GOVERNMENT OF THE PEOPLE’S REPUBLIC OF BANGLADESH
MINISTRY OF COMMUNICATIONS

ROADS AND HIGHWAYS DEPARTMENT

RHD Management Plan
Volume 3
Planning & Maintenance Wing
Management Manual

DECEMBER 2003
ISSUE 1
FOREWORD

RHD MANAGEMENT PLAN

The RHD Management Plan has been developed as part of the commitment, as stated in the National Land Transport Policy, to ensure the effective planning, management and maintenance of the National Road Network.

The Management Plan has been prepared by RHD officers working through the MPITs, assisted by consultants from IDC3, SRNDP and RRMP3. The Plan covers all aspect of the Department operations and extends to all support services including human resources, financial, administration, information technology and health and safety. Care has been taken to build on existing systems and procedures.

The Management Plan is applied through the documented strategy papers, operational plans, job descriptions and procedures contained in eight volumes as follows:

Volume 1 - RHD Management Manual
Volume 2 - Management Services Wing Management Manual
Volume 3 - Planning and Maintenance Wing Management Manual
Volume 4 - Technical Services Wing Management Manual
Volume 5 - Bridge Management Wing Management Manual
Volume 6 - Mechanical Zone Management Manual
Volume 7 - Zonal Operations Management Manual
Volume 8 - Foreign Aided Projects Management Manual

Volume 1 contains the core documentation including the RHD strategy, general job descriptions, general procedures and a schedule of relevant GoB rules and regulations.

In Volumes 2 to 8, operational plans define the objectives, outputs and activities of each Wing and Circle and establish the necessary operational budgets and resource requirements. Operational procedures and specific job descriptions provide a systematic record of current practice and a framework for the further development of the management of the whole Department.

The RHD Management Plan is intended to be a live document, and will be maintained on the RHD Intranet. The implementation and future improvements of the documents will be conducted through MPITs under the overall directions of the ACE of management Services Wing.

I wish to thank and commend all of the officers of RHD who have devoted their time and energy to the preparation of this important document. I also extend my appreciation to the development partners who have actively supported this work particularly DFID, ADB and WB.

January 2004

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CHIEF ENGINEER
Roads and Highways Department
Sarak Bhaban, Ramna, Dhaka
VOLUME 3

PLANNING & MAINTENANCE WING MANAGEMENT MANUAL

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OVERVIEW

The Management Manual for the Planning & Maintenance Wing forms a part of the RHD Management Plan, which consists of strategy papers, operational plans, job descriptions and procedures within a defined framework. Figure 1 ‘RHD Documentation Framework’ shows the hierarchy of documentation required to define the RHD Management Plan.

This document must be read in conjunction with the RHD Management Manual, Volume 1 of the RHD Management Plan, which contains the core documentation for the whole of the Department as follows:

- RHD Strategy
- Office of the Chief Engineer
- General Job Descriptions
- RHD General Procedures
- Government of Bangladesh Rules and Regulations

The Chief Engineer controls the overall RHD Management Plan Policy.

The Management Manual for the Planning & Maintenance Wing contains specific documentation that applies to the whole of the Wing, and is one of seven volumes for the Wings and Zones as follows:

- Volume 2 - Management Services Wing Management Manual
- Volume 3 - Planning & Maintenance Wing Management Manual
- Volume 4 - Technical Services Wing Management Manual
- Volume 5 - Bridge Management Wing Management Manual
- Volume 6 - Mechanical Zone Management Manual
- Volume 7 - Zonal Operations Management Manual
- Volume 8 - Foreign Aided Projects Management Manual

The Management Manuals are structured to achieve the flexibility required to control the varied activities and methods of operation of the Roads and Highways Department at the Wing/Zone level.

The Master Copies of the Management Manual documentation are filed on the RHD Intranet and the documentation will be updated on a regular basis and all amendments and additions will be advertised. Master hard copies of the documents are held in the office of the Chief Engineer, Additional Chief Engineer-Planning & Maintenance Wing, the Administration & Establishment Circle and the MIS &
Estates Circle. The documents are regarded as live documents, and proposals for amendment, addition or deletion are encouraged, and can be logged on the RHD Intranet.

RESPONSIBILITIES

The responsibility for determining the necessary controls within the Roads and Highways Department generally lies with the Chief Engineer, except where Government of Bangladesh rules and regulations apply.

The responsibility for determining the necessary controls within the Wing, Circle, Division and Sub-Division generally lies with the respective Additional Chief Engineer, except where Government of Bangladesh rules and regulations or the RHD General Procedures contained in Volume 1 - RHD Management Manual apply.

The management of the system is a function of the Management Services Wing under the control of the Additional Chief Engineer – Management Services Wing who reports on a routine basis to the Chief Engineer.

The main responsibilities of the Additional Chief Engineer – Management Services Wing are:

- Reporting to the Senior Management Committee on all Management Plan matters.
- The overall planning, development, monitoring and reporting of all aspects of the system
- Maintenance of the Management Plan documentation through the Superintending Engineer - Administration & Establishment Circle & Superintending Engineer - MIS & Estates Circle.
- Formal review of the adequacy and effectiveness of the Management Plan.

The master copies of the Management Plan documentation will be stored on the RHD Intranet, and will be managed by the Superintending Engineer – MIS & Estates Circle.

The main responsibilities of the Superintending Engineer – MIS & Estates Circle are:

- Liaising with the Superintending Engineer - Administration & Establishment Circle on all Management Plan documentation matters.
- Ensuring that the master documents stored on the RHD Intranet contain all current amendments and additions.
- Advertising changes to the documentation on the homepage of the RHD Intranet.
- Formal review of the adequacy and effectiveness of the Intranet documentation system.

To assist liaison, the Member-Secretary of MPIT or a member of staff will be nominated by the Additional Chief Engineer – Planning & Maintenance Wing as required. They will be responsible for:
• Liasing with the Superintending Engineer – Administration & Establishment Circle on Management Plan matters.
• Liasing with the Superintending Engineer – MIS & Estates Circle on Management Plan documentation matters.
• Assisting in the formal review of the adequacy and effectiveness of the Management Plan.

MANAGEMENT MANUAL COMPONENTS

The Management Manual for the Wing is structured to achieve the flexibility required controlling the varied activities and methods of operation of the Roads and Highways Department at the Wing level. It is not a static document and must be regularly updated to meet changing circumstances.

The Management Manual consists of:

• The Planning & Maintenance Wing Strategy
• Operational Plan and Specific Job Descriptions for the Office of the Additional Chief Engineer
• Operational Plans, Specific Job Descriptions and Operational Procedures for each Circle

PLANNING & MAINTENANCE WING STRATEGY

The Planning & Maintenance Wing Strategy (See section 1) sets out the overall objective, outputs and activities of the Wing and provides a summary of total personnel numbers and budget. The overall objective is as follows:

The objective of the Planning & Maintenance Wing is to contribute to the overall strategy of RHD by providing a high level of service, in the effective planning and management of a programme of works on the RHD road network. This involves close liaison with the MoC, the Planning Commission and RHD field divisions to ensure that the work is managed from conception to physical completion whilst ensuring the optimum utilisation of funds.

OPERATIONAL PLANS

The Operational Plans assist the planning and management in each Circle (See Following Sections) by:

1. Defining the work of the Wing/Circle:
   The Objectives of the Wing/Circle are established with defined Outputs. The Activities required to achieve the Outputs are listed and programmed in a logical manner in the Workplan.

2. Establishing the personnel, structure and resources to do the job:
The required numbers of Personnel and the Organisational Structure required to manage the personnel effectively are detailed in the Personnel and Organogram Databases. Resources such as transport and office equipment and the overall Budget requirements are tabulated. RHD has prepared a PCP titled 'Investigation, Survey, Planning, Design and Monitoring (ISPDM) of RHD Projects' showing budget requirements of all Wings/Circles, Which is now under submission to the Planning Commission.

The Operational plans are to be reviewed annually and an assessment made of

- Progress against the defined outputs
- Adequacy of the resources and personnel

The Operational plan is then to be adjusted for the following year taking these factors into account, and also considering, for example, changes in priorities which may affect the overall objective, revised budget allocations and organisational changes within the RHD.

**SPECIFIC JOB DESCRIPTIONS**

In addition to the General Job Descriptions for each grade of officer, every post has specific duties and functions. These duties and functions are detailed in the Specific Job Descriptions for each post from Additional Chief Engineer to Sub-Assistant Engineer.

The Specific Job Descriptions for individual posts may require modifications from time to time in order to respond to changing circumstances. Such modifications may be made with the approval of the Chief Engineer provided that all changes comply with Government rules and regulations.

**OPERATIONAL PROCEDURES**

The operational procedures relate to activities not covered by the RHD General Procedures, and are specifically for activities undertaken in the Wing, Circles and Divisions. They must not conflict with the RHD General Procedures.

The operational procedures provide an important record of the processes required to complete the activities undertaken by the Wing and Circles. The information provided by the operational procedures includes the steps in the process, responsibilities for tasks, the essential inputs and outputs, and the interactions with other departments.

The operational procedures are intended to compliment the various GoB rules and regulations, RHD manuals, standards and specifications by providing guidance on the application of these documents in a working environment. These are tools to assist officers in the effect execution of the work of the RHD, by encouraging consistency in the management of activities and providing continuity when officers move from one department to another.

The operational procedures are not intended to be an additional layer of regulation.
General Procedure - GP3 - Preparation of RHD Management Plan Procedures describes the process for preparing procedures, and aims to ensure that the procedures are produced in a consistent manner.
FIGURE 1 - RHD DOCUMENTATION FRAMEWORK
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<th>Abbreviation</th>
<th>Description</th>
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<tr>
<td>A&amp;A</td>
<td>Audit &amp; Accounts</td>
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<td>AADT</td>
<td>Average Annual Daily Traffic</td>
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<td>ACC</td>
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<td>Additional Chief Engineer - Bridge Management Wing</td>
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<td>ACE-PMW</td>
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<td>Annual Development Budget/Asian Development Bank</td>
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<td>AE-MON</td>
<td>Assistant Engineer - Monitoring Division</td>
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<td>AO</td>
<td>Administrative Officer</td>
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<tr>
<td>ARMP</td>
<td>Annual Routine Maintenance Programme</td>
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<td>ATE</td>
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<td>ATE-EPPD</td>
<td>Assistant Transport Economist - Economic Planning &amp; Policy Division</td>
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<tr>
<td>ATE-FSD</td>
<td>Assistant Transport Economist - Feasibility Studies Division</td>
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<td>BBS</td>
<td>Bangladesh Bureau of Statistics</td>
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<td>BCR</td>
<td>Benefit-Cost Ratio</td>
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<td>BCS</td>
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<td>BMMS</td>
<td>Bridge Maintenance and Management System</td>
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<td>BPC</td>
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<td>Bangladesh Road Transport Authority</td>
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<td>Custom Duties and Sales Tax</td>
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<td>Chief Engineer</td>
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<td>Consolidation of Institutional Development Component 3</td>
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<td>Computerised Project Monitoring System</td>
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<td>CSIMT</td>
<td>Contract System Implementation &amp; Monitoring Team</td>
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<td>Deflection Cone Penetration Test</td>
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<td>(MINCoP)</td>
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<td>FAP</td>
<td>Foreign Aided Projects</td>
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<td>FIDIC</td>
<td>Fédération International de Ingénieurs-Conseils (International Federation of Consulting Engineers)</td>
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<td>FIRR</td>
<td>Financial Internal Rate of Return</td>
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<td>SE-PDC</td>
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<td>SJD</td>
<td>Specific Job Descriptions</td>
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<td>SMART</td>
<td>Specific, Measurable, Achievable, Realistic, and Time-bound</td>
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<td>WWW</td>
<td>World Wide Web</td>
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<td>XEN</td>
<td>Executive Engineer</td>
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SECTION 1  STRATEGY

INTRODUCTION

The Planning & Maintenance Wing (Previously Network Management Wing) was formed following a reorganisation of the former Planning & Development Wing. This includes some new circles and new roles to reflect the current functions of the wing and the growing emphasis on maintenance. The processes and procedures are developed from those under the former wing structure.

This Management Plan is based on the RHD Organisation as shown in figure 1.1.

OBJECTIVE

The objective of the Planning & Maintenance Wing is to contribute to the overall strategy of RHD by providing a high level of service, in the effective planning and management of a programme of works on the RHD road network. This involves close liaison with the MoC, the Planning Commission and RHD field divisions to ensure that the work is managed from conception to physical completion whilst ensuring the optimum utilisation of funds.

MAIN OUTPUTS

The main outputs of the Wing and its Circles are:

- Up-to-date accurate and reliable inventory maintained, including the physical attributes, of the Department’s roads and bridges.
- Contribute to the RHD policies and long-term development plans by using available road and bridge data including traffic, economic and social parameters.
- Prioritised listings and short-term and long-term programmes presented for road maintenance and development projects designed to optimise the use of Government and private funds.
- Assistance provided for development of annual budgets for the maintenance of roads.
- PCP, PP and TAPP documents submitted for consideration by the MoC and the Planning Commission.
- Advice and assistance given to the Department in all procurement issues.
- Effective and timely responses provided to emergency situations (floods, cyclones, earth-slips etc.).
- Interface provided with other wings, circles and field zones as appropriate in the development of plans incorporating road safety, environmental and social issues.
ORGANISATION

The organogram for the wing (December 2003) is shown below:

Organogram of Planning & Maintenance Wing
The Planning & Maintenance Wing consists of six Circles each headed by an officer of Superintending Engineer Level. The total proposed staffing for the Wing is 342 persons comprising 68 Class I officers, 36 Class II officers, 166 Class III and 73 Class IV staff.

Certain officers in the Wing are to be designated as specialists. Specialist posts for engineers with specialist training are star marked thus, EE*. Specialist posts for engineers, or non-engineers, with specialist qualifications are shown together with the equivalent engineering grade thus, Exec. Transport Economist (EEX).

The detailed personnel figures are shown in the Personnel and Organogram Databases.

**ACTIVITIES**

The main activities of the Wing and its Circles are summarised below:

- Collect, collate, review and monitor data on the entire network included in the RMMS.
- Undertake additional surveys as may be necessary to carry out economic or other analyses in the planning process.
- Apply HDM-4 for the analysis of maintenance, improvement and development programmes in order to optimise the use of available financial and other resources.
- Develop annual & multi-year programmes of maintenance & development works (including foreign aided projects) in consultation with the planning authorities in the MoC and the Planning Commission.
- Provide guidance on future investment alternatives to the Ministry of Communications, the Ministry of Finance and the Planning Commission based on economic optimisation analyses.
- Prepare recommendations for any proposed future expansion of the network including commissioning reviews of environmental, ecological, hydrological and social impacts of the proposed construction or acquisition.
- Prepare PCPs, PPs and TAPPs using data available from the RMMS and HDM-4 analyses.
- Maintain monitoring systems for revenue and ADP projects including those funded from external resources.
- Carry out the packaging of annual periodic maintenance programmes, procure contractors and consultants for undertaking large scale periodic maintenance works and monitor the execution of these works.
• Provide procurement assistance to other circles and field divisions for works and services contracts including: Studies, Surveys, Supervision and Construction for Routine and Periodic Maintenance, Improvement Works and New Construction.

• Undertake mid-year reviews of progress and if appropriate prepare re-allocations of funds to ensure efficient utilisation of resources.

• Develop a co-ordinated approach to programme development involving all circles within the Wing whilst ensuring the highest possible service to customers.

• Establish adequate funds for the operation of the Wing to meet the objectives stated above by securing budgets based on actual operational needs.

• Establish increased funding for road & bridge maintenance on a long-term basis.

Further details on the outputs and activities of the various circles are provided in the Circle Operational Plans.

**INDICATIVE ANNUAL BUDGET**

The total indicative budget for the Wing is shown in TABLE-1.1. Individual budgets are included in the operational plan of each Circle.
FIGURE 1.1 - ORGANOGRAM OF ROADS AND HIGHWAYS DEPARTMENT
## 1) RUNNING COSTS:

<table>
<thead>
<tr>
<th>Item</th>
<th>Quantity</th>
<th>Rate  (Taka)</th>
<th>Total Cost (Taka)</th>
<th>No. per Year</th>
<th>Annual Cost (Lakh)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Operation &amp; Maintenance:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vehicle Operation &amp; Maintenance</td>
<td>51.00</td>
<td>15000.00</td>
<td>765000.00</td>
<td>12.00</td>
<td>91.80</td>
</tr>
<tr>
<td>Stationary, Copying &amp; Consumables</td>
<td>16.50</td>
<td>10000.00</td>
<td>165000.00</td>
<td>12.00</td>
<td>19.80</td>
</tr>
<tr>
<td>Computer Operations &amp; Maintenance</td>
<td>56.00</td>
<td>3000.00</td>
<td>168000.00</td>
<td>12.00</td>
<td>20.16</td>
</tr>
<tr>
<td>Printing (external printers)</td>
<td>4.50</td>
<td>100000.00</td>
<td>450000.00</td>
<td>0.50</td>
<td>4.25</td>
</tr>
<tr>
<td>Office Equipment Maintenance</td>
<td>56.00</td>
<td>10000.00</td>
<td>560000.00</td>
<td>12.00</td>
<td>67.20</td>
</tr>
<tr>
<td>Services, investigations, surveys etc (details in circle budget sheets)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>234.46</td>
</tr>
</tbody>
</table>

**TOTAL 1:** (Lakh) 437.67

## 2) CAPITAL COSTS: (Purchase and periodic replacement of all equipment etc.)

<table>
<thead>
<tr>
<th>Item</th>
<th>Quantity</th>
<th>Rate  (Lakh)</th>
<th>Total Cost (Lakh)</th>
<th>Life (Years)</th>
<th>Avg Annual Cost (Lakh)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vehicles1: Jeep</td>
<td>45.00</td>
<td>25.00</td>
<td>1125.00</td>
<td>8.00</td>
<td>140.63</td>
</tr>
<tr>
<td>Vehicles2: Pickup</td>
<td>5.00</td>
<td>15.00</td>
<td>75.00</td>
<td>10.00</td>
<td>7.50</td>
</tr>
<tr>
<td>Vehicles3: Car</td>
<td>1.00</td>
<td>20.00</td>
<td>20.00</td>
<td>8.00</td>
<td>2.50</td>
</tr>
<tr>
<td>Computer &amp; Accessories (general office)</td>
<td>53.00</td>
<td>1.00</td>
<td>53.00</td>
<td>4.00</td>
<td>13.25</td>
</tr>
<tr>
<td>Computer &amp; Accessories (specialist)</td>
<td>3.00</td>
<td>2.00</td>
<td>6.00</td>
<td>4.00</td>
<td>1.50</td>
</tr>
<tr>
<td>Specialist Computer Software</td>
<td>9.00</td>
<td>0.50</td>
<td>4.50</td>
<td>4.00</td>
<td>1.13</td>
</tr>
<tr>
<td>Photocopier</td>
<td>20.00</td>
<td>2.00</td>
<td>40.00</td>
<td>4.00</td>
<td>10.00</td>
</tr>
<tr>
<td>Fax machine</td>
<td>8.00</td>
<td>1.00</td>
<td>8.00</td>
<td>4.00</td>
<td>2.00</td>
</tr>
<tr>
<td>Air Conditioner</td>
<td>28.00</td>
<td>0.50</td>
<td>14.00</td>
<td>5.00</td>
<td>2.80</td>
</tr>
<tr>
<td>Specialist Equipment</td>
<td>0.00</td>
<td>1.00</td>
<td>0.00</td>
<td>5.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Office Furniture &amp; Fixtures</td>
<td>11.00</td>
<td>2.00</td>
<td>21.25</td>
<td>10.00</td>
<td>2.13</td>
</tr>
<tr>
<td>Office Refurbishment</td>
<td>11.00</td>
<td>1.00</td>
<td>10.75</td>
<td>10.00</td>
<td>1.08</td>
</tr>
</tbody>
</table>

**TOTAL 2:** (Lakh) 1,377.50  184.50  **GRAND TOTAL (1 + 2 ) 622.17**

**TOTAL EQUIVALENT ANNUAL BUDGET = Taka 622 Lakh**

**TOTAL INDICATIVE ANNUAL BUDGET - P&M WING - TABLE 1.1**

(Based on 2003-2004 Financial Year)
SECTION 2  OFFICE OF THE ADDITIONAL CHIEF ENGINEER
OPERATIONAL PLAN

INTRODUCTION

The Office of the Additional Chief Engineer is responsible for the overall management of the Planning &
Maintenance Wing. The main outputs and activities are shown in Section 1.

OBJECTIVE

The objective of the office is to:

*Manage all operations in the Planning & Maintenance Wing and ensure that the Strategy for the
Wing is fully achieved and the Management Plans are applied.*

ORGANISATION

The Wing is split into six Circles, with the Superintending Engineers of each circle, reporting to the
Additional Chief Engineer. The basic organisation of the office of the ACE is as follows:

The organisation of the Office of the Additional Chief Engineer consists of the ACE, on Assistant
Engineer and other office support staff. The total number of personnel is 16. The detailed personnel
figures are shown in the Personnel and Organogram Databases.

RESOURCES

The Office of the Additional Chief Engineer requires resources for Head Office operations and to
enable the ACE to make periodic field inspection visits.
The resources required are shown in the table below:

<table>
<thead>
<tr>
<th>Item</th>
<th>Existing (2003)</th>
<th>Proposed Total Requirement</th>
<th>Additional Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Inspection Vehicles</td>
<td>1</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>2. Computer with printer</td>
<td>1</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>3. Photocopyer</td>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>4. Air cooler</td>
<td>1</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>5. Fax Machine</td>
<td>-</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

**INDICATIVE BUDGET**

The indicative budget for the Office of the Additional Chief Engineer is shown in TABLE-2.1.
### 1) RUNNING COSTS:

<table>
<thead>
<tr>
<th>Item</th>
<th>Quantity</th>
<th>Rate (Taka)</th>
<th>Total Cost (Taka)</th>
<th>No. per Year</th>
<th>Annual Cost (Lakh)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operation &amp; Maintenance:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vehicle Operation &amp; Maintenance</td>
<td>2.00</td>
<td>15000.00</td>
<td>30000.00</td>
<td>12.00</td>
<td>3.60</td>
</tr>
<tr>
<td>Stationary, Copying &amp; Consumables</td>
<td>0.50</td>
<td>10000.00</td>
<td>5000.00</td>
<td>12.00</td>
<td>0.60</td>
</tr>
<tr>
<td>Computer Operations &amp; Maintenance</td>
<td>3.00</td>
<td>3000.00</td>
<td>9000.00</td>
<td>12.00</td>
<td>1.08</td>
</tr>
<tr>
<td>Printing (external printers)</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Office Equipment Maintenance</td>
<td>5.00</td>
<td>10000.00</td>
<td>50000.00</td>
<td>12.00</td>
<td>6.00</td>
</tr>
<tr>
<td>Services (investigations, surveys etc.)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inspection visits etc.</td>
<td>1.00</td>
<td>5000.00</td>
<td>5000.00</td>
<td>6.00</td>
<td>0.30</td>
</tr>
</tbody>
</table>

**TOTAL 1: (Lakh)** 11.58

### 2) CAPITAL COSTS: (Purchase and periodic replacement of all equipment etc.)

<table>
<thead>
<tr>
<th>Item</th>
<th>Quantity</th>
<th>Rate (Lakh)</th>
<th>Total Cost (Lakh)</th>
<th>Life (Years)</th>
<th>Avg Annual Cost (Lakh)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vehicles1: Jeep</td>
<td>2.00</td>
<td>25.00</td>
<td>50.00</td>
<td>8.00</td>
<td>6.25</td>
</tr>
<tr>
<td>Vehicles2: Pickup</td>
<td>0.00</td>
<td>15.00</td>
<td>0.00</td>
<td>10.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Vehicles3: Car</td>
<td>0.00</td>
<td>20.00</td>
<td>0.00</td>
<td>8.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Computer &amp; Accessories (general office)</td>
<td>3.00</td>
<td>1.00</td>
<td>3.00</td>
<td>4.00</td>
<td>0.75</td>
</tr>
<tr>
<td>Computer &amp; Accessories (specialist)</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>4.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Specialist Computer Software</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>4.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Photocopier</td>
<td>1.00</td>
<td>2.00</td>
<td>2.00</td>
<td>4.00</td>
<td>0.50</td>
</tr>
<tr>
<td>Fax machine</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>4.00</td>
<td>0.25</td>
</tr>
<tr>
<td>Air Conditioner</td>
<td>3.00</td>
<td>0.50</td>
<td>1.50</td>
<td>5.00</td>
<td>0.30</td>
</tr>
<tr>
<td>Specialist Equipment</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Office Furniture &amp; Fixtures</td>
<td>1.00</td>
<td>2.00</td>
<td>2.00</td>
<td>10.00</td>
<td>0.20</td>
</tr>
<tr>
<td>Office Refurbishment</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>10.00</td>
<td>0.10</td>
</tr>
</tbody>
</table>

**TOTAL 2: (Lakh)** 60.50 **Avg Annual Cost: (Lakh) 8.35 **

**GRAND TOTAL (1+2): 19.93**

TOTAL EQUIVALENT ANNUAL BUDGET = Taka 20 Lakh

**TOTAL INDICATIVE ANNUAL BUDGET - OFFICE OF THE ACE - TABLE 2.1**

(Based on 2003-2004 Financial Year)
SECTION 3  PLANNING & PROGRAMMING CIRCLE
OPERATIONAL PLAN

INTRODUCTION

The Planning & Programming Circle (Originally under ACE Planning & Development) was created in 1998. The Circle is headed by an SE with 3 divisions each under an Executive Engineer.

OBJECTIVE

The objective of the Planning & Programming Circle is to contribute to the overall strategy of the Planning & Maintenance Wing by:

Ensuring inclusion of cost effective road and bridge projects in the ADP and preparing proposals for allocation of funds on the basis of social and economic priorities.

OUTPUT

♦ TAPP prepared for undertaking feasibility studies (PC1 and PC2), consultancy services, detailed design of foreign aided projects and GoB funded projects.

♦ PPCPs, PCPs and PPs prepared for inclusion of new GoB financed and foreign aided projects in the ADP.

♦ ADP prepared in accordance with the approved TAPP, PCPs and PPs to the RHD, MoC and Planning Commission.

♦ Allocation of budgets proposed for GoB funded and foreign aided projects included in the ADP.

ORGANISATION

The Planning & Programming Circle is headed by a Superintending Engineer and supported by three Executive Engineers who are each in charge of each division namely:

♦ Planning Division I

♦ Planning Division II

♦ Programming Division
The organogram for the circle (December 2003) is shown below:

**Organogram of Planning & Programming Circle**

![Organogram of Planning & Programming Circle]

The numbers of existing and approved personnel in the Circle are shown in the Personnel and Organogram Databases. The total proposed number of personnel in the Circle to be 65, which is significantly less than the current sanctioned strength of 130 mainly due to a reduction in the number of Divisions within the Circle from 4 to 3. There are also some changes proposed in the numbers of officers and staff in individual posts. The proposed number of personnel of the Circle comprises 14 Class I, 8 Class II, 29 Class III and 15 Class IV staff.

**ACTIVITIES**

- Preparation of PPCP for lining up foreign aid/loan by ERD of GoB
- Preparation of PCP based on the information supplied by HDM Circle, Project Director of aided projects and zonal offices.
- Preparation of TAPPs for consultancy services.
- Recast of existing PCPs & PPs as per Planning Commissions requirements.
- Revision of PPs as per field requirement viz. Variation in quantities price escalation increase in item of works etc.
- Preparation of 5-year plan.
- Preparation of 3- year rolling plan.
- Preparation of proposal for ADP Projects for a particular financial year (July-June).
- Preparation of proposal of budget allocation on the basis of requirements for the approved list of ADP projects.
Scrutiny of programme of physical work against allocated funds.

Re-appropriate budgets for some ADP Projects as per field requirements

Preparation of proposal for revised ADP at the middle of the financial year.

**RESOURCES**

The Planning & Programming Circle requires resources for Head Quarters operations and to enable the circle to undertake preliminary investigations for project preparation and assessment.

The resources required are shown in the table below:

<table>
<thead>
<tr>
<th>Item</th>
<th>Existing (2003)</th>
<th>Proposed Total Requirement</th>
<th>Additional Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Inspection Vehicle</td>
<td><em>10</em></td>
<td>8</td>
<td>4*</td>
</tr>
<tr>
<td>2. Computer</td>
<td>4</td>
<td>8</td>
<td>4</td>
</tr>
<tr>
<td>3. Photocopier</td>
<td>3</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>4. Fax Machine</td>
<td>-</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>5. Air Cooler</td>
<td>2</td>
<td>4</td>
<td>2</td>
</tr>
</tbody>
</table>

* Out of 10 existing inspection vehicle, 6 are very old and they need to be replaced very soon.

**INDICATIVE BUDGET**

The indicative budget for the Planning & Programming Circle is shown in TABLE-3.1. The budget table shows both the annual operation and maintenance costs, and the capital costs of purchasing new and replacing old equipment. As all equipment will not be purchased or replaced immediately the capital cost can be annualised depending on the average life and various items of the equipment. The cost shown excludes the cost of the personnel, who are paid from other sources.

On this basis the annual recurring cost for the Circle is Taka 55 lakh and the capital cost on an annualised basis is Taka 27 lakh. A total cost of Taka 82 lakh per annum. For outsource field services and preliminary design an estimated sum of Taka 25 lakh per annum is included in the annual recurring costs.

**WORKPLAN**

The work plan of the circle for the financial year based on the activities and resources detailed above is shown in FIGURE-3.1
1) RUNNING COSTS:

<table>
<thead>
<tr>
<th>Item</th>
<th>Quantity</th>
<th>Rate (Taka)</th>
<th>Total Cost (Taka)</th>
<th>No. per Year</th>
<th>Annual Cost (Lakh)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operation &amp; Maintenance</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vehicle Operation &amp; Maintenance</td>
<td>8.00</td>
<td>15000.00</td>
<td>120000.00</td>
<td>12.00</td>
<td>14.40</td>
</tr>
<tr>
<td>Stationary, Copying &amp; Consumables</td>
<td>2.00</td>
<td>10000.00</td>
<td>20000.00</td>
<td>12.00</td>
<td>2.40</td>
</tr>
<tr>
<td>Computer Operations &amp; Maintenance</td>
<td>8.00</td>
<td>3000.00</td>
<td>24000.00</td>
<td>12.00</td>
<td>2.88</td>
</tr>
<tr>
<td>Printing (external printers)</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Office Equipment Maintenance</td>
<td>9.00</td>
<td>10000.00</td>
<td>90000.00</td>
<td>12.00</td>
<td>10.80</td>
</tr>
<tr>
<td>Services (investigations, surveys etc.)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Preliminary Investigations</td>
<td>10.00</td>
<td>250000.00</td>
<td>2500000.00</td>
<td>1.00</td>
<td>25.00</td>
</tr>
<tr>
<td>(for GoB projects)</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
</tbody>
</table>

TOTAL 1: (Lakh) 55.48

2) CAPITAL COSTS: (Purchase and periodic replacement of all equipment etc.)

<table>
<thead>
<tr>
<th>Item</th>
<th>Quantity</th>
<th>Rate (Lakh)</th>
<th>Total Cost (Lakh)</th>
<th>Life (Years)</th>
<th>Avg Annual Cost (Lakh)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vehicles1: Jeep</td>
<td>6.00</td>
<td>25.00</td>
<td>150.00</td>
<td>8.00</td>
<td>18.75</td>
</tr>
<tr>
<td>Vehicles2: Pickup</td>
<td>2.00</td>
<td>15.00</td>
<td>30.00</td>
<td>10.00</td>
<td>3.00</td>
</tr>
<tr>
<td>Vehicles3: Car</td>
<td>0.00</td>
<td>20.00</td>
<td>0.00</td>
<td>8.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Computer &amp; Accessories (general office)</td>
<td>8.00</td>
<td>1.00</td>
<td>8.00</td>
<td>4.00</td>
<td>2.00</td>
</tr>
<tr>
<td>Computer &amp; Accessories (specialist)</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>4.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Specialist Computer Software</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>4.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Photocopier</td>
<td>4.00</td>
<td>2.00</td>
<td>8.00</td>
<td>4.00</td>
<td>2.00</td>
</tr>
<tr>
<td>Fax machine</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>4.00</td>
<td>0.25</td>
</tr>
<tr>
<td>Air Conditioner</td>
<td>4.00</td>
<td>0.50</td>
<td>2.00</td>
<td>5.00</td>
<td>0.40</td>
</tr>
<tr>
<td>Specialist Equipment</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Office Furniture &amp; Fixtures</td>
<td>1.00</td>
<td>2.00</td>
<td>2.00</td>
<td>10.00</td>
<td>0.20</td>
</tr>
<tr>
<td>Office Refurbishment</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>10.00</td>
<td>0.10</td>
</tr>
</tbody>
</table>

TOTAL 2: (Lakh) 202.00 26.70

GRAND TOTAL (1 + 2) 82.18

TOTAL EQUIVALENT ANNUAL BUDGET = Taka 82 Lakh

TOTAL INDICATIVE ANNUAL BUDGET - P&P CIRCLE - TABLE 3.1
(Based on 2003-2004 Financial Year)
### TASK / PROGRAM / ITEM

1. Preliminary investigation & survey
2. Preparation of TAPP/PPCP/PCP/PP
3. Recast, revision of PCP / PP
4. Preparation of ADP of RHD
5. Half-year Review of ADP
6. Re-appropriation of allocation in R/B Project
7. Interministerial meeting including Pre-ECNEC
8. Scrutinising of programme of physical works
9. Preparation of 3 year rolling plan
10. Preparation of 5 year plan
11. Preparation of proposal for ADP projects for a particular Financial Year
12. Proposal of budget allocation for different projects

#### Circle Work Plan

**Wing : Planning & Maintenance**

**Circle : Planning & Programming**

<table>
<thead>
<tr>
<th>TASK / PROGRAM / ITEM</th>
<th>JUL</th>
<th>AUG</th>
<th>SEP</th>
<th>OCT</th>
<th>NOV</th>
<th>DEC</th>
<th>JAN</th>
<th>FEB</th>
<th>MAR</th>
<th>APR</th>
<th>MAY</th>
<th>JUN</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Preliminary investigation &amp; survey</td>
<td></td>
<td></td>
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<tr>
<td>2. Preparation of TAPP/PPCP/PCP/PP</td>
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<tr>
<td>3. Recast, revision of PCP / PP</td>
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<tr>
<td>4. Preparation of ADP of RHD</td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>5. Half-year Review of ADP</td>
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<td></td>
<td></td>
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</tr>
<tr>
<td>6. Re-appropriation of allocation in R/B Project</td>
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<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>7. Interministerial meeting including Pre-ECNEC</td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Scrutinising of programme of physical works</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Preparation of 3 year rolling plan</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>10. Preparation of 5 year plan</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. Preparation of proposal for ADP projects for a particular Financial Year</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12. Proposal of budget allocation for different projects</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Planned**

**FIGURE - 3.1**
SECTION 4  MONITORING CIRCLE OPERATIONAL PLAN

INTRODUCTION

The Monitoring Circle has two divisions: Monitoring Division and Evaluation Division.

OBJECTIVES

The objective of the Monitoring Circle is to contribute to the overall strategy of the Planning & Maintenance Wing by:

Providing timely and accurate monitoring and post project evaluations of RHD projects in order to assist RHD Senior Management and other Government agencies in the better management of the road network and the formulation of future budgets.

OUTPUTS

♦ Reports provided to RHD Senior Management on the implementation of RHD projects both local and foreign aided including development and technical assistance projects.
♦ Appropriate management information provided on the physical and financial achievements against budgets.
♦ Post project evaluation reports produced on all completed projects.
♦ Project evaluation reports produced on selected projects during implementation.

ORGANISATION

The Monitoring Circle is headed by a Superintending Engineer (SE) who is supported by two Executive Engineers each in charge of a division, namely:
♦ Monitoring Division
♦ Evaluation Division
The organogram for the Monitoring Circle (December 2003) is as follows:

Organogram of the Monitoring Circle

- Superintending Engineer*
  (SE-1)
  (AE-1, SAE-1)
- Monitoring Division
  (EE*-1, SDE*-1, AE-2,
  SAE-3)
- Evaluation Division
  (EE-1, AE-2,
  SAE-2)

The numbers of existing and approved personnel in the Circle are shown in the Personnel and Organogram Databases. The total proposed number of personnel in the Circle to be 46. As this is a newly created circle there is no sanctioned strength or existing staff. The proposed number of personnel is made up of 9 Class I, 6 Class II, 23 Class III and 8 Class IV staff.

Certain officers in the Monitoring Circle are to be designated as specialists. Specialist posts for engineers with specialist training are star marked thus, EE*.

ACTIVITIES

- Collection and compilation of all project and relevant data required for the preparation of management reports.
- Preparing reports on progress of projects in terms of physical and financial achievements.
- Preparation of summary and other special reports for RHD management and other Government bodies.
- Preparation of answers to questions raised in parliament and in parliamentary committees.
- Monitor physical progress by sample field visits.
- Post project evaluation.
- Arrange review meetings in the Ministry.
RESOURCES

The Monitoring Circle requires resources for Head Office based activities, making random field check on reporting data and to carry out post project evaluations using both the Circles’ own resources and local consultants.

