed that the required documents of Urban Economist would be submitted. The Consulting firm also assured the 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 Tk. 3, 26, 82,536.00 (Three Crore Twenty Six lac Eighty Two thousand Five Hundred Thirty Six) only including IT and VAT etc. The Client indicated the several items according to RFP & ToR to be included in reimbursable items and work plan should be changed accordingly. The Consulting firm agreed on this and they will submit re-casted & realistic work plan which was agreed to be the part of the contract agreement. Moreover, the consulting firm agreed to complete the whole assignment as per TOR and work plan within the total financial offer. If there need any extra time inputs (man-months) beyond the proposal to complete the whole assignment they 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.

    
   3/6

5. Negotiated Contract Amount

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

In BDT		
Cost Component	Amount as per Financial Proposal	Amount (Corrected / Evaluated)
Staff Remuneration	10,400,000.00	7310000.00
Reimbursable Expenses	18,073,400.00	18,073,400.00
Total Contract Amount (Excluding Taxes & VAT)	28473400.00	25383400.00
Local Taxes 10%	4209136.00	2538340.00
VAT 15%		3807510.00
Total Contract Amount (Including Taxes & VAT)	3,26,82,536.00 (Three Crore Twenty Six lac Eighty Two Thousand Five Hundred Thirty Six) only	31729250.00 (Three Crore Seventeen lac Twenty Nine Thousand Two Hundred Fifty) only.

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 25383400.00
Estimated IT and VAT on negotiated contract amount : BDT 6345850.00
Total Contract Amount (including IT and VAT) : BDT 31729250.00
(Taka Three Crore Seventeen lac Twenty Nine Thousand Two Hundred Fifty 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/Association

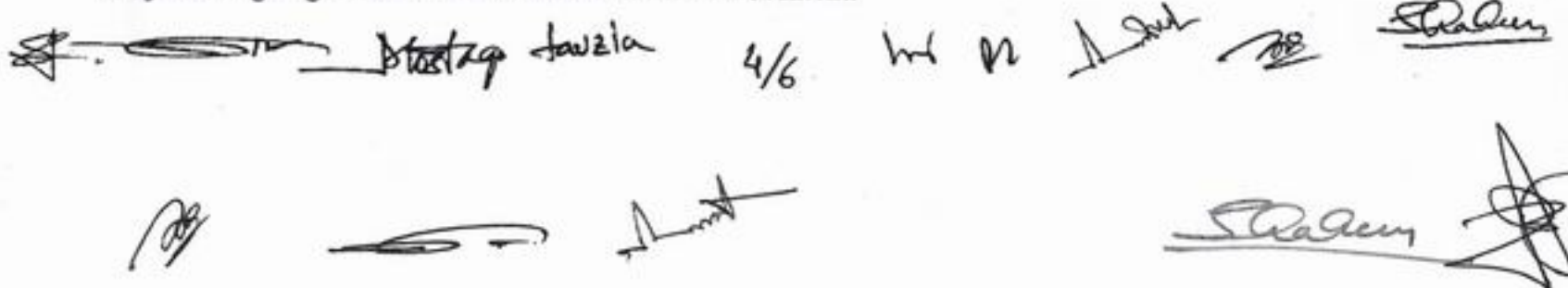
It is agreed that the Consulting firm will be responsible for the consultancy services of Package 2 under "Preparation of Development Plan for Fourteen Upazilas" Project. Moreover, the consulting firm must inform the client on any field visit /activities in advance and in written form.

9. Liability of the Consulting firm/Association

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 December 2014. The target date of commencement is subject to signing of contract and issuance of Letter of Intent.

 4/6

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.