The resources required are shown in the table below:

<table>
<thead>
<tr>
<th>Item</th>
<th>Existing (2003)</th>
<th>Proposed Total Requirement</th>
<th>Additional Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Vehicle</td>
<td>0</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>2. Computer</td>
<td>0</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>3. Photocopier</td>
<td>0</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>4. Fax</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>5. Air Cooler</td>
<td>0</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>6. Office Furniture</td>
<td>0</td>
<td>3</td>
<td>3</td>
</tr>
</tbody>
</table>

INDICATIVE BUDGET

The indicative budget for the Monitoring Circle is shown in TABLE-4.1. The budget table shows the annual operation and maintenance costs (including the costs of undertaking field visit and investigations) and the capital costs of purchasing new, and replacing old, equipment. The costs shown exclude the cost of personnel who are paid for from other sources.

The office running and annual recurring expenditure of the Circle is Taka 42 lakh. The average annualised capital costs are Taka 24 lakh giving a total equivalent annual budget of Taka 66 lakh. As this is a new circle without existing resources the capital cost requirement in the first year will be significantly higher than the average annual budget and close to the total capital cost figure of Taka 185 lakh.

WORK PLAN

The work plan of the Circle for the financial year based on the activities and resources detailed above is shown in FIGURE-4.1.
1) RUNNING COSTS:

<table>
<thead>
<tr>
<th>Item</th>
<th>Quantity</th>
<th>Rate (Taka)</th>
<th>Total Cost (Taka)</th>
<th>No. per Year</th>
<th>Annual Cost (Lakh)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operation &amp; Maintenance:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vehicle Operation &amp; Maintenance</td>
<td>11.00</td>
<td>15000.00</td>
<td>165000.00</td>
<td>12.00</td>
<td>19.80</td>
</tr>
<tr>
<td>Stationary, Copying &amp; Consumables</td>
<td>6.00</td>
<td>10000.00</td>
<td>60000.00</td>
<td>12.00</td>
<td>7.20</td>
</tr>
<tr>
<td>Computer Operations &amp; Maintenance</td>
<td>12.00</td>
<td>3000.00</td>
<td>36000.00</td>
<td>12.00</td>
<td>4.32</td>
</tr>
<tr>
<td>Printing (external printers)</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Office Equipment Maintenance</td>
<td>12.00</td>
<td>10000.00</td>
<td>120000.00</td>
<td>12.00</td>
<td>14.40</td>
</tr>
<tr>
<td>Services (investigations, surveys etc.)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Field surveys and monitoring</td>
<td>4.00</td>
<td>10000.00</td>
<td>40000.00</td>
<td>12.00</td>
<td>4.80</td>
</tr>
</tbody>
</table>

TOTAL 1: (Lakh) 50.52

2) CAPITAL COSTS: (Purchase and periodic replacement of all equipment etc.)

<table>
<thead>
<tr>
<th>Item</th>
<th>Quantity</th>
<th>Rate (Lakh)</th>
<th>Total Cost (Lakh)</th>
<th>Life (Years)</th>
<th>Avg Annual Cost (Lakh)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vehicles1: Jeep</td>
<td>11.00</td>
<td>25.00</td>
<td>275.00</td>
<td>8.00</td>
<td>34.38</td>
</tr>
<tr>
<td>Vehicles2: Pickup</td>
<td>0.00</td>
<td>15.00</td>
<td>0.00</td>
<td>10.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Vehicles3: Car</td>
<td>0.00</td>
<td>20.00</td>
<td>0.00</td>
<td>8.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Computer &amp; Accessories (general office)</td>
<td>12.00</td>
<td>1.00</td>
<td>12.00</td>
<td>4.00</td>
<td>3.00</td>
</tr>
<tr>
<td>Computer &amp; Accessories (specialist)</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>4.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Specialist Computer Software</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>4.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Photocopier</td>
<td>4.00</td>
<td>2.00</td>
<td>8.00</td>
<td>4.00</td>
<td>2.00</td>
</tr>
<tr>
<td>Fax machine</td>
<td>2.00</td>
<td>1.00</td>
<td>2.00</td>
<td>4.00</td>
<td>0.50</td>
</tr>
<tr>
<td>Air Conditioner</td>
<td>6.00</td>
<td>0.50</td>
<td>3.00</td>
<td>5.00</td>
<td>0.60</td>
</tr>
<tr>
<td>Specialist Equipment</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Office Furniture &amp; Fixtures</td>
<td>2.00</td>
<td>2.00</td>
<td>4.00</td>
<td>10.00</td>
<td>0.40</td>
</tr>
<tr>
<td>Office Refurbishment</td>
<td>2.00</td>
<td>1.00</td>
<td>2.00</td>
<td>10.00</td>
<td>0.20</td>
</tr>
</tbody>
</table>

TOTAL 2: (Lakh) 306.00

GRAND TOTAL (1 + 2) 91.60

TOTAL EQUIVALENT ANNUAL BUDGET = Taka 92 Lakh

TOTAL INDICATIVE ANNUAL BUDGET - MAINTENANCE CIRCLE - TABLE 7.1
(Based on 2003-2004 Financial Year)
## Circle Work Plan

**Wing : Planning & Maintenance**

**Circle : Monitoring**

<table>
<thead>
<tr>
<th>TASK / PROGRAM / ITEM</th>
<th>JUL</th>
<th>AUG</th>
<th>SEP</th>
<th>OCT</th>
<th>NOV</th>
<th>DEC</th>
<th>JAN</th>
<th>FEB</th>
<th>MAR</th>
<th>APR</th>
<th>MAY</th>
<th>JUN</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Compilation of project data</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>2. Preparing reports on physical &amp; financial progress</td>
<td></td>
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<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>3. Preparation of regular reports for RHD etc.</td>
<td></td>
<td></td>
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<tr>
<td>4. Preparation of answers to parliamentary questions</td>
<td></td>
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<tr>
<td>5. Preparing project evaluation reports</td>
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<tr>
<td>6. Develop &amp; introduce computer based systems</td>
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</tr>
</tbody>
</table>

**Typical Year :**

**Circle : Monitoring**

**Wing : Planning & Maintenance**

---

**FIGURE - 4.1**

*Planned*
SECTION 5  PROCUREMENT CIRCLE OPERATIONAL PLAN

INTRODUCTION

The Procurement Circle now consists of two divisions namely i) Contract Evaluation Division and ii) Documentation & Procurement Division.

OBJECTIVES

The objective of the Procurement Circle is to contribute to the overall strategy of the Planning & Maintenance Wing by:

*Dealing with procurement activities to be approved by the CE/MoC within the RHD to ensure that they are carried out in accordance with the defined Government rules, procedures and documentation.*

OUTPUTS

♦ Procurement of development and maintenance works processed so approved by the CE/MoC and ADP and revenue programmes carried out as per the standard documents, observing all the existing rules and regulations of the Government.

♦ New application for enlistment and the updated joint enlistment of RHD/LGED contractors (NJRC) processed under various classes.

♦ Procurement process carried out and the required portable steel bridges distributed to meet the emergency requirements of the RHD.

♦ RHD standard bidding documents produced, maintained, updated and supplied.

♦ Data on tender notices provided and maintained on the RHD database and published on the RHD Intranet.

ORGANISATION

The Procurement Circle is headed by a Superintending Engineer (SE) who is supported by two Executive Engineers each in charge of a division, namely:

♦ Contract Evaluation Division
♦ Documentation & Procurement Division
The current organisation (December 2003) of the Procurement Circle is shown below:

Organogram of the Procurement Circle

The numbers of personnel in the Circle are shown in the Personnel and Organogram Databases. The total proposed number of personnel in the Circle to be 47, which is below the current sanctioned strength, as the Monitoring Division has been removed to form a separate Circle. The proposed number of personnel of the Circle is 8 Class I, 6 Class II, 23 Class III and 10 Class IV staff.

Certain officers in the Procurement Circle are to be designated as specialists. Specialist posts for engineers with specialist training are star marked thus, EE*.

ACTIVITIES

♦ The Superintending Engineer Procurement Circle will act as Member-Secretary of the RHD Committee of Purchase (RHDCOP) for procurement of works, goods and services under the following categories:

i. Evaluation and recommendations of contractors’ bids.

ii. Evaluation for selecting consultants.

iii. Variation Order/Addendum of procurement of works and services.

♦ Ensure process for pre-qualification of contractors.

♦ Co-ordinate production, maintain and supply approved updated RHD bidding documents.

♦ Advise and assist field officers with regard to the procurement processes.

♦ Ensure the provision of new application of enlistment and updated joint enlistment of RHD/LGED contractors (NJRC) under various classes.

♦ Ensure process for approval of RFP of consultancy services and bidding documents.
♦ Review bids for major construction contracts if required.

♦ Ensure procurement of portable steel bridge, truss bridge and other construction materials to meet the emergency requirements of the RHD.

♦ Ensure that the data relating to tender notices and other relevant information is provided to the MIS Circle.

RESOURCES

The Procurement Circle requires resources for Headquarters operations and to enable the Circle to undertake necessary inspections etc.

The resources required are shown in the table below:

<table>
<thead>
<tr>
<th>Item</th>
<th>Existing (2003)</th>
<th>Proposed Total Requirement</th>
<th>Additional Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Inspection Vehicles</td>
<td>3</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>2. Computer</td>
<td>2</td>
<td>6</td>
<td>4</td>
</tr>
<tr>
<td>3. Photocopier</td>
<td>1</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>4. Air Cooler</td>
<td>1</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>5. Fax Machine</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

INDICATIVE BUDGET

The indicative budget for the Procurement Circle is shown in TABLE-5.1. The budget table shows both the annual operation and maintenance costs (including the costs of undertaking investigations) and the capital costs of purchasing new, and replacing old, equipment. As not all equipment will be purchased or replaced immediately the capital cost has been annualised depending on the average life of the various items of equipment. The costs shown exclude the cost of personnel who are paid for from other sources.

On this basis the annual recurring cost for the Circle is Taka 32 lakh and the capital cost on an annualised basis is Taka 23 lakh. A total cost of Taka 55 lakh per annum. Of this total amount Taka 5 lacs is to cover the cost of investigations carried out by local consultants.

WORK PLAN

The work plan of the Circle for the financial year based on the activities and resources detailed above is shown in FIGURE-5.1.
### 1) RUNNING COSTS:

<table>
<thead>
<tr>
<th>Item</th>
<th>Quantity</th>
<th>Rate (Taka)</th>
<th>Total Cost (Taka)</th>
<th>No. per Year</th>
<th>Annual Cost (Lakh)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operation &amp; Maintenance:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vehicle Operation &amp; Maintenance</td>
<td>6.00</td>
<td>15000.00</td>
<td>90000.00</td>
<td>12.00</td>
<td>10.80</td>
</tr>
<tr>
<td>Stationary, Copying &amp; Consumables</td>
<td>3.00</td>
<td>10000.00</td>
<td>30000.00</td>
<td>12.00</td>
<td>3.60</td>
</tr>
<tr>
<td>Computer Operations &amp; Maintenance</td>
<td>6.00</td>
<td>3000.00</td>
<td>18000.00</td>
<td>12.00</td>
<td>2.16</td>
</tr>
<tr>
<td>Printing (external printers)</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Office Equipment Maintenance</td>
<td>8.00</td>
<td>10000.00</td>
<td>80000.00</td>
<td>12.00</td>
<td>9.60</td>
</tr>
<tr>
<td>Services (investigations, surveys etc.)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Field visits &amp; checks on procurement</td>
<td>1.00</td>
<td>10000.00</td>
<td>10000.00</td>
<td>12.00</td>
<td>1.20</td>
</tr>
<tr>
<td>Evaluation of Bids &amp; Procurement of</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Services by local consultants</td>
<td>10.00</td>
<td>50000.00</td>
<td>500000.00</td>
<td>1.00</td>
<td>5.00</td>
</tr>
</tbody>
</table>

**TOTAL 1: (Lakh)** 32.36

### 2) CAPITAL COSTS: (Purchase and periodic replacement of all equipment etc.)

<table>
<thead>
<tr>
<th>Item</th>
<th>Quantity</th>
<th>Rate (Lakh)</th>
<th>Total Cost (Lakh)</th>
<th>Life (Years)</th>
<th>Avg Annual Cost (Lakh)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vehicles1: Jeep</td>
<td>6.00</td>
<td>25.00</td>
<td>150.00</td>
<td>8.00</td>
<td>18.75</td>
</tr>
<tr>
<td>Vehicles2: Pickup</td>
<td>0.00</td>
<td>15.00</td>
<td>0.00</td>
<td>10.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Vehicles3:</td>
<td>0.00</td>
<td>20.00</td>
<td>0.00</td>
<td>8.00</td>
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</tr>
<tr>
<td>Computer &amp; Accessories (general office)</td>
<td>6.00</td>
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<td>6.00</td>
<td>4.00</td>
<td>1.50</td>
</tr>
<tr>
<td>Computer &amp; Accessories (specialist)</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>4.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Specialist Computer Software</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>4.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Photocopier</td>
<td>3.00</td>
<td>2.00</td>
<td>6.00</td>
<td>4.00</td>
<td>1.50</td>
</tr>
<tr>
<td>Fax machine</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>4.00</td>
<td>0.25</td>
</tr>
<tr>
<td>Air Conditioner</td>
<td>4.00</td>
<td>0.50</td>
<td>2.00</td>
<td>5.00</td>
<td>0.40</td>
</tr>
<tr>
<td>Specialist Equipment</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Office Furniture &amp; Fixtures</td>
<td>2.00</td>
<td>2.00</td>
<td>4.00</td>
<td>10.00</td>
<td>0.40</td>
</tr>
<tr>
<td>Office Refurbishment</td>
<td>2.00</td>
<td>1.00</td>
<td>2.00</td>
<td>10.00</td>
<td>0.20</td>
</tr>
</tbody>
</table>

**TOTAL 2: (Lakh)** 171.00  23.00

**GRAND TOTAL (1 + 2)** 55.36

**TOTAL EQUIVALENT ANNUAL BUDGET = Taka 55 Lakh**
**Circle Work Plan**

<table>
<thead>
<tr>
<th>TASK / PROGRAM / ITEM</th>
<th>JUL</th>
<th>AUG</th>
<th>SEP</th>
<th>OCT</th>
<th>NOV</th>
<th>DEC</th>
<th>JAN</th>
<th>FEB</th>
<th>MAR</th>
<th>APR</th>
<th>MAY</th>
<th>JUN</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Organise &amp; act as Member Secretary to R&amp;H CoP</td>
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<td></td>
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<tr>
<td>2. Prepare standard documents &amp; update</td>
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<tr>
<td>3. Provide advice to field zones of Procurement</td>
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<tr>
<td>4. To prepare &amp; maintain contractor registration lists</td>
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<tr>
<td>5. To receive bids for major projects</td>
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<tr>
<td>6. To procure for Portable Steel Bridging</td>
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<tr>
<td>7. To Provide input to the MIS/Database</td>
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</tbody>
</table>

**FIGURE - 5.1**

- **Year**: Typical
- **Wing**: Planning & Maintenance
- **Circle**: Procurement

**Planned**
SECTION 6  HDM CIRCLE OPERATIONAL PLAN

INTRODUCTION

The HDM Circle was established to develop the RHD’s capabilities in the field of road maintenance planning. HDM circle is now well established and operating on a fully functional basis and producing the RHD Annual Road Maintenance Plan, database reports and maps.

OBJECTIVE

The objective of the HDM is to contribute to the overall strategy of the Planning & Maintenance Wing by:

Developing an integrated modern system for the management of maintenance and development activities of RHD Network by strategic planning, programming of roadwork’s, project analysis, research & policy studies.

OUTPUTS

♦ Regular information provided from the RHD road network database.
♦ Strategic plans provided for maintenance and development works through the use of HDM.
♦ Priorities agreed for budgetary allocations both for investment and maintenance activities.
♦ Reports submitted on the economic priorities for the development, rehabilitation and maintenance of roads.
♦ Maps of the RHD Network provided from the GIS Systems.
♦ Management information on the RHD road network made available.
♦ Database, HDM and GIS systems operated and maintained.
♦ Road Network Database Annual & Annual Road Maintenance & Rehabilitation Needs Report.

ORGANISATION

The HDM Circle is headed by a Superintending Engineer who is supported by three Executive Engineers each in charge of a division, namely:

♦ Data Collection Division
♦ HDM Operation Division
Database Division

A number of posts proposed in the HDM circle are currently development posts under IDC3 and need converting into sanctioned revenue posts if the circle activities are to be made sustainable.

The current organisation (December 2003) of the HDM Circle is shown below:

Organogram of the HDM Circle

The numbers of personnel in the Circle are shown in the Personnel and Organogram Database. The total proposed number of personnel in the Circle to be 66. This is significantly higher than the total current sanctioned strength plus current approved development posts. Of the proposed number of personnel in the Circle 15 are Class I, 6 Class II, 31 Class III and 14 Class IV staff, but the number of Class I will be 17 in place of 15 in the final organogram.

Certain officers in the HDM Circle are to be designated as specialists. Specialist posts for engineers with specialist training are star marked thus, EE*. Specialist posts for engineers, or non-engineers, with specialist qualifications are shown together with the equivalent engineering grade thus, GIS Specialist (SDE*).

ACTIVITIES

- Managing out surveys on the RHD road network to acquire data on roughness, Road condition surveys, traffic surveys, DCP, deflection, pavement inventory etc.
- Entering of data into Database and checking & verification for acceptability.
- Compilation of data and arranging publication and distribution of the annual road network condition report and annual road maintenance and rehabilitation needs report (and others as required).
♦ Preparation and updating of RHD digital road maps and their printing, publication and distribution.

♦ Preparation of annual maintenance and development plans for RHD using the HDM system.

♦ Develop the linkages between the GIS, databases and HDM systems to enable the users of RHD Intranet to have on line access to all relevant data.

♦ Provide HDM support for in carrying out evaluation of development projects and pre and post-evaluation of projects.

♦ Ensure relevant studies and research on factor calibration and adjustment of intervention level.

RESOURCES

The HDM Circle requires resources for Headquarters operations and to enable the Circle to undertake necessary surveys, investigations etc. A number of vehicles are required to be equipped for specialist survey work. Much of the work of this Circle involves computer systems and there is therefore a heavy requirement for computers, software and related equipment to be kept up-to-date.

The resources required are shown in the table below:

<table>
<thead>
<tr>
<th>Item</th>
<th>Existing (2003)</th>
<th>Proposed Total Requirement</th>
<th>Additional Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Inspection Vehicles</td>
<td>10</td>
<td>10</td>
<td>0</td>
</tr>
<tr>
<td>2. Computer</td>
<td>15</td>
<td>15</td>
<td>0</td>
</tr>
<tr>
<td>3. Photocopier</td>
<td>2</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>4. Air cooler</td>
<td>4</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>5. Fax Machine</td>
<td>-</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

INDICATIVE BUDGET

The indicative budget for the HDM Circle is shown in TABLE-6.1. The budget table shows both the annual operation and maintenance costs (including the costs of undertaking surveys) and the capital costs of purchasing new, and replacing old, equipment. As not all equipment will be purchased or replaced immediately the capital cost has been annualised depending on the average life of the various items of equipment. The costs shown exclude the cost of personnel who are paid for from other sources. The costs for producing maps and reports provided free (for RHD, MoC, Planning Commission) should be reviewed for inclusion in future budget allocations.

On this basis the annual recurring cost for the Circle is Taka 146 lakh and the capital cost on an annualised basis is Taka 35 lakh. A total cost of Taka 181 lakh per annum. Of this total amount Taka 89 lakh is to cover the costs of studies survey and investigations carried out by local consultants.
WORK PLAN

The work plan of the Circle for the financial year based on the activities and resources detailed above is shown in FIGURE-6.1.
## 1) RUNNING COSTS:

<table>
<thead>
<tr>
<th>Item</th>
<th>Quantity</th>
<th>Rate (Taka)</th>
<th>Total Cost (Taka)</th>
<th>No. per Year</th>
<th>Annual Cost (Lakh)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operation &amp; Maintenance:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vehicle Operation &amp; Maintenance</td>
<td>10.00</td>
<td>15000.00</td>
<td>150000.00</td>
<td>12.00</td>
<td>18.00</td>
</tr>
<tr>
<td>Stationary, Copying &amp; Consumables</td>
<td>1.00</td>
<td>10000.00</td>
<td>10000.00</td>
<td>12.00</td>
<td>1.20</td>
</tr>
<tr>
<td>Computer Operations &amp; Maintenance</td>
<td>15.00</td>
<td>3000.00</td>
<td>45000.00</td>
<td>12.00</td>
<td>5.40</td>
</tr>
<tr>
<td>Printing (Database Reports)</td>
<td>4.00</td>
<td>100000.00</td>
<td>400000.00</td>
<td>1.00</td>
<td>4.00</td>
</tr>
<tr>
<td>Office Equipment Maintenance</td>
<td>9.00</td>
<td>10000.00</td>
<td>90000.00</td>
<td>12.00</td>
<td>10.80</td>
</tr>
<tr>
<td>Services (investigations, surveys etc.)</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Traffic Count Surveys</td>
<td>500.00</td>
<td>10000.00</td>
<td>5000000.00</td>
<td>1.00</td>
<td>50.00</td>
</tr>
<tr>
<td>R&amp;B Annual Conditions Surveys (checks)</td>
<td>50.00</td>
<td>10000.00</td>
<td>500000.00</td>
<td>1.00</td>
<td>5.00</td>
</tr>
<tr>
<td>Deflection Surveys</td>
<td>1.00</td>
<td>500000.00</td>
<td>500000.00</td>
<td>1.00</td>
<td>15.00</td>
</tr>
<tr>
<td>Pavement Inventory &amp; DCP Surveys</td>
<td>3000.00</td>
<td>500.00</td>
<td>1500000.00</td>
<td>1.00</td>
<td>15.00</td>
</tr>
<tr>
<td>Road Roughness Surveys</td>
<td>12000.00</td>
<td>75.00</td>
<td>9000000.00</td>
<td>1.00</td>
<td>9.00</td>
</tr>
<tr>
<td>GPS Surveys</td>
<td>5000.00</td>
<td>100.00</td>
<td>500000.00</td>
<td>1.00</td>
<td>5.00</td>
</tr>
<tr>
<td>Data Entry &amp; Validation</td>
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<td>250000.00</td>
<td>250000.00</td>
<td>1.00</td>
<td>2.50</td>
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<tr>
<td>Workshops and Seminars</td>
<td>10.00</td>
<td>150000.00</td>
<td>1500000.00</td>
<td>1.00</td>
<td>15.00</td>
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<tr>
<td><strong>TOTAL 1: (Lakh)</strong></td>
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<td>145.90</td>
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</table>

## 2) CAPITAL COSTS: (Purchase and periodic replacement of all equipment etc.)

<table>
<thead>
<tr>
<th>Item</th>
<th>Quantity</th>
<th>Rate (Lakh)</th>
<th>Total Cost (Lakh)</th>
<th>Life (Years)</th>
<th>Avg Annual Cost (Lakh)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vehicles1: Jeep</td>
<td>8.00</td>
<td>25.00</td>
<td>200.00</td>
<td>8.00</td>
<td>25.00</td>
</tr>
<tr>
<td>Vehicles2: Pickup</td>
<td>2.00</td>
<td>15.00</td>
<td>30.00</td>
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<td>3.00</td>
</tr>
<tr>
<td>Vehicles3: Car</td>
<td>0.00</td>
<td>20.00</td>
<td>0.00</td>
<td>8.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Computer &amp; Accessories (general office)</td>
<td>12.00</td>
<td>1.00</td>
<td>12.00</td>
<td>4.00</td>
<td>3.00</td>
</tr>
<tr>
<td>Computer &amp; Accessories (specialist)</td>
<td>3.00</td>
<td>2.00</td>
<td>6.00</td>
<td>4.00</td>
<td>1.50</td>
</tr>
<tr>
<td>Specialist Computer Software</td>
<td>3.00</td>
<td>0.50</td>
<td>1.50</td>
<td>4.00</td>
<td>0.38</td>
</tr>
<tr>
<td>Photocopier</td>
<td>3.00</td>
<td>2.00</td>
<td>6.00</td>
<td>4.00</td>
<td>1.50</td>
</tr>
<tr>
<td>Fax machine</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>4.00</td>
<td>0.25</td>
</tr>
<tr>
<td>Air Conditioner</td>
<td>5.00</td>
<td>0.50</td>
<td>2.50</td>
<td>5.00</td>
<td>0.50</td>
</tr>
<tr>
<td>Specialist Equipment</td>
<td>0.00</td>
<td>1.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Office Furniture &amp; Fixtures</td>
<td>1.00</td>
<td>2.00</td>
<td>2.00</td>
<td>10.00</td>
<td>0.20</td>
</tr>
<tr>
<td>Office Refurbishment</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>10.00</td>
<td>0.10</td>
</tr>
<tr>
<td><strong>TOTAL 2: (Lakh)</strong></td>
<td></td>
<td></td>
<td>262.00</td>
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<td>35.43</td>
</tr>
</tbody>
</table>

**GRAND TOTAL (1 + 2)**: 181.33

**TOTAL EQUIVALENT ANNUAL BUDGET = Taka 181 Lakh**

**TOTAL INDICATIVE ANNUAL BUDGET - HDM CIRCLE - TABLE 6.1**

*(Based on 2003-2004 Financial Year)*
<table>
<thead>
<tr>
<th>TASK / PROGRAM / ITEM</th>
<th>JUL</th>
<th>AUG</th>
<th>SEP</th>
<th>OCT</th>
<th>NOV</th>
<th>DEC</th>
<th>JAN</th>
<th>FEB</th>
<th>MAR</th>
<th>APR</th>
<th>MAY</th>
<th>JUN</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Equipment Calibration</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>2. Roughness Survey</td>
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</tr>
<tr>
<td>3. Traffic Surveys</td>
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<tr>
<td>4. Deflection Survey (bi-annually)</td>
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<tr>
<td>5. Road Condition Survey</td>
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<tr>
<td>6. GPS Survey</td>
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<tr>
<td>7. Pavement Inventory and DCP Survey</td>
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<tr>
<td>8. Data Entry and Updating</td>
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<tr>
<td>9. Data processing and publication of reports</td>
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<tr>
<td>10. HDM run and maintenance Plan</td>
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<td></td>
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<tr>
<td>11. Strategic planning using HDM4</td>
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<tr>
<td>12. Integration of HDM with GIS</td>
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<tr>
<td>13. GIS Mapping</td>
<td></td>
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<tr>
<td>14. Providing database information and digital maps</td>
<td></td>
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<tr>
<td>15. Project evaluations using HDM4</td>
<td></td>
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</tr>
<tr>
<td>16. Study &amp; Research</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

FIGURE - 6.1
SECTION 7 MAINTENANCE CIRCLE OPERATIONAL PLAN

INTRODUCTION

The Roads and Highways Department has substantially completed Bangladesh’s national road network, the road network being the most valuable asset of the country. RHD is responsible for protecting and enhancing the value of this asset through proper road and bridge maintenance. This responsibility has led RHD to move forward to formulate a new strategy for the maintenance of the road network and establish this Maintenance Circle. The maintenance circle has responsibility for both routine and periodic maintenance of the RHD road network.

OBJECTIVES

The objective of the Maintenance Circle is to contribute to the overall strategy of the Planning & Maintenance Wing by:

Planning, managing and monitoring routine and periodic maintenance activities of the road network in a systematic and cost effective manner.

OUTPUTS

♦ Annual Maintenance Plans prepared in accordance with the HDM outputs and by giving consideration to economic strategic importance.
♦ Awareness raised as to the importance of road maintenance activities and the future funding requirements.
♦ Budgets allocated for the various road maintenance activities.
♦ Large-scale periodic/routine maintenance works are planned and executed effectively.
♦ Reports provided on the effectiveness of road maintenance operations.
♦ Technical documentation on road maintenance maintained and developed for the RHD.
♦ Seminar/symposia arranged on the road maintenance activities and future maintenance funding requirements.
♦ Reports prepared on disaster management and flood situations.
ORGANISATION

The Maintenance Circle is headed by a Superintending Engineer who is supported by three Executive Engineers each in charge of a division, namely.

♦ Routine Maintenance Division
♦ Periodic Maintenance Division I
♦ Periodic Maintenance Division II

The organisation structure (December 2003) of the Maintenance Circle is as follows:

**Organogram of Maintenance Circle**

```
Superintending Engineer (SE-1)
    (AE-1, SAE-1)

Routine Maintenance Division
    (EE-1, SDE-1, AE-2, SAE-3)

Periodic Maintenance Division-I
    (EE-1, AE-2, SAE-2)

Periodic Maintenance Division-II
    (EE-1, AE-2, SAE-2)
```

The numbers of personnel in the Circle are shown in the Personnel and Organogram Databases. The total proposed number of personnel in the Circle to be 78, which is greater than the current sanctioned strength. There are also some changes in the numbers of staff in individual posts. The proposed number of personnel of the Circle is 12 Class I, 8 Class II, 38 Class III and 20 Class IV staffs.

ACTIVITIES

♦ Preparation of annual periodic maintenance programs based on the RMMS and the HDM outputs and budget allocations

♦ Advise the field offices on the implementation of maintenance works.
Programme, package and procure contractors and consultants for the execution of large-scale maintenance works funded both by the revenue and development budget.

Monitor large-scale periodic/routine maintenance works.

Review the demands of zonal offices for allotment of maintenance fund under different sub-head in consideration of the defined programmes and budgetary constraints.

Monitor & Quantify extend of damage during disaster and flood situations.

Preparation of budget for routine and periodic maintenance.

RESOURCES

The Maintenance Circle requires resources for Headquarters operations and to enable the Circle to obtain relevant information and data for contract preparation and packaging and the monitoring of Periodic Maintenance contracts and programming of routine maintenance.

The resources required are shown in the table below:

<table>
<thead>
<tr>
<th>Item</th>
<th>Existing 2003</th>
<th>Proposed Total Requirement</th>
<th>Additional Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Inspection Vehicles</td>
<td>7</td>
<td>11</td>
<td>4  5  9</td>
</tr>
<tr>
<td>2. Computer</td>
<td>4</td>
<td>12</td>
<td>8  0  8</td>
</tr>
<tr>
<td>3. Photocopier</td>
<td>1</td>
<td>4</td>
<td>3  0  3</td>
</tr>
<tr>
<td>4. Air Cooler</td>
<td>1</td>
<td>6</td>
<td>5  1  6</td>
</tr>
<tr>
<td>5. Fax Machine</td>
<td>0</td>
<td>2</td>
<td>2  0  2</td>
</tr>
</tbody>
</table>

It is expected that the resource and budgetary requirements of this Circle will increase in the near future as greater emphasis is given to maintenance operations.

INDICATIVE BUDGET

The indicative budget for the Maintenance Circle is shown in TABLE-7.1. The budget table shows both the annual operation and maintenance costs and the capital costs of purchasing new, and replacing old equipment. As not all equipment will be purchased or replaced immediately the capital costs has been annualised depending on the average life of the various items of equipment. The costs shown exclude the cost of personnel who are paid for from other sources.

The costs of carrying out inspections and surveys in connection with the detailed preparation of maintenance programmes and the monitoring of maintenance activities are included. However the costs of detailed supervision of periodic maintenance works are not included in the Circles budgets.
On this basis the annual recurring cost for the Circle is Taka 51 lakh and the capital cost on an annualised basis is Taka 41 lakh. A total cost of Taka 92 lakh per annum.

WORKPLAN

The workplan of the Circle for the financial year based on the activities and resources detailed above is shown in FIGURE-7.1.
### 1) RUNNING COSTS:

<table>
<thead>
<tr>
<th>Item</th>
<th>Quantity</th>
<th>Rate (Taka)</th>
<th>Total Cost (Taka)</th>
<th>No. per Year</th>
<th>Annual Cost (Lakh)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operation &amp; Maintenance:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vehicle Operation &amp; Maintenance</td>
<td>11.00</td>
<td>15000.00</td>
<td>165000.00</td>
<td>12.00</td>
<td>19.80</td>
</tr>
<tr>
<td>Stationary, Copying &amp; Consumables</td>
<td>6.00</td>
<td>10000.00</td>
<td>60000.00</td>
<td>12.00</td>
<td>7.20</td>
</tr>
<tr>
<td>Computer Operations &amp; Maintenance</td>
<td>12.00</td>
<td>3000.00</td>
<td>36000.00</td>
<td>12.00</td>
<td>4.32</td>
</tr>
<tr>
<td>Printing (external printers)</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Office Equipment Maintenance</td>
<td>12.00</td>
<td>10000.00</td>
<td>120000.00</td>
<td>12.00</td>
<td>14.40</td>
</tr>
<tr>
<td>Services (investigations, surveys etc.)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Field surveys and monitoring</td>
<td>4.00</td>
<td>10000.00</td>
<td>40000.00</td>
<td>12.00</td>
<td>4.80</td>
</tr>
</tbody>
</table>

**TOTAL 1: (Lakh)** 50.52

### 2) CAPITAL COSTS: (Purchase and periodic replacement of all equipment etc.)

<table>
<thead>
<tr>
<th>Item</th>
<th>Quantity</th>
<th>Rate (Lakh)</th>
<th>Total Cost (Lakh)</th>
<th>Life (Years)</th>
<th>Avg Annual Cost (Lakh)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vehicles1: Jeep</td>
<td>11.00</td>
<td>25.00</td>
<td>275.00</td>
<td>8.00</td>
<td>34.38</td>
</tr>
<tr>
<td>Vehicles2: Pickup</td>
<td>0.00</td>
<td>15.00</td>
<td>0.00</td>
<td>10.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Vehicles3: Car</td>
<td>0.00</td>
<td>20.00</td>
<td>0.00</td>
<td>8.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Computer &amp; Accessories (general office)</td>
<td>12.00</td>
<td>1.00</td>
<td>12.00</td>
<td>4.00</td>
<td>3.00</td>
</tr>
<tr>
<td>Computer &amp; Accessories (specialist)</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>4.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Specialist Computer Software</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>4.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Photocopier</td>
<td>4.00</td>
<td>2.00</td>
<td>8.00</td>
<td>4.00</td>
<td>2.00</td>
</tr>
<tr>
<td>Fax machine</td>
<td>2.00</td>
<td>1.00</td>
<td>2.00</td>
<td>4.00</td>
<td>0.50</td>
</tr>
<tr>
<td>Air Conditioner</td>
<td>6.00</td>
<td>0.50</td>
<td>3.00</td>
<td>5.00</td>
<td>0.60</td>
</tr>
<tr>
<td>Specialist Equipment</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Office Furniture &amp; Fixtures</td>
<td>2.00</td>
<td>2.00</td>
<td>4.00</td>
<td>10.00</td>
<td>0.40</td>
</tr>
<tr>
<td>Office Refurbishment</td>
<td>2.00</td>
<td>1.00</td>
<td>2.00</td>
<td>10.00</td>
<td>0.20</td>
</tr>
</tbody>
</table>

**TOTAL 2: (Lakh)** 306.00

**GRAND TOTAL (1 + 2)** 91.60

TOTAL EQUIVALENT ANNUAL BUDGET = Taka 92 Lakh

TOTAL INDICATIVE ANNUAL BUDGET - MAINTENANCE CIRCLE - TABLE 7.1

(Based on 2003-2004 Financial Year)
<table>
<thead>
<tr>
<th>TASK / PROGRAM / ITEM</th>
<th>JUL</th>
<th>AUG</th>
<th>SEP</th>
<th>OCT</th>
<th>NOV</th>
<th>DEC</th>
<th>JAN</th>
<th>FEB</th>
<th>MAR</th>
<th>APR</th>
<th>MAY</th>
<th>JUN</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Annual Routine Maintenance Planning</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Annual Periodic Maintenance Planning</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Annual Periodic/Routine Maintenance Programme</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Maintenance Procurement Contract and Award</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Monitoring Maintenance Works</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Registration of Contractor (RHD/LGED)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Allocation of fund</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Disaster Management</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**FIGURE - 7.1**
SECTION 8  ECONOMICS CIRCLE OPERATIONAL PLAN

INTRODUCTION

The Economics Circle was established in 1976 headed by a Senior Economist (of Superintending Engineer Rank). The Circle now plays a key role in providing economic input for road network planning and development, and for maintenance planning through the HDM system.

OBJECTIVES

The objective of the Economics Circle is to contribute to the overall strategy of the Planning & Maintenance Wing by:

Ensuring that major investment decisions and forecasts made by RHD are economically sound through the provision of required economic analysis and data.

OUTPUTS

♦ Annual road user costs data (VOC, TTC & ACC) provided for use in HDM and other economic analyses.
♦ Economic input provided to PPs/PCPs in accordance with socio-economic parameters.
♦ Socio-economic database provided and maintained for project evaluation in the transport sector.
♦ Support services provided to MoC, MoF, RHD, Planning Commission and Donor Agencies/Countries on socio-economic matters relating to road and road transport development.
♦ Traffic projection model developed and maintained.

ORGANISATION

The Economics Circle is headed by a Senior Economist (hereby re-designated as Chief Transport Economist), supported by 3 Economists (hereby re-designated as Executive Transport Economist) who are each in charge of Division, namely:

♦ Road User Cost Division
♦ Feasibility Studies Division
♦ Economic Policy & Planning Division
The current organisation (December 2003) of the Economic Circle is as follows:

**Organogram of the Economics Circle**

The existing and proposed numbers of personnel in the Circle are shown in the Personnel and Organogram Databases. The total proposed number of personnel in the Circle is to be 36 of which 35 are currently sanctioned posts and one post of Research Officer is currently in the status of having been approved by the appropriate authority, but no GO was issued by the Ministry of Finance. There are however some re-arrangements made in the number of staff in individual posts and in some cases re-designation is suggested. The total proposed number of personnel of the Circle consist of 9 Class I, 0 Class II, 18 Class III and 8 Class IV staff.

Officers in the Economics Circle are to be designated as specialists. Specialist posts for engineers as well as economists with specialist qualifications are shown together with the equivalent engineering grade thus, Exec. Transport Economist (EEX).

In order to ensure that the officers in this circle are of comparable status and receive similar benefits to equivalent engineering posts under the Department, some changes in the designations are proposed (i.e. Chief Transport Economist (CTE) in place of Senior Economist, Executive Transport Economist (ETE) in place of Economist, Sub-Divisional Transport Economist (STE) and Assistant Transport Economist (ATE) in place of the remaining Class I post designations). The pay scale of CTE, ETE and STE will be equivalent to the pay scale of a SE, EE and SDE respectively. while the pay scale of an ATE will be equivalent to that of an AE.
ACTIVITIES

- Carry out economic feasibility studies of road projects.
- Carry out economic feasibility studies of bridge projects.
- Estimate and update road user costs (VOC, TTC & ACC) annually.
- Undertake traffic origin-destination surveys, traffic count surveys and socio-economic surveys.
- Undertake VOC, TTC and ACC surveys for updating the Road User Costs (RUC) report.
- Create a socio-economic database on the basis of primary and secondary data.
- Make reviews of and comment on the economic parts of study reports prepared by consultants and other agencies.
- Prepare specialised reports relating to road and road transport development.
- Update the asset valuation on an annual basis.
- Develop and maintain a traffic projection model.

RESOURCES

The Economics Circle requires resources for Headquarters operations and to enable the Circle to undertake necessary surveys and economic studies etc. using both the Circles’ own resources and consultants.

The resources required are shown in the table below:

<table>
<thead>
<tr>
<th>Item</th>
<th>Existing (2003)</th>
<th>Proposed Total Requirement</th>
<th>Additional Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Inspection Vehicles</td>
<td>4*</td>
<td>8</td>
<td>4</td>
</tr>
<tr>
<td>2. Computer with printer</td>
<td>3*</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>3. Photocopier</td>
<td>1*</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>4. Air cooler</td>
<td>1*</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>5. Fax Machine</td>
<td>-</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>6. Computer Software</td>
<td>-</td>
<td>4</td>
<td>4</td>
</tr>
</tbody>
</table>

Note: * Out of the existing resources 4 vehicles, 1 computer, 1 photocopier and 1 AC is very old and in a very bad condition.
INDICATIVE BUDGET

The Indicative budget for the Economics Circle is shown in TABLE-8.1. The budget table shows both the annual operation and maintenance costs (including the costs of undertaking economic studies and surveys) and the capital costs of purchasing new and replacing old equipment. As not all equipment will be purchased or replaced immediately the capital cost has been annualised depending on the average life of the various items of equipment. The costs shown exclude the cost of personnel who are paid for from other sources.

On this basis the annual recurring cost for the Circle is Taka 100 lakh and the capital cost on an annualised basis is Taka 27 lakh. Giving a total cost of Taka 127 lakh per annum.

(Of this total amount, Taka 38 lacs are to cover the costs of economic studies carried out by Consultants).

WORK PLAN

The work plan of the Circle for the financial year based on the activities and resources detailed above is shown in FIGURE-8.1.
### 1) RUNNING COSTS:

<table>
<thead>
<tr>
<th>Item</th>
<th>Quantity</th>
<th>Rate (Taka)</th>
<th>Total Cost (Taka)</th>
<th>No. per Year</th>
<th>Annual Cost (Lakh)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operation &amp; Maintenance</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vehicle Operation &amp; Maintenance</td>
<td>8.00</td>
<td>15000.00</td>
<td>120000.00</td>
<td>12.00</td>
<td>14.40</td>
</tr>
<tr>
<td>Stationary, Copying &amp; Consumables</td>
<td>1.00</td>
<td>10000.00</td>
<td>10000.00</td>
<td>12.00</td>
<td>1.20</td>
</tr>
<tr>
<td>Computer Operations &amp; Maintenance</td>
<td>6.00</td>
<td>3000.00</td>
<td>18000.00</td>
<td>12.00</td>
<td>2.16</td>
</tr>
<tr>
<td>Printing (external printers)</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Office Equipment Maintenance</td>
<td>6.00</td>
<td>10000.00</td>
<td>60000.00</td>
<td>12.00</td>
<td>7.20</td>
</tr>
<tr>
<td>Services (investigations, surveys etc.)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Road User Costs Study - by RHD</td>
<td>1.00</td>
<td>300000.00</td>
<td>300000.00</td>
<td>1.00</td>
<td>3.00</td>
</tr>
<tr>
<td>Economic Study of Bridge Project by RHD</td>
<td>5.00</td>
<td>150000.00</td>
<td>750000.00</td>
<td>1.00</td>
<td>7.50</td>
</tr>
<tr>
<td>Economic Study of Road Project by RHD</td>
<td>5.00</td>
<td>150000.00</td>
<td>750000.00</td>
<td>1.00</td>
<td>7.50</td>
</tr>
<tr>
<td>Economic Study of Brd. Project by Consultants</td>
<td>5.00</td>
<td>350000.00</td>
<td>1750000.00</td>
<td>1.00</td>
<td>17.50</td>
</tr>
<tr>
<td>Economic Study of Rd Project by Consultants</td>
<td>5.00</td>
<td>400000.00</td>
<td>2000000.00</td>
<td>1.00</td>
<td>20.00</td>
</tr>
<tr>
<td>OD &amp; TC Survey by counts</td>
<td>1.00</td>
<td>2000000.00</td>
<td>2000000.00</td>
<td>1.00</td>
<td>20.00</td>
</tr>
</tbody>
</table>

**TOTAL 1: (Lakh)** 100.46

### 2) CAPITAL COSTS: (Purchase and periodic replacement of all equipment etc.)

<table>
<thead>
<tr>
<th>Item</th>
<th>Quantity</th>
<th>Rate (Lakh)</th>
<th>Total Cost (Lakh)</th>
<th>Life (Years)</th>
<th>Avg Annual Cost (Lakh)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vehicles1: Jeep</td>
<td>6.00</td>
<td>25.00</td>
<td>150.00</td>
<td>8.00</td>
<td>18.75</td>
</tr>
<tr>
<td>Vehicles2: Pick-up</td>
<td>1.00</td>
<td>15.00</td>
<td>15.00</td>
<td>10.00</td>
<td>1.50</td>
</tr>
<tr>
<td>Vehicles3: Microbus</td>
<td>1.00</td>
<td>20.00</td>
<td>20.00</td>
<td>8.00</td>
<td>2.50</td>
</tr>
<tr>
<td>Computer &amp; Accessories (general office)</td>
<td>6.00</td>
<td>1.00</td>
<td>6.00</td>
<td>4.00</td>
<td>1.50</td>
</tr>
<tr>
<td>Computer &amp; Accessories (specialised)</td>
<td>0.00</td>
<td>2.00</td>
<td>0.00</td>
<td>4.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Specialist Computer Software</td>
<td>4.00</td>
<td>0.50</td>
<td>2.00</td>
<td>4.00</td>
<td>0.50</td>
</tr>
<tr>
<td>Photocopyer</td>
<td>2.00</td>
<td>2.00</td>
<td>4.00</td>
<td>4.00</td>
<td>1.00</td>
</tr>
<tr>
<td>Fax machine</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>4.00</td>
<td>0.25</td>
</tr>
<tr>
<td>Air Conditioner</td>
<td>3.00</td>
<td>0.50</td>
<td>1.50</td>
<td>5.00</td>
<td>0.30</td>
</tr>
<tr>
<td>Specialist Equipment</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Office Furniture &amp; Fixtures</td>
<td>1.00</td>
<td>1.25</td>
<td>1.25</td>
<td>10.00</td>
<td>0.13</td>
</tr>
<tr>
<td>Office Refurbishment</td>
<td>1.00</td>
<td>0.75</td>
<td>0.75</td>
<td>10.00</td>
<td>0.08</td>
</tr>
</tbody>
</table>

**TOTAL 2: (Lakh) 201.50**

**GRAND TOTAL (1 + 2) 126.96**

**TOTAL EQUIVALENT ANNUAL BUDGET = Taka 127 Lakh**

**TOTAL INDICATIVE ANNUAL BUDGET - ECONOMICS CIRCLE - TABLE 8.1**

*Based on 2003-2004 Financial Year*
### Circle Work Plan

**Year:** Typical

<table>
<thead>
<tr>
<th>TASK / PROGRAM / ITEM</th>
<th>JUL</th>
<th>AUG</th>
<th>SEP</th>
<th>OCT</th>
<th>NOV</th>
<th>DEC</th>
<th>JAN</th>
<th>FEB</th>
<th>MAR</th>
<th>APR</th>
<th>MAY</th>
<th>JUN</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Economic Study of Road Projects</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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*FIGURE - 8.1*
SPECIFIC JOB DESCRIPTIONS

INTRODUCTION

Written Job Descriptions will help officers understand their roles in the RHD organisation, and therefore help to avoid misunderstandings. The job descriptions will also serve as a good starting point when officers are transferred between wings/zones.

The Job Descriptions will be maintained by the Administration & Establishment Division - Administration & Establishment Circle and the current updated versions will be available on the RHD Intranet. Training will be given to the Class 1 Officers to enable them to develop the job descriptions of their subordinates.

Feedback is important and all officers are encouraged to discuss their job descriptions with their Superior Officer (s).

GENERAL JOB DESCRIPTIONS

All RHD officers are delegated with defined responsibilities according to their Grade. The details of these duties and authorities are given in the General Job Descriptions. These include both administrative duties and financial authorities, and are the same for each grade of officer irrespective of the specific details of his/her current post. The General Job Descriptions are detailed in the RHD Management Manual - Volume 1 of the RHD Management Plan.

SPECIFIC JOB DESCRIPTIONS

In addition to the General Job Descriptions for each grade of officer, every post has specific duties and functions. These duties and functions are detailed in the Specific Job Descriptions for each post, which form part of the Management Manuals for each Wing, Zone and Circle.

Specific Job Descriptions for the posts from Sub-Assistant Engineer grade to Additional Chief Engineer grade within the Planning & Maintenance Wing are included in this section as follows:

Specific Job Descriptions for individual posts may require modification from time to time in order to respond to changing circumstances. Such modifications may be made with the approval of the Chief Engineer provided that these changes comply with Government rules.
GENERAL INFORMATION

Additional responsibilities and authorities for officers working on foreign aided projects may be modified by agreement between the Government of Bangladesh and the concerned Development Partner(s).

All the posts referred to in both the General and the Specific job descriptions are open to both male and female candidates and reference to he should always be taken to mean he or she.

The large majority of officers in the Road and Highways Department are from the engineering cadre. Non-engineering officers have the same general duties and responsibilities as engineers of equivalent grade as described in the relevant General Job Descriptions.

The terms ‘engineer’ and ‘engineering’ apply equally to both Civil and Mechanical Engineering disciplines.
<table>
<thead>
<tr>
<th>Job No.</th>
<th>Job Title</th>
<th>Wing/Zone/Circle/Division</th>
<th>No. Posts</th>
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# Planning & Maintenance Wing - Specific Job Descriptions

<table>
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<th>Job No.</th>
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*Specialist Training Required  *Specialist Qualification Required
CIRCLES WITHIN THIS WING:

- Planning & Programming Circle
- Monitoring Circle
- Procurement Circle
- HDM Circle
- Maintenance Circle
- Economics Circle

DIVISIONS UNDER THIS WING: 16

OFFICERS UNDER THIS OFFICE:

1. Assistant Engineer 1 No.
2. Sub-Assistant Engineer 1 No.

PERSONNEL SPECIFICATIONS:

The post holder must meet the general requirements of an Additional Chief Engineer as specified in the RHD Management Manual and as per recruitment rules.

The post holder should preferably be a Graduate Civil Engineer with experience in relevant fields particularly; he should have served at least 2 years as a Superintending Engineer of a Circle in the Planning & Maintenance Wing of RHD. The post holder should have adequate training in the fields of Planning, Management, Procurement and Monitoring. He should be well conversant with feasibility studies and economic analysis for different projects and must have a sound knowledge of project monitoring procedures.

DUTIES AND RESPONSIBILITIES:

In addition to the general responsibilities of the post of Additional Chief Engineer, as specified in the RHD Management Manual, the specific duties relating to this position are detailed below:

1. Ensure RHD maintains an up to date accurate and reliable road & bridge database.
2. Contribute to RHD policies and long-term development plans through the use of available road and bridge data including traffic, economic and social parameters.
3. Recommend short-term and long-term programmes for road maintenance and development projects based on prioritised listings and designed to optimise the use of Government and private funds.
4. Ensure the timely submission of PPCPs, PCPs, PPs and TAPP documents to the MoC and the Planning Commission.

5. Provide advice and assistance to the Department on all procurement issues.

6. Ensure prompt and effective responses to emergency situations (flood, cyclones, bridge failures, earth-slips etc).

7. Co-ordinate and interface with other wings and zones for the development of plans incorporating road safety, environmental and social issues.

8. The ACE-Planning & Maintenance Wing will chair the RHD Committee of Purchase (RHDCOP) and ensure that all cases are scrutinised before approval is given. In cases, which are beyond the delegated powers of the field/zonal, officers’ approval from the competent authority must be processed.
PERSONNEL SPECIFICATIONS:

The post holder must meet the general requirements of an Assistant Engineer as specified in the RHD Management Manual and as per recruitment rules.

DUTIES & RESPONSIBILITIES:

In addition to the general responsibilities of the post of Assistant Engineer, as specified in the RHD Management Manual, the specific duties relating to this position are detailed below:

1. Work under direct control of the Additional Chief Engineer, Planning and Maintenance Wing and perform the duties assigned to him. Some of these duties are stated below:
2. Preparing technical reports, briefing papers for higher authority as instructed;
3. Examine proposals and enquiries for roads and bridges from the general public and Member of Parliament and make a consolidated report on them;
4. Enter data in the database and checks e-mail and prepare draft reply for the ACE.
5. Obtain the reports and maintain records of important documents (PPCP, TAPP, PCP, PP etc.).
6. Supervise assigned tasks of Sub-Assistant Engineers.
PERSONNEL SPECIFICATIONS:

The post holder must meet the general requirements of a Sub-Assistant Engineer as specified in the RHD Management Manual and as per recruitment rules.

DUTIES & RESPONSIBILITIES:

In addition to the general responsibilities of the post of Sub-Assistant Engineer, as specified in the RHD Management Manual, the specific duties relating to this position are detailed below:

1. Work under direct control of the Additional Chief Engineer, Planning and Maintenance Wing and perform the duties assigned to him from time to time. Some of such duties are mentioned below:

2. Keeping records of all documents which will include measurement books, tender documents, tender notices, PCPP, TAPP, PCP, PP, districts/ thanas /mouza maps etc.

3. Maintain register for PCPs, TAPPs, PCPs, PPs and reports issued.

4. Maintaining Govt. circulars on all technical matters from MoC, CE-RHD and other offices, RHD standards & guidelines etc.

5. Maintaining the account of all office furniture and equipment under the office of the Additional Chief Engineer, Planning & Maintenance Wing.

6. Report to the ACE/AE on specific duties on regular basis.
DIVISIONS UNDER THIS CIRCLE:

- Planning Division I
- Planning Division II
- Programming Division

OFFICERS UNDER THIS OFFICE:
1. Assistant Engineer 1 No.
2. Sub-Assistant Engineer 1 No.

PERSONNEL SPECIFICATIONS:

The post-holder must meet the general requirements of a Superintending Engineer as specified in the RHD Management Manual and as per recruitment rules.

The post-holder should preferably be a Graduate Civil Engineer with, at least 2 years, experience as a junior officer in the Planning and Programming Circle. He should have received training in Highway Planning. He must have thorough experience in the preparation of PPs, PCP, PPCP and a sound knowledge of preparing Annual Development Programmes.

DUTIES AND RESPONSIBILITIES:

In addition to the general responsibilities of the post of Superintending Engineer, as specified in the RHD Management Manual, the specific duties relating to this position are detailed below:

1. Responsible for the submission of Technical Assistance Project Proforma (TAPPs) seeking technical assistance for consultancy services on RHD projects.

2. Responsible for the submission of Project Concept Papers (PCPs) and Project Proformas (PPs) of identified Road and Bridge projects to be included in the ADP, including Foreign aided projects. Projects to be ranked on the basis of economic and social priorities.

3. Responsible for the submission of Preliminary PCPs (PPCPs) of projects for lining up foreign aid by the Economic Relations Division (ERD) as well as for inclusion of the projects in the ADP/Rolling Plan.

4. Responsible for Revision of PCPs/PPs as per decisions of the Planning Commission/ECNEC and processing them for approval.
5. Responsible for preparing the proposed allocation of the Development Budget/ADP on the basis of proposals (for allocation of funds) supplied by the Maintenance Circle, Zonal/Field offices, and Project Directors of Foreign Aided Projects. Proposals shall be supported by the HDM and Economics Circles.

6. Responsible for re-allocation of budgets of ADP Projects as per field requirements and obtaining approvals for these changes.

7. Responsible for preparation of Five Year Plan/Perspective Plan, Aid Worthy project list and Three Year Rolling Plan as per the guidelines given by the Planning Commission and process these for submission to the Ministry and Planning Commission.
PERSONNEL SPECIFICATIONS:

The post holder must meet the general requirements of an Assistant Engineer as specified in the RHD Management Manual and as per recruitment rules.

DUTIES & RESPONSIBILITIES:

In addition to the general responsibilities of the post of Assistant Engineer, as specified in the RHD Management Manual, the specific duties relating to this position are detailed below:

1. Work under direct control of the Superintending Engineer, Planning and Programming Circle and perform the duties assigned to him. Some of these duties are stated below:

2. Assist in recasting PCP, TAPP and PP in accordance with the Planning Commission requirement.

3. Assist in checking draft 3-years rolling plan, 5-years development plan, revised PP and TAPP.

4. Assist in checking draft proposals for budget allocations on the basis of the approved list of ADP projects.

5. Assist in checking draft proposals for the revised ADP prior to the middle of the financial year.

6. Assist in checking the physical works programmes of Zones/Wings against allocated fund

7. Preparing technical reports, briefing papers for higher authority as instructed;

8. Supervise assigned tasks of Sub-Assistant Engineers.
PERSONNEL SPECIFICATIONS:

The post holder must meet the general requirements of a Sub-Assistant Engineer as specified in the RHD Management Manual and as per recruitment rules.

DUTIES & RESPONSIBILITIES:

In addition to the general responsibilities of the post of Sub-Assistant Engineer, as specified in the RHD Management Manual, the specific duties relating to this position are detailed below:

1. Work under direct control of the Superintending Engineer, Planning and Programming Circle and perform the duties assigned to him from time to time. Some of such duties are mentioned below:

2. Keeping records of all documents like measurement books, tender documents, tender notices, PCPP, TAPP, PCP, PP, districts/thanas/mouza maps etc.

3. Maintain register for PCPs, TAPPs, PCPs, PPs and reports issued.

4. Maintaining Govt. circulars on all technical matters from MoC, CE-RHD and other offices, RHD standards & guidelines etc.

5. Maintaining the account of all office furniture and equipment under the office of the Superintending Engineer, planning & Programming Circle;

6. Check and verify arithmetical figures of ADP as instructed by AE;

7. Checking proof copy, printing and publication of important document viz. ADP, 5-year plan, 3-year rolling plan etc.

8. Report to AE on specific duties on regular basis.
RHD Specific Job Description – Planning & Maintenance Wing

SJD/PPC/2.1 - EXECUTIVE ENGINEER

OFFICERS UNDER THE DIVISIONS:

1. Sub-Divisional Engineer 1 No. 1 No.
2. Assistant Engineer 2 No. 2 No.
3. Sub-Assistant Engineer 2 No 2 No

PERSONNEL SPECIFICATIONS:

The post holder must meet the general requirements of an Executive Engineer as specified in the RHD Management Manual and as per recruitment rules.

The post holder should be a Graduate in Civil Engineering. He should have at least 2 years work experience in a junior position, in the Planning & Maintenance Wing. He should have received formal training in Highway Planning.

DUTIES & RESPONSIBILITIES:

In addition to the general responsibilities of the post of Executive Engineer, as specified in the RHD Management Manual, the specific duties relating to this position are detailed below:

1. Prepare Preliminary Project Concept Papers (PPCPs) to assist the External Resource Division of the Ministry of Finance in lining up foreign aid/loans.
2. Prepare and process Project Concept Papers (PCPs) based on information supplied by the Project Directors of aided projects, consultants, Zonal offices and other government offices.
3. Prepare Technical Assistance Project Proformas (TAPPs) for consultancy services.
4. Prepare and process Project Proformas (PPs) based on information supplied by the Project Directors of aided projects, consultants, Zonal offices and other government offices.
5. Recast PCPs and PPs in accordance with Planning Commission requirements.
6. Revise PPs in accordance with field requirements including adjusting for price escalation increased work etc.
7. Prepare the 3 - year rolling plan in co-operation with Programming Division, HDM, Maintenance and Economics Circles.
8. Assist in the preparation of the 5 - year development plan.
9. Manage the sale of tender documents for specified works as per Government instructions/orders. (Planning Division I only).
PERSONNEL SPECIFICATIONS:

The post holder must meet the general requirements of a Sub-Divisional Engineer as specified in the RHD Management Manual and as per recruitment rules.

He should have received formal training in Highway Planning. He should have work experience, for at least 2 years, in a junior position in the Planning & Maintenance Wing.

DUTIES & RESPONSIBILITIES:

In addition to the general responsibilities of the post of Sub-Divisional Engineer, as specified in the RHD Management Manual, the specific duties relating to this position are detailed below:

1. Prepare draft preliminary project concept paper (PPCP), project concept papers (PCP), technical assistant project proforma (TAPP) and project proforma (PP).
2. Preparing draft 3-years rolling plan and 5-years development plan.
3. Preparing draft recast of PCP, TAPP and PP in accordance with the Planning Commission requirement.
4. Preparing draft proposals for foreign aided projects/aid-worthy projects.
5. Prepare draft revise PP and TAPP in accordance with field requirements, increased work and adjustment of price exclamation etc.
6. Maintaining accounts of expenditures (revenue and development) for all offices under P&P Circle (for SDE Planning Division-I only).
7. Prepare tender documents for pretty purchases/small works (for SDE Planning Division-I only).
8. Preparing technical reports, briefing papers etc for senior engineers.
9. Examine and investigate proposals for roads and bridges from the general public, Member of Parliament and others.
10. Ensure whether the reports (environmental, re-settlement, feasibility etc.) required for PPs, TAPPs are obtained.
11. Check database input and interface with computer network system.
12. Supervise the assigned tasks of the Assistant Engineer/Sub-Assistant Engineers.
PERSONNEL SPECIFICATIONS:

The post holder must meet the general requirements of an Assistant Engineer as specified in the RHD Management Manual and as per recruitment rules.

He should have received formal training in Highway Planning.

DUTIES & RESPONSIBILITIES:

In addition to the general responsibilities of the post of Assistant Engineer, as specified in the RHD Management Manual, the specific duties relating to this position are detailed below:

1. Assist EE/SDE in the following:
   i) Assist in preparing preliminary project concept paper (PPCP), project concept papers (PCP), technical assistant project proforma (TAPP) and project proforma (PP).
   ii) Assist in preparing draft 3-years rolling plan, 5-years development plan, revises PP and TAPP.
   iii) Assist in recasting PCP, TAPP and PP in accordance with the Planning Commission requirement.
   iv) Assist in preparing proposals for future foreign aided projects/aid-worthy projects.
   v) Assist SDE in all financial activities and in the preparation of tender documents.

2. Preparing technical reports, briefing papers for senior engineers’ etc. as instructed.

3. Examine proposals and enquiries for roads and bridges from the general public and Member of Parliament.

4. Obtain the reports (environmental, re-settlement, feasibility etc.) required for PCPs, PPs, TAPPs.

5. Collect information data for future development and foreign aided projects.

6. Enter data in the divisional database.

7. Maintain records of important documents (PPCP, TAPP, PCP, PP etc.).

8. Provide basic information for answers to the parliamentary questions.

9. Obtain data/information from ACEs fields/wings, PDs of projects, Govt. offices and any other source for preparation of PCPP, TAPP, PCP, and PP.

10. Report to EE/SDE on all specific duties on a regular basis

11. Supervise assigned tasks of Sub-Assistant Engineers.
PERSONNEL SPECIFICATIONS:

The post holder must meet the general requirements of a Sub-Assistant Engineer as specified in the RHD Management Manual and as per recruitment rules.

He should have received formal training in Highway Planning.

DUTIES & RESPONSIBILITIES:

In addition to the general responsibilities of the post of Sub-Assistant Engineer, as specified in the RHD Management Manual, the specific duties relating to this position are detailed below:

1. Keeping records of all documents which will include measurement books, tender documents, tender notices, PCPP, TAPP, PCP, PP, districts/thanas/mouza maps etc.
2. Maintaining Govt. circulars on all technical matters from MoC, CE-RHD and other offices, RHD standards & guidelines etc.
3. Checking of arithmetical data of PCPP, TAPP, PCP & PP’s as instructed by SDE/AE.
4. Maintaining of all office equipment of under the control of the Divisional Office.
5. Checking proof, printing and publication of PCPP, TAPP, PCP, PP’s etc.
6. Record work done measurements of vouchers/small works and its certification (for assigned SAE of Planning Division-I).
7. Obtain documentary materials for reports and information on basic cost of plant, materials and labour and others as required.
8. Prepare graph, figure, sketches, and drawings required for PCPs, TAPPs, PCPs, PPs etc.
9. Calculate quantities for drawings and estimates required for PCPs, TAPPs, PCPs, PPs.
10. Maintain register for PCPs, TAPPs, PCPs, PPs and reports issued.

Report to the EE/SDE on all specific duties on a regular basis.
OFFICERS UNDER THE DIVISION:

1. Sub-Divisional Engineer 1 No.
2. Assistant Engineer 2 No.
3. Sub-Assistant Engineer 3 No.

PERSONNEL SPECIFICATIONS:

The post-holder must meet the general requirements of an Executive Engineer as specified in the RHD Management Manual and as per recruitment rules.

The post-holder should preferably be a graduate in Civil Engineering. He should have received formal training in Highway Planning. He should have work experience, for at least 2 years, in a junior position in the Planning & Maintenance Wing.

DUTIES & RESPONSIBILITIES:

In addition to the general responsibilities of the post of Executive Engineer, as specified in the RHD Management Manual, the specific duties relating to this position are detailed below:

1. Prepare proposals for the Annual Development Programme (ADP).
2. Prepare proposals for budget allocations on the basis the approved list of ADP projects.
3. Assist in re-appropriation of budgets for ADP Projects in accordance with field requirements.
4. Prepare proposals for the revised ADP prior to the middle of the financial year.
5. Review the programme of physical work against allocated funds.
6. Provide information to Planning Cell-MoC, for preparing the 5-year development plan.
PERSONNEL SPECIFICATIONS:

The post holder must meet the general requirements of a Sub-Divisional Engineer as specified in the RHD Management Manual and as per recruitment rules.

He should have received formal training in Highway Planning. He should have work experience, for at least 2 years, in a junior position in the Planning & Maintenance Wing.

DUTIES & RESPONSIBILITIES:

In addition to the general responsibilities of the post of Sub-Divisional Engineer, as specified in the RHD Management Manual, the specific duties relating to this position are detailed below:

1. Prepare draft proposals for the Annual Development Programme (ADP).
2. Prepare draft proposals for budget allocations on the basis of the approved list of ADP projects.
3. Assist in re-appropriation of budgets for ADP Projects in accordance with field requirements.
4. Prepare draft proposals for the revised ADP prior to the middle of the financial year.
5. Check the physical programmes works of Zones/Wings against allocated funds.
6. Collate information/data for preparing the 5-years development plan and 3-years rolling plan.
7. Preparing technical reports, briefing papers etc for senior engineers.
8. Check project-monitoring system input database and interface with computer network system and other relevant Circles.
9. Ensure link number of road sections for each road scheme listed in the ADP.
PERSONNEL SPECIFICATIONS:

The post holder must meet the general requirements of an Assistant Engineer as specified in the RHD Management Manual and as per recruitment rules. He should have received formal training in Highway Planning.

DUTIES & RESPONSIBILITIES:

In addition to the general responsibilities of the post of Assistant Engineer, as specified in the RHD Management Manual, the specific duties relating to this position are detailed below:

1. Assist EE/SDE programming division for the following:-
   i) In preparing draft proposals for ADP.
   ii) In preparing draft proposals for budget allocations on the basis of the approved list of ADP projects.
   iii) In preparing draft proposals for the revised ADP prior to the middle of the financial year.
   iv) Checking the physical programmes works of Zones/Wings against allocated funds.
   v) Preparing technical reports, briefing papers etc. for senior engineers.
   vi) Ensure link number of roads to be included in the ADP.

2. Report to EE/SDE on specific duties on a regular basis.

3. Provide basic information for answers of parliamentary questions.

4. Enter data in the divisional database.
PERSONNEL SPECIFICATIONS:
The post holder must meet the general requirements of a Sub-Assistant Engineer as specified in the RHD Management Manual and as per recruitment rules. He should have received formal training in Highway Planning.

DUTIES & RESPONSIBILITIES:
In addition to the general responsibilities of the post of Sub-Assistant Engineer, as specified in the RHD Management Manual, the specific duties relating to this position are detailed below:

1. Keeping records of all documents which will include measurement books, ADP, 5-years plan, 3-years rolling plan etc.
2. Maintaining Govt. circulars on all technical matters from MoC, CE-RHD and other offices, RHD guidelines etc.
3. Check and verify arithmetical figures of ADP as instructed by SDE/AE.
4. Maintaining of all office equipment under the control of the Divisional Office.
5. Checking proof copy, printing and publication of important document viz. ADP, 5-year plan, 3-year rolling plan etc.
6. Obtain information/data and documentary materials for preparation of technical reports.
7. Report to AE/SDE on all specific duties on a regular basis.
RHD Specific Job Description – Planning & Maintenance Wing

SJD/MON/1.1 - SUPERINTENDING ENGINEER

DIVISIONS UNDER THIS CIRCLE:

- Monitoring
- Evaluation

OFFICERS UNDER THIS OFFICE:

1. Assistant Engineer  1 No.
2. Sub-Assistant Engineer  1 No.

PERSONNEL SPECIFICATIONS:

The post holder must meet the general requirements of a Superintending Engineer as specified in the RHD Management Manual and as per recruitment rules.

The post holder should preferably be a Graduate Civil Engineer. He must be well acquainted with the techniques of project evaluation and have received formal training in the field of the monitoring and evaluation of projects. He should have at least 2 years previous experience working in a junior position in the Monitoring Circle.

DUTIES AND RESPONSIBILITIES:

In addition to the general responsibilities of the post of Superintending Engineer, as specified in the RHD Management Manual, the specific duties relating to this position are detailed below:

1. Provide accurate monitoring and post project evaluations of RHD projects in order to assist RHD Senior Management.

2. Collect and compile all project and relevant data including physical and financial data required for the preparation of management reports.

3. Provide monthly progress reports on physical and financial achievements to RHD senior management on the implementation of RHD projects both local and foreign aided and technical assistance projects including Prime Minister’s priority projects.

4. Provide appropriate management information on physical and financial achievements against the planned programmes/budgets and standards. Areas requiring further review and action should be highlighted.
5. Responsible for submission of monthly and quarterly progress reports in the prescribed format to the IMED division of Planning Ministry.

6. Responsible for answering questions of parliamentary members and committees.

7. Provide information for producing the Annual Report of RHD

8. Prepare summary and other special reports for RHD management and other Government bodies.


10. Provide data to Procurement Circle for outsourcing and engagement of consultants for the evaluation of large projects.

11. Monitor the physical progress of projects by detailed sample field inspections or site visits.

12. Arrange progress review meeting in the Ministry.

13. Ensure development & operations of Computerised project monitoring system database.
PERSONNEL SPECIFICATIONS:

The post holder must meet the general requirements of an Assistant Engineer as specified in the RHD Management Manual and as per recruitment rules.

He should have received formal training in Project Planning & Monitoring. He should have adequate knowledge in road works.

DUTIES AND RESPONSIBILITIES:

In addition to the general responsibilities of the post of Assistant Engineer, as specified in the RHD Management Manual, the specific duties relating to this position are detailed below:

1. Assist in disposing all letters on technical matters addressed to SE on time.

2. Keeping record and maintain properly all technical reports, progress reports, post project evaluation reports, etc.

3. Co-ordinate with divisions of Monitoring circle for project monitoring and evaluation related works.

4. Writing minutes of the meeting chaired by the SE on works related to Monitoring circle.

5. Prepare technical reports, briefing papers, etc. for SE.

6. Carry out any other activities assigned to him time to time by his seniors.

7. Supervise assigned tasks of SAE.
PERSONNEL SPECIFICATIONS:

The post holder must meet the general requirements of a Sub-Assistant Engineer as specified in the RHD Management Manual and as per recruitment rules. He should have adequate knowledge in road works.

DUTIES AND RESPONSIBILITIES:

In addition to the general responsibilities of the post of Sub-Assistant Engineer, as specified in the RHD Management Manual, the specific duties relating to this position are detailed below:

1. Keeping records of all documents, progress reports, etc.

2. Maintain Government circulars on all technical matters from MoC, CE-RHD and other offices, etc.

3. Maintain all office equipment under the control of Circle office.

4. Report to AE on all specific duties on a regular basis.
OFFICERS UNDER THE DIVISION:

1. Sub-Divisional Engineer 1 No.
2. Assistant Engineer 2 No.
3. Sub-Assistant Engineer 3 No.

PERSONNEL SPECIFICATIONS:

The post holder must meet the general requirements of an Executive Engineer as specified in the RHD Management Manual and as per recruitment rules.

The post holder should preferably be a Graduate in Civil Engineering. He should have a minimum of 2 years experience in a junior position in the Planning & Maintenance Wing. He should have received training or undergone post-graduate studies in Project Management, Monitoring or Management Information.

DUTIES & RESPONSIBILITIES:

In addition to the general responsibilities of the post of Executive Engineer, as specified in the RHD Management Manual, the specific duties relating to this position are detailed below:

1. Monitor submission of progress reports from field operations including foreign aided projects on a monthly basis.
2. Prepare reports on progress of RHD projects both local & foreign aided including development and technical assistance projects including Prime Minister's Priority projects.
3. Analyse project details including physical quantities and financial costs of the projects for preparation of management reports.
4. Prepare progress reports to the Ministry in the IMED formats on a monthly/quarterly basis.
5. Assist the SE in preparing answers to Parliamentary Questions.
6. Monitor physical progress by sample field inspection or site visit.
7. Maintain Database of all other relevant activities as required.
8. Manage data entry from field progress report to Computerised Project Monitoring Systems.
PERSONNEL SPECIFICATIONS:

The post holder must meet the general requirements of a Sub-Divisional Engineer as specified in the RHD Management Manual and as per recruitment rules.

The post holder should preferably be a graduate in Civil Engineering. He should have received formal training in monitoring and evaluation of projects. He should have adequate knowledge in road works.

DUTIES AND RESPONSIBILITIES:

In addition to the general responsibilities of the post of Sub-Divisional Engineer, as specified in the RHD Management Manual, the specific duties relating to this position are detailed below:

1. Assist in monitoring submission of progress reports from field offices including aided projects.

2. Ensure data entry from field progress report to the computerized Project Monitoring System.

3. Prepare reports on progress of RHD projects both local & foreign aided including technical assistance projects.

4. Assist in preparing progress reports in IMED formats on a monthly/quarterly basis.

5. Preparing technical reports, briefing papers etc. for senior Engineers.

6. Supervise the assigned tasks of the AE/SAE.
PERSONNEL SPECIFICATIONS:
The post holder must meet the general requirements of an Assistant Engineer as specified in the RHD Management Manual and as per recruitment rules.

He should have received formal training in Project Planning & Monitoring. He should have adequate knowledge in road works.

DUTIES AND RESPONSIBILITIES:
In addition to the general responsibilities of the post of Assistant Engineer, as specified in the RHD Management Manual, the specific duties relating to this position are detailed below:

1. Assist in monitoring submission of progress reports from field offices including aided projects.
2. Ensure data entry from field progress report to the computerized Project Monitoring System.
3. Prepare reports on progress of RHD projects both local & foreign aided including technical assistance projects.
4. Assist in preparing progress reports in IMED formats on a monthly/quarterly basis.
5. Preparing technical reports, briefing papers etc. for senior Engineers.
6. Supervise the assigned tasks of the SAE.
PERSONNEL SPECIFICATIONS:

The post holder must meet the general requirements of a Sub-Assistant Engineer as specified in the RHD Management Manual and as per recruitment rules. He should have adequate knowledge in road works.

DUTIES AND RESPONSIBILITIES:

In addition to the general responsibilities of the post of Sub-Assistant Engineer, as specified in the RHD Management Manual, the specific duties relating to this position are detailed below:

1. Keeping records of all documents, progress reports, etc.
2. Maintain Government circulars on all technical matters from MoC, CE-RHD and other offices, etc.
3. Maintain all office equipment under the control of Division office.
4. Report to AE on all specific duties on a regular basis.
OFFICERS UNDER THE DIVISION:

1. Assistant Engineer 2 No.
2. Sub-Assistant Engineer 2 No.

PERSONNEL SPECIFICATIONS:

The post holder must meet the general requirements of an Executive Engineer as specified in the RHD Management Manual and as per recruitment rules.