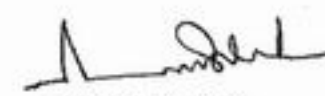
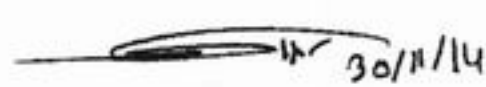
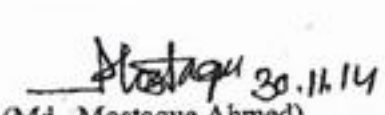
PEC also decided that the extended meeting of dated 30 November, 2014 will be held on 11 December, 2014 at 10:30 a.m. in the same venue.

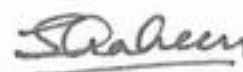
As there were no other points for discussion, the negotiation ended with exchange of thanks by the PD.

PEC

1. 
(Shaheen Ahmed)
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. 
(Mahmudur Rashid Mazumder)
Assistant Engineer, BRWSSP, DPHE, Dhaka & Member, PEC.
4. 
(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.
5. 
(Fauzia Sharmin Tithi)
Planner & Project Manager-1,
"Preparation of Development Plan for Fourteen Upazilas" Project, Urban Development Directorate, 82, Segunbagicha, Dhaka-1000 & Member, PEC.

Consultants

1. 
(Afsana Kamal)
Director, Sheltech Consultants (Pvt.) Ltd.
1/E/2 Paribagh (Mazar Road) Shahbagh, Dhaka-1000
2. 
(Md. Shahim Hasan)
Managing Director,
ARC Bangladesh Ltd.
6/5 Lalmatia, Block-B
Dhaka-1207, Bangladesh
3. 
(Md. Mostaque Ahmed)
Chairman
ARC Bangladesh Ltd.
6/5 Lalmatia, Block-B
Dhaka-1207, Bangladesh



6. ^{2007/78}
(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.

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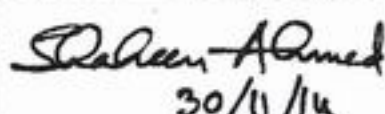
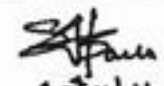

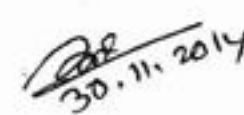
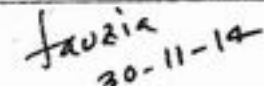

Attendance of the Proposal Evaluation Committee (PEC) Members

For the Contract Negotiation Meeting of Package 2

Name of the Service: Consultancy Services for Preparation of Development Plan of Package 2 under "Preparation of Development Plan for Fourteen Upazilas" Project, UDD.

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

Date of Negotiation: November 30, 2014. **Time of Meeting:** 02:30 p.m.

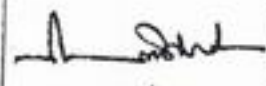
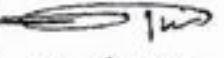
Sl. No.	Name & Designation	Signature with Date
1.	Mr. Shaheen Ahmed Project Director, "Preparation of Development Plan for Fourteen Upazilas" Project, Urban Development Directorate, 82, Segunbagicha, Dhaka-1000 & Chairman, PEC.	 30/11/14
2.	Mr. Dr. Md. Musleh Uddin Hasan Assistant Professor, Department of URP, BUET, Dhaka & Member, PEC.	A
3.	Mr S. M. Sadekul Islam Sub Divisional Engineer, Population Project Cell (PPC), PWD, Dhaka & Member, PEC.	 30/11/14.
4.	Mr. Mahmudur Rashid Mazumder Assistant Engineer, BRWSSP, DPHE, Dhaka & Member, PEC.	 30/11/2014
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.	 30.11.2014
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.	 30-11-14
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.	 30/11/14




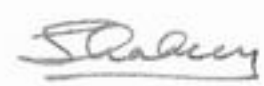

Attendance of the Representatives of Consulting Firms
For the Contract Negotiation Meeting of Package 2

Name of the Service: Consultancy Services for Preparation of Development Plan of Package 2 under "Preparation of Development Plan for Fourteen Upazilas" Project, UDD.

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

Date of Negotiation: November 30, 2014. **Time of Meeting:** 02:30 p.m.

Sl. No.	Consulting Firm	Name, Designation & Contact Number	Signature with Date
1.	Sheltech Consultants (Pvt.) Ltd. 1/E/2 Paribagh (Mazar Road) Shahbagh, Dhaka-1000	Afrana M. Kamal Director, SEPL 01819262012	 30.11.14
2.	ARC Bangladesh Ltd. 6/5 Lalmatia, Block-B Dhaka-1207, Bangladesh	Md. SHAMIM HASAN Managing Director 0715014112	 30.11.14

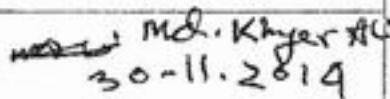
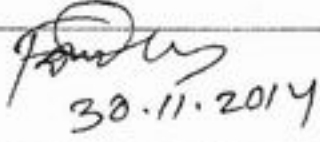
Attendance of the Key Professionals of Consulting Firms

For the Contract Negotiation Meeting of Package 2

Name of the Service: Consultancy Services for Preparation of Development Plan of Package 2 under "Preparation of Development Plan for Fourteen Upazilas" Project, UDD.

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

Date of Negotiation: November 30, 2014. **Time of Meeting:** 02:30 p.m.

Sl. No.	Name, Designation & Contact Number	Signature with Date
1.	Md. Khyer Ali, GIS Expert Cell: 01721765641	 30-11-2014
2.	Tripal Kumar sen, Survey Expert MOB # 01716877617	 30.11.2014
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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. 2)

EXTENDED MEETING MINUTES OF CONTRACT NEGOTIATION

With

The Consulting Firm: JV of Sheltech consultants (Pvt) Ltd & ARC Bangladesh Ltd, 1/E/2 (2nd Floor) Paribagh
(Mazar Road) Shahbagh, Dhaka-1000, Bangladesh; Phone: 8802-9611171; Fax: 8802-9611103;
scpl.mail@gmail.com.

For

Selection of Consulting Firm for "Consultancy Services for Preparation of Development Plan for
Package 2 (Ishwarganj Upazila (286.19 sq. km), District-Mymensingh, Raipura (408.45 sq. km) &
Shibpur (232.47 sq. km) Upazila, District- Narsingdi.) under "Preparation of Development Plan for
Fourteen Upazilas" Project

Mohd. h. A. [Signature] *[Signature]* *[Signature]*

[Signature] *[Signature]* *[Signature]* *[Signature]*

**Extended Meeting Minutes of Contract Negotiation
With**

The Consulting Firm: JV of Sheltech Consultants (Pvt) Ltd & ARC Bangladesh Ltd, 1/E/2 (2nd Floor) Paribagh (Mazar Road) Shahbagh, Dhaka-1000, Bangladesh; Phone: 8802-9611171; Fax: 8802-9611103; scpl.mail@gmail.com.

On Dated: December 11, 2014 at 10.30 a.m.

SUBJECT: Selection of Consulting Firm for "Consultancy Services for Preparation of Development Plan for Package 2 (Ishwarganj Upazila (286.19 sq. km), District-Mymensingh, Raipura (408.45 sq. km) & Shibpur (232.47 sq. km) Upazila, District- Narsingdi.) under "Preparation of Development Plan for Fourteen Upazilas" Project

PRESENT:

For the Preparation of Development Plan for Fourteen Upazillas 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. Dr. Md. Musleh Uddin Hasan : Associate Professor, Department of Urban & Regional Planning, BUET, Dhaka & Member, PEC
4. Mr. Mahmudur Rashid Mazumder : Assistant Engineer, BRWSSP, DPHE, Dhaka & Member, PEC.
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.
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.
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.

For the Consultant

1.	Mrs. Afsana Kamal	:	Director, Sheltech Consultants (Pvt.) Ltd. 1/E/2 Paribagh (Mazar Road) Shahbagh, Dhaka-1000
2.	Mr. Md. Shahim Hasan	:	Managing Director, ARC Bangladesh Ltd. 6/5 Lalmatia, Block-B, Dhaka-1207, Bangladesh

[Handwritten signatures and initials are present at the bottom of the page, including names like 'Mush', 'me', 'J.', 'Ahmed', 'Shadeem', and others.]