He should have received training/undertake post-graduate studies in the management and/or evaluation of projects. He should have a minimum of 2 years experience in a junior post of the Planning & Maintenance Wing.

DUTIES & RESPONSIBILITIES:

In addition to the general responsibilities of the Executive Engineer, as specified in the RHD Management Manual, the specific duties relating to this post are detailed below:

1. Prepare post-project evaluation reports of all RHD projects (both local & foreign funded).
2. Prepare summary and other special reports for RHD Senior Management and other Governmental bodies.
3. Evaluate projects in conjunction with the Economic and other Circles for submission to the IMED/Planning Commission.
4. Evaluate project completion reports by the physical inspection of sample works and field visits.
5. Prepare papers/documents when evaluation of projects needs to be outsourced.
6. Prepare evaluation report during implement of project.
7. Co-ordinate & report on viability issues of development projects with different circles.
PERSONNEL SPECIFICATIONS:

The post holder must meet the general requirements of an Assistant Engineer as specified in the RHD Management Manual and as per recruitment rules.

DUTIES & RESPONSIBILITIES:

In addition to the general responsibilities of the Assistant Engineer, as specified in the RHD Management Manual, the specific duties relating to this post are detailed below:

1. Assist the EE in the preparation of the following:
   - ex-post evaluation report
   - terminal evaluation report
   - impact evaluation report
   - on-going/progress monitoring/evaluation report
   - project completion report

2. Collect and compile data/information from the field as and when required for the preparation of the above reports.

3. Prepare relevant tables/charts and graphs for all types of evaluation reports.

4. Attend meetings/symposiums/seminars on project appraisal/preparation, monitoring and evaluation and submit brief reports to the EE.

5. Perform any assignment given by the EE in project related or other matters.
PERSONNEL SPECIFICATIONS:

The post holder must meet the general requirements of a Sub-Assistant Engineer as specified in the RHD Management Manual and as per recruitment rules.

DUTIES & RESPONSIBILITIES:

In addition to the general responsibilities of the Sub-Assistant Engineer, as specified in the RHD Management Manual, the specific duties relating to this post are detailed below:

1. Assist the AE in the collection of field data as and when required.

2. Assist the AE in the calculation works relating to tables/charts and graphical presentation in all types of evaluation reports.

3. Collect all relevant documents/reports from the field or other offices as and when asked by the AE/EE.

4. Attend any other work assigned by AE/EE from time to time.
DIVISIONS UNDER THIS CIRCLE:

- Contract Evaluation
- Documentation & Procurement

OFFICERS UNDER THIS OFFICE:

1. Assistant Engineer 1 No.
2. Sub-Assistant Engineer 1 No.

PERSONNEL SPECIFICATIONS:

The post holder must meet the general requirements of a Superintending Engineer as specified in the RHD Management Manual and as per recruitment rules.

The post holder should preferably be a Graduate in Civil Engineering with experience in Procurement and Contract Administration. He must be well conversant with standard procedures and documents. He should have received formal training in contract Administration and Procurement and previous experience in the Procurement Circle is preferred.

DUTIES AND RESPONSIBILITIES:

In addition to the general responsibilities of the post of Superintending Engineer, as specified in the RHD Management Manual, the specific duties relating to this position are detailed below:

1. Process the procurement of development and maintenance works sent by RHD zones/wings/projects to be approved by CE/MoC and assist so that the ADP and revenue programmes are carried out as per approved documents observing all the existing rules and regulations of the Government.

2. Ensure the provision of new applications of enlistment and update registration of contractors under various categories, viz, G1, G2 & G3/S1, S2 & S3.

3. Ensure the provision/procurement of the required portable steel bridge, truss bridge and other construction materials to meet the emergency requirements of the RHD.

4. Co-ordinate production, maintain and supply approved updated bidding documents.
5. The Superintending Engineer Procurement Circle will act as Member-Secretary of the RHD Committee of Purchase (RHDCOP) for procurement of works, goods and services under the following categories:
   i) Evaluation and recommendations of contractors’ bids.
   ii) Evaluation for selecting consultants.
   iii) Variation Order/Addendum of procurement of works, goods and services.

6. Ensure field officers receive assistance with regard to procurement processes.

7. Manage receipt of bids invited for major construction contracts if required.

8. Provide input related to his circle in to the MIS/database.

9. Responsible for updating the Manual of the circle.


11. Provide guidelines for pre-qualification of contractors.

PERSONNEL SPECIFICATIONS:
The post holder must meet the general requirements of an Assistant Engineer as specified in the RHD Management Manual and as per recruitment rules.

He should undertake formal training in procurement to become conversant with the RHD standard tender documents and the procurement procedures.

DUTIES & RESPONSIBILITIES:
In addition to the general responsibilities of the post of Assistant Engineer, as specified in the RHD Management Manual, the specific duties relating to this position are detailed below:

1. Assist the SE to process the procurement of development and maintenance works so that the programmes are carried out as per approved documents.

2. Assist the SE for enlistment and update registration of contractors under various categories.

3. Assist the SE to carry out procurement processes for portable steel bridges for emergency works of the department.

4. Assist the SE in the evaluation and recommendation of contractors’ bids, variation order of procurements and selection of consultants.

5. Assist the SE to carry out the process of pre-qualification of contractors.

6. Assist the SE on queries with regard to the procurement processes from field officers.
PERSONNEL SPECIFICATIONS:

The post holder must meet the general requirements of a Sub-Assistant Engineer as specified in the RHD Management Manual as per recruitment rules. He should receive training in RHD standard tender documents and the procurement procedures.

DUTIES & RESPONSIBILITIES:

In addition to the general responsibilities of the post of Sub-Assistant Engineer, as specified in the RHD Management Manual, the specific duties relating to this position are detailed below:

1. Assist the SE for enlistment and update registration of contractors under various categories.

2. Assist the SE to carry out procurement processes and distribute required portable steel bridge for emergency works of the department.

3. Assist the SE for evaluation of contractors’ bids, variation order of procurements.

4. Assist the SE on queries with regard to the procurement processes from field offices.
OFFICERS UNDER THE DIVISION:

1. Assistant Engineer 2 No.
2. Sub-Assistant Engineer 2 No.

PERSONNEL SPECIFICATIONS:

The post holder must meet the general requirements of an Executive Engineer as specified in the RHD Management Manual and as per recruitment rules.

The post holder should preferably be a Graduate in Civil Engineering. He should have received specialised training in Procurement and should be well conversant with International Contract documents (FIDIC Type) & the procurement procedures of the major agencies. Two years past work experience in the Planning and Maintenance Wing is preferred.

DUTIES & RESPONSIBILITIES:

In addition to the general responsibilities of the post of Executive Engineer, as specified in the RHD Management Manual, the specific duties relating to this position are detailed below:

1. Assist SE Procurement (Member-Secretary RHD CoP) in respect of examining the evaluation of the procurement of works & services to be approved by the CE/MoC under the categories listed below: -
   i) Provide guidelines for pre-qualification of contractors.
   ii) Evaluation & recommendation of contractors’ bids.
   iii) Evaluation for selecting consultants.
   iv) Variation Order/Addendum of procurement of goods, works and services.

2. Review bids for major construction contracts if required.

3. Provide advice and assistance to field officers in connection with contract evaluation issues.

4. Receive bids on behalf of the Superintending Engineer, Procurement Circle as per guidelines.

5. Maintain the database for tender notice and other related information.
PERSONNEL SPECIFICATIONS:

The post holder must meet the general requirements of an Assistant Engineer as specified in the RHD Management Manual and as per recruitment rules. He should be conversant with the RHD standard documents, item of works, schedule of rates, procurement and evaluation procedures.

DUTIES & RESPONSIBILITIES:

In addition to the general responsibilities of the post of Assistant Engineer, as specified in the RHD Management Manual, the specific duties relating to this position are detailed below:

1. Assist the EE-Contract Evaluation Division in respect of examining the evaluation of the procurement of works & services to be approved by the higher authorities under the categories listed below:
   
   i) Preparation of guidelines for pre-qualification of contractors.
   
   ii) Evaluation & recommendation of contractors' bids.
   
   iii) Evaluation for selecting consultants.
   
   iv) Variation Order/Addendum of procurement of goods, works and services.

2. Assist in reviewing bids for major construction contracts.

3. Assist to receive bids for the Procurement Circle as per guidelines.

4. Provide assistance to field offices in connection with contract evaluation issues.

5. Assist the EE to maintain the database for tender notice and other related information.
PERSONNEL SPECIFICATIONS:

The post holder must meet the general requirements of a Sub-Assistant Engineer as specified in the RHD Management Manual and as per recruitment rules. He should receive training in RHD standard tender documents & the procurement procedures.

DUTIES & RESPONSIBILITIES:

In addition to the general responsibilities of the post of Sub-Assistant Engineer, as specified in the RHD Management Manual, the specific duties relating to this position are detailed below:

1. Assist the EE to carry out procurement processes for goods, works and services.

2. Assist the EE for evaluation of contractors’ bids and variation order of procurement of goods, works and services.

3. Assist the EE on queries with regard to the procurement processes from field offices.

4. Assist in the checking /approval of tender documents prepared by field offices.
### OFFICERS UNDER THE DIVISION:

1. Sub-Divisional Engineer  1 No.
2. Assistant Engineer  1 No.
3. Sub-Assistant Engineer  3 No.

### PERSONNEL SPECIFICATIONS:

The post holder must meet the general requirements of an Executive Engineer as specified in the RHD Management Manual and as per recruitment rules.

The post holder should preferably be a Graduate in Civil Engineering. He should have received formal training in Procurement and be conversant with international contract documents (FIDIC Type) & the procurement procedures of the major leading agencies. Two years past work experience in Planning & Maintenance Wing is preferred.

### DUTIES & RESPONSIBILITIES:

In addition to the general responsibilities of the post of Executive Engineer, as specified in the RHD Management Manual, the specific duties relating to this position are detailed below:

1. Co-ordinate production, maintain and supply approved updated bidding documents.
2. Carry out the procurement process and distribute the required portable steel bridge to meet the emergency requirements of the RHD.
3. Process new application for enlistment and update registration of contractors under various categories, viz, G1, G2 & G3/S1, S2 & S3.
5. Perform function as drawing & disbursement officer for Procurement Circle.
6. Advise field officers on queries with regard to the procurement processes.
PERSONNEL SPECIFICATIONS:

The post holder must meet the general requirements of a Sub-Divisional Engineer as specified in the
RHD Management Manual and as per recruitment rules.

The post holder should preferably be a Graduate in Civil Engineering. He should have received formal
training in Procurement and be conversant with the RHD standard tender documents and the
procurement procedures. Two years work experience in a junior position in the Planning &
Maintenance Wing is preferred.

DUTIES & RESPONSIBILITIES:

In addition to the general responsibilities of the post of Sub-Divisional Engineer, as specified in the
RHD Management Manual, the specific duties relating to this position are detailed below:

1. Monitor and inform the EE information on production and supply of approved updated bidding
documents.

2. Process new application for enlistment and update registration of contractors under various
categories, viz, G1, G2 & G3/S1, S2 & S3.

3. Assist the EE to carry out procurement processes for required portable steel bridges to meet the
emergency requirements of the department.

4. Assist the EE to process for approval of contract documents for procurement.

5. Assist the processing for approval of RFP of consultancy services & bidding documents.

6. Assist the functions of the EE for drawing & disbursement of fund for Procurement Circle.

7. Assist the EE on queries with regard to the procurement processes from field officers.
PERSONNEL SPECIFICATIONS:

The post holder must meet the general requirements of an Assistant Engineer as specified in the RHD Management Manual as per recruitment rules.

He should undertake formal training in procurement of works/goods and be conversant with the RHD standard tender documents and the procurement procedures.

DUTIES & RESPONSIBILITIES:

In addition to the general responsibilities of the post of Assistant Engineer, as specified in the RHD Management Manual, the specific duties relating to this position are detailed below:

1. Monitor and inform the information on production and supply of approved updated bidding documents to SDE.

2. Initiate the process of new application for enlistment and update registration of contractors under various categories.

3. Assist the SDE to carry out procurement processes and distribute required portable steel bridge for the department work.

4. Assist the SDE to process for approval of contract documents for procurement.

5. Assist the processing for approval of RFP of consultancy services & bidding documents.

6. Assist the SDE on queries with regard to the procurement processes.
PERSONNEL SPECIFICATIONS:

The post holder must meet the general requirements of a Sub-Assistant Engineer as specified in the RHD Management Manual and as per recruitment rules. He should receive formal training in RHD standard tender documents & the procurement procedures.

DUTIES & RESPONSIBILITIES:

In addition to the general responsibilities of the post of Sub-Assistant Engineer, as specified in the RHD Management Manual, the specific duties relating to this position are detailed below:

1. Assist in the production and supply of updated bidding documents.

2. Assist in the enlistment and update registration of contractors under various categories.

3. Assist in the procurement of portable steel bridges.

4. Assist on queries with regard to the procurement processes from field offices.
DIVISIONS UNDER THIS CIRCLE:

- Data Collection
- HDM Operation
- Database

OFFICER UNDER THE CIRCLE OFFICE:

1. Assistant Engineer 1 No.

PERSONNEL SPECIFICATIONS:

The post holder must meet the general requirements of a Superintending Engineer as specified in the RHD Management Manual and as per recruitment rules.

The post holder must be Graduate in Civil Engineering preferably with specialist training/post graduate studies in Highway Maintenance/Planning. The post holder should preferably have at least 2 years previous experience in a junior position in this Circle.

DUTIES AND RESPONSIBILITIES:

In addition to the general responsibilities of the post of Superintending Engineer, as specified in the RHD Management Manual, the specific duties relating to this position are detailed below:

1. Ensure the timely completion of all surveys required to support the road planning systems in all zones of RHD.

2. Ensure the provision of regular information from the Database on the RHD Road Network in formats suitable for use by the various user groups.

3. Provide strategic plans for maintenance and development works through the use of programs such as HDM model.

4. Fix priorities for budgetary allocations for both development and maintenance works of RHD by use of HDM model.

5. Submit reports to determine economic priorities for the development, rehabilitation and maintenance of roads.

6. Provide and distribute up to date RHD Network Maps from the GIS of Database Division.
7. Make available management information on the RHD road network by the integration of the road database, GIS and HDM data.

8. Organise seminar/workshop/training for further development of HDM as an efficient tools for maintenance planning in RHD.

9. Monitoring quality and standards of road network data

10. Ensuring development of the road network database.
PERSONNEL SPECIFICATIONS:

The post holder must meet the general requirements of an Assistant Engineer as specified in the RHD Management Manual and as per recruitment rules. The post holder should have training/post graduate studies in Highway Maintenance/Planning if he is to remain in the circle.

DUTIES AND RESPONSIBILITIES:

In addition to the general responsibilities of the post of Assistant Engineer, as specified in the RHD Management Manual, the specific duties relating to this position are detailed below:

1. Inform the SE the timely completion of all surveys required to support the road network planning of RHD roads.

2. Provide and distribute up to date RHD Network Maps from the GIS of Database Division as per instruction of the SE.

3. Assist SE in the following:
   
   i) In ensuring the provision of regular information of the RHD Road Network Database in formats suitable for use by the various user groups.

   ii) For providing strategic plans for maintenance works through the use of HDM model.

   iii) In fixing economic priorities for constrained budget allocations for maintenance works by the use of HDM model.

   iv) In organising seminar/workshop for the development of HDM as efficient tools for maintenance planning in RHD.

4. Inform about the quality and standards of road network data to the SE.

5. Report on all specific duties assigned to him from time to time.
OFFICERS UNDER THE DIVISION:

1. Sub-Divisional Engineer 1 No.
2. Assistant Engineer 3 No.
3. Sub-Assistant Engineer 3 No.

PERSONNEL SPECIFICATIONS:

The post holder must meet the general requirements of an Executive Engineer as specified in the RHD Management Manual and as per recruitment rules.

The post holder should preferably be a Graduate in Civil Engineering. He should have received training/higher studies in GIS, highway planning and management and should have at least 2 years work experience in a junior position in the Planning & Maintenance Wing preferably in HDM Circle.

DUTIES & RESPONSIBILITIES:

In addition to the general responsibilities of the post of Executive Engineer, as specified in the RHD Management Manual, the specific duties relating to this position are detailed below:

1. Compile data and arrange publication of the annual RHD database report.
2. Arrange distribution of the annual RHD database report.
3. Maintain the RHD road links and events databases and ensure that the necessary procedures are followed in making additions or amendments to the databases.
4. Checking data validation and the correctness of the collected data.
5. Arranging entry data into the road database ensuring verification procedures.
6. Collate and maintain information on all on-going road projects both from the revenue and development budgets (both GoB and foreign funded) and ensure that these are highlighted in the database to prevent duplication.
7. Produce reports on the data for specific applications and in response to requests from existing and potential users.
8. Consult Data Collection Division for improving the quality and standard of data.
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<tr>
<td>9.</td>
<td>Prepare and update RHD digital road maps including their printing, publication and distributions.</td>
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<td>10.</td>
<td>Develop and maintain GIS database the RMMS and the HDM system to enable the users of RHD Intranet to have on line access to all relevant data.</td>
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<td>11.</td>
<td>Develop and maintain the GIS system to allow the system to be used for the storage and representation of other data such as land records, arboriculture, social and environment etc.</td>
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<td>12.</td>
<td>Provide GIS in-house services for RHD and also for RHD road development &amp; maintenance projects.</td>
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<td>13.</td>
<td>Co-ordination with GIS units of other organisations in order to improve overall quality of service in the GIS system.</td>
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<td>14.</td>
<td>Maintain the quality and standard of data for GIS.</td>
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<tr>
<td>15.</td>
<td>Manage the introduction of GIS Internet applications.</td>
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<td>16.</td>
<td>Develop the advanced application of GIS for transportation planning, transport economics and disaster management etc.</td>
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<tr>
<td>17.</td>
<td>Co-ordinate with GIS units of other organisation in order to improve overall quality of service in GIS system.</td>
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</tbody>
</table>
PERSONNEL SPECIFICATIONS:
The post holder must meet the general requirements of a Sub-Divisional Engineer as specified in the RHD Management Manual and as per recruitment rules.
The post holder should preferably be a graduate in Civil Engineering. He should have preferably at least two years work experience in using GIS.

DUTIES & RESPONSIBILITIES:
In addition to the general responsibilities of the post of Sub-Divisional Engineer, as specified in the RHD Management Manual the specific duties relating to this position are detailed below:

1. Publication and distribution of the annual RHD database report.
2. Maintain the RHD road links and events databases and ensure that the necessary procedures are followed in making additions or amendments to the databases.
3. Organise data entry and checking data validation for correctness after the data entry.
4. Produce searches and reports on the data for specific applications and in response to requests from existing and potential users.
5. Discuss and take assistance from Data Collection Division for improving the quality and standard of data.
6. Prepare and update RHD digital road maps and their printing, publication and distributions.
7. Develop and maintain GIS database of the RMMS and BMMS using HDM system.
8. Develop and maintain the GIS system to allow the system to be used for the storage and representation of other data such as land records, arboriculture, social and environment etc.
9. Keep co-ordination with GIS units of other organisations in order to improve overall quality of service in the GIS system.
10. Maintain the quality and standard of data for GIS.
11. Manage the introduction of GIS Internet applications.
13. User support service (map production, map development and overall supervision).
14. Maintaining up-to-date GIS data held in the RHD-GIS.
PERSONNEL SPECIFICATIONS:
The post holder must meet the general requirements of an Assistant Engineer as specified in the RHD Management Manual and as per recruitment rules.

He should have preferably two years work experience in Planning & Maintenance Wing. He should take training in HDM related works.

DUTIES & RESPONSIBILITIES:
In addition to the general responsibilities of the post of Assistant Engineer, as specified in the RHD Management Manual, the specific duties relating to this position are detailed below:

1. Assist for publication and distribution of the annual RHD database report.
2. Keeping records of the RHD road links and events databases and ensure that the necessary procedures are followed in making additions or amendments to the databases.
3. Organise and check data entry for correctness with data validation and ensure reliable data after data entry.
4. Discuss and take assistance from Data Collection for improving the quality and standard of data.
5. Prepare and update RHD digital road maps and assist the other GIS staff for their printing, publication and distributions of GIS Maps and reports.
6. Develop and maintain GIS database of the RMMS and BMMS.
7. Develop and maintain the GIS system to allow the system to be used for the storage and representation of other data such as land records, arboriculture, social and environment etc.
8. Keep co-ordination with GIS units of other organisations in order to improve overall quality of service in the GIS system.
9. Maintain the quality and standard of data for GIS.
10. Manage the introduction of GIS Internet applications.
11. GIS data survey in special cases.
12. Maintaining up-to-date GIS data held in the RHD - GIS.
PERSONNEL SPECIFICATIONS:

The post holder must meet the general requirements of a Sub-Assistant Engineer as specified in the RHD Management Manual and as per recruitment rules. He should have preferably minimum of two years of work experience in Planning & Maintenance Wing and have received formal training in HDM related works.

DUTIES & RESPONSIBILITIES:

In addition to the general responsibilities of the post of Sub-Assistant Engineer, as specified in the RHD Management Manual, the specific duties relating to this position are detailed below:

1. Assist SDE/AE in the following:

   i) distribution of annual RHD database report.

   ii) in checking data entry for correctness with data validation and ensure reliable data after data entry.

   iii) for performing GIS field surveys by the department in special cases.

   iv) in developing and maintaining GIS database system of the RMMS and BMMS.

   v) in maintaining the quality and standard of data for GIS.

   vi) preparing and updating RHD digital road maps and assist other GIS staff for printing, publication and distribution of GIS maps and reports.

2. Keeping records of the RHD road links and events databases.

3. Keep co-ordination with GIS units of other organisations in order to improve overall quality of service in the GIS system.

4. GIS data entry and data processing.
OFFICERS UNDER THE DIVISION:

1. Sub-Divisional Engineer 1 No.
2. Assistant Engineer 2 No.
3. Sub-Assistant Engineer 1 No.

PERSONNEL SPECIFICATIONS:

The post holder must meet the general requirements of an Executive Engineer as specified in the RHD Management Manual and as per recruitment rules.

The post holder should preferably be a Graduate in Civil Engineering. He should have received training/post graduate studies in highway planning and management. He should have at least two years work experience in a junior position in the Planning & Maintenance Wing preferably in HDM Circle.

DUTIES & RESPONSIBILITIES:

In addition to the general responsibilities of the post of Executive Engineer, as specified in the RHD Management Manual, the specific duties relating to this position are detailed below:

1. Establish the parameters and periodically adjust the calibration and intervention levels of the HDM model. Carry out all necessary, studies and research required for this work.

2. Prepare annual maintenance and development plans (including schemes for new links, capacity improvements and rehabilitation of roads) for RHD using the HDM system.

3. Carry out HDM support activities in the evaluation of development projects and pre and post evaluation of projects in co-operation with the Economics Circle.

4. Analyse data to develop models and criteria for 1 to 3.

5. Arrange training/seminar/symposium on the activities of HDM model.

6. Prepare strategic plan, multi-year rolling plan for maintenance and development works/projects through use of programs like HDM model.

7. Prepare list of prioritisation and selection of road projects by using HDM 4 model.

8. Carry out analysis of new projects by using HDM 4 model.
PERSONNEL SPECIFICATIONS:

The post holder must meet the general requirements of a Sub-Division Engineer as specified in the RHD Management Manual and as per recruitment rules.

He should preferably have received training/post graduate studies in highway planning and management. He should have at least two years work experience in a junior position in the Planning & Maintenance Wing preferably in HDM circle.

DUTIES & RESPONSIBILITIES:

In addition to the general responsibilities of the post of Sub Division Engineer, as specified in the RHD Management Manual, the specific duties relating to this position are detailed below:

1. Establish the parameters and periodically adjust the calibration and intervention levels of the HDM model.

2. Assist the XEN to prepare annual maintenance plan (including schemes for new links, capacity improvements and rehabilitation of roads) for RHD using HDM model.

3. Carry out HDM support activities in the evaluation of development projects and pre and post evaluation of projects in co-operation with the Economics Circle.

4. Analyse data to develop models and criteria for 1 to 3.

5. Assist to arrange training /seminar/symposium on the activities of HDM model.
PERSONNEL SPECIFICATIONS:
The post holder must meet the general requirements of an Assistant Engineer as specified in the RHD Management Manual and as per recruitment rules. He should take training in HDM Circle related works.

DUTIES & RESPONSIBILITIES:
In addition to the general responsibilities of the post of Assistant Engineer, as specified in the RHD Management Manual, the specific duties relating to this position are detailed below:

1. Assist to establish the parameters and periodically adjust the calibration and intervention levels of the HDM model.

2. Assist to prepare annual maintenance plan (including schemes for new links, capacity improvements and rehabilitation of roads) for RHD using HDM model.

3. Carry out HDM support activities in the evaluation of development projects and pre and post evaluation of projects in co-operation with the Economics Circle.

4. Analyse data to develop models and criteria for 1 to 3.

5. Assist to arrange training/seminar/symposium on the activities of HDM model.
PERSONNEL SPECIFICATIONS:

The post holder must meet the general requirements of a Sub-Assistant Engineer as specified in the RHD Management Manual and as per recruitment rules. He should preferably have minimum of two years of work experience in Planning & Maintenance Wing and have received training HDM related works.

DUTIES & RESPONSIBILITIES:

In addition to the general responsibilities of the post of Sub-Assistant Engineer, as specified in the RHD Management Manual the specific duties relating to this position are detailed below:

1. Assist AE to establish the parameters and periodically adjust the calibration and intervention levels of the HDM model.

2. Assist AE to prepare annual maintenance and rehabilitation needs report (including schemes for new links, capacity improvements and rehabilitation of roads) for RHD using HDM model.

3. Carry out HDM support activities in the evaluation of development projects and pre and post evaluation of projects in co-operation with the Economics Circle.

4. Assist AE to carry out analyse of data to develop models and criteria for 1 to 3.

5. Assist AE to arrange training /seminar/symposium on the activities of HDM model.
OFFICERS UNDER THE DIVISION:

1. Sub-divisional Engineer 1 No.
2. Assistant Engineer 2 No.
3. Sub-Assistant Engineer 2 No.

PERSONNEL SPECIFICATIONS:
The post holder must meet the general requirements of an Executive Engineer as specified in the RHD Management Manual and as per recruitment rules.

The post holder should preferably be a Graduate in Civil Engineering. He should have received training/higher studies in highway planning and management and should have at least 2 years work experience in a junior position in the Planning & Maintenance Wing preferably in HDM Circle.

DUTIES & RESPONSIBILITIES:
In addition to the general responsibilities of the post of Executive Engineer, as specified in the RHD Management Manual, the specific duties relating to this position are detailed below:

1. Manage Compilation of all sorts data required for publication of annual RHD database report and ensure timely submission of collated data to the EE-Database Division.
2. Manage surveys on the RHD road network to acquire data on RCS, Traffic surveys, DCP, Deflection, Pavement Inventory, GIS etc. and publication of reports on surveys, if necessary by outsourcing.
3. Organise/manage roughness survey in close co-operation with HDM Operation Division.
4. Checking data validation and ensure the correctness of collected data.
5. Monitor and advise in order to carry out divisional traffic count surveys by the field divisions other than those places identified by the Economics circle.
6. Co-operate and participate in the development and maintenance of a road network database as well as GIS Database in the HDM Circle.
7. Arrange workshops /seminars on data collection issues and motivate field personnel to obtain quality data by giving instructions/ lectures during field inspections.
8. Distribute Survey Forms annually to the Field Divisions.
9. Monitoring the activities of field survey works.
10. Monitoring and reporting on the collection of data to the higher authorities.
PERSONNEL SPECIFICATIONS:

The post holder must meet the general requirements of a Sub-Divisional Engineer as specified in the RHD Management Manual and as per recruitment rules.

The post holder should preferably be a graduate in Civil Engineering. He should preferably have at least two years work experience in HDM related works.

DUTIES & RESPONSIBILITIES:

In addition to the general responsibilities of the post of Sub-Divisional Engineer, as specified in the RHD Management Manual the specific duties relating to this position are detailed below:

1. Arrange surveys on the RHD road network to acquire data on RCS, traffic surveys, DCP, deflection, pavement inventory and GIS etc.

2. Arrange road roughness survey for the entire road network under RHD.

3. Arrange printing all types of Survey Forms required for the purpose of HDM.

4. Arrange sending data/report to Database Division.

5. Obtain progress of on collection of data and prepare report.

6. Prepare programme of works and organise surveys.

7. Check tender document, bill of quantities and work done for payment purpose with contractors.

8. Report to the Executive Engineer on all specific duties on regular basis.
PERSONNEL SPECIFICATIONS:

The post holder must meet the general requirements of an Assistant Engineer as specified in the RHD Management Manual and as per recruitment rules. He should have preferably two years work experience in Planning & Maintenance Wing. He should take training in HDM Circle related works.

DUTIES & RESPONSIBILITIES:

In addition to the general responsibilities of the post of Assistant Engineer, as specified in the RHD Management Manual, the specific duties relating to this position are detailed below:

1. Assist to initiate the surveys by field divisions (RCS, traffic survey) and centrally by the HDM Circle (DCP, deflection, GIS and pavement inventory survey).

2. Carry out road roughness for the entire road network under RHD.

3. Checking of all survey data received from the field divisions.

4. Check compilation of all sorts of data required before sending to EE-Database for publications of RHD network database.

5. Assist in holding workshop/seminars on data collection issues particularly on obtaining quality data.

6. Assist in arranges printing all types of survey forms required for the purpose of HDM.

7. Assist in the following:
   
   i) distribution the Survey Form in the field annually.

   ii) monitoring the activities of field survey works.
PERSONNEL SPECIFICATIONS:

The post holder must meet the general requirements of a Sub-Assistant Engineer as specified in the RHD Management Manual and as per recruitment rules. He should preferably have minimum of two years of work experience in Planning & Maintenance Wing and have received training in HDM related works.

DUTIES & RESPONSIBILITIES:

In addition to the general responsibilities of the post of Sub-Assistant Engineer, as specified in the RHD Management Manual, the specific duties relating to this position are detailed below:

1. Assist in carrying out road roughness and GIS survey for the road network under RHD.
2. Assist in printing all types of survey forms.
3. Assist for sending the RCS forms, Traffic survey forms etc to the respective field divisions.
4. Assist in procuring the centrally controlled DCP, deflection, and pavement inventory surveys data.
5. Carryout all types of computations works required for checking/compilations etc. survey data reports.
6. Keeping all types records particularly maintaining register of reports, prepared, issued and received.
7. Prepare graphs, figures, sketches drawings as and when required.
8. Prepare estimates which includes also collection of rates for plant, labour materials etc.
9. Report to the EE/SDE on all specific duties on a regular basis.
DIVISIONS UNDER THIS CIRCLE:

- Routine Maintenance
- Periodic Maintenance-I
- Periodic Maintenance-II

OFFICERS UNDER THIS OFFICE:

1. Assistant Engineer 1 No.
2. Sub-Assistant Engineer 1 No.

PERSONNEL SPECIFICATIONS:

The post holder must meet the general requirements of a Superintending Engineer as specified in the RHD Management Manual and as per recruitment rules.

The post holder should preferably be a Graduate Civil Engineer. The post holder should have received training/higher studies in Road Maintenance and Planning and have at least 2 years direct field experience of executing Routine and Periodic maintenance works.

DUTIES AND RESPONSIBILITIES:

In addition to the general responsibilities of the post of Superintending Engineer, as specified in the RHD Management Manual, the specific duties relating to this position are detailed below:

1. Ensure that routine and periodic maintenance are planned and executed effectively with priorities established in accordance with the HDM outputs.

2. Ensure regular reports are provided to RHD management on Annual Road Maintenance Plans prepared in accordance with the HDM analysis.

3. Create awareness within the Department, higher levels of Government and with Development Partners of the importance of road maintenance activities and the future maintenance funding requirements.

4. Allocate budgets for the various road maintenance activities.
5. Ensure the Zones receive all necessary advice on the implementation of maintenance works.

6. Ensure standard documents for maintenance works are provided and maintained.

7. Review the demands of Zonal field offices for allotment of maintenance funds under different sub-heads in consideration of the defined programmes and budgetary constraints.

8. Manage and monitor the execution of large-scale maintenance works using the new contracting system.

9. Programme, package and procure contractors and consultants for the execution of large-scale maintenance works funded from the revenue budget.

10. Initiate seminars/symposia on the road maintenance activities of RHD and future maintenance funding requirements.

11. Ensure submission of reports on damages due to disaster and flood.
PERSONNEL SPECIFICATIONS:

The post holder must meet the general requirements of an Assistant Engineer as specified in the RHD Management Manual as per recruitment rules.

The post holder should undertake training/higher studies in Road Maintenance and Planning. He should understand Routine and Periodic maintenance works.

DUTIES AND RESPONSIBILITIES:

In addition to the general responsibilities of the post of Assistant Engineer, as specified in the RHD Management Manual, the specific duties relating to this position are detailed below:

1. Assist the SE to ensure that routine and periodic maintenance are planned and executed effectively with priorities established in accordance with the HDM outputs.
2. Report to the SE on Annual Road Maintenance Plan prepared in accordance with the HDM analysis.
3. Collect information of road maintenance activities of other aided on-going projects and future maintenance funding requirements.
4. Assist the SE to allocate budgets for the various road maintenance activities.
5. Assist the SE in ensuring that standard documents for maintenance works are provided and maintained.
6. Assist in preparing programmes and packages of large-scale periodic maintenance works using the new contracting system.
7. Assist in the procurement of contractors and consultants for the execution of large-scale maintenance works.
8. Assist in obtaining reports on damages due to disaster and flood from Zones.
PERSONNEL SPECIFICATIONS:

The post holder must meet the general requirements of a Sub-Assistant Engineer as specified in the RHD Management Manual and as per recruitment rules.

The post holder should have a minimum of two years work experience at the field operational level in routine and periodic maintenance works. He should have received formal training in RHD Training Centre.

DUTIES AND RESPONSIBILITIES:

In addition to the general responsibilities of the post of Sub-Assistant Engineer, as specified in the RHD Management Manual, the specific duties relating to this position are detailed below:

1. Assist the AE to prepare programmes and packages of large-scale periodic maintenance works using the new contracting system.

2. Assist the AE to select contractors for the execution of large-scale maintenance works.

3. Assist the AE and report that routine and periodic maintenance are planned and executed with priorities established in accordance with the HDM outputs.

4. Collect information of road maintenance activities of other aided on-going projects and future maintenance funding in other projects.

5. Assist the AE to allocate budgets for the various road maintenance activities.

6. Assist in maintaining standard documents for maintenance works.
OFFICERS UNDER THE DIVISION:

1. Sub-Divisional Engineer 1 No.
2. Assistant Engineer 1 No.
3. Sub-Assistant Engineer 3 No.

PERSONNEL SPECIFICATIONS:

The post holder must meet the general requirements of an Executive Engineer as specified in the RHD Management Manual and as per recruitment rules.

The post holder should preferably be a graduate in Civil Engineering. He should have at least 2 years experience working at the field operation level on Routine and Periodic Maintenance works. He should have received formal training in planning, management and execution of maintenance works.

DUTIES & RESPONSIBILITIES:

In addition to the general responsibilities of the post of Executive Engineer, as specified in the RHD Management Manual, the specific duties relating to this position are detailed below:

1. Prepare the Annual Routine Maintenance Programme and propose distribution of funds for the various road maintenance activities.
2. Advise the field officers on the implementation of routine maintenance works in accordance with the RHD Road Maintenance Manual, including issuing of necessary manuals, standard documents etc.
3. Collect and collate information from the Monitoring and Evaluation Circle and field offices regarding major disasters e.g. Cyclones, flood damage, bridge collapses etc. in order to provide reports on the cost of damages for information and necessary action to RHD & MoC management.
4. Review the demands of Zonal field offices for allotment of maintenance funds under different sub-heads in consideration of the defined programme and budgetary constraints.
5. Advise the SE Maintenance and the SE RHDTTC on the training needs for routine maintenance personnel.
6. Prepare report on damages due to natural disaster and flood situations.
PERSONNEL SPECIFICATIONS:

The post holder must meet the general requirements of a Sub-Divisional Engineer as specified in the RHD Management Manual and as per recruitment rules.

He should have at least 2 years experience working at the field operation level on Routine and Periodic Maintenance works. He should have received formal training in planning, management and execution of maintenance works.

DUTIES & RESPONSIBILITIES:

In addition to the general responsibilities of the post of Sub Divisional Engineer, as specified in the RHD Management Manual, the specific duties relating to this position are detailed below:

1. Assist in the preparation of the Annual Routine Maintenance Programme for the entire RHD road network and proposed distribution of funds for routine maintenance activities.

2. Assist the field officers on the implementation of routine maintenance works in accordance with the RHD Road Maintenance Manual, including issuing of necessary manuals, standard documents etc.

3. Collect information from the Monitoring and Evaluation Circle and field offices regarding major disasters e.g. Cyclones, flood damage, bridge collapses etc. in order to provide reports on the cost of damages for information and necessary action to RHD & MoC management.

4. Review the demands of Zonal field offices for allotment of maintenance funds under different sub-heads in consideration of the defined programme and budgetary constraints.

5. Prepare reports on damages due to natural disaster and flood situations.
PERSONNEL SPECIFICATIONS:

The post holder must meet the general requirements of an Assistant Engineer as specified in the RHD Management Manual and as per recruitment rules.

He should be well conversant with the road maintenance activities of the department. He should undertake formal training in planning, management and execution of maintenance works.

DUTIES & RESPONSIBILITIES:

In addition to the general responsibilities of the post of an Assistant Engineer, as specified in the RHD Management Manual, the specific duties relating to this position are detailed below:

1. Assist in the preparation of the Annual Routine Maintenance Programme for the entire RHD road network and proposed distribution of funds for routine maintenance activities.

2. Assist the field offices on the implementation of routine maintenance works in accordance with the RHD Routine Road Maintenance Handbook.

3. Collect information from the Monitoring and Evaluation Circle and field offices regarding major disasters e.g. Cyclones, flood damage, bridge collapses etc. in order to provide reports on the cost of damages for information and necessary action to RHD & MoC management.

4. Assist to review the demands of Zone field offices for allotment of maintenance funds under different sub-heads in consideration of the defined programme and budgetary constraints.

5. Assist in the preparation of damages due to natural disaster and flood situations.
PERSONNEL SPECIFICATIONS:

The post holder must meet the general requirements of a Sub-Assistant Engineer as specified in the RHD Management Manual and as per recruitment rules. He should have received formal training in the RHD Training Centre.

DUTIES & RESPONSIBILITIES:

In addition to the general responsibilities of the post of a Sub-Assistant Engineer, as specified in the RHD Management Manual, the specific duties relating to this position are detailed below:

1. Assist to prepare the Annual Routine Maintenance Programme for the entire RHD road network and propose distribution of funds for routine maintenance activities.

2. Assist the field offices on the implementation of routine maintenance works in accordance with the RHD Routine Road Maintenance Handbook.

3. Collect information from field offices regarding major disasters e.g. Cyclones, flood damage, bridge collapses etc.

4. Assist to review the demands of Zone field offices for allotment of routine maintenance funds.
OFFICERS UNDER THE DIVISIONS:

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<th>Division-I</th>
<th>Division-II</th>
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<tr>
<td>1. Assistant Engineer</td>
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<td>2. Sub-Assistant Engineer</td>
<td>2 No.</td>
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PERSONNEL SPECIFICATIONS:

The post holder must meet the general requirements of an Executive Engineer as specified in the RHD Management Manual and as per recruitment rules.

The post holder should preferably be a graduate in Civil Engineering. He should have experience at the field operational level in Routine and Periodic Maintenance. He should have received formal training in the planning, management and execution of maintenance works.

DUTIES & RESPONSIBILITIES:

In addition to the general responsibilities of the post of Executive Engineer, as specified in the RHD Management Manual, the specific duties relating to this position are detailed below:

1. Prepare Periodic Maintenance programmes, to be executed by field divisions, based on HDM outputs and provide budget allocations for these to field offices.

2. Prepare Large Scale Periodic Maintenance programmes based on HDM outputs and identify budget requirements for these.

3. Advise on the implementation of large-scale periodic maintenance works including provision of manuals and standard contract documents.

4. Programme, package and procure contractors and consultants for the execution of large-scale maintenance works funded from the revenue budget.

5. Review reports and data on a monthly basis in connection with the progress (physical, quality and financial) of periodic maintenance programmes and advise the SE to take necessary action in case of any problems.
6. Review the demands of Zonal offices for allotment of maintenance funds under different sub-head in considerations of the defined programme and budgetary constraints and make recommendations to the SE.

PERSONNEL SPECIFICATIONS:

The post holder must meet the general requirements of an Assistant Engineer as specified in the RHD Management Manual and as per recruitment rules.

He should be well conversant with all types of Routine and Periodic Maintenance works. He should undertake formal training in the planning, management and execution of maintenance works.

DUTIES & RESPONSIBILITIES:

In addition to the general responsibilities of the post of an Assistant Engineer, as specified in the RHD Management Manual, the specific duties relating to this position are detailed below:

1. Assists to prepare Annual Periodic Maintenance programmes, to be executed by field divisions, based on HDM outputs and provide budget allocations for these to field offices.

2. Assists to prepare large-scale Periodic Maintenance programmes and packages based on HDM outputs and identify budget requirements for these.

3. Assist to implement large-scale periodic maintenance works using new contract documents

4. Assist to procure contractor and consultant for the execution of large-scale maintenance works funded from the revenue budget.

5. Assist to review reports and data on a monthly basis in connection with the progress (physical, quality and financial) of periodic maintenance programmes.

6. Assist to review the demands of Zone offices for allotment of maintenance funds under different sub-head in considerations of the defined programme and budgetary constraints.
PERSONNEL SPECIFICATIONS:

The post holder must meet the general requirements of a Sub-Assistant Engineer as specified in the RHD Management Manual and as per recruitment rules. He should have undertaken formal training in the RHD Training Centre.

DUTIES & RESPONSIBILITIES:

In addition to the general responsibilities of the post of a Sub-Assistant Engineer, as specified in the RHD Management Manual, the specific duties relating to this position are detailed below:

1. Assists to prepare large-scale Periodic Maintenance programmes and packages to be executed based on HDM outputs.

2. Assist to implement large-scale periodic maintenance works using new contract documents

3. Assist to procure contractors for the execution of large-scale maintenance works funded from the revenue budget.

4. Assist to review reports and data on a monthly basis in connection with the progress (physical, quality and financial) of periodic maintenance programmes.

5. Assist to review the demands of Zone offices for allotment of maintenance funds under different sub-head in considerations of the defined programme and budgetary constraints.
DIVISIONS UNDER THIS CIRCLE:

- Road User Cost
- Feasibility Studies
- Economic Policy & Planning

PERSONNEL SPECIFICATIONS:

The post holder must meet the general requirements of an officer of the rank of Superintending Engineer as specified in the RHD Management Manual and as per recruitment rules.

The post-holder must hold a first degree in Economics/Transport Economics/Statistics from a recognised university. He must have sound experience in conducting economic feasibility studies and analysis of projects with at least 5 years previous experience working as an Executive Transport Economist/Economist in the Economics Circle of RHD.

DUTIES AND RESPONSIBILITIES:

In addition to the general responsibilities of an officer of Superintending Engineer grade, as specified in the RHD Management Manual, the specific duties relating to this position are detailed below:

1. Ensure necessary surveys are carried out and road user costs report (VOC, TTC & ACC) for use in HDM and other economic analyses is updated and published annually.

2. Provide support services to MoC, MoF, RHD, Planning Commission and Donor Agencies/Countries on economic matters relating to road and road transport development.

3. Ensure the provision of economic data and analyses for inclusion in PPs/PCPs.

4. Ensure the establishment and maintenance of an economic database for project evaluation in the transport sector.

5. Oversee the implementation of economic feasibility studies for proposed road and bridge project.

6. Ensure economic monitoring and evaluation of completed projects, both GoB and foreign funded.

7. Review and comment on the economic parts of study reports prepared by consultants and other agencies.
8. Manage the preparation of specialised reports relating to road and road transport development.

9. Manage the RHD traffic forecast model, including the organisation of traffic surveys.

10. Ensure that the Annual RHD asset valuation is prepared.
OFFICERS UNDER THE DIVISION:

1. Assistant Transport Economist 2 No.

PERSONNEL SPECIFICATIONS:

The post holder must meet the general requirements of an officer with the rank of Executive Engineer as specified in the RHD Management Manual and as per recruitment rules.

The post-holder must hold a first degree in Economics/Transport Economics/Statistics from a recognised university and have worked for at least 7 years as a Sub-Divisional Transport Economist/Assistant Transport Economist.

DUTIES AND RESPONSIBILITIES:

In addition to the general responsibilities of the post of Executive Engineer, as specified in the RHD Management Manual, the specific duties relating to this position are detailed below:

1. Update road user costs data such as vehicle operating costs (VOCs), travel time costs (TTCs) and accident costs (ACCs) annually for use in HDM-4 and other studies/analyses and arrange publication of Annual RHD Road User Cost Report.

2. Responsible for VOC related surveys (e.g. vehicle operators'/owners’ survey) in major cities and towns for collection of data such as vehicle utilisation, service and maintenance etc.

3. Responsible for collection of all secondary data in relation to RUC such as, vehicle registration, make, price, taxes & fees of vehicles, tyre, fuel and lubricants, etc.

4. Responsible for passenger and freight travel time surveys in relation to TTC on main and feeder roads.

5. Responsible for collection of data in relation to ACC such as number of road traffic accident (RTA), medical cost, property damage cost, vehicle damage cost etc. in urban and rural areas.

6. Review and comment on economic parts of study reports prepared by consultants and other agencies, as assigned by the Chief Transport Economist.
PERSONNEL SPECIFICATIONS:

The post holder must meet the general requirements of an officer with the rank of Assistant Engineer as specified in the RHD Management Manual and as per recruitment rules.

The post-holder must hold a first degree in Economics/Transport Economics/Statistics from a recognised university.

DUTIES AND RESPONSIBILITIES:

In addition to the general responsibilities of the post of Executive Engineer, as specified in the RHD Management Manual, the specific duties relating to this position are detailed below:

1. Undertaking VOC related field surveys (e.g. vehicle operators'/owners' survey) in major urban and inter urban areas for collection of data such as vehicle utilisation, service and maintenance, overheads crew cost etc.

2. Collecting all secondary data in relation to RUC such as, vehicle registration, make, price, taxes & fees of vehicles, tyre, fuel and lubricants, etc.

3. Conducting passenger and freight travel time field surveys in relation to TTC on national, district and feeder roads.

4. Analysing road user costs data such as vehicle operating costs (VOC), travel time costs (TTC) and accident costs (ACC).

5. Assisting the ETE in updating and in arranging publication of the Annual RHD Road User Costs Report annually.

6. Collect data in relation to ACC such as number of road traffic accident (RTA), medical cost, property damage cost, vehicle damage cost etc. in urban and rural areas.

7. Assist or provide support service to the ETE in any other activity assigned by him, such as reviewing or preparing of various road user cost related reports, HDM related analysis etc.
OFFICERS UNDER THE DIVISION:

1. Assistant Transport Economist 2 No.

PERSONNEL SPECIFICATIONS:

The post holder must meet the general requirements of an officer with the rank of Executive Engineer as specified in the RHD Management Manual and as per recruitment rules.

The post-holder must hold a first degree in Economics/Transport Economics/Statistics from a recognised university and have worked for at least 7 years as a Sub-Divisional Transport Economist/Assistant Transport Economist.

DUTIES AND RESPONSIBILITIES:

In addition to the general responsibilities of the post of an Executive Engineer, as specified in the RHD Management Manual, the specific duties relating to this position are detailed below:

1. Carry out economic feasibility studies for proposed road and bridge projects.

2. Responsible for traffic surveys in co-ordination with concerned field officers such as origin to destination (O-D) and traffic count surveys in connection with the economic analysis of specific road and bridge projects.

3. Responsible for collection, processing, analysis and compilation of socio-economic data required as inputs for the purpose of carrying out economic evaluations and studies.

4. Carry out post-economic evaluation of road/bridge development projects (project benefit monitoring and evaluation).

5. Review and comment on economic parts of study reports prepared by consultants and other agencies, as assigned by the Chief Transport Economist.

6. Provide economic parameters of Project Profiles as and when required for preparation of PCPs and PPs.
PERSONNEL SPECIFICATIONS:

The post holder must meet the general requirements of an officer with the rank of Assistant Engineer as specified in the RHD Management Manual and as per recruitment rules.

The post-holder must hold a first degree in Economics/Transport Economics/Statistics from a recognised university.

DUTIES AND RESPONSIBILITIES:

In addition to the general responsibilities of the post of an Assistant Engineer, as specified in the RHD Management Manual, the specific duties relating to this position are detailed below:

1. Undertaking traffic survey such as origin to destination (O-D) and traffic count surveys in connection with the economic analysis of specific road and bridge projects.

2. Collecting, editing, compiling and analysing of socio-economic and traffic data required as inputs for the purpose of carrying out economic evaluations and studies.

3. Conducting surveys and collecting secondary data in carrying out post project completion-economic evaluation of road/bridge development projects (project benefit monitoring and evaluation).

4. Preparing draft analysis in order to provide economic parameters of Project Profiles as and when required for preparation of PCPs and PPs.

5. Liaison with the field office to get the accurate data for economic appraisal reporting.

6. Assist the ETE in any other activity such as, review and comment on economic parts of feasibility study reports prepared by consultants and other agencies, as assigned by the Executive Transport Economist.
OFFICER UNDER THE DIVISION:

1. Assistant Transport Economist 1 No.

PERSONNEL SPECIFICATIONS:

The post holder must meet the general requirements of an officer of the rank of Executive Engineer as specified in the RHD Management Manual and as per recruitment rules.

The post-holder must hold a first degree in Economics/Transport Economics/Statistics from a recognised university and have worked for at least 7 years as a Sub-Divisional Transport Economist/Assistant Transport Economist.

DUTIES AND RESPONSIBILITIES:

In addition to the general responsibilities of the post of Executive Engineer, as specified in the RHD Management Manual, the specific duties relating to this position are detailed below:

1. Prepare different specialist reports in relation to road and road transport development as required by the Department and the Government.

2. Interact with other departments and organisations concerned with the provisions of data on socio-economic indicators to maintain and periodically update the database.

3. Preparation of long and medium term plans for RHD in co-ordination with Planning and Programming, HDM and Maintenance Circles.

4. Review and comment on economic parts of study reports prepared by consultants and other agencies as assigned by the Chief Transport Economist.

5. Preparation of the Annual RHD asset valuation report.

6. Development and maintain the RHD traffic forecast model.

7. Responsible for traffic surveys such as traffic counts and origin to destination survey in relation to traffic forecast model.
PERSONNEL SPECIFICATIONS:
The post holder must meet the general requirements of an officer of the rank of Assistant Engineer as specified in the RHD Management Manual and as per recruitment rules.

The post-holder must hold a first degree in Economics/Transport Economics/Statistics from a recognised university.

DUTIES AND RESPONSIBILITIES:
In addition to the general responsibilities of the post of Assistant Engineer, as specified in the RHD Management Manual, the specific duties relating to this position are detailed below:

1. Collect necessary secondary data from RHD offices and other organizations in preparing different specialist reports in relation to road and road transport development as required by the Department and the Government.

2. Maintain continuous liaison with other departments and organisations concerned for the provisions of data on socio-economic indicators to maintain and periodically update the database.

3. Collect data and provide input to ETE in preparation of long and medium term plans for RHD in co-ordination with Planning and Programming, HDM and Maintenance Circles.

4. Collect RHD inventory data from field offices as assigned by the ETE.

5. Prepare draft analysis of the Annual RHD asset valuation report.

6. Conduct traffic surveys such as, traffic counts and origin – destination survey on RHD network in connection with forecast model as assigned by the ETE.

7. Provide support services to ETE in developing and maintaining the RHD traffic forecast model.

8. Provide support services to ETE in reviewing and comment on economic parts of study reports prepared by consultants and other agencies as assigned by the Chief Transport Economist.
OPERATIONAL PROCEDURES

INTRODUCTION

The Operational Procedures have been developed with the RHD officers and generally represent current practice and existing processes with some adjustment where new initiatives have an impact. They should be seen as a useful aid both for existing staff, but particularly for new staff entering the Circle for the first time. The procedures should be reviewed and updated as the Circle develops in the future. Any suggestions for improvement should be communicated to the Management Plan Implementation Team for the Planning & Maintenance Wing.

These Operational Procedures describes the key responsibilities to carry out operations of the circles/wings/zones. The Executive Engineers of each division are therefore a pivot for the procedures. However within each division the Executive Engineer will be assisted by the Sub-Divisional Engineers, Assistant Engineers, Sub-Assistant Engineers and other officers and staff under him depending on the situations and requirements, although their involvement in many of the procedures has not been explicitly stated in the “Responsibilities” para of each procedure. Many of these operational procedures also cut across the circles and divisions and require cooperation between different parts of RHD. The Operational Procedures contained in this section are as overleaf.

This is not a full list of procedures, but could be considered as a handbook to help guide key tasks and functions within the RHD. The procedures reference the main standards, guidelines, manuals, directives and Government/RHD rules and regulations that should be followed to enable RHD to achieve its main outputs and goals. It is expected that these procedures will be changed, refined and further OPs will be developed and evolve with the passage of time.
<table>
<thead>
<tr>
<th>Planning &amp; Maintenance Wing - Operational Procedures</th>
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</thead>
<tbody>
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<td><strong>Planning &amp; Programming Circle</strong></td>
</tr>
<tr>
<td>OP/PPC/1.1 Project Preparation and Approval</td>
</tr>
<tr>
<td><strong>Planning Division (I &amp; II)</strong></td>
</tr>
<tr>
<td>OP/PPC/2.1 Preparation of Planning Commission Form-II (PC-II)</td>
</tr>
<tr>
<td>OP/PPC/2.2 Preparation of Project Concept Paper (PCP)</td>
</tr>
<tr>
<td>OP/PPC/2.3 Preparation of Technical Assistance Project Proforma (TAPP)</td>
</tr>
<tr>
<td>OP/PPC/2.4 Preparation of Project Proforma (PP)</td>
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<tr>
<td>OP/PPC/2.5 GoB Strategic Planning Process</td>
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<tr>
<td><strong>Programming Division</strong></td>
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<tr>
<td>OP/PPC/3.1 Preparation of the Annual Development Programme (ADP)</td>
</tr>
<tr>
<td>OP/PPC/3.2 Budget Process for the ADP</td>
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<tr>
<td><strong>Monitoring Circle</strong></td>
</tr>
<tr>
<td>OP/MON/1.1 Monitoring of ADP Projects and Revenue Works</td>
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<td>OP/MON/1.2 Answers to Parliamentary Questions</td>
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<tr>
<td><strong>Monitoring Division</strong></td>
</tr>
<tr>
<td>OP/MON/2.1 Preparation of Monthly RHD Progress Report</td>
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<tr>
<td>OP/MON/2.2 Preparation of Management Report</td>
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<tr>
<td>OP/MON/2.3 Processing of IMED Quarterly Progress Reports</td>
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<tr>
<td><strong>Evaluation Division</strong></td>
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<tr>
<td>OP/MON/3.1 Post Project Evaluation Report</td>
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<td><strong>Procurement Circle</strong></td>
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<td><strong>Contract Evaluation Division</strong></td>
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<tr>
<td>OP/PC/2.1 Prequalification of Contractors for GoB Funded Projects</td>
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<tr>
<td>OP/PC/2.2 Preparation of Tender Documents for GoB Funded Projects</td>
</tr>
<tr>
<td>OP/PC/2.3 Evaluation of Tenders</td>
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<tr>
<td>OP/PC/2.4 Appointment of Consultants for GoB Funded Projects</td>
</tr>
<tr>
<td>OP/PC/2.5 Maintenance of Tender Notice Database</td>
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<tr>
<td><strong>Documentation &amp; Procurement Division</strong></td>
</tr>
<tr>
<td>OP/PC/3.1 Maintenance of Procurement Documentation</td>
</tr>
<tr>
<td>OP/PC/3.2 Registration of G1, G2, G3 &amp; S1, S2, S3 Contractors</td>
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<tr>
<td>OP/PC/3.3 Procurement of Portable Steel Bridges</td>
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<tr>
<td>Section</td>
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<tr>
<td>HDM Circle</td>
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<tr>
<td>Database Division</td>
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<td>HDM Operation Division</td>
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<td>Data Collection Division</td>
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<tr>
<td>Maintenance Circle</td>
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<tr>
<td>Routine Maintenance Division</td>
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<td>Periodic Maintenance Division (I &amp; II)</td>
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<td>Economics Circle</td>
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<tr>
<td>Economic User Costs Division</td>
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<td>Economic Feasibility Study Division</td>
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<td></td>
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<tr>
<td>Economic Policy &amp; Planning Division</td>
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</tbody>
</table>
1 PURPOSE AND SCOPE

Each year the RHD prepares an Annual Development Programme (ADP) which sets out a proposed budget and programme for development works. All projects included in the ADP require approval. This requires preparation of a Project Concept Paper (PCP) and then Project Proforma (PP) for development works and Technical Assistance Project Proforma (TAPP) and PC-II for consultancy for foreign aided and GoB funded projects.

2 DEFINITIONS

PCP - Project Concept Paper.
PP - Project Proforma.
TAPP - Technical Assistance Project Proforma.
PC-II - Planning Commission Form - II (TAPP for GoB funded projects).

3 RESPONSIBILITIES

Planning and Programming Circle is the part of RHD responsible for finalising PCP, PP, TAPP and PC-II documents. Initial preparation may be by the field zones, Bridge, Management Wing, Foreign Aid Project Director or Planning & Programming Circle.

4 METHOD

4.1 PROJECT CONCEPT PAPER (PCP)

In August 1990, the Planning Commission introduced Project Concept Paper (PCP). This can be for either a GoB funded or foreign aid funded project.

The PCP, on clearance by MoC, is placed before the ECNEC for approval. On clearance by ECNEC, the project is included in the Annual Development Programme (ADP) instalment is released.

After clearance of the scheme by ECNEC, the Department is required to prepare a full Project Proforma (PP) and finalise the same by DPEC on conformity with observations, instructions of ECNEC on condition that cost of the project is not exceeded in any of the components as shown in PCP.

The RHD will initially prepare a PP based on the PCP already be prepared. Once the PCP has been approved by ECNEC, the PP will be finalised by DPEC within the stipulated time.
4.2 PROJECT PROFORMA (PP)

The Planning Commission prescribed (Nov-1988) two sets of Project Proforma for:

a) Projects whose benefits can be quantified
b) Projects whose benefits cannot be quantified

Both the Project Proforma divides the document into the following parts:

Part-A Project digest
Part-B Project description
Part-C Investment cost
Part-D Financing of the project
Part-E Project Implementation
Part-F Operation of the project
Part-G Economic evaluation

For projects whose benefits can be quantified, the indicators of Benefit cost ratio-Financial and Economic, Internal rate of return (IRR) both for Financial and Economic are required to be evaluated. A gist is included as Annexure-I.

For Technical Assistance, (TA), there is also prescribed proforma known as TAPP where basic particulars are required to be furnished in several parts. The gist is included as Annexure-II.

4.3 PROCEDURE FOR APPROVAL

The project proforma is scrutinised at various levels by different committees. The Committee at the level of the Ministry is known as Divisional Project Evaluation Committee (DPEC), comprising members from Planning Commission (PC), External Resources Division (ERD), Ministry of Finance, IMED (Implementation, Monitoring and Evaluation Division). There is also a committee in the Planning Commission known as Project Evaluation Committee (PEC). The highest National Committee is known as ECNEC (Executive Committee of National Economic Council).

According to the guidelines prepared by Planning Commission, the different Committees have power to sanction schemes as follows:

<table>
<thead>
<tr>
<th>Project amount</th>
<th>Scrutiny by</th>
<th>Condition</th>
<th>Authority of approval</th>
</tr>
</thead>
<tbody>
<tr>
<td>A) Investment Project</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(a) Amount not exceeding Tk.</td>
<td>DPEC</td>
<td>Included in 5-year plan or agreed to by P.C for its inclusion</td>
<td>(a) The Minister in charge Department</td>
</tr>
<tr>
<td>2.00 crore</td>
<td></td>
<td></td>
<td>(b) The Minister of Planning</td>
</tr>
<tr>
<td>(b) Amount more than 3.00</td>
<td>PEC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>crore not exceeding Tk. 10.00</td>
<td></td>
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<td></td>
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<tr>
<td>crore</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>
RHD Operational Procedure – Planning & Maintenance Wing

OP/PPC/1.1 - Project Preparation and Approval

<table>
<thead>
<tr>
<th>Planning &amp; Programming Circle</th>
<th>Approved:</th>
</tr>
</thead>
</table>

(c) Amount exceeding Tk. 10.00 crore

<table>
<thead>
<tr>
<th>DPEC &amp; PEC</th>
<th>(c) EC-NEC</th>
</tr>
</thead>
</table>

B) TA Project

PEC

<table>
<thead>
<tr>
<th>Planning Minister</th>
</tr>
</thead>
</table>

5 REFERENCES

See Operational Procedures for:

a) PC-II: OP/PPC/2.1
b) PCP: OP/PPC/2.2
c) PP: OP/PPC/2.4
d) TAPP: OP/PPC/2.3

6 PROCEDURE FLOWCHART - None.
## Annexure-I

### Outline of Project Proforma (PP)
**Purpose:** For approval of the scheme by ECNEC/PEC/DPEC

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Part &amp; Title</th>
<th>Brief Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Part-A Project digest</td>
<td>Name, location, objective project digest brief, Investment Cost (Local-DIR-RPA), Operational recurring expenditure Economic analysis such as Benefit/cost ratio IRR/NPV/Discount rate etc. Status of the project (inclusion in 5 year plan) Administrative authorities, period of construction, mode of financing. Feasibility studies if any Management aspect, Name designation of officers preparing the PP.</td>
</tr>
<tr>
<td>2.</td>
<td>Part-B Project Description</td>
<td>Detailed description, background objective and scope, specifications Major quantum of works etc.</td>
</tr>
<tr>
<td>3.</td>
<td>Part-C Investment Cost</td>
<td>Annual breakdown of Investment cost over the period, with mention of year showing currencies in the form of local, direct, reimbursed project assistance (RPA).</td>
</tr>
<tr>
<td>4.</td>
<td>Part-D Financing of the Project</td>
<td>Block allocation if any, type of financing (grant, loan, equity, PA) source of financing of foreign exchange.</td>
</tr>
<tr>
<td>5.</td>
<td>Part-E Project Implementation</td>
<td>Execution of different components shown in the form of percentage, year-wise with mention of currencies in the form of local, direct, RPA.</td>
</tr>
<tr>
<td>6.</td>
<td>Part-F Operation of the Project</td>
<td>Operation and recurring cost of the requirement of materials. CDST, Manpower requirement (local and foreign), Machinery &amp; equipment etc.</td>
</tr>
<tr>
<td>7.</td>
<td>Part-G Economic Evaluation</td>
<td></td>
</tr>
</tbody>
</table>
### Outline of Technical Assistance Project Proforma (TAPP)

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Part &amp; Title</th>
<th>Brief Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Part-A Project Aid</td>
<td>Name of project, project No., Administrative Ministry Division Executive Agency, Name and designation of officers preparing the TAPP etc.</td>
</tr>
<tr>
<td>2.</td>
<td>Part-B Project Dates</td>
<td>Commencement and completion of the project etc.</td>
</tr>
<tr>
<td>3.</td>
<td>Part-C</td>
<td>Source of financing for project financing in local and foreign exchange components, annual breakdown of investment cost over the period showing the local, project aid, RPA, Cost etc. financing after completion of project mode of financing etc.</td>
</tr>
<tr>
<td>4.</td>
<td>Part-D Project Description</td>
<td>Detailed descriptions, background objective, scope of work, specifications, major quantum of work etc.</td>
</tr>
<tr>
<td>5.</td>
<td>Part-E Project Output</td>
<td>Technology transfer, training, management improvement, institutional support etc.</td>
</tr>
<tr>
<td>6.</td>
<td>Part-F Project Input</td>
<td>Detailed description of project inputs in the form of personnel, equipment, training others etc.</td>
</tr>
</tbody>
</table>
Annexure-III

Outline of Project Concept Paper (PCP)
(As per order dated 16.8.91)
Purpose: For approval of the scheme by ECNEC

1. Name of the project.
2. Name of the sponsoring Ministry and Executive agency.
3. Objective, brief description.
4. Recommendation of Feasibility Study if any.
5. Status with reference to 5 year plan.
7. Nature of funding: Loan, grant, and source.
8. Benefit of Investment:
   Financial - FRR
   Economical - ERR
9. Break down of cost components of major items (shown as PERCENTAGE of total cost)
   viz: personnel, physical construction, transport, land consultant etc.
10. Equipment, furniture etc. for management of the project.
11. Probable influence of the project on organisation, production, employment, lower strata of the
    society, female, environment.
12. Revenue expenditure on completion of project no. of personnel, total expenditure, income.
13. Period of project implementation.
14. Location.
15. Description of similar projects, complete, in progress.
16. Any other related matters
1 PURPOSE AND SCOPE

This procedure describes the process for preparing the Preliminary Project Concept Paper in Planning Commission Form-II (PC-II) for preparing a report on Feasibility Study of any Project to be conducted through GOB fund.

2 DEFINITIONS

Planning Commission Form-II (PC-II) is a proposal in a concise form that is submitted to MoC for project approval and inclusion in the Annual Development Programme (ADP). A PC-II is required for any Feasibility Study Project to be conducted through GoB fund. It should include a brief description of the project, scope of work, scope of consulting services, ToR, total cost of consulting services, etc, in the prescribed format of PC-II.

3 RESPONSIBILITIES

Executive Engineer - Planning Division (EE-PD) – is responsible for collecting all required data and organising and preparing the draft PC-II.

Superintending Engineer - Planning & Programming Circle (SE-PPC) – is responsible for reviewing the PC-II and making recommendation for approval of the draft PC-II to the Additional Chief Engineer - Planning & Maintenance Wing.

Additional Chief Engineer - Planning & Maintenance Wing (ACE-PMW) – gives the final clearance from the Wing’s point of view and submits the final draft of the PC-II to the Chief Engineer for his signature along with other signatories responsible for preparation of the PC-II and for submission to the MoC.

Additional Chief Engineers - Field Zone/Bridge Management Wing/Other Wings – are responsible for ensuring that his subordinate officers submit the required information/draft PC-II to the SE-Planning & Programming Circle precisely and in time.

4 METHOD

4.1 PREPARATION OF THE DRAFT PC-II

The Superintending Engineer - Planning & Programming Circle receives the data related to the project in the PC-II format from a number of sources:
The main source of information is from the field offices for mainly road projects. Following necessary surveys, the concerned field offices supply the required data generally in the PC-II format as and when instructed by the higher authority.

For bridge projects, the Additional CE, Bridge Management Wing with the assistance of his SE, Planning & Data Circle prepares the draft PC-II.

The Executive Engineer - Planning Divisions scrutinises the draft PC-II and may request further information, or clarification of the data. He also ensures that the PC-II is in the prescribed format of the Planning Commission.

4.2 Final Draft PC-II

The Executive Engineer - Planning Divisions submits the draft PC-II to the Superintending Engineer - Planning & Programming Circle, who reviews the submission. He may ask for additional information or clarification.

When the SE P&P is satisfied, that the PC-II is accurate and contains all of the necessary information, it is reviewed by the Additional Chief Engineer - Planning & Maintenance Wing and submitted to the Chief Engineer as a final draft for his signature.

4.3 Submission to the Ministry of Communications

When the Chief Engineer has signed the PC-II along with other signatories concerned with the preparation of the PC-II, it is submitted to the Ministry of Communications by the Superintending Engineer - Planning & Programming Circle on behalf of the CE-RHD for approval and inclusion of the project in the ADP.

5 References

Planning Commission Guidelines published by Planning Commission
5 year Development Plan published by Planning Commission

6 Procedure Flowchart

The procedure flowchart for this procedure is detailed in the next page.
1 PURPOSE AND SCOPE

This procedure describes the process for preparing a good quality Project Concept Paper (PCP) for any development project from the receipt of data to final submission of the draft PCP to the Ministry of Communications (MoC) for onward transmission to the Planning Commission for approval.

2 DEFINITIONS

Project Concept Paper (PCP) - is a proposal in a concise form that is submitted to the MoC in order that the project can be approved for inclusion in the Annual Development Programme (ADP). A PCP is required for construction projects, consultant services, equipment purchase, acquisition of land, manpower etc. It includes the total estimated cost and a detailed description of the project.

Environmental Impact Assessment (EIA) - An EIA report prepared at the feasibility level that contains the systematic study, assessment, quantification and valuation of the impacts of a proposed project including a management plan to deal with negative impacts.

Initial Environmental Examination (IEE) - The first stage in the Environmental Assessment of project at pre-feasibility level for identifying and assessing possible environmental impacts.

Economic Data - the economic data for the PCP is provided by the Chief Transport Economist – Economics Circle. For Foreign Aided Projects the data will be obtained from the feasibility study undertaken prior to the final project proposal.

Project Proforma (PP) - The PP is a more detailed version of the PCP also prepared in a prescribed format. Following approval of the PCP by the Planning Commission, the PP of the project is required to be prepared and approved within a specific period of time.

3 RESPONSIBILITIES

Executive Engineer - Planning Divisions (EE-PD) – is responsible for collecting all required data and organising and preparing the PCP.

Superintending Engineer - Planning & Programming Circle (SE-PPC) – is responsible for reviewing the PCP and making recommendation for approval of the PCP to the Additional Chief Engineer - Planning & Maintenance Wing.

Additional Chief Engineer - Planning & Maintenance Wing (ACE-PMW) – gives the final clearance from the Wing’s point of view and submits the final version of the PCP to the Chief Engineer for his approval and signature along with other signatories responsible for preparation of the PCP.
Additional Chief Engineers - Field Zone/Bridge Management Wing/Other Wings – are responsible for ensuring that his subordinate officers submit the required information/draft PCP to the SE-Planning & Programming Circle precisely and in time.

Project Directors (PD) of Foreign Aided Projects - are required to supply required draft PCP to SE-PPC to process for approval.

4 METHOD

4.1 PREPARATION OF THE DRAFT PCP

The Superintending Engineer - Planning & Programming Circle receives the data related to the project in the PCP format from a number of sources:

- The main source of information is from the field offices for mainly road projects. Following necessary surveys, the concerned field offices supply the required data generally in the PCP format as and when instructed by the higher authority.

- For bridge projects, the Additional CE, Bridge Management Wing with the assistance of his SE, Planning & Data Circle prepares the draft PCP along with an IEE and EIA.

- Project Directors of Foreign Aided Projects generally prepares the draft PCP along with IEE and EIA with the help of Consultants on the basis of feasibility studies.

The Executive Engineer - Planning Divisions scrutinise the draft PCP data and may request further information, or clarification of the data. He also ensures that the PCP is in the prescribed format of the Planning Commission. The PCP should contain an outline at the design (including technical feasibility) for the road/bridge (s) proposed in accordance with approved standards (e.g. geometric, pavement design guidelines, bridge design standards, standard drawings) and cost estimate based on this and consistent with the current RHD schedule of rates. The PCP should also be based on results of survey/site investigation carried out (e.g existing carriageway, embankment height and width, amount of material available for recycling).

The preparation of the PCP should be based on a project appraisal that should include environment (IEE & EIA - see OP/SE/3.1), resettlement guidelines (see OP/SE/2.1), economic feasibility (see OP/EC/3.1) and social impact assessment (see OP/EC/4.1) and land acquisition required.
4.2 FINAL VERSION OF PCP

The Executive Engineer - Planning Divisions submit the draft PCP to the Superintending Engineer - Planning & Programming Circle who reviews the submission. He may ask for additional information or clarification.

When the SE-PPC is satisfied, that the PCP is accurate and contains all of the necessary information, it is reviewed by the Additional Chief Engineer - Planning & Maintenance Wing and submitted to the Chief Engineer as a final draft for his signature.

4.3 SUBMISSION TO THE MINISTRY OF COMMUNICATIONS

When the Chief Engineer has signed the PCP along with other signatories concerned with the preparation of the PCP, it is submitted to the Ministry of Communications by the Superintending Engineer - Planning & Programming Circle on behalf of the CE-RHD.

The MoC process involves submission of the PCP to the Planning Commission (PC) for approval by the Executive Committee of the National Economic Council (ECNEC). During this period there will be some interaction between the concerned personnel from the Planning Commission and the MoC and the concerned senior RHD Officers in order to finalise the PCP for submission to the Executive Committee of National Economic Council (ECNEC) for final approval.

5 REFERENCES

Planning Commission Guidelines published by the Planning Commission
5 Year Development Plan published by the Planning Commission
OP/SE/3.1 - Preparation of IEE and EIA report.

6 PROCEDURE FLOWCHART

The procedure flowchart for this procedure is detailed in the next page.
OP/PPC/2.2 - Preparation of Project Concept Paper (PCP)

Start for PCP Road Project

Data from IEE (see OP/SE/3.1)

Data from Feasibility Study Report (if required)

Yes

Data received by SE PPC

Scrutinized by EE-Plan PD

Further information requested

Yes

No

No

Request EIA from Environment Division

EIA considerations included in PCP prepared (EE-Plan PD)

PCP prepared EE-Plan PD

Review by SE-PPC

Recommended

Yes

No

Start for PCP for Bridge Project (See OP/PD/3.1)

Reviewed by ACE-PMW

Recommended

Yes

No

CE signs and Recommends

SE-PPC send to MoC

End
1 PURPOSE AND SCOPE

This procedure describes the process for preparing the Technical Assistance Project Proforma (TAPP) for any technical study/reform programmes to be conducted through Foreign Assistance.

2 DEFINITIONS

Technical Assistance Project Proforma (TAPP) - is a proposal in a concise form, that is submitted to MoC in order that the project can be approved for inclusion in the Annual Development Programme (ADP). A TAPP is required for any Feasibility Study/technical study/reform programmes to be conducted through Foreign Assistance. It should include a brief description of the project, scope of work, scope of consulting services, TOR, total cost of consulting services, etc, in the prescribed format of TAPP.

Documents of Technical Assistance - generally indicates the necessity of conducting the study/reform activities mentioned with cost breakdown by the donor agencies. These documents are generally in the form of Aide Memoire, Project Appraisal Report, and Project Memorandum etc, of donor agencies.