Extended Meeting Minutes of the Contract Negotiation

Introduction

The negotiation meeting took place including the PEC members and the representatives of consulting firm of Package 2 i.e.:- JV of Sheltech Consultants (Pvt) Ltd & ARC Bangladesh Ltd, 1/E/2 (2nd Floor) Paribagh (Mazar Road) Shahbagh, Dhaka-1000, 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, Ms. Afsana Kamal, Director of Sheltech Consultants (Pvt.) Ltd. 1/E/2 Paribagh (Mazar Road) Shahbagh, Dhaka-1000 expressed her thanks for being invited extended meeting 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. Availability of Key Professional Staff:

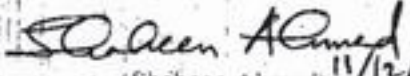
The Client expressed its major concern as to the availability of proposed key staff in the proposed position to conduct the proposed activities following the proposed approach and methodology. According to Technical Proposal of consulting firm, the following proposed key staff attended the meeting (pls see the annex). The Consulting firm assured the availability of key staff both in central office as well as project site office.

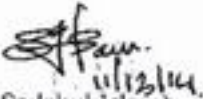
3. Minutes of Extended Negotiation Meeting

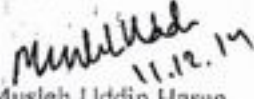
It was agreed that minutes of today's negotiation meeting will be part & parcel of the Contract Agreement.

As there were no other points for discussion, the extended negotiation meeting ended with exchange of thanks by the PD.


PEC

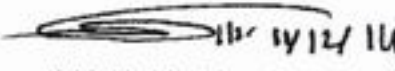
1. 
(Shaheen Ahmed) 11/12/14
Project Director, "Preparation of Development
Plan for Fourteen Upazilas" Project, UDD,
Dhaka and Chairman, PEC

2. 
(S. M. Sadekul Islam) 11/12/14
Sub Divisional Engineer, Population Project Cell
(PPC), PWD, Dhaka & Member, PEC.

3. 
Dr. Md. Musleh Uddin Hasan
Associate Professor
Department of Urban & Regional Planning
BUET, Dhaka & Member, PEC.

Consultants

1. 
(Afsana Kamal) 11/12/14
Director, Sheltech Consultants (Pvt.) Ltd.
1/E/2 Paribagh (Mazar Road) Shahbagh, Dhaka-
1000

2. 
(Md. Shahim Hasan)
Managing Director,
ARC Bangladesh Ltd.
6/5 Lalmatia, Block-B
Dhaka-1207, Bangladesh

4. (Mahmudur Rashid Mozumder)
Assistant Engineer, BRWSSP, DPHE, Dhaka &
Member, PEC.

5. (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.

6. (Fauzia Sharmin Tithi)
Planner & Project Manager-1,
"Preparation of Development Plan for Fourteen
Upazilas" Project, Urban Development
Directorate, 82, Segunbagicha, Dhaka-1000 &
Member, PEC.

7. (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.

Muhammad Nurul Islam

Signature



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

Attendance of the Consulting Firm Members of Extended Negotiation Meeting for Package - 2

Name of the Services: Consultancy Services for Preparation of Development Plan of Package 2 under "Preparation of Development Plan for Fourteen Upazilas" Project, UDD.

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

Date: December 11, 2014, **Time:** 10:30 a.m.