3 RESPONSIBILITIES

Executive Engineer - Planning Divisions (EE-PD) – is responsible for collecting all required data and organising and preparing the TAPP.

Superintending Engineer - Planning & Programming Circle (SE-PPC) - is responsible for reviewing the TAPP and making recommendation for approval of the TAPP to the Additional Chief Engineer-Planning & Maintenance Wing.

Additional Chief Engineer - Planning & Maintenance Wing (ACE-PMW) - gives the final clearance from the Wing’s point of view and submits the final version of the TAPP to the Chief Engineer for his approval and signature along with other signatories responsible for preparation of the PCP.

Additional Chief Engineers - Bridge Management Wing/Other HQ Wings - are responsible for ensuring that his subordinate officers submit the required information/draft TAPP to the SE-Planning & Programming Circle precisely and in time.

Project Directors (PD) of Foreign Aided Projects - are required to supply required draft TAPP to SE-PPC to process for approval.
4 METHOD

4.1 PREPARATION OF THE DRAFT TAPP

The Superintending Engineer-Planning & Programming Circle receives the data related to the project in the TAPP format from a number of sources:

- The main source of information is generally from the Project Directors of Foreign Aided Road Projects who prepares the draft TAPP with the help of Consultants on the basis of Preliminary Technical assistance documents.
- For bridge projects, the Additional CE-Bridge Management Wing with the assistance of his SE-Planning & Data Circle prepares the draft TAPP on the basis of Project Memorandum etc.

The Executive Engineer-Planning Divisions scrutinises the draft TAPP and may request further information, or clarification of the data. He also ensures that the TAPP is in the prescribed format of the Planning Commission.

4.2 FINAL VERSION OF TAPP

The Executive Engineer-Planning Divisions submits the draft TAPP to the Superintending Engineer-Planning & Programming Circle, who reviews the submission. He may ask for additional information or clarification.

When the SE-PPC is satisfied, that the TAPP is accurate and contains all of the necessary information, it is reviewed by the Additional Chief Engineer-Planning & Maintenance Wing and submitted to the Chief Engineer as a final version for his signature.

4.3 SUBMISSION TO THE MINISTRY OF COMMUNICATIONS

When the Chief Engineer has signed the TAPP along with other signatories concerned with the preparation of the TAPP, it is submitted to the Ministry of Communications by the Superintending Engineer-Planning & Programming Circle on behalf of the CE-RHD for onward submission to the Planning Commission for final approval.

5 REFERENCES

Planning Commission Guidelines published by Planning Commission
5 year Development Plan published by Planning Commission
OP/PPC/2.2 Preparation of Project Concept Paper (PCP)
6 PROCEDURE FLOWCHART

The procedure flowchart for this procedure is detailed below.

![Flowchart Image]

Start

- Receives the document or report or Instruction from CE ACE-PMW

Document of TA Project: Aide Memoire/Appraisal Report/MoU etc.

- Roads/other
  - Organise Preparation SE-PPC
  - Prepare draft TAPP (EE-PD, PPC/Consultant)
  - Yes
  - Approved (SE-PPC)
  - No
  - Approved (ACE-PMW)

- Bridges
  - Organise Preparation SE-PDC
  - Prepare draft TAPP (EE-BMPD/Consultant)
  - Yes
  - Approval by Bridge (EE-BMPD/Consultant)
  - No
  - Approved (ACE-PMW)
  - Yes
  - SE-PDC send to ACE-PMW
  - No
  - Approved (ACE-PMW)
  - Yes
  - SE-PPC send to CE-RHD

CE-RHD signs and recommends

- SE-PPC send to MoC

End
1 PURPOSE AND SCOPE

This procedure describes the process for preparing the Project Proforma (PP) for any development project from the receipt of approved Project Concept Paper (PCP) of the concerned project to the submission of the PP to the Ministry of Communications (MoC) for approval.

2 DEFINITIONS

Project Concept Paper (PCP) - is a proposal in a concise form that is submitted to the MoC in order that the project can be approved for inclusion in the Annual Development Programme (ADP). A PCP is required for construction projects, consultant services, equipment purchase, acquisition of land, manpower etc. It includes the total estimated cost and a detailed description of the project.

Environmental Impact Assessment (EIA) - An EIA report prepared at the feasibility level that contains the systematic study, assessment, quantification and valuation of the impacts of a proposed project including a management plan to deal with negative impacts.

Initial Environmental Examination (IEE) - The first stage in the Environmental Assessment of project at pre-feasibility level for identifying and assessing possible environmental impacts.

Economics Data - the economic data for the PCP/PP is provided by the Chief Transport Economist–Economics Circle. For Foreign Aided Projects the data will be obtained from the feasibility study undertaken prior to the final project proposal.

Project Proforma (PP) - The PP is a more detailed version of the PCP also prepared in a prescribed format. Following approval of the PCP by the Planning Commission, the PP of the project is required to be prepared and approved within a specific period of time.

3 RESPONSIBILITIES

Executive Engineer - Planning Divisions (EE-PD) - is responsible for collecting all required data and organising and preparing the PP.

Superintending Engineer - Planning & Programming Circle (SE-PPC) - is responsible for reviewing the PP and making recommendation for approval of the PP to the Additional Chief Engineer-Planning & Maintenance Wing.

Additional Chief Engineer - Planning & Maintenance Wing (ACE-PMW) - gives the final clearance from the Wing's point of view and submits the final version of the PP to the Chief Engineer for his approval and signature along with other signatories responsible for preparation of the PP.
Additional Chief Engineers - Field Zone/Bridge Management Wing/Other Wings - are responsible for ensuring that his subordinate officers submit the required information/draft PP to the SE-Planning & Programming Circle precisely and in time.

Project Directors (PD) of Foreign Aided Projects - are required to supply required draft PP to SE-PPC to process for approval.

4 METHOD

4.1 PREPARATION OF THE DRAFT PP

On receipt of the approved PCP of any project, the Superintending Engineer-Planning & Programming Circle (SE-PPC) starts the preparation of the PP so that it can be completed and approved by the Ministry of Communications (MoC) within a specified time.

- For GOB funded road projects, EE-PD prepares the draft PP in the prescribed format with the help of the information/data contained in the approved PCP.

- For bridge projects, the Additional CE-Bridge Management Wing with the assistance of his SE-Planning & Data Circle prepares the draft PP on the basis of the approved PCP and sends it to the SE-PPC for further processing.

- Project Directors of Foreign Aided Projects generally prepares the draft PP with the help of Consultants on the basis of the approved PCP and submits the same to the SE-PPC for further processing.

The Executive Engineer-Planning Divisions (EE-PD) scrutinises the draft PP and may request further information, or clarification of the data. He also ensures that the PP is in the prescribed format of the Planning Commission.

4.2 FINAL VERSION OF PP

The Executive Engineer-Planning Divisions submits the draft PP to the Superintending Engineer-Planning & Programming Circle, who reviews the submission. He may ask for additional information or clarification.

When the SE-PPC is satisfied, that the PP is accurate and contains all of the necessary information, it is reviewed by the Additional Chief Engineer-Planning & Maintenance Wing and submitted to the Chief Engineer as a final version of the PP for his approval and signature.
4.3 Submission to the Ministry of Communications

When the Chief Engineer has signed the PP along with other signatories concerned with the preparation of the PP, it is submitted to the Ministry of Communications by the Superintending Engineer-Planning & Programming Circle on behalf of the CE-RHD for final approval.

5 REFERENCES

Planning Commission Guidelines published by Planning Commission
5 year Development Plan published by Planning Commission
OP/PPC/2.2 Preparation of Project Concept Paper (PCP)
OP/SE/3.1 Preparation of IEE and EIA report.

6 Procedure Flowchart

The procedure flowchart for this procedure is detailed in the next page.
Start

receives Approved PCP
SE-PPC

Road/other  Project  Bridges  Project  FAP

Prepare Draft PP
(SE-PPC & EE-PD)

Prepare Draft PP
(SE-PDC & EE-BIPD)

FAP

Prepare Draft PP Project
Director (FAP)/Consultant

Initial Draft PCP

Check PCP
Additional Information required
(SE-PPC)

No

Seek from respective office as above

Yes

Prepares PP
(EE.PD.PPC)

Review
(SE-PPC)

Reviewed
ACE-PMW

CE-RHD signs and Recommends

SE-PPC send to MoC

End
1 PURPOSE AND SCOPE

This procedure outlines the overall strategic planning processes undertaken by the RHD that contribute and respond to Government of Bangladesh Overall Strategic Planning (in particular, the 5 Year Plan and the 2 or 3-year Rolling Plans) and Policy formulation. This includes strategy and policy development that contributes to GoB 5 Year Plan and the process of developing RHD annual and medium-term programmes and budgets that are consistent with the GoB 5 Year Plan.

2 DEFINITIONS

Plan - This is a one-year or longer-term perspective of future work.

Programme - This is detailed, costed, and timed schedule of specific projects to implement the plan.

Medium Term - Typically a 3-5 year time horizon.

Strategic - Network-wide perspective and/or multi-year perspective linked to the achievement of wider (GoB) objectives or goals.

Government of Bangladesh 5-Year Plan (5-Year Plan) - Overall strategic plan for development. Each new plan starts a new period.

Government of Bangladesh 2 or 3-Year Rolling Plan (3-Year Rolling Plan) - This indicates the work to be undertaken in accordance with the 5 Year Plan. Each year it has a confirmed programme of work called the Annual Development Programme, (ADP) and indicative budget for the two following years.

Property Reduction Strategy Paper (PRSP) - The PRSP is a World Bank/IMF initiative, likely to be come the GoB's the main strategic planning vehicle in the future.

3 RESPONSIBILITIES

This procedure presents the need for RHD strategy and long-term costed planning. This process would be led by the Chief Engineer with prime responsibility resting with the Planning & Programming Circle. Inputs from the HDM Circle, Maintenance Circle, Economics Circle and Bridge Management Wing (and other RHD functions) will be important in this process.

4 METHOD

Two separate processes are presented here – developing and ensuring RHD policy has good links to wider Planning Commission and GoB strategic planning and policy mechanisms, and developing RHD’s programme and budget to ensure it responds to this GoB policy and the current 5 year plan.
The concept of a ‘performance agreement’ for the RHD is linked to this strategic planning process, and is outlined in procedure OP/MON/2.2.

4.1 STRATEGIC PLANNING PROCESS

It is important the road transport planning is both considered for long-term as well as immediate requirements, and coordinated with wider multi-modal land transport planning and accountable to the GoB and people of Bangladesh.

This should fit within a framework of long-term multi-sectoral planning that reflects Government policy and allows transport infrastructure (e.g. roads and bridges) to support and build other sections of the Bangladesh population and economy, leading to sustainable development.

This requires RHD to:

- Participate in a wider process of multi-modal land-transport planning, to ensure coordination and coherence of road, rail and waterway transport (and airports) in Bangladesh
- Contribute to preparation of scenarios for land-transport planning to develop options for development that meets and reflects wider government objectives
- Receive a costed-plan for land-transport development and develop and maintain a National Road Transport Strategy
- Develop a ‘Performance Agreement’ for the RHD that sets out clearly how the performance of the RHD can be monitored against its inputs (funding and operational performance) and outputs (level of service agreement between the RHD and people of Bangladesh). – See OP/MON/2.2.

4.2 DEVELOPMENT OF RHD PLAN

RHD has a Road Maintenance Management System (RMMS), Bridge Maintenance Management System (BMMS), HDM and GIS database. Together these are considered as RHD’s Road Asset Management System (RAMS). These can be used to produce ‘maintenance and rehabilitation needs reports’ that set out the next year’s required maintenance and rehabilitation and supporting 5-year budget expenditure profile.

The RHD needs to be able to assess the cost of achieving a standard of maintenance management. Firstly, there will be a cost involved in increasing the standard of maintenance on RHD roads and bridges and removing the backlog of overdue maintenance (now requiring full rehabilitation in some cases). Secondly, the budget cost to sustain the condition of RHD’s road and bridge stock above a
predetermined level, through routine, emergency and periodic maintenance works, needs to be determined and agreed.

The RHD’s Annual Development Plan should be linked to its strategic planning process and to the current GoB 5 year plan. This will present the framework for long-term planned development work. A medium term budgetary framework (MTBF) is under development that combines proposed development projects for the next year (updating the previous year’s Annual Development Programme) with indicative budget for the following four years. This should link to the GoB 5 year plan and rolling 3-year plan.

RHD’s annual development programmes and budget (development and maintenance) need to combine the inputs of the Needs Report (See OP/HDM/3.2 and OP/BPD/3.1) and MTBF. It is important that preservation of the RHD infrastructure assets receives sufficient funding. Therefore:

- Funding of maintenance (routine, periodic and an unallocated amount for emergency works) needs to be budgeted before proposed development projects are considered. (This should be reflected in GoB stated policy).
- Determining the budget required to bring the standard of RHD roads and bridges to an acceptable level (rehabilitation – budget over designated timeframe) and then maintained (routine & periodic maintenance annual minimum budget requirement) should be evaluated and agreed. The minimum acceptable standards (levels of service) should be defined in the RHD’s Performance Agreement.
- Improvements and rehabilitation required to maintain RHD’s current assets (from the Needs reports) should be a priority over further development of the RHD’s road network.

The preparation and approval of the RHD Annual Development and Revenue Programmes and Budgets must be consistent with the GoB 5 year plan. The conversion of the Annual Development Programme (ADP) into the Annual Development Budget (ADB) results in allocation to budget account classifications for approval of parliament and subsequent expenditure. For RHD all of the ADP is through the ADB.

If the RHD is to achieve the objectives stated in its annual (and medium term) plans and programmes and be held accountable for these, then it is imperative that the planned level of funding is actually provided to it by the MoF in full and on time

5  REFERENCE - None.

6  PROCEDURE FLOWCHART

The procedures flowchart noted above are presented on the following pages.
6.1 Strategic Planning

Performance Agreement

This needs to define the scope and funding allocation (development & revenue budgets) of RHD. The key performance indicators are established to link strategy and goals to the funding levels and outputs expected.
6.2 Annual Plans, Programmes & Budget

[Flowchart diagram showing the process:
- Start
- GoB 5 Year Plan & Rolling 3 Year Plan
- PRSP and other Strategic Policy
- Medium Term Budgetary Framework (MTBF)
- Road Asset Management System (RAMS)
- HDM
- GIS
- RMSS
- BMMS
- PCP Project Preparation Process
- Annual Development Plan (Rolling) (1 year plan + 4 year indicative)
- Needs Reports (1 year planned + 4 Year indicative budget)
- Prioritize using Performance Criteria (KPIs) (see Strategic Planning)
- Development/ Improvement Projects
- Revenue Budget 1 year proposed + 4 year indicative
- Other Revenue Expenditure
- Monitoring & Feedback
- Reporting
- Actual Annual Development + Revenue Budget + Work Programme
- Approval & Budget Allocation
- End]
1 PURPOSE AND SCOPE

This procedure describes the process for preparing the RHD components of the Annual Development Programme (ADP), prior to submission to the Ministry of Communications.

2 DEFINITIONS

Annual Development Programme (ADP) - is the operational document of the GoB’s 5 year plan and includes all types of GoB funded and Foreign Aided Projects which are ongoing and newly included. The ADP consists of the main investment programme, technical assistance programme and self-financed programme, which are sub-divided into the different government sectors. The ADP is published in June and is available to the public.

Project Concept Paper (PCP) - is a proforma proposal for an investment project in a concise form that is submitted to the Ministry of Communications in order that the project can be considered for inclusion in the ADP. A PCP is required irrespective of the size of expenditure.

Project Proforma (PP) - following approval of the PCP, the PP is prepared within a specific period of time. The PP is a more detailed version of the PCP, prepared in a prescribed format.

1 RESPONSIBILITIES

Executive Engineer (EE) – Programming Division - is responsible for collecting, scrutinizing projects from the field office and newly included local and foreign aided projects, in accordance with the guidelines of the Planning Commission (PC).

Superintending Engineer (SE) – Planning & Programming Circle - responsible for reviewing and recommending the draft ADP. He has overall knowledge about all the relevant projects.

Additional Chief Engineer (ACE) - Planning & Maintenance Wing - gives the final recommendation and submits the draft ADP to the Chief Engineer (CE). Following approval by the CE, he submits the final draft ADP to the MoC.

2 METHOD

2.1 PREPARATION OF THE DRAFT ADP

The Executive Engineer (EE) – Programming Division compiles the ADP for a particular year in February. His main tasks are to:
• Consult the Planning Commission Guidelines in order to identify any new instructions that affect the submission of the ADP
• Obtain a list of ongoing projects from the Superintending Engineer - Monitoring Circle.
• Obtain a list of new projects from the Executive Engineer - Planning Division - Planning & Programming Circle.
• Obtain a priority listing from the Superintending Engineer - HDM Circle (Annual maintenance Plan).
• Consult the ADP for the previous year.

When all of the information has been received, the final list of projects is prepared for the draft ADP, and he submits this to the Superintending Engineer – Planning & Programming Circle.

2.2 REVIEW BY SUPERINTENDING ENGINEER – PLANNING & PROGRAMMING CIRCLE

The Superintending Engineer – Planning & Programming Circle reviews the draft ADP. He considers requests for funds from the Additional Chief Engineers – Field Zone and also may consider the views of the MoC. Following final amendment by the Programming Division, the draft ADP is submitted to the Budget Committee chaired by Additional Chief Engineer - Planning & Maintenance Wing and Director, Audit & accounts being the Member-Secretary of the committee.

4.3 RECOMMENDATION BY THE ADDITIONAL CHIEF ENGINEER - PLANNING & MAINTENANCE WING (THROUGH BUDGET COMMITTEE)

The ACE-PMW (and Budget Committee) verifies the draft proposal of ADP and ensures that the ADP has been prepared in line with the approved guidelines of Budget Committee. The proposal is then forwarded to the CE, RHD for his approval.

4.4 ADP FINAL DRAFT SUBMITTED TO THE MoC

When the Chief Engineer is satisfied with the final draft of the ADP, it is returned to the Additional Chief Engineer - Planning & Maintenance Wing for final submission to the Joint Chief – Planning Cell – Ministry of Communications and from there to Planning commission for final approval.

Upon receipt of the approved ADP, CE, RHD forwards the relevant extract of the ADP to different Zones for preparation of the physical programme of works to be executed against different projects within the allocated fund.

3 REFERENCES

Annual Development Programme published by the Planning Commission (Programming Division)
Planning Commission Guidelines published by the Planning Commission
Annual Maintenance Plan published by the RHD (HDM Circle)
PPs and PCPs for new projects
OP/PPC/2.2 Preparation of Project Concept Paper (PCP)

4 PROEDURE FLOWCHART

The procedure flowchart for this procedure is detailed on the next page.
1 PURPOSE AND SCOPE

The purpose of this procedure is to describe the steps to be followed for processing the budget and releasing funds for Roads and Highway Department projects listed in the ADP, in order to incur the expenditure in a particular fiscal year.

This procedure will be applicable for all development schemes of the RHD both for local and foreign aided projects.

2 DEFINITIONS

Annual Development Programme (ADP) - is the operational document of the GoB’s 5-Year Plan and includes all types of GoB funded and Foreign Aided Projects, which are ongoing and newly included. The ADP consists of the main investment programme, technical assistance programme and self-financed programme, which are sub-divided into the different government sectors. The ADP is published in June and is available to the public.

3 RESPONSIBILITIES

Additional Chief Engineer, Planning & Maintenance Wing (ACE-PMW) - reviews the ADP allocations when they are first received, and examines the consolidated proposals for release of funds from the Wings, Zones and Projects.

Superintending Engineer, Planning & Programming Circle (SE-PPC) - reviews the ADP allocations when they are first received and sends the final request for release of funds to the MoC. He also manages the process within the Planning & Programming Circle.

Executive Engineer, Planning Division (EE-PD) - is responsible for sending the notification of ADP allocations to the Wings, Zones and Projects and resolving any matters that require further clarification.

4 METHOD

4.1 DISTRIBUTION OF ADP ALLOCATIONS

The budget process starts when the ADP, which shows the allocation for different schemes under the development budget, is published by the Ministry of Planning (MoP). When the ADP is received by the MoC, the RHD portion is sent to the CE-RHD for follow-up actions.

The CE sends the ADP to ACE-PMW and SE-PPC for onward transmission of the information regarding project wise allocations to the respective HQ Wings and Zones, Field Zones and Project
Directors of foreign aided projects. The respective ACEs and PDs will then further distribute the information to their SEs and EEs with the instruction to prepare an annual physical programme with item wise cost breakdown within the allocated fund for each project/scheme included in the ADP.

4.2 PROPOSALS FOR RELEASE OF FUNDS

Based on the annual physical programme along with cost breakdown of the allocated fund for each project, the SEs and EEs of the Wings, Zones and Projects then prepare their proposals for the release of funds on a quarterly basis for individual projects. The proposals showing the apportionment of expenditure in a prescribed format are submitted to the CE, RHD through respective ACEs and PDs.

4.3 APPROVAL OF PROPOSALS FOR RELEASE OF FUNDS

The CE will instruct the RHD Budget Committee chaired by the ACE-PMW to examine the draft proposals. If there are any further queries, then the EE-PD will contact the officers in the Wings, Zones and Projects for clarification. When the Budget Committee/ACE-PMW agree that the proposals are justified, the consolidated statement for release of funds in prescribed forms is sent to the MoC by the SE-PPC in order to obtain the release of funds for individual projects of the ADP.

The MoC is authorised to release the funds for the 1st, 2nd and 3rd quarters but not for the 4th quarter. After reviewing the proposals for the release of funds MoC provides approval for release of fund for the 1st quarter and subsequently for the 2nd and 3rd quarters after reviewing the progress of work.

For the last quarter the MoC will write to the Planning Commission (PC) for the release of funds for unapproved projects/schemes and to the MoF directly for approved projects. After obtaining the approval for the last quarter from the MoC/MoF, the MoC will communicate the approval for the release of funds to the CE-RHD.

5 REFERENCES

Annual Development Programme published by the Planning Commission (Programming Division).
Planning Commission Guidelines published by the Planning Commission.
OP/PPC/3.1 Preparation of the Annual Development Programme (ADP)
Government of Bangladesh directives on release of funds for development projects.

6 PROCEDURE FLOWCHART

The procedure flowchart for this procedure is detailed on the next page.
Start

RHD Portion of ADP received CE

Annual Development Programme published by MoF

Distribution of ADP allocations discussed CE/ACE-PMW/SE-PPC

Copy of ADP for Zone, Wing and Project

Notification of ADP allocation to Zones, Wings and Projects EE-PD

Notification received and distributed to SEs+EEs ACEs/PDs

Consolidated forms received (quarterly) CE

Proposals examined D-AA/ACE-PMW

Satisfactory

Yes

Request for release of funds to MoC SE-PPC

End

Contract Zones, Wings+Projects for clarification EE-PD

No

Satisfactory

Yes

Proposal for release of fund prepared (25%) SEs/EEs

Form scrutinised ACEs/PDs

Satisfactory

Yes

Consolidated form prepared SEs/EEs

Consolidated Release of Fund Form

Release of Fund Form
1 PURPOSE AND SCOPE

This procedure outlines the overall process of monitoring within the RHD. This relates solely to monitoring of physical and financial progress which should be distinguished from either internal (or external) financial or quality audits or monitoring of the effectiveness of construction supervision and works contracts within the RHD.

The RHD Project Monitoring System (PMS) is an important database that links together different databases and computerises systems within RHD. This will facilitate effective monitoring to be carried out both in the field and in Sarak Bhaban. Effective monitoring aims to inform management, to allow improved management control.

2 DEFINITIONS

Monitoring is defined here in the context of financial and physical progress of works.

Project Monitoring System (PMS) – is the computerised system developed within the RHD to link together different RHD systems, allow computerised reporting from the Zones to Sarak Bhaban and enable computerised preparation of contract documents and financial payments on site. Access to the PMS is through the Planning Module, Field Module and Core Module.

Field Module – A system of input screens and reports used by the Divisions/Circles managing contracts to either directly or through electronic means transfer data to or from the central PMS database. The field module has three sections, contracts, revenue budget and finance.

Core Module – A system of input screens and reports used either by the Monitoring Circle for ADP projects and the Maintenance Circle for Revenue Budgets to produce reports for Chief Engineer and all levels of management in RHD

Planning Module – A system of input screens and reports used by the Planning and Programming Circle to prepare and monitor the progress of project planning and approvals.

3 RESPONSIBILITIES

Monitoring Circle (SE, EE – Monitoring Division) – EE prepares and SE has the overall responsibility for inputting and approving the Field Module data each month which allows the Core Module of the Project Monitoring System to be used by Monitoring Circle and other RHD Circles, and prepares the ADP Monitoring Report and Summary Monitoring Report to the Senior RHD Management, CE and MoC.
Maintenance Circle (SE, EEs) – SE prepares (with EEs) and approves the monthly Maintenance (Revenue Budget) Monitoring Report and Summary Monitoring Report to the CE and MoC.

Executive Engineers and Sub-Divisional Engineers (Field) – use the Field Module PMS to prepare contracts documentation (Contract, BOQ, Specification), record monthly measure and issue monthly payment certificates, and report work progress to Head Office, and use database to determine physical and financial progress of works on site.

Director, Audit and Accounts – responsible for review of financial progress of works.

Planning and Maintenance, Technical Services and Bridge Management Wings – may use the Planning and Core Modules of the PMS to aid planning, progress and technical review of works on site.

4 METHOD

4.1 THE PROJECT MONITORING SYSTEM (PMS)

The PMS allows the RHD to introduce computerised systems for:

Contract Preparation – Field Module: computerised preparation of specifications, BOQ, contract documents

Contract Measurement- Field Module: computerised record of site measurement allows computerised generation of measurement certificates for contracts and work completed to be monitored.

Finance and budgets – Financial Field Module (both through financial field module, and computerised ADP and Revenue budget records). Records financial information from the Revenue and ADP approved budget to main BOQ items in works contracts.

This Project Monitoring System uses the Contract to link these through a Core and a Planning Module to the RHD Road Asset Management System within RHD (Road Maintenance Management System, Bridge Maintenance Management System, HDM and GIS). This allows improved reporting to MoC, informed planning of future works, informed quality and financial monitoring, improved coordination and flexibility of reporting from different RHD systems.

4.2 INPUTS TO INFORM WORKS PROGRESS AND FINANCIAL ALLOCATIONS

The main inputs to the Project Monitoring System are as follows:

a) Contract Information is entered in the field by EE or SDE (field). This would be done during contract preparation.
b) Monthly measure is entered in the field. The SDE could do this using the computer in the Division Office. This will allow improved ease of control of contracts in the Zones.

c) Budget information is entered showing the disbursement of budget allocations with time, by division and to different projects and contracts within the ADP and Revenue budgets. This would be done by the Office of the Director of Audit and Accounts.

4.3 OUTPUTS (FIELD LEVEL)

The main benefits at the Field Level will be:

a) Once contract data is inputted, the EE/SDE/AE can use this **computerised contract system** to generate the bulk of contract documentation required for tendering and letting contracts. This will save time in Divisional Offices.

b) Once the measurement data is inputted this **computerised measurement system** can be used to produce measurement certificates and control contract expenditure through improved monitoring systems and copy to head office.

4.4 FIELD MODULE TO CORE MODULE

The Core Module is designed to allow the Project Monitoring System to be updated each month. This is done by the Monitoring Circle, inputting data by all of the Field Zones into the system.

The Monitoring Circle will then be able to quickly produce the ADP Monitoring Report each month to the CE and MoC. The full database report will be the primary item (soft copy only, as required) that could be produced for use by RHD for progress and financial monitoring. A short executive summary (hard copy, e.g. maximum 10 pages) should be prepared and submitted to the CE for review by the RHD Senior Management and for reporting to the MoC (to suit MoC reporting requirements).

The Maintenance Circle will use the data input by the Monitoring Circle to produce the monthly Maintenance Monitoring Report to the CE and MoC. This will also consist of both a full database report (soft copy only, as required) and a short executive summary (hard copy, e.g. maximum 10 pages).

The data reported will also be accessible directly from the database. This will (for example) enable monitoring of ADP projects contract by contract (from the Field Module), split into roads and bridge contracts by the database (link to the RMMS). This system could be interrogated by the RHD to:

**Compare** data between the different field sub-divisions, divisions, circles and zones.

**Compare** data between different RHD internal systems.
4.5 INFORMED CONTROL AND PLANNING OF WORKS PROGRESS AND EXPENDITURE

In addition to the standard monitoring report from the Field Zones to Monitoring Circle (as a data file), and then from the Monitoring Circle to CE and MoC the database could be used for special reporting by different parts of the RHD. These are outlined below:

Field Zones – Monitoring Progress of Works

The Financial Field Module has contract cost-time information. By distributing project budget allocations over the period for each contract tracking an S-Curve (typical spending profile for a construction contract) the expected monthly expenditure can be estimated. For Bangladesh a ‘monsoon modified S-Curve’ can be used to effectively planned work. The system, can generate predicted planned progress and cash-flow requirements for projects based on inputted contract costs, start dates and estimated durations.

Once Contract and Measurement data is recorded (in the field zone) the system could be used by the field to measure actual progress against each contract (and PCP):

a) in terms of expenditure (Lakh Taka or % completion)

b) in terms of time (months or % contract period ahead or behind)

Financial Progress

The system can be used to quantify Work-in-Progress on site. This could be used to help plan future budget allocations and improve forecast for future expenditure requirements within the RHD.

Planning

By estimating completion of different contracts and projects, with the aid of planned progress estimates medium term (e.g. 3 – 5 year) planning of workload within the RHD may be better informed, such as:

- current rate of expenditure
- how much spending is already committed next year (to contracts already awarded)
- history of expenditure on individual road links built up to improve use of RMMS etc.

Procurement and Contract Monitoring, Schedule of Rates

The Zones and the Procurement Circle will be able to monitor the contract procurement process using the Project Monitoring System. This would include comparing contract costs to Schedule of Rates to inform the decision making when the RHD Schedule of Rates is updated.

Technical Quality of Construction

Support the work of the Quality Management Team (team formed by the CE chaired and headed by BRRL to visit and review quality of construction on a sample basis) and BRRL etc to improve monitoring of quality of construction (e.g. by requiring actual against planned number of tests on site).
5 REFERENCE

Project Management System User Manuals – to be developed.

This procedure also relates to the processes for monitoring on site (Zonal Procedures manual), monitoring by the Bridge Management Division, BRRL and Audit and Accounts.

6 PROCEDURE FLOWCHART

Please refer to the procedure flowchart on the next page.
1 PURPOSE AND SCOPE

This procedure describes how the information for answers to Parliamentary Questions is obtained and approved within RHD, before final submission to the Ministry of Communications.

2 DEFINITIONS

Questions are raised by a Member of Parliament and submitted to the Minister of Communications by the Parliament Secretariat. There are two types of questions:

Written Questions - answers to the written questions are distributed to each Member of Parliament and the Speaker confirms that an answer has been given in Parliament. There is no provision to raise supplementary questions against written questions.

Oral Question - a question marked with a star (sometimes referred to as a starred question). The main feature of an oral question is that the answers are not supplied to the Members of the Parliament in writing. The Minister of Communications delivers the answer in Parliament, and is normally asked supplementary questions.

3 RESPONSIBILITIES

Additional Chief Engineer - Planning & Maintenance Wing - approves the final draft of the answer prepared by the Monitoring Circle.

Superintending Engineer - Monitoring Circle - acts as a co-ordinator in preparing answers to the parliamentary questions. He checks and recommends draft answers and sends them to the Additional Chief Engineer - Planning and Maintenance Wing for approval.

Executive Engineer - Monitoring Division - is the council officer of RHD and receives parliamentary questions from the Ministry of Communications. He plays the key role in compiling and editing the draft answers, which are, sent from the field offices/Foreign Aided Projects, with the help of his Sub-divisional Engineer and Assistant Engineer.

Additional Chief Engineer - Field Zone - approves the draft answer prepared by the Field Circle.

Superintending Engineer - Field Circle - receives the questions from the Executive Engineer - Monitoring Division. He provides information, which will enable the answer to be prepared by the Monitoring Division with the help of his staff.

Project Director - Foreign Aided Project - receives the questions from the Executive Engineer - Monitoring Division.
4 METHOD

4.1 RECEIPT OF THE REQUEST FOR AN ANSWER TO A PARLIAMENTARY QUESTION

The Executive Engineer - Monitoring Division (RHD Council Officer) receives parliamentary questions from the Ministry of Communications’ Council Officer, in advance of and during parliamentary sessions. A deadline is given for providing the answer, and the time available is variable.

A list of questions is provided and answers will be given to Parliament in writing unless the question is marked with a star, in which case an oral answer is to be given. For oral answers, the Minister may be required to give supplementary information and this will be provided with the answer form the RHD.

4.2 PREPARATION OF THE ANSWER – HEADQUARTERS

If the required information is available on the database of the Monitoring Division and other offices in the RHD Headquarter then the Executive Engineer - Monitoring Division will collect and prepare the answers with the help of his staff.

4.3 PREPARATION OF THE ANSWER – FIELD ZONE

Where the answer requires information from the field offices, the Executive Engineer - Monitoring Division sends the questions by fax immediately to the field office.

A question about the overall activities of the Zone is sent directly to the Additional Chief Engineer - Field Zone. A question about specific operations in a Field Circle, is sent directly to the relevant Superintending Engineer. If the information is available in the Circle Office an answer is prepared immediately and returned. If divisional input is required, the Superintending Engineer requests the relevant Executive Engineer to prepare the answer.

All answers are approved by the Additional Chief Engineer or Superintending Engineer before they are returned to the Executive Engineer - Monitoring Division.

4.4 PREPARATION OF THE ANSWER – FOREIGN AIDED PROJECT

When an answer requires information from a Foreign Aided Project, the Executive Engineer - Monitoring Division sends the questions by fax immediately to the Project Director for the project, who provides the information.

4.5 SUBMISSION OF ANSWERS TO PARLIAMENTARY QUESTIONS

The Executive Engineer - Monitoring Division compiles the answers sent from the field offices, Foreign Aided Projects and those prepared by his own staff. After final editing, the answers are reviewed by
the Superintending Engineer - Monitoring and Evaluation and Additional Chief Engineer - Planning and Maintenance Wing before final submission of the answer to the Ministry of Communications.

5 REFERENCES

RHD Annual Report
Monthly Progress Reports
MIS database

6 PROCEDURE FLOWCHART

The procedure flowchart for this procedure is detailed on the next page.
RHD Operational Procedure – Planning & Maintenance Wing

OP/MON/1.2 - Answers to Parliamentary Questions

Start

Question Received EE-Mon

Written questions from MoC Council Officer

Obtain information from Project Director & ACEs-HQ EE-Mon

Yes

Requires FAP and HQ wing report?

No

Prepare draft answer SDE/AE - Mon

Yes

Review draft answer EE-Mon

Fax sent to ACE/SE - Field EE - Mon

No

Requires FAP and HQ wing report?

SE - Field Circle Prepares answer

Divisional input required

Yes

Information from divisional office

Data collection EE-Field Division

No

Answer prepared EE-Field Division

ACE/SE - Field Approval

Yes

Answer to MoC

SE-Mon checks and recommends to ACE (P&M)

No

ACE-P&M Approval

Yes

Sent to MoC SE-Mon

End

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1 PURPOSE AND SCOPE

This procedure describes the process for preparing the monthly report on progress for all physical works being undertaken by the Roads and Highways Department.

2 DEFINITIONS

**RHD Monthly Progress Report** - provides a summary of all of the individual reports of projects included in ADP including those committed by the Prime Minister, received from the Field Offices, Headquarter Wings/Zones and Foreign Aided Projects. The report is prepared to a standard format and contains information on both financial and physical progress.

**Project Monitoring System (PMS)** – The Project Monitoring System is a database in the RHD MIS system where various progress related data of RHD projects (ADP, Revenue, Foreign-aided) are stored and operated mainly for monitoring physical and financial progress of projects as well as for planning of projects and preparing RHD Annual Report.

3 RESPONSIBILITIES

**Additional Chief Engineer - Planning & Maintenance Wing** - approves the final draft of the report prepared by the Monitoring Circle.

**Superintending Engineer - Monitoring Circle** - receives the individual reports from the Superintending Engineers and Project Directors and acts as a co-ordinator in preparing the final report. He reviews and recommends the draft report for approval by the Additional Chief Engineer - Planning & Maintenance Wing.

**Executive Engineer - Monitoring Division** - reviews the individual reports and compiles the RHD Progress Report.

**Superintending Engineers - Field Circles and Project Directors - Foreign Aided Projects** - provide the detailed information for their projects in a standard format.

4 METHOD

4.1 SUBMISSION OF FIELD/PROJECT/HQ REPORTS

Progress reports are submitted to the Superintending Engineer - Monitoring Circle, between the 8th and 10th day of each month. The reports are prepared in a standard format (in Bengali) as defined by the Planning & Maintenance Wing and contain physical and financial information on the projects.
4.2 **Compilation of Monthly RHD Progress Report**

The individual reports are received by the Superintending Engineer - Monitoring Circle, and reviewed by the Executive Engineer - Monitoring Division. Following detailed checking by the Monitoring Division, a summary of the reports is produced in the form of the draft RHD Progress Report. The checked and final data at this stage will be stored in the Computerised Project Monitoring System (CPMS) by AE/SAE.

4.3 **Approval of the Monthly RHD Progress Report**

The Superintending Engineer - Monitoring Circle reviews the draft RHD Progress Report with the Executive Engineer - Monitoring Division, and then recommends the report to the Additional Chief Engineer - Planning & Maintenance Wing.

Following approval by the Additional Chief Engineer - Planning & Maintenance Wing, the RHD Progress Report is returned to the Superintending Engineer - Monitoring Circle. Copies of the final RHD Progress Report are then distributed as per circulation list, including the Chief Engineer, Additional Chief Engineers and Project Directors. The report is required to be distributed within the specific date of each month.

The report is then discussed at the Ministry of Communications’ monthly review meeting, arranged on a specific date of each month.

5 **References**

RHD Monthly Report – standard format - maintained by the Monitoring Circle.

Circulation List - maintained by the Additional Chief Engineer - Planning & Maintenance Wing

OP/ZF/2.2 – Preparation of Progress Report

6 **Procedure Flowchart**

The procedure flowchart for this procedure is detailed on the next page.
RHD Operational Procedure – Planning & Maintenance Wing

OP/MON/2.1 - Preparation of Monthly RHD Progress Report

Start

Reports received
SE-Mon

Field/Project/HQ progress reports
SEs/PDs

Review of reports
EE-Mon

Enter Data in the Data Base of PMs by SAE/Operator

Compilation of RHD Progress Report by computerized system SDE/AE-Mon

Draft RHD Progress Report

Final check
EE-Mon

Meeting to finalise RHD Progress Report
EE-Mon/SE-Mon

Review and recommendation to ACE(P+M Wing)
SE-Mon

Received by ACE-P+M Wing

Approved by ACE

Yes

Final RHD Progress Report

No

Final production of RHD Progress Report
SE-Mon

Distribution as per standard list SE-Mon

End
1 PURPOSE AND SCOPE

This procedure outlines management reporting of RHD’s operations (internal management) and its overall performance against wider plans and objectives (strategic management). This reporting can help RHD’s management to assess the performance of its operations, management, administration and support functions in using budgets to meet objectives and strategy.

Key performance indicators, contained in a Performance Agreement would give a useful structure for internal management reporting, effective auditing (internal and external) and to supply data for wider public dissemination, such as through an RHD Annual Report.

2 DEFINITIONS

RHD Internal Management Report defines how the RHD’s performance in different areas utilises its inputs (staff, budget and other resources) to meet strategic outputs and objectives (maintain and develop national road network of Bangladesh).

Performance Agreement defines what service the RHD should aim to provide to the people of Bangladesh, and what level of funding allocation from the GoB is required to support this. This aims to link the RHD’s overall strategy and goals to the funding and outputs expected. The objective of such an agreement is to focus the organisation’s efforts on the delivery of outputs (i.e. providing a level of service that benefits users, rather than on the utilisation of inputs).

Key Performance Indicators (KPIs) set out the required indicators for measuring the performance of the RHD. These indicators need to be designed to be objective and clear: SMART indicators. This means that indicators should be ‘Specific, Measurable, Achievable, Realistic and Time-bound’. Targets for each indicator will also be defined so the actual performance of RHD in different areas can be monitored and evaluated.

3 RESPONSIBILITIES

This procedure would be the responsibility of the Monitoring Circle, working with the Planning & Programming Circle in the development of a strategic planning function within the RHD.

4 METHOD

4.1 DEVELOP RHD PERFORMANCE AGREEMENT

The RHD should be able to demonstrate efficiency in the use of its budgets through its operations, management, administration and support functions. Developing a performance agreement for RHD
recognises the mandate of RHD, on behalf of the GoB, to deliver a safe, well-maintained road network to the People of Bangladesh, as encapsulated in the organisation’s "Mission Statement”. An RHD agreement will sit within the MoC’s overall aims and the GoB strategy, as presented in Figure 6.2.

This performance agreement will summarise the RHD’s scope and its budget allocations and disbursement timing (means of delivering strategy). It will also state RHD’s policy in key areas and how it reports its performance to the Ministry of Communications.

4.2 DEVELOP RHD KEY PERFORMANCE INDICATORS (KPIs)

Two types of KPIs will be useful:

- **Internal KPI** to measure RHD’s internal (operations and administration) performance, and
- **External KPI** to measure the level of service provided to RHD customers (road network users).

Each procedure should have a defined target performance for each year. Management reporting will then record how well RHD is performing in these areas compared to previous years. Examples of these are given in the table below: encapsulated

<table>
<thead>
<tr>
<th>Indicator Type</th>
<th>Example Indicator</th>
<th>Example of Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1 Internal KPI</td>
<td><strong>Current assets and key account balances</strong> at period ends.</td>
<td>Annual Work-in-Progress and accrued liabilities</td>
</tr>
<tr>
<td>1.2 Internal KPI</td>
<td><strong>Level of Axle Road Compliance</strong></td>
<td>e.g. Based on convictions.</td>
</tr>
<tr>
<td>1.3 Internal KPI</td>
<td><strong>Staffing Levels and Staff Turnover</strong></td>
<td>% Within each circle/wing (including transfers)</td>
</tr>
<tr>
<td>1.4 Internal KPI</td>
<td><strong>Level of Late Payment to Contractors/Consultants</strong></td>
<td>Number of incidences and total amount for different lateness of payment</td>
</tr>
<tr>
<td>1.5 Internal KPI</td>
<td><strong>Development Projects</strong> - % completion of projects in the ADP (actual versus scheduled progress)</td>
<td>%</td>
</tr>
<tr>
<td>1.6 Internal KPI</td>
<td><strong>Treatment Unit Costs</strong> – Average unit costs of carrying out different maintenance and rehabilitation options on RHD roads.</td>
<td>Index against related costs in other regional countries, historical values &amp; CPI (Consumer Price Index)</td>
</tr>
<tr>
<td>2.1 External KPI</td>
<td><strong>Total Book Value of RHD Network</strong> – based on network inventory (RMMS and BMMS)</td>
<td>Calculated – (Compared to previous year’s values which should increase each year)</td>
</tr>
<tr>
<td>2.2 External KPI</td>
<td><strong>Calculation of Maintenance Backlog</strong> - costed value of HDM and BMMS Annual Maintenance and Rehabilitation Needs Reports</td>
<td>Target is to minimise to a constant annual value.</td>
</tr>
<tr>
<td>2.3 External KPI</td>
<td><strong>Ratio of Overall Erosion of Capital</strong> – Ratio of</td>
<td>Determine current value</td>
</tr>
</tbody>
</table>
### 4.3 REPORTING RHD KEY PERFORMANCE INDICATORS (KPIs)

Some of these KPIs are general and some are specific to different RHD Wings and Circles or Zonal Operations.

A schedule of data, including these indicators, should be prepared that sets out which circle/wing is responsible for supplying different data.

The data showing performance against these indicators should be prepared. In some cases, where actual results are not close to the targets it may be appropriate to revise the targets in the short term. The important thing is that these target values should be seen to improve each year (or at least not get any worse).

### 4.4 INTERNAL MANAGEMENT REPORTING IN THE RHD

These data should be reported periodically to the RHD Senior Management (e.g. through Senior Management Committee) to enable any review or action to be undertaken. This will also be useful for internal and external monitoring. Some of this information may be useful to report to Ministry of Communications to allow evaluation of performance against long-term planning and transport strategies.

### 4.5 RHD STRATEGY DEVELOPMENT AND ANNUAL REPORT

The key performance indicators may be chosen to allow them to be easily understood by the non-technically informed layman (a member of the general public). Presentation of these, with supporting summary of current strategy and operations could form the basis for an RHD Annual Report.
5 REFERENCE

OP/PPC/2.5 Strategic Planning and GoB Five Year Plan

6 PROCEDURE FLOWCHART

Two figures are presented overleaf:

- Figure 6.1 How Internal Management Reporting relates to the RHD Management Manuals
- Figure 6.2 How Performance Agreements and Strategy for the RHD, MoC and GoB may be related.
GoB Performance Agreement with KPIs

MoC Performance Agreement with KPIs

RHD Performance Agreement with Key Performance Indicators (KPIs)

Key Performance Indicator for Strategy/Goal

- Economic Development
- Transport Efficient
- Better Road Asset Management
- Better Roads Level of Service & efficiency value providing to road users

Figure 6.2: How Performance Agreements and Strategy Objectives for the RHD, MoC and GoB may be related
1 PURPOSE AND SCOPE

The procedure describes how the IMED quarterly progress reports are processed and the scope covers all development projects (both local and foreign aided) by the Monitoring Circle.

2 DEFINITIONS

Implementation, Monitoring and Evaluation Division (IMED) - is a division of the Ministry of Planning headed by an officer of the rank of Secretary. It is the central organisation for the evaluation and monitoring of public sector development projects included in the Annual Development Programme.

IMED Quarterly Progress Report (IMED/03/2001) - a prescribed government form for project monitoring submitted to the MoC and IMED on a quarterly basis. The report allows the IMED to assess the progress and performance of projects during implementation. Progress is reported on such items as physical and financial achievement; release and disbursement of funds; implementation problems etc.

Annual Development Programme - is the operational document of the GoB’s 5-year plan and includes all types of GoB funded and Foreign Aided Projects, which are ongoing and newly included. The ADP consists of the main investment programme, technical assistance programme and self-financed programme, which are sub-divided into the different government sectors. The ADP is published in June and is available to the public.

3 RESPONSIBILITIES

Chief Engineer (CE) - is the main signatory of the IMED Quarterly Progress Reports but the present arrangement for signing of the reports is delegated to an authorized officer who is the SE-MON.

Additional Chief Engineer - Planning & Maintenance Wing (ACE-PMW) - responsible for reviewing the IMED Quarterly Progress Reports and sending to the CE.

Superintending Engineer - Monitoring Circle (SE-MON) – is responsible for liaising with the Field, HQ and Project officers to ensure that all necessary information is received on time. He reviews the quarterly progress reports. He is authorised to sign the reports on behalf of the CE and for sending them directly to the Ministry of Communications/IMED.

Executive Engineer - Monitoring Division (EE-MON) – supervises the checking and compilation of the individual reports.

Assistant Engineer - Monitoring Division (AE-MON) - detailed checking of all reports.
4 METHOD

4.1 PREPARATION OF IMED QUARTERLY PROGRESS REPORTS

The SE-MON requests the Field, HQ and Project Officers to submit individual IMED Quarterly Progress Reports for each development project listed in the ADP. The officers will be given at least two weeks notice, to allow them sufficient time to collect the necessary information. The EEs/PMs of the HQ/Zone/Project preparing the IMED report.

The respective Superintending Engineers/Project Directors examine the reports of each individual project and submit them to the SE-MON no later than fifteen days after the end of each quarter being reported.

4.2 CHECKING OF IMED QUARTERLY PROGRESS REPORTS

The SE-MON receives the reports and sends those to the EE-MON for checking and compilation. The AE-MON is entrusted with the responsibility for all initial checking and compilation. The final draft reports and the draft letters are submitted to the SE-MON.

4.3 FINAL SUBMISSION

BY an order presently the reports are submitted to the Secretary of the MoC by the SE-MON directly and with an intimation copy to the CE, ACE-PMW, Assistant Secretary -MoC Development, and Assistant Director - IMED.

5 REFERENCES

Annual Development Programme published by the Planning Commission (Programming Division)
IMED/03/2001 - IMED Quarterly Progress Report Standard Proforma
Website: www.rhdbangladesh.org
Circulation List - maintained by the Additional Chief Engineer - Planning and Maintenance Wing
OP/ZF/2.2 – Preparation of Progress Report

6 PROCEDURE FLOECHART

The procedure flowchart for this procedure is detailed on the next page.
Start

Request for submission of reports
SE-MON

Reports prepared by Field Zones, HQ and Project Offices

Reports received and reviewed
SE-MON

IMED Progress Report

Checking and compilation of reports EE-MON

Detailed checking of IMED report AE-MON

Preparation of draft letter for submission

Final reports + draft letter reviewed
SE-MON

No

Recommend

Yes

Submit to ACE-PMW and CE for Final approval
SE-MON

Approved

Yes

Sign of reports and submit to MoC

End

Yes

No
1 PURPOSE AND SCOPE

Undertaking post project evaluation and producing post project evaluation reports aims to increase the efficiency, cost effectiveness and relevance of future road and bridge projects. This aims to base (current and future) project preparation and prioritisation on more accurate data and assumptions based on findings on successful and unsuccessful past projects.

This should help determine whether Project as completed has met the original project objectives. This, in turn, should improve future project preparation and implementation, by recording and applying lessons for the preparation of future projects.

All projects initiated by RHD (whether FAP or GoB) require some form of post-completion evaluation. The depth and detail of the evaluation will depend on the scale of the project. This needs to be defined and agreed. This should be read in conjunction with procedure OP/EC/3.3 which focuses on economic evaluation aspects of project evaluation.

2 DEFINITIONS

Project Monitoring: the process of assessing the progress on a (road or bridge construction) project during the course of project implementation. This involves both the physical progress (how much has actually been achieved towards project completion) and the financial progress (the total costs incurred, irrespective of whether funds have been transferred).

Project Evaluation: a once-only assessment on the final completion of the entire project, to determine to what extent the project has met its original objectives, whether it has achieved technical and financial targets, and whether it has followed the planned implementation process. This is the subject of this note.

Donor Project Evaluation: If a given project is financed from external funding, the funding agency may require their own (independent) evaluation, to be conducted by an external party. Such an evaluation is unrelated to and separate from the RHD project evaluation requirements, which is subject of this note.

Project Impact Assessment: a broader review of the impact of any transport infrastructure project, to determine the direct and indirect impact of the intervention, including social, environmental and economic impacts.
3 RESPONSIBILITIES

Post project evaluation will involve responsibilities for the ACE – Planning & Maintenance Wing, Superintending Engineer – Monitoring Circle, Executive Engineer – Monitoring Division and various field officers. These will be developed as this activity develops within RHD.

4 METHOD

An outline methodology is presented below on the basis of assistance for project evaluation by external consultants.

4.1 DEFINE SCOPE, BASELINE AND INITIATE EVALUATION PROCESS

- Define Scope of Evaluation effort in relation to size of the project.
- RHD to conduct process or to out-source?
- Define and prepare ToRs for external consultants.
- Collect project preparation material (“before project situation”): PCP and PP, project design reports, including budget, proposed or forecasted implementation schedule; traffic counts and other data used in economic assessment.

4.2 OUTPUT OF THE EVALUATION PROCESS

The following are considered as the main outputs for an effective post project evaluation process:

- **Planning**: assess whether project planning was realistic, whether assumptions made during planning were realistic, relevant and accurate
- **Design**: determine whether the design criteria used in project design meet the development objectives, and are likely to meet them in the future
- **Implementation process – timing**: record the milestones during construction process, assessing where delays occurred compared to planned implementation, what caused the delays, how these could have been avoided.
- **Implementation process – environment**: record and describe the environmental impact of the project during construction process, and post project completion. This should also include any health & safety incidents taken place during project construction, such as site accidents, accidents following temporary traffic measures
- **Implementation process – cost**: record the cost of actual construction compared with project cost estimates. Identify main cost components, and variance between estimates and final costs
• **Implementation process – quality**: determine whether work as built meets (RHD) design standards and criteria

• **Benefits and beneficiaries**: Identify and – where possible – quantify the benefits of project following completion. Identify beneficiary groups and their interests, both those directly and indirectly affected. Compare results with the intended benefits and beneficiaries. Review assumptions made on economic benefit stream, and compare with actual and probably future benefits.

• **Negative impacts**: Were negative impacts anticipated and forecasted, and included in pre-investment project assessment? What are perceived negative impacts following conclusion: employment, social disruption, traffic safety, other environmental impact

• **Economic Evaluation**: See Procedure OP/EC/3.3.

5 **REFERENCE** - None.

6 **PROCEDURE FLOWCHART** - To be developed.
1 PURPOSE AND SCOPE

This procedure covers the process for the pre-qualification of contractors for GoB funded projects where no overseas aid agency is involved.

2 DEFINITIONS

Pre-qualification – the method of short listing of eligible contractors on the basis of their ability to undertake particular construction works in relation to set criteria for those works required by RHD.

Verification – Physical and other checks to determine whether or not information provided by a contractor is correct.


3 RESPONSIBILITIES

Additional Chief Engineer (ACE) – will act as the Superintending Officer of the contract in case the value of contract is more than Taka 3 crores.

Superintending Engineer (SE) – will act as either Engineer or Superintending Officer if the contract value is more than Taka 3 crores or up to Taka 3 crores respectively.

Executive Engineer (EE) – will act as Engineer of the contract for contract value up to Taka 3 crores.

Superintending Engineer – Procurement Circle (SE-PC) – has overall responsibilities for circulating approved standard RHD documents and guidelines to ensure that the pre-qualification of the contractors is carried out correctly by the concerned procuring entity.

4 METHOD

4.1 GENERAL

When tenders are to be invited for a particular contract this can generally be done in two ways, namely;

Open Tendering – whereby any contractor of eligible category can participate in the tender.

Restricted Tendering – whereby shortlists of contractors are invited to tender (by the Employer), having previously demonstrated their ability to undertake the contract.

It is neither necessary nor desirable that pre-qualification of contractors is undertaken for every tender that is called, particularly where the works involved are similar to previous tenders. On the other hand,
it can be the case that when open tendering is adopted for contracts of bigger size and complex nature, the lowest tenders are from contractors without the necessary experience or financial ability to undertake the contracts, which inevitably leads to difficulties when their tenders have to be rejected.

Accordingly restricted tendering can be beneficial in such cases to both the Employer and contractors but it necessarily requires that the pre-qualification process is correctly carried out, which may result in some contractors failing to pre-qualify.

4.2 **DECISION FOR PRE-QUALIFICATION**

The decision to undertake the pre-qualification of contractors for a particular contract must come from the concerned Additional Chief Engineer on the basis of the proposal initiated by the concerned authorised officer calling the tender of that particular contract.

4.3 **PREPARATION OF PRE-QUALIFICATION DOCUMENTS AND ADVERTISEMENT**

The pre-qualification advertisement will include:

- The name and address of the procuring entity
- A brief description of the object of the procurement (i.e. description of the works) including the desired time for delivery or completion
- The means and conditions for obtaining the pre-qualification documents and the place from which they may be obtained
- A summary of the required qualification criteria
- The place and deadline for submission of the applications to pre-qualify (allow 28 days minimum for submission of applications)

Pre-qualification Document will include:

- Instructions for preparing and submitting pre-qualification documents
- A general description of the work
- Required qualifications of contractors
  - previous relevant experience on the type of work involved
  - equipment capabilities
  - financial soundness
  - litigation history
  - personnel experience
Upon completion of the draft advertisement and pre-qualification documents those should be approved by the concerned ACE.

4.4 Advertisement for Pre-qualification

Upon approval from the ACE the agreed advertisement will be posted in both Bengali and English national newspapers and on the RHD web site by the representative of the Employer authorised to call the tender (SE or EE as the case may be).

4.5 Response to Questions

Should any contractors seek clarification of the pre-qualification documents during the period allowed, and then the SE/EE will agree the RHD response with the relevant ACE before supplying it to the contractors. In addition, both the question (without identifying the source) and the RHD response will be posted on the RHD web site.

4.6 Evaluation of Pre-qualification Documents

The evaluation of pre-qualification documents submitted by contractors must be rigorous and any information supplied by contractors must be substantiated. The evaluation will be undertaken by an evaluation committee formed by the ACE.

Upon completion of the evaluation of all submitted pre-qualification applications (documents), approval will be needed to be obtained from the ACE for the recommended short list of contractors to be selected for participation in the concerned tender.

4.7 Notification of Results of Pre-qualification

Upon approval of the evaluation report on the pre-qualification of contractors by the ACE, all contractors should be notified of the success, or otherwise, of their application to pre-qualify.

The notification to contractors should be by means of a standard letter issued by the authorised representative of the Employer, and in the case of contractors that did not pre-qualify, it should briefly state the reasons (e.g., “inadequate previous experience in works of a similar nature etc.”).

5 References

RHD Standard Tender Documents (September 2001).
OP/PC/2.3 – Evaluation of Tenders.
Standard RHD Pre-qualification Document.
6  PROCEDURE FLOWCHART

The procedure flowchart for this procedure is detailed below.
1 PURPOSE AND SCOPE

This procedure describes the process for preparation of the tender documents for GoB funded projects prepared mostly by Zones to ensure that they are prepared in a consistent manner and in accordance with RHD Standards and Guidelines.

2 DEFINITIONS


Approved updates/amendments – comprises all changes, variations, or other amendments to the NCP that have been formally authorised by the Chief Engineer, RHD, for inclusion in all NCP contracts.

Changes – comprises any modifications, additions or other amendments to the NCP documents required for a particular project, all of which will require approval from CE-RHD.

Contract System Implementation and Monitoring Team (CSIMT) – a standing committee formed by the CE, RHD for overall management of effective implementation of NCP in RHD. Additional Chief Engineer, Planning & Maintenance and the Superintending Engineer, Procurement Circle are the chairman and member-secretary of the committee respectively.

3 RESPONSIBILITIES

Superintending Engineer – Zone (SE-Zone) – responsible for the preparation of Tender Documents with a contract value greater than Tk 3.0 crore.

Executive Engineer – Zone (EE-Zone) – responsible for the preparation of Tender Documents with a contract value upto Tk 3.0 crore.

Superintending Engineer – Procurement Circle (SE-PC) – as Member-Secretary of Contract System Implementation and Monitoring Team (CSIMT) is responsible for over-viewing and monitoring the overall implementation of NCP. He plays a key role in organising any amendments required to the NCP Documents through approval by the CE, RHD.

Executive Engineer – Documentation & Procurement Division (EE-DPD) – responsible for management/distribution of NCP documents as has been described in OP/PC/3.1 Management of Procurement Documentation.
4 METHOD

4.1 ASSESS NEED FOR VARIATIONS TO NCP

The purpose of the NCP is to standardise all contracts to be funded by GoB. To this end it is mandatory that the NCP standard documents (Vols 1 - 4 incorporating such revisions that have been approved by the Chief Engineer, RHD, for inclusion in all contracts) are adopted for all contracts.

In exceptional circumstances variations may be needed to the NCP for a particular project. Should this be the case the SE/EE-Zone responsible for the preparation of the Tender Documents should identify the changes required and prepare a Working Paper outlining the changes required and the reasons for them for processing by SE-PC and subsequent approval by CE, RHD.

4.2 AMENDMENTS TO THE NCP TENDER DOCUMENTS

The format and wording of the various Clauses and Forms given in different Sections of “The Tender” document have been carefully prepared so that they should in their present form be applicable for use on the majority of GOB funded projects without any significant changes. If, however, for a particular project it is considered appropriate to amend or delete some of the existing clauses or forms or to insert new clauses or forms, then the approved 'Procedure for Amendments to the Tender Documents' is to be strictly followed. This 'Procedure for Amendments' was circulated through CE, RHD's office order no. Tender1/02-310-CE, date 22-05-2003. Under any circumstances, a tender, which includes changes/amendments to the approved tender documentation, which have not been approved in accordance with the above-mentioned approved procedure, is not permitted to be floated.

4.3 PREPARATION OF TENDER DOCUMENTS

An updated version of Volume 1 of 4 – The Tender – in ‘Word’ format on a floppy disc was issued by the EE-DPD under SE-PC to each Executive Engineer of a road division. This document - Volume 1 of 4 – The Tender – September 2001 included the updated amendments as well as a Bengali translation of the document. The Bengali translation should be attached with the formal English language tender document and only the English language document should be filled in by RHD staff and subsequently completed by the contractor for his submission of The Tender document. No data entries should be made in the Bengali document, which will be used for guidance only.

All Executive Engineers are required to download the updated version of "The Tender" document onto the hard drive of their office computers to use this document to produce the scheme specific tender documents under the new contract system. The Executive engineers are also required to update their soft copy of "The Tender" in accordance with the amendments made to the documents by the CE, RHD from time to time and circulated through relevant office orders.
Subject to the approval of CE-RHD to any amendments to the NCP documents, the SE/EE –Zone will prepare the Tender Documents for the relevant project incorporating completed project-specific drawings and corresponding Bills of Quantities.

4.4 **APPROVAL OF TENDER DOCUMENTS**

Any officer who is authorised to call tenders is, in principle, also authorised to approve the document after being satisfied with its worthiness and correctness prior to calling of the tenders. He should however ensure timely circulation and the receipt of the tender documents among the specified offices including the office of the Superintending Officer well ahead of the date of submission of the tenders. This will facilitate to point out any major discrepancy or inconsistency in the documents and to take necessary corrective measures in time.

4.5 **ARCHIVE TENDER DOCUMENTS**

For all contracts a copy of the tender documents used for the calling of tenders should be forwarded to EE/ DPD for archiving.

5 **REFERENCES**

RHD Standard Tendering Procedures (STP) Volumes 1 - 4

6. **PROCEDURE FLOWCHART**

The procedure flowchart for this procedure is detailed on the next page.
Start

Are changes needed to NCP documents? (SE/EE-Zone)

No

Follow NCP rules to obtain changes (SE/EE-Zone)

Yes

Prepare NCP Tender Documents as per guidelines (SE/EE-Zone)

No

Prepare Tender Documents incorporating changes (SE/EE-Zone)

Yes

Archived Tender Documents (EE-DPD)

End
1 PURPOSE AND SCOPE

This procedure covers the process to be adopted for the opening of tenders and subsequent evaluation of tenders for GoB funded projects.

2 DEFINITIONS


RHD Committee of Purchase (RHDCOP) – a standing committee in RHD to advise the CE, RHD in matters of disposal of RHD contracts prior to the stage of award of contract. The committee is approved by the MoC.

Tender Opening Statement (TOS) – a record of the opening of tenders to be prepared generally by the Engineer and submitted to the concerned ACE on the same day as the opening of tenders. A standard format is attached to this Operating Procedure.

Tender Evaluation Committee (TEC) – a committee comprising a minimum of three members and headed by the Engineer (the authorised officer representing the Employer to administer the contract as per terms and conditions of the contract).

Tender Evaluation Report (TER) – an evaluation report on the tenders opened at the Tender Opening to be prepared by the Engineer and countersigned by the Superintending Officer. A standard format is attached to this Operating Procedure.

3 RESPONSIBILITIES

Additional Chief Engineer (ACE) – will act as the Superintending Officer of the contract in case the value of contract is more than Taka 3 crores.

Superintending Engineer (SE) – will act as either Engineer or Superintending Officer if the contract value is more than Taka 3 crores or up to Taka 3 crores respectively.

Executive Engineer (EE) – will act as Engineer of the contract for contract value up to Taka 3 crores.
4 METHOD

4.1 OPENING OF TENDERS

It is advisable that the evaluation of all tenders are done through some committee comprising of minimum three members and headed by the Engineer who is generally the same officer authorised by the Employer to call the tender.

In accordance with the RHD Tender Invitation Notice and at the appointed date and time for tender opening and in the presence of those tenderers or their representatives who wish to attend, the Engineer along with other members of the Evaluation Team will undertake the opening of tenders. The tender opening will be undertaken in the following manner:

(i) Prior to the scheduled date and time for opening of the tender, the Engineer will ensure that all tenders received in his office and in other designated offices have been collected together to place before him during the time of tender opening.

(ii) the Engineer will then read aloud the Engineer’s Estimate for the Works.

(iii) the Engineer will then open each tender in turn in the following manner:

(a) the tenderer’s name will be read aloud and recorded in the Tender Opening Statement

(b) the tender price will be read aloud and recorded in the Tender Opening Statement

(c) the presence or absence of a tender security will be read aloud and recorded in the Tender Opening Statement

(d) the presence or absence of the original plus two photocopies of Sections 8 & 9 of the tender will be read aloud and recorded in the Tender Opening Statement

(e) the Engineer will initial the Tender Price on the originals and both photocopies of Sections 8 & 9

(f) the Engineer will then place both sets of photocopies in two separate envelopes

(iv) when all tenders have been opened and recorded in the above manner, and the two envelopes both contain two complete sets of photocopies of Sections 8 & 9 of all tenders, the Engineer will seal both envelopes and sign both of them. He will then invite everyone else present at the tender opening to sign the envelopes.

(v) all tenderers or their representatives present at the tender opening will then be asked to complete and sign the relevant part of the Tender Opening Statement as a record of their attendance and witness to the tender opening.

(vi) the Engineer will then complete and sign the Tender Opening Statement and send this, together with the two sealed envelopes, to the concerned ACE on the same day as the tender opening.
4.2 EVALUATION OF TENDERS

4.2.1 DETERMINATION OF RESPONSIVENESS

All tenders must be checked by the Tender Evaluation committee (TEC) to confirm whether or not they comply with the requirements of the Instructions to Tenderers. A checklist of those requirements is included as an appendix to the standard format for an Evaluation Report attached to this Operating Procedure. This checklist must be completed for every tender, with a complete set of checklists included as part of the Tender Evaluation Report.

On the basis of these checklists the TEC will determine whether or not each tender is deemed to be responsive or non-responsive. Only those tenders which are deemed to be responsive will be subject to further evaluation.

4.2.2 ARITHMETIC CHECK ON RESPONSIVE TENDERS

The TEC will undertake an arithmetic check of responsive tenders in accordance with Clause 29.1 of Section 1: Instructions to Tenderers and thereafter determine the Evaluated Tender Price for each tender in accordance with Clause 30.2 of the same Section.

Where the TEC identifies and corrects arithmetic errors in a tender, the Engineer shall notify the tenderer concerned to obtain their agreement to the corrected tender price. If the tenderer does not accept the corrected tender price then the tender must be rejected and the tender security will forfeited.

4.2.3 COMPARISON OF THE LOWEST EVALUATED TENDER WITH THE ENGINEER’S ESTIMATE

The TEC will undertake a comparison of the lowest (agreed) evaluated tender with the Engineer’s Estimate in accordance with Clauses 30.3 & 34.2 of Section 1: Instructions to Tenderers. A simplified method of achieving this is contained in the standard format for the Tender Evaluation Report attached to this Operating Procedure.

4.2.4 CLARIFICATION OF TENDERS

During the course of evaluating tenders it may be necessary for the Engineer to seek clarification from one or more of the tenderers. Where such clarification takes the form of a detailed price analysis for any item in the Bill of Quantities this must be undertaken in accordance with Clause 27.1 of Section 1: Instructions to Tenderers.
4.2.4 RECOMMENDATION FOR THE AWARD OF CONTRACT

As a result of the comparison of the lowest evaluated tender with the Engineer’s Estimate, it is possible that an increased Performance Security may be required from the tenderer to protect the interests of the Employer. The need or otherwise for this will be identified by completion of the attached standard Tender Evaluation Report.

Unless there are exceptional circumstances for doing otherwise, the Engineer will recommend the award of the contract to the lowest evaluated tender with an increased Performance Security if required.

The Engineer will forward the completed Tender Evaluation Report to the Superintending Officer for the Contract for his certification and onward transmission to the higher authority for approval in accordance with the delegated financial power to accept tenders.

4.2.5 AWARD OF CONTRACT

In case the acceptance of the tender is beyond the limit of the financial power of the ACE, the Tender Evaluation Report will be submitted to the CE, RHD who will refer the matter to the RHDCOP for its recommendations. Based on the recommendations of the RHDCOP, CE, RHD will take decision regarding award of contract of value up to Taka 4 crores and if more the matter will be referred to Ministry for decision in the DIVCOP (Divisional Committee of Purchase), now renamed as MinCOP (Ministrial Committee of Purchase).

5 REFERENCES

RHD Standard Tender Documents Volumes 1 – 4 (September 2001)

6 PROCEDURE FLOWCHART

The procedure flowchart for this procedure is detailed on the next page.
Submit Tender Opening Statement plus record of tenders in two sealed envelopes to ACE (EAR)

Start

Opening of Tenders (EAR)

Reject late tenders and return unopened (EAR)

Do tenders comply with Instructions to Tenderers (EAR)

Reject non-conforming tenders (EAR)

Check for arithmetic errors (EAR) (SE/EE)

Check for front end loading of tender (EAR)

Yes

Obtain clarification from tenderer (EAR)

Is clarification of any tender required

No

No

Prepare Tender Evaluation Report (EAR)

Working Paper (EAR)

Yes

Approval (ACE)

Approval (CoP)

Yes

Start
1 PURPOSE AND SCOPE

This procedure covers the process for selecting and appointing consultants for a GoB funded project where the consultancy fees will not exceed Tk 1 crore. For larger consultancy contracts the same procedure will apply except that the approval from the Ministry of Communication will be needed.

2 DEFINITIONS

RHD Committee of Purchase (RHDCOP) – a standing committee in RHD to advise the CE, RHD in matters of disposal of RHD contracts prior to the stage of award of contract. The committee is approved by the MoC.

Consultants – is deemed to include any private sector firm registered in Bangladesh that provides consultancy services in any discipline including surveys, design and supervision of works.

Terms of Reference (TOR) – means the objectives, scope, tasks to be performed, responsibilities of the Client and Consultant, expected results and deliverables of a consultancy assignment.

Technical Proposal – means the technical approach and methodology to meet the TOR proposed by a consultant including a programme for the services to be provided, the staff proposed and man-month input.

Financial Proposal – means the fees and reimbursable expenses proposed by a consultant for providing a consultancy service.

Quality/Cost Assessment – means the evaluation of both technical and financial proposals from consultants by means of weighted scores to determine the consultant offering the highest combined score.

3 RESPONSIBILITIES

Additional Chief Engineer, Wing/Zone (ACE-W/Z) – may opt for outsourcing services like surveying, designing, preparing study reports etc. if they are convinced that these services are not possible to be obtained in-house within their respective wing or zone. In such cases, the concerned ACE will be responsible to submit a comprehensive proposal of appointment of consultants for the particular services for approval by the CE, RHD.

Superintending Engineer, Procurement Circle (SE-PC) – has overall responsibilities for circulating approved standard RHD documents and guidelines to ensure that the selection of consultants is carried out correctly by the concerned procuring entity. He is also responsible for negotiations with the selected consultants through RHD CoP.
4 METHOD

4.1 GENERAL

The selection of consultants can be made in a number of ways depending on the type of consultancy service required. The following are some conventional methods for selection of consultants:

i) the lowest fee offered by a consultant from a shortlist of consultants invited to submit financial proposals alone who are known to be competent and reliable for undertaking the services required. This method is normally adopted where the services are straightforward (e.g. topographical surveys) and the fees are comparatively low.

ii) the lowest fee offered by a consultant from a shortlist of consultants invited to submit both technical and financial proposals. This is known as a ‘two envelope system’, with the financial proposals from all of the consultants remaining sealed until after an evaluation of their technical proposals is carried out. Only those consultants whose technical proposals are deemed technically acceptable (normally on the basis of gaining sufficient marks in a pre-determined marking system) have their financial proposals opened.

iii) a Quality / Cost basis which is the same as (ii) above except that all of the consultants that have their financial proposals opened are ranked according to a formula which takes account of the quality of their technical proposal (i.e. the marks scored) and the cost of their proposed services. Under this system the consultant ranked highest (who will not necessarily have the lowest cost) is appointed.

This Operational Procedure covers the general process to be adopted in the recruitment of consultants based on the selection criteria approved by CE, RHD for particular consulting services.

4.2 REQUEST FOR CONSULTING SERVICE

Individual Circles within RHD, say under Technical Services or Bridge Wings, may be called upon to undertake services for which they have inadequate resources or technical capability. Under these circumstances they may go for initiating the process of outsourcing the services.

For example, any request from the field zone for road design assistance must be made to the Additional Chief Engineer, Technical Services Wing. If the Road Design and Safety Circle does not have the resources they will assist the requesting zone by procuring consultants to undertake this work. But the request for the recruitment of consultants must be made by the Additional Chief Engineer Technical Services through a comprehensive proposal to CE, RHD and it should be supported by adequate budget provision in the Project Proforma of the Concerned project.
Upon approval to the proposal for recruitment of consultants, CE, RHD will appoint a Technical Committee to oversee their recruitment chaired by the ACE of the relevant wing providing the service.

4.3 REQUEST FOR PROPOSALS FROM CONSULTANTS

At this time there are only a limited number of local consultants in Bangladesh capable of providing consultancy services to the standard required by RHD. Under these circumstances it is appropriate that all local consultants having the capability to provide the required services are invited to submit technical and financial proposals.

It will be the responsibility of SE of the concerned circle providing the service to prepare a draft of the detailed Terms of Reference (TOR) and Request for Proposals (RFP) for the consultancy services in consultation with the requesting zone and in accordance with the selection criteria approved by the CE, RHD.

Subject to approval by the Technical Committee and CE/RHD and any amendments they might require, SE will issue the RFP and TOR to all qualified local consultants allowing them not less than 6 weeks to submit their Technical & Financial Proposals.

4.4 RECEIPT OF TECHNICAL & FINANCIAL PROPOSALS

During the course of preparation of their proposals one or more of the consultants may require clarification of the TOR. Should SE provide such clarification then both the question and the reply must be made known to all of the consultants by fax or e-mail at the earliest opportunity without disclosing the source of the question.

The RFP should require all Financial Proposals to be submitted in separate sealed envelopes with the name of the consultant on the outside. Upon receipt by SE, these sealed envelopes must be immediately given to his ACE for safekeeping until their opening is authorized by CE/RHD.

In the RFP, consultants will have been given the date, time, place of submission and receiving officer for their proposals. Compliance with this must be strictly observed and late proposals cannot be accepted. Unless otherwise dictated SE will be the receiving officer for proposals.

4.5 EVALUATION OF TECHNICAL PROPOSALS

The evaluation committee formed by the concerned ACE and approved by the CE, RHD will undertake an evaluation of the Technical Proposals according to a marking system approved by CE/RHD, to arrive at a ranking for the consultants. There is no requirement that all the consultants should have a separate ranking and two or more of the consultants can achieve equal marks. Upon completing the technical evaluation by the committee, SE will submit this for approval of CE, RHD.
Where a consultant’s Technical Proposal has failed to meet the minimum qualifying mark for proposals (as laid down in the criteria by CE, RHD) then this will be notified to the consultant and their unopened Financial Proposal returned to them.

4.6 **Evaluation of Financial Proposals**

Upon approval to the technical evaluation SE will arrange for the opening of the Financial Proposals from the qualifying consultants in the presence of those consultants following the usual procedure for opening tenders.

SE will then undertake an evaluation of these proposals according to the criteria laid down by CE, RHD to identify the recommended consultant either on the basis of the lowest cost or the highest quality/cost basis.

Both the Opening Report and the Evaluation report will be submitted to CE, RHD for approval. CE, RHD will refer the matter to SE, PC for recommendation of the RHDCOP on the basis of which CE, RHD will make a final decision.

4.7 **Appointment of Consultants**

Following final approval of the CE/ RHD, RHDCOP will undertake contract negotiations with the recommended consultants and prepare the draft Form of Contract for their appointment.

Following completion of the draft Contract SE/PC will submit this to CE/RHD for approval and following this the concerned ACE will appoint the consultant.

5 **REFERENCES**

- OP/PC/2.2 Preparation of Tender Documents for GoB Funded Projects
- CPTU – Standard Request for Proposals for Selection of Consultants (draft) (23 April 2003)

6 **Procedure Flowchart**

The procedure flowchart for this procedure is detailed on the next page.
Request from Zone or Wing for Design Services (ACE/Z/W)

Assess Design Circle ability to provide service (SE/Design Circle)

Prepare request for consultancy services (ACE/Wing)

Appoint Consultants (ACE/Wing)

Yes

RHDCOP Approval

Yes

CE/RHD Approval

Technical Committee appointed for recruitment of Consultants CE/RHD

Prepare RFP & TOR for consultancy SE/DC

No

No

Technical Committee

No

No

CE/RHD Approval

No

CE/RHD Approval

Yes

Evaluate technical proposals (Technical Committee)

Yes

CoP Approval

Open financial proposals and prepare Quality/Cost Assessment (Technical Committee)

Approved Project Proforma and Budget

End

End

Start
1 PURPOSE AND SCOPE

This procedure covers the process for maintaining the tender notification database, which contains current notices for all Roads and Highways Department contracts. The general public can view all tender notifications by logging on to the RHD website (www.rhdbangladesh.org).

2 DEFINITIONS

Tender Notice - contains all information which contractors require to tender for a contract, including times for selling, submitting and opening tenders, description of the work, category of contractor etc. All tender notices are advertised on the notice boards of the respective RHD offices and for contracts greater than Taka 80,000 they are published in the national daily press.

Tender Notification Database - a database containing all tender notices for contracts of value greater than Taka 80,000 advertised by RHD offices nation-wide, which can be viewed publicly on the RHD web-site.

Annual Development Programme (ADP) - is the operational document of the GoB’s five-year plan and includes Annual Financial Program of all types of GoB funded and Foreign Aided Projects, which are ongoing and newly included. The ADP consists of the main investment programme, technical assistance programme and self-financed programme, which are sub-divided into the different government sectors. The ADP is published in June and is available to the public.

3 RESPONSIBILITIES

Superintending Engineer - Procurement Circle (SE-PC) - has overall responsibility for ensuring that the database is maintained and that the process is conducted efficiently.

Executive Engineer - Contract Evaluation Division - Procurement Circle (EE-CED) - is responsible for managing the collection of data, monitoring the status and accuracy of information, maintaining the database records and ensuring that the information is archived.

Executive Systems Analyst - Software Development Division - MIS & Estates Circle (ESA-SD) - responsible for maintaining the database software and resolving any problems within the limits defined in the IT procedures. Also works closely with the Procurement Circle in order to develop the database.

Sub-Divisional Engineer - Library & Records - MIS & Estates Circle (SDE-L&R) - responsible for archiving the tender notices, including transferring the data to CDs for storage.
4 METHOD

4.1 RECEIPT OF NOTICES

The EE-CED receives copies of Tender Notices for contracts from the field divisions, projects and headquarters wings well ahead of the last date for submission of tenders. The authorised officers for calling tenders should make it a point that the tender notice is sent to EE-CED at the earliest opportunity - preferably concurrently at the time the notices are sent for publication in the newspapers.

The notices are checked to ensure that they conform to current contract procedures and are valid projects, which are contained in the ADP. The EE-CED will refer any major discrepancy if noticed to the appropriate office promptly, in order that the notice can be amended timely.

4.2 ENTRY OF DATA

The EE-CED supervises the entry of data on the Tender Notification Database by the staff of his Circle to ensure that the information on the database tallies with the original Tender Notice. The tender notification is then made live on the website.

4.3 DATABASE UPDATE

The EE-CED ensures that the Tender Notices displayed are current and that they are removed from the website when the closing date for tender submission has passed. The old notices remain on the database for reference purposes for 3 months and are then stored on CDs in the RHD Library - see Operational Procedure 2.3 - Records and Archives.

4.4 MAINTENANCE OF THE DATABASE

The ESA-SDD works closely with the Procurement Circle in order to receive feedback on the operation of the tender notification system and develop the database. The MIS and Estates Circle will provide a rapid response to any technical problems, via the Help Desk in accordance with Operational Procedure 2.5 - Technology Information Management.

4.5 MONITORING PROCUREMENT PROCESS

Authority and approval for the procurement process for GoB projects is through the respective EE, SE and ACE posts in each field zone or the relevant circle/wing. However, some monitoring of procurement at head office is still necessary to check that appropriate contract awards are made through “best practice” procurement to the NCP, and followed effectively throughout RHD.
Monitoring should include all stages of procurement:

Budget & Project Approval: ensure feasibility study, survey and site investigation, EIA etc. sufficient and completed.

Feasibility study, Environment, Resettlement, Land Acquisition: all completed, for design and PCP approval.

Prequalification process: only eligible contractor prequalified and no unfair exclusion.

Design and standards: checked, approval to current standards, (includes based on traffic data and bridges by ACE-BMW).

Contracts documents: correct form used, quality checked.

Tender Evaluation: pricing anomalies highlighted, lowest tender selection unless legitimate reason for exclusion.

Contract award: contract documents produced and signed by appropriate persons. Land available.

Monitoring during and after contracts are responsibility of the Monitoring Circle and the Maintenance Circle for ADP and maintenance works respectively.

The tender notice database should be used to monitor contract size (how projects are split into contracts). Other monitoring is on the basis of information received by the Procurement Circle (e.g. Tender Notices and bids for contracts over 5 Lakh Taka as of December 2003). Monitoring will be improved through introduction of the Project Monitoring System.

Until this is up and running monitoring should be carried out on a selective basis only for contracts across the field zones and divisions. This will either require visits to the field or copies of procurement data to be requested and received from the zones.

5 REFERENCES

Tender Notification Database User Manual - RHD Intranet or RHD Web-site - to be developed.


6 PROCEDURE FLOWCHART

The procedure flowchart for this procedure is detailed on the next page.
RHD Operational Procedure – Planning & Maintenance Wing

OP/PC/2.5 - Maintenance of Tender Notice Database

Procurement Circle - Contract Evaluation Division Approved:

Start

Receive Tender Notice (EE/CED)

Enter data on database (EE/CED)

Tender Notification live on website (EE/CED)

Okay

Tender Notification removed from website after submission date (EE/CED)

Report to IT Helpdesk (EE/CED)

Resolve Problem (ESA/SD)

Archive Notices on CD

Archive Tender Notices (SDE/L&R)

End
1 PURPOSE AND SCOPE

This procedure covers the process for maintaining a database within Procurement Circle of the procurement documentation for all contracts undertaken by RHD.

2 DEFINITIONS

*Procurement Documentation* – is deemed to include copies of all relevant reports, orders, authorizations, notices, correspondence and other documents related to the procurement of works, goods or services by RHD. It will include, but will not be limited to, the pre-qualification of contractors, the tendering process and the award of contract.

3 RESPONSIBILITIES

**Executive Engineer – Documentation & Procurement Division (EE-DPD)** – responsible for compiling and maintaining procurement documentation for all RHD contracts.

**Executive Engineer – Zones & Wings (EE-Z/W)** – responsible for supplying EE/DPD copies of procurement documentation for all contracts undertaken by them.

**Additional Chief Engineer – Zones/Wings (ACE-Z/W)** – responsible for notifying EE/DPD prior to any procurement being undertaken by his Zone/Wing.

4 METHOD

4.1 GENERAL

Under the Public Procurement Regulations currently being promoted by the Ministry of Planning, at the end of each fiscal year CE/RHD will be required to undertake a review of the procurement process adopted for not less than 15% of the contracts awarded during the year using independent consultants.

Every stage of the procurement process is covered by either Government or RHD regulations/procedures. The purpose of this Operating Procedure is to establish how a database of procurement documentation should be established and maintained within RHD. Checking that such documentation complies with the various RHD standards and procedures does not form part of this Operating Procedure.

Accordingly, this Procedure only covers the receipt of procurement documentation from the various Wings and Zones of RHD by Procurement Circle and the filing by them of this information in a systematic manner.
To ensure that this information is provided to Procurement Circle in a timely manner, an Office Order from CE/RHD will be required instructing all ACE/ZWs to provide copies of procurement documentation relating to each key stage of every procurement within one month of the completion of that stage.

4.2 PROCUREMENT DOCUMENTATION TO BE PROVIDED BY WINGS AND ZONES

Clearly any procurement undertaken directly by Procurement Circle will be supported by full documentation and all correspondence relating to it. Where procurement is being undertaken by others, it would be impractical for every letter, e-mail, report and all other correspondence relating to the procurement to be copied to Procurement Circle for filing. At Section 6 of this Procedure the minimum documentation to demonstrate that the procurement has been correctly undertaken is identified, and EE/DPD should use this as a checklist for the information to be provided by the Wings/Zones.

Upon notification by an ACE/ZW that a procurement is to be undertaken by his zone or wing, EE/DPD should notify the relevant EE/ZW of the required minimum information to be copied to Procurement Circle (i.e. the checklist) and confirm that the responsibility for supplying this information rests with the EE/ZW and that no reminders will be given.

4.3 FILING OF PROCUREMENT DOCUMENTATION

For every procurement there will be copies of letters and other single A4 sheets, together with A4 reports and possibly books of A3 drawings and all documentation relating to a particular procurement should be kept together for easy retrieval.

The manner in which procurement documentation is filed and subsequently archived (for a number of years) will be for Procurement Circle to determine. However it is suggested that the procurement documentation for each procurement is kept in a separate box file or ring binder file. In either case the file should contain a checklist for the required procurement documentation, ticked and dated as and when documents are received. Once in/on the file, documents can be copied but should not be removed for any reason.

4.4 COMPLETION AND ARCHIVING OF PROCUREMENT DOCUMENTATION

During March / April each year EE/DPD should check all procurement files and make contact with the respective EE/ZWs to confirm the status of those that are not complete. Where contracts have been completed or are substantially in advance of the procurement documentation supplied to Procurement Circle, EE/DPD should compile a list of such projects and advise CE/RHD accordingly.

For those files where the procurement documentation is complete, the files should be sealed and archived for future reference.
5 REFERENCES
OP/PC/2.1 – Pre-qualification of Contractors for GoB Funded Projects
OP/PC/2.2 – Preparation of Tender Documents for GoB Funded Projects
OP/PC/2.3 - Evaluation of Tenders
OP/PC/2.4 – Appointment of Consultants for GoB Funded Project

6. PROCEDURE FLOWCHART
The procedure flowchart for this procedure is detailed on the next page.
1 PURPOSE AND SCOPE

This procedure describes the process for dealing with new applications from contractors who desire to be registered in either of the categories G1, G2, G3, S1, S2, or S3 under the Joint Registration System in place both in RHD and LGED.

2 DEFINITIONS

**Joint Registration** - The Joint Registration, also known as the Unified Registration, was introduced and notified for information of all through a circular issued by the National committee for Joint Registration on September 9, 2001.

In order to fulfil the Legal Covenants of the Loan agreement of IDA funded Second Road Rehabilitation and Maintenance Project with a view to improve the local construction industry, the formal approval for introduction of the Joint Registration system was given by the Ministry of Communication in January 19, 2001 with subsequent amendments issued on September 4, 2001.

The registration system covers enlistment and other relevant issues of contractors of both RHD and LGED. The Ministry of Communications will act as the Lead Ministry in respect of disposal of administrative issues and the responsibility of the related secretarial functions was entrusted with the Planning and Maintenance Wing of RHD.

**National Committee** - The National Committee for Joint Registration was formed with members from both RHD and LGED. The Additional Chief Engineer, Planning and Maintenance, RHD and the Additional Chief Engineer, LGED Headquarters will act as Co-Chairman and preside over the meetings alternatively. The Superintending Engineer, Procurement circle, RHD acts as the member-secretary of the committee. This committee deals with the registration of contractors of G1, G2, G3, S1, S2 and S3 categories.

**Zonal Committees** - There are seven Zonal Committees with members from both RHD and LGED. The respective ACE, Zone of RHD is the chairman and the SE of LGED posted in the zonal head quarter acts as the member-secretary. The zonal committee deals with the registration of contractors of G4, G5, S4, and S5 categories.

**New Applications** - Contractors who have not been previously registered and contractors who desire to be updated from a lower category to a higher category need to apply in the prescribed Application Form which contains the uniform criteria for enlistment under different categories of the Joint Registration System.
Registration Database - a database of all registered contractors is maintained by the Procurement Circle.

Renewals - The licenses of all the registered contractors both new and the previous (fitted-in to the respective departments) will need to be annually renewed as per existing procedure.

3 RESPONSIBILITIES

Superintending Engineer - Procurement Circle - has overall responsibility for ensuring that the registration process is conducted efficiently and that the National Committee is kept informed of all new applications.

Executive Engineer - Documentation & Procurement Division - is responsible for maintaining updated records of contractors in accordance with the department's latest guidelines.

4 METHOD

4.1 RECEIPT OF APPLICATIONS

New applications to be dealt with in the National Committee are received by the Superintending Engineer - Procurement Circle. Intending contractors both for the new enlistment and for the promotion to the next higher category are required to use the approved application forms for Joint Registration.

4.2 SCRUTINY OF APPLICATIONS

A working paper consisting of a consolidated list of applicants along with the submitted documents is prepared by the Executive Engineer – Documentation & Procurement Division for scrutiny by the five members sub-committee comprising of members from both RHD and LGED. The scrutiny committee examines the documents and submits the scrutiny report in prescribed format to the National Committee for approval twice during a calendar year. The scrutiny report of the applications received up to October will be submitted to the National Committee by the first week of December and for those received within April next, the scrutiny report will be submitted by the first week of June.

4.3 APPROVAL BY THE NATIONAL COMMITTEE

The National Committee will give fresh enlistment/promotion only twice in a calendar year, in January and in July. Accordingly the selected contractors for both new enlistment/promotion will be duly notified to submit required registration fees as applicable for different categories as per latest circular to the Executive Engineer, Documentation & Procurement Division.
4.4 DATABASE UPDATE

Once payment of the requisite fee has been made then the Executive Engineer – Documentation & Procurement Division will transfer the contractor's details, including the allocated category, on to the Registration Database.

The database also includes details of annual renewals and approvals from the seven Zonal Committees.

5 REFERENCES

Unified Criteria for Enlistment of Contractors, Committee for Uniform Registration of Contractors, December 1999

Application Form for Joint Registration of Contractors

National Committee's Circulars of memo numbers: 251 of 10/9/01 and 45 of 20/2/02.

6. PROCEDURE FLOWCHART

The procedure flowchart for this procedure is detailed on the next page.
Start

Applications invited (July to December) (SE/PC)

Receive new applications (SE/PC)

New applications for registration

Summary of the main items of the application

Prepare report for National Committee (EE/DPD)

Submit report to National Committee (SE/PC)

National Committee Approval

Verify information using spot checks (SE/MC or a sub-committee)

Information verified as OK

Notify contractor (SE/PC)

Verify registration payment (EE/DPD)

Reject Application (SE/PC)

Payment Made

Approved list of contractors

Update Database (EE/DPD)

7 No Zonal Committee approvals

Verify registration payment (EE/DPD)

End
1 PURPOSE AND SCOPE

This procedure describes the process for the central procurement of portable steel bridges (PSB) required countrywide for use, taking into account current stocks and potential future requirements.

2 DEFINITIONS

RHD Committee on Purchase (RHDCoP) – a central committee which meets at regular intervals to scrutinise and give recommendations in respect of approval of RHD contracts referred to this committee. The committee is approved by the MoC. The committee is chaired by a senior Additional Chief Engineer (ACE) and the SE-Procurement Circle acts as the Member Secretary. The committee submits its recommendations to the CE, RHD.

Annual Development Programme (ADP) – is the operational document of the GoB’s five year plan and includes Financial Programme of all types of GoB funded and Foreign Aided Projects which are ongoing and newly included. The ADP consists of the main investment programme, technical assistance programme and self-financed programme, which are sub-divided into the different government sectors. The ADP is published in June and is available to the public.

Project Concept Paper (PCP) – is an approved proforma, which contains salient information, including a tentative cost break-down proposal for an investment project in a concise form that is submitted to the Ministry of Communications in order that the project can be considered for inclusion in the ADP. A PCP is required irrespective of the size of expenditure.

Project Proforma (PP) - following approval of the PCP, the PP is prepared within a specific period of time. The PP is a more detailed version of the PCP, also prepared in an approved prescribed format.

3 RESPONSIBILITIES

Superintending Engineer - Procurement Circle (SE/PC) - has overall responsibility for ensuring that the Procurement process is conducted efficiently and that the Committee on Purchase are kept informed. He is the Member Secretary of the CoP.

Executive Engineer- Documents & Procurement Division (EE/DPD)- is responsible for the preparation of the relevant documents and also for execution of the works.
4 METHOD

4.1 DETERMINE REQUIREMENTS

A census is carried out annually of existing stocks of portable bridges by the Bridge Circle taking into account their condition, current location and whether still in use. EE/DPD should determine the requirements from each Division and consolidate these to prepare a schedule of new bridge requirements, including specification, quantities, estimate of costs, and Project Proforma.

4.2 DOCUMENT PREPARATION AND CALL FOR TENDERS

As per provision in the approved PP, the EE/DPD prepares the tender documents, tender notice and list of pre-qualified suppliers (if applicable) for the approval of SE/PC, and in due course the calling for tenders by SE/PC. The Tender Notice is uploaded on to the Tender Notice database and the RHD website.

4.3 CONTRACT AWARD AND PROCUREMENT

Upon receipt of tenders, a tender evaluation report is prepared by EE/CED and submitted to the RHDCoP for approval through CE/RHD. The normal procedures are followed for contract evaluation as given in OP/PC/2.2. After selection of contractor/supplier, the supply is taken through EE Procurement Storage Division and the materials are kept stored under his store for subsequent distribution among the requiring field divisions as per prior approval of the CE/RHD.

5 REFERENCES

OP/PPC/2.2 Preparation of Project Concept Paper (PCP)
OP/PPC/3.1 Preparation of the Annual Development Programme (ADP)
OP/PC/2.1 Pre-qualification of Contractors for GoB Funded Projects
OP/PC/2.2 Preparation of Tender Documents for GoB Funded Projects
OP/PC/2.3 Evaluation of Tenders
OP/PC/2.5 Maintenance of Tender Notice Database

6 PROCEDURE FLOWCHART

The procedure flowchart for this procedure is detailed on the next page.
Determine overall requirements for portable bridges nationwide. Take account of existing stocks, their location and condition. Prepare PCP/PP/ADP

Prepare schedule of new bridges, specification, estimate of costs. Prepare Tender Documents, Tender Notice and submit to CoP if required. (EE/DPD)

RHDCOP Approval

Yes

Issue Tender Notice Issue Tender Documents (EE/DPD)


RHDCOP Approval

No

Tender Applications from contractors or potential suppliers

Tenders submitted by contractors or potential suppliers

Re-Tender

Award Contract (SE/PC)

End
1 PURPOSE AND SCOPE

This operational procedure describe the methods by which RMMS database and HDM-4 system results can be integrated with RHD GIS in order to visualise the RHD Road Network Asset Database on GIS maps. It is one of the key tools for the implementation of a sustainable Road Maintenance Management System (RMMS).

2 DEFINITIONS

**GIS:** Geographical Information System is an information system used to input, store, retrieve, manipulate, analyse and output geographically referenced (geo-spatial) data, This can support decision making for planning and management of land use, natural resources, environment, transportation, urban facilities, and other administrative records.

**HDM-4:** Highway Development and Management Model Version 4 is a software package, which is used to analyse the maintenance, and rehabilitation needs of a road network on economic priority.

**RMMS:** Road Maintenance and Management System, is a database which contains the available information for the RHD Road Network.

**Route** occurrences are sets of sequentially connected road(s) and/or link(s) identified by a unique alpha digit name called a Route Label.

**Road** occurrence is a set of sequentially connected Links. Each Road is identified by a unique alpha digit name called a Road Label.

**Road Link:** A Link is the part of a road between two Nodes (intersections).

**Road Sections (or Segment)** A road section is defined as a continuous length within a link with the same surface type, pavement width, shoulder width and condition. A link is split into sections in this way using a process called dynamic segmentation. This dynamic segmentation takes place in the RMMS. Each section is assigned a serial number within the link. Over time, the length of individual sections may change, and the number should, in theory, be reduced, as the surface types, pavement and shoulder widths and conditions become more uniform.

3 RESPONSIBILITIES

**SE–HDM Circle** – has the overall responsibility for the integration of the different elements, which makes up the GIS system.
EE-Database, EE-Data Collection and EE-HDM Operation Division - Responsible for keeping the system operational.

4 METHOD

The implementation of the HDM-4 system in conjunction with GIS is designed to provide a tool for visualisation both project appraisal and presentation of multi-year periodic road maintenance and road development programmes. In addition, HDM-4 is used to conduct strategic analyses to determine long term funding requirements in order to achieve road network performance targets set by the government.

![Sample extract from a three-year work programme](image)

Figure 1, Example of HDM-4 results

HDM-4 results are integrated with GIS mapping procedures. Data are available from the outputs of HDM-4 which are linear segmented form.

The results from the dynamic segmentation are then transformed to linearly referenced data events and stored in a table into a feature that can be displayed on GIS map.

There are two data requirements for performing and displaying the results of dynamic segmentation. First, each event in an event table must include a unique identifier and its measurement along a linear feature. Second, each linear feature (route) must have a unique identifier and a measurement system stored with it.
The model to display dynamic segmentation data uses data files (event tables) to store segmented data for linear features. Event tables contain records (events), which identify and describe a particular location along a linear feature.

Figure 2 shows how events could be shown on a map. Event records comprise a route-identifier, measure values (indicating a location), and one or more attributes describing the location. For example, an event describing pavement quality will contain a route identifier of 2 (Road Link number 2), ‘from’ and ‘to’ chainage of 0 km and 10 km, and an attribute of "Bad". This means the pavement quality on Road Link 2 is Bad between chainage 0 km and 10 km.

Because events reference routes and measure locations along these routes (road links), they can be edited and maintained independently of Arc topology of Road in GIS. Data for this linear feature can be stored in many different events. For example, there may be pavement, traffic volume event tables where each references the same road feature.

The figure below shows the Dynamic Segmentation process by which HDM-4 results is integrated with GIS and thereby enables GIS to display them on Maps.

5 REFERENCES

Development of Geographic Information System (GIS) as part of the Institutional Development Component of the Second Road Rehabilitation and Maintenance Project. June 1995, IDC

University of Birmingham, UK Pilot implementation of HDM-4 in Bangladesh. September, 2003

6 PROCEDURE FLOWCHART

The flowchart for this procedure is detailed below.

Start

Road Data → RMMS Database

Dynamic Segmentation file (input file to HDM-4 and GIS)

HDM-4

HDM-4 output file

GIS Data → GIS

End
1 PURPOSE AND SCOPE

This procedure describes the information dissemination of the outputs from the HDM Circle.

2 DEFINITIONS - None.

3 RESPONSIBILITIES

SE–HDM Circle – approves all information before it is released to internal or external clients.

EE-Database, EE-Data Collection and EE-HDM Operation Division - Responsible for production of the information to be distributed to internal and external clients.

4 METHOD

Annually a number of reports are prepared by HDM Circle and distributed to a number of internal as well as external clients, at the moment the following reports are being prepared:

RHD Road Network Database Annual Report – This report contains the results of the annual surveys carried out on the entire RHD road network. The report is distributed to:

1. Maintenance Circle
2. Planning and Programming Circle
3. Various donor organisations (on request)
4. Consulting firms carrying out work for donors or RHD (on request)

This Report is also placed on RHD’s web page. This provides the Field Engineers with information on the actual condition of the roads of their jurisdiction.

Annual Road Maintenance and Rehabilitation Needs Report – This report is prepared by running HDM-4. The report indicates the maintenance and rehabilitation needs of roads and is prioritized as per NPV/Cost. The report is distributed to:

1. Maintenance Circle (to be used as basis for the annual PMP and Routine maintenance plans)
2. Planning and Programming Circle (to be used as basis for the annual ADP)
3. Various donor organisations (on request)
4. Consulting firms carrying out work for donors or RHD (on request)

The Annual Road Maintenance and Rehabilitation Needs Report is also placed on RHD’s web page. This provides the field Engineers with information on the annual maintenance needs of the roads of their jurisdiction.
**Road Maps** – are being distributed to HQ, Zonal, Divisional and Sub-Division offices on an annual basis and when changes on the road network make it necessary to update the maps during the year.

**Thematic Maps** – are annually being produced covering:

1. Condition of the road network (included in the Annual Road Network Condition Report)
3. Traffic volume on the road network (included in the Annual Road Network Condition Report)
4. Maps showing special events as requested by internal and external clients (see OP/HDM/2.4).

**A Road Gazette (a statistical directory)** is produced annually giving the official Name, Road ID, Road Description, Link ID, Link Description, Start, End and Length of each road included in the RHD road network.

5 **REFERENCES** - None.

6 **PROCEDURE FLOWCHART** - None.
1 PURPOSE AND SCOPE

The purpose of this procedure is to describe how RHD digital map data should be managed to provide secure, long-term storage and high quality data, easily accessible to its users in a timely manner.

2 DEFINITIONS

GIS: Geographical Information System is defined as an information system used to input, store, retrieve, manipulate, analyse and output geographically referenced data or geo-spatial data, in order to support decision making for planning and management of land use, natural resources, environment, transportation, urban facilities, and other administrative records.

RMMS: Road Maintenance and Management System, is a database which contains the available information for the RHD Road Network.

3 RESPONSIBILITIES

SE–HDM Circle: overall responsible for GIS management issues and policy strategies, and co-ordinate with RHD decision-makers.

Executive Engineer-Database Division: As Database manager: overall responsible for supervision of GIS development, GIS budgeting, spatial data collection related to GIS, reports and document preparation. Responsible for Co-ordinating GIS development with RMMS database development.

4 METHOD

The management of RHD digital maps requires good organisation of GIS digital data. This procedures includes data collection, management and data organisation, database construction, data quality and the GIS data archives in RHD.

4.1 GIS DATA CAPTURE / DATA COLLECTION

GIS data can be collected using the following methods and sources:

- Digitising / scanning from hardcopy maps
- Field survey using GPS receiver
- Satellite Imageries by classifying colour bands and vectoring
- Collection of road information of (RHD is the custodian for National, Regional and District roads and LGED for rural roads).
- Collection of Digital map data from other organisations such as LGED
Generally GIS data can be collected from the above sources and methods. RHD’s GIS data capture has been mainly done by digitising road or road related feature from hard copy maps or by field survey using GPS. Data collection from other agencies (e.g. LGED) is also a major source of RHD GIS data. Data collection is a continuous process throughout the whole life cycle of the GIS system. GPS road alignment survey methodology and procedures are given in GPS survey manual (see references).

The current RHD GIS, has been built with data, mostly collected by GPS field survey and available information from RHD offices. This was combined with digital thana-base maps procured from LGED.

It is important, for every new road or bridge development project, or inclusion of roads into RHD road network, the road features along with other tabular information should be collected and entered into the GIS system. EE Database will coordinate the needed surveys with EE Data Collection.

Exchange and coordination of data collected is important, particularly data collection from RHD field offices. In this respect EE Data Collection Division should always contact with RHD officials (or through SE HDM) to the respective RHD offices for necessity actions. Under the supervision and the co-ordination of EE Data Collection Division, SDE/AE will conduct the data collection.

### 4.2 DATA VERIFICATION AND QUALITY ASSURANCE

- Data verification
- Quality and data standard

All data sources and spatial data entry methods will result in some errors in the information inputted into GIS. The type, severity, implications of these errors (often inherent in GIS) will determine the quality of the GIS spatial data. These errors must be recognised and properly dealt with. It is virtually impossible to eliminate spatial data errors altogether, but GIS users can reduce and manage errors by good working practices, thus improving the quality.

Verifying the accuracy of spatial data is essential for RHD Digital data management. Tabular data also needs to be verified to ensure the data quality in the GIS database. Data quality measure should include positional accuracy, completeness, correctness and integrity of spatial data.

### 4.3 DATA PROCESSING AND DATABASE DEVELOPMENT

- Data processing and editing
- Standard Shape file/coverage processing
- Key feature attributes
- Data-Documentation
The collected data needs to be processed and made usable for the GIS system. Data processing and editing is fully implemented using GIS software. All the RHD road and road related features should be processed in “ArcInfo Coverage” or equivalent Shapefiles. All the road or related features should be identified correctly and given an identification number such as a combination of Road number, Road link number, Start and End location and the link length should be defined correctly.

Any amendment of existing feature data sets or newly built datasets, should be documented. This will ensure all GIS users can use these data sets. This standard data documentation or meta-data should be circulated among its users.

4.4 INTEGRATION OF RMMS DATABASE

Access and linking to the RMMS database is a vital function of the RHD GIS system. The RHD GIS system is able to access the RMMS database, which is held in RHD server. All GIS maps should be joined with RMMS tables and table objects virtually and dynamically. This means changes made to the database tables, are reflected in changed map content (data should not be copied from RMMS to tables located within a GIS map as this will not stay up-to-date). Road link number in GIS road database with RMMS database tables should be used for this integration.

4.5 AUTOMATED CARTOGRAPHY

4.5.1 ROUTINE MAP PRODUCTION

All wings/offices within RHD require up to date road maps. This requires a well-managed centralised Road GIS has been established. This facility requires a master digital road network upon which other relevant information can be attributed such as road condition, road roughness and road traffic.

Generally, the RHD GIS unit produces two categories of road maps. These two categories are RHD Road network maps and RHD thematic road maps which provide specific relevant information.

RHD Road Map
- Road Number, Link Number, Start and End of locations are attributed.

RHD Thematic Map
- Different aspects, such as road condition, road roughness and road traffic are highlighted using colour symbols are utilised on road links or road sections to visualise the above data.

One of the major objectives of GIS mapping is to produce a series of thematic maps based on the HDM output results for Road maintenance, such as for project priority rating, based on impact analysis in terms of resource constraints, to maximise the cost effectiveness of maintenance rehabilitation plans for different budget levels.
4.5.2 ADHOC MAPPINGS

Apart from routine GIS map production the GIS department receives other requests for maps. These mapping requests may be received from ongoing RHD roads and bridge projects or other Government departments. No mapping requirements are received from private or non-government organisations at present (see OP/HDM/2.4).

4.6 DIGITAL MAP DATA ARCHIVES

All the processed and final GIS data sets and Maps are stored on the RHD server, where all users can access them through windows network. Figure 2 shows the layout for GIS data and map location on the server. This is supported by a Data Dictionary and Map catalogue maintained by the Database division.

When making amendment or changes to either the data or processed maps, the EE Database or officer in-charge should also make the necessary changes in the Data Dictionary and Map Catalogue. This aims to ensure all users work on the same set of data and maps.

4.6.1 GIS MAP AND DATA DISSEMINATION

GIS maps are disseminated in the following ways:

- WWW: GIS Websites (RHD GIS website is now under development);
- Digital Map data map (copied in a reliable magnetic medium); and
- Hard copy maps printed

GIS data dissemination depends on the policy adopted by the department considering what level of maps or data and how other user (external user) could access.

5 REFERENCES


National Road Sector GIS, Full Scale Implementation of GIS, a Proposal to DFID (July 1996, IDC project).

GPS Concept and Methodology (June 2002, IDC3 project).

GIS Database User Manual - to be developed.

6 PROCEDURE FLOWCHART

The procedure flowchart for this procedure is detailed on the next page.
Production & Management of RHD Digital Maps

Start

Data Collection

Spatial data to go into GIS database or RHD network data to go into database

Collect Digital Map Data

Collect Published Hardcopy Maps

Data Capture by GPS Survey

Download and Post Processing

Maintain required quality/recollect data

Check if Data Quality Acceptable

Yes

Check if Geo-reference Ok

Yes

Define geo-reference from known location from maps

No

Apply Co-ordinate Transformation if necessary

Check Horizontal Accuracy of Feature Data

Yes

Data processing, editing and topology building

Update Meta data for data

Defining feature attributes for their correct type, class and user defined identification number

Use dynamic Link/Join with RMMS Database stored in RHD Server

Cartographic Mapping RHD Road Maps for Zonal to Divisional levels

GIS Customised Application Development Mapping

Update map for metadata

Store RHD GIS Data & Maps in RHD Server Location

No

End
Layout of GIS Digital Map Data in RHD Server

\RHD3\RDBMS

\RHD1\GIS

GPS COVERAGE

Road Data

Road Maps

National
Zone
Circle
Division
Support

National
Zone
Circle
Division
Support

GIS Common data

Common Coverage
Tabular Data

RHD Projects

RMMS Database

GPS Baseline Database

\RHD4\GPS-Data
1 PURPOSE AND SCOPE

The purpose of this procedure is to assist RHD develop, use and maintain the RHD GIS system. This GIS system is now well established and has been operating successfully with the necessary data, software and hardware. This operational procedure includes future development and the long-term maintenance of the RHD GIS system.

2 DEFINITIONS

GIS: Geographical Information System is defined as an information system that is used to input, store, retrieve, manipulate, analyse and output geographically referenced data or geo-spatial data, in order to support decision making for planning and management of land use, natural resources, environment, transportation, urban facilities, and other administrative records.

RMMS: Road Maintenance and Management System, is a database which contains the available information for the RHD Road Network.

3 RESPONSIBILITIES

Superintending Engineer – HDM Circle - will be able to deal with GIS management and policy strategies, and be able to co-ordinate RHD decision-makers.

Executive Engineer - Database Division - overall supervision of GIS development, GIS budgeting, report and document preparation. Co-ordinate GIS development with RMMS database development

4 METHOD

GIS has an important role in integrating RHD road features along with related tabular information captured and developed in the RHD database and MIS. All sections/wings/offices within RHD require up to date road maps. The Database division now provides a centralised mapping facility within RHD.

4.1 FUTURE DEVELOPMENT

To ensure an up-to-date RHD GIS system there will continue to be opportunities to make further expansion and more flexible use of GIS mapping in RHD. New Ideas, expansion of functionality, advanced development could be adopted for future development.

Expansion of the GIS would include a set of steps starting with the needs assessment and review of the on-going use and maintenance of the GIS system, as follows:

- Needs Assessment & Conceptual Design
• Review existing data & Conduct new survey if necessary
• Review existing Hardware and Software capability
• Database Planning and Design & Database Construction
• Pilot Study/Test with the existing system with the existing system
• GIS Application Development
• GIS Use and Maintenance

The component of the future plan could address the following issues:

• Ensure that descriptions of applications are understandable to the user
• A logical translation of user requirements to system specifications
• Detailed specification suitable for system development

4.2 GIS USE AND MAINTENANCE

For GIS ongoing operation and maintenance two broad tasks are required: User support and service and System maintenance (database, hardware and software).

4.2.1 USER SUPPORT AND SERVICES

The following user support services can be identified for implementation of the RHD GIS:

• Technical support while GIS is fully utilised. This will include for GIS data and application, software and hardware.
• User feedback to identify system enhancements (GIS functions/applications and database)
• Data error/problem reporting and resolution procedures
• User feedback on data accuracy and system performance
• User involvement in decisions on all system upgrades (data, software, and hardware)
• User training courses as needed (GIS application and software, databases and spatial analysis, e.g. specific application use)

RHD GIS System and Database maintenance

Three driving components of system update can be identified in the implementation of GIS, which are:

• System Enhancement (e.g. enhanced functionality)
• Database expansion (e.g. widen scope of spatial and tabular data employed in GIS system)
• Routine system maintenance (application updates)
Regular review (e.g. annual) should assess these and the benefits and the associative cost of any update. As user can be negatively affected by the changes, major enhancements or expansions need to be subjected to provide training courses to the users.

4.2.2 DATA MAINTENANCE PROCEDURES

1) Managing existing data

Backup/Restore

An available backup system is necessary for the GIS database. Should anything happen in the hardware system (i.e. the file server disk crashes), EE Database will then be able to restore previous backup without losing the data. Therefore, a schedule for regular