Sl. No.	Name	Designation	Signature with Date
01	Afoana M Kamal	Director	 11/12/14
02	MD. SHAMIM HASAN	MANAGING DIRECTOR	 11/12/2014
03			
04			


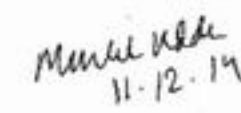

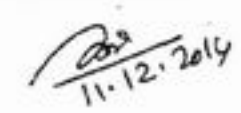
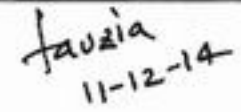
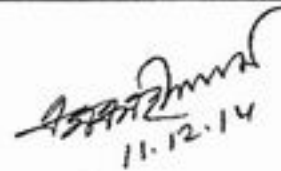


Attendance of the Proposal Evaluation Committee (PEC) Members
Extended Negotiation Meeting of Package - 2

Name of the Services: Consultancy Services for Preparation of Development Plan of Package 2 under "Preparation of Development Plan for Fourteen Upazilas" Project, UDD.

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

Date: December 11, 2014, **Time:** 10:30 a.m.

Sl. No.	Name of PEC Members	Signature with Date
01	Mr. Shaheen Ahmed Project Director, "Preparation of Development Plan for Fourteen Upazilas" Project, Urban Development Directorate, 82, Segunbagicha, Dhaka-1000 & Chairman, PEC	 11/12/14
02	Mr. Dr. Md. Musleh Uddin Hasan Assistant Professor, Department of URP, BUET, Dhaka & Member, PEC	 11.12.14
03	Mr. S. M. Sadekul Islam Sub Divisional Engineer, Population Project Cell (PPC), PWD, Dhaka & Member, PEC	 11/12/14.
04	Mr. Mahmudur Rashid Mazumder Assistant Engineer, BRWSSP, DPHE, Dhaka & Member, PEC	A
05	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	 11.12.2014
06	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	 11-12-14
07	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	 11.12.14

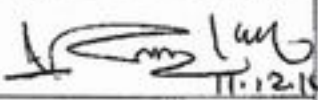
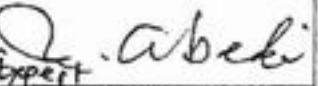
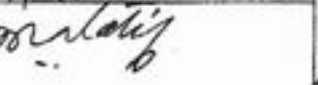
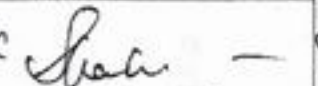
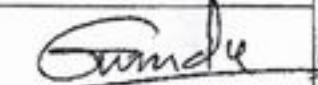
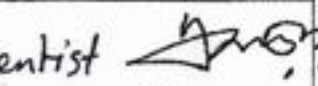
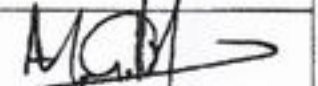
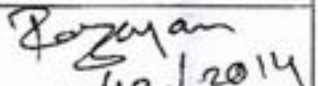
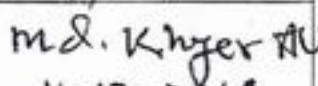
Government of the People's Republic of Bangladesh
Urban Development Directorate
82, Segunbagicha, Dhaka-1000
Website:- www.udd.gov.bd

Attendance of Technical Staff for Extended Negotiation Meeting of Package – 2

Name of the Services: Consultancy Services for Preparation of Development Plan of Package 2 under "Preparation of Development Plan for Fourteen Upazilas" Project, UDD.

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

Date: December 11, 2014, **Time:** 10:30 a.m.

Sl. No.	Name of Technical Staff	Proposed Position	Signature with Date
01	Dr. Nurul Islam Nazem	Team Leader	 11.12.14
02	M. Ashraful Abedin	Transport planning expert	 Abedin?
03	Md. Abdul Latif	Social-expat consultant	 Latif?
04	Shahina Akter	Photogrammetric expert	 Shah - ?
05	Gourcango Kumar Kundu	Urban Planner	 Kundu?
06	Md. Shamsuddoha	Agricultural scientist	 Shamsuddoha?
07	Dr. Md. Ghulam Murteza	Economist	 Murteza
08	Razvan	Geologist	 Razvan 11/12/2014
09	Md. Khayer Ali	GIS Expert	 Md. Khayer Ali 11.12.2014
10			
11			
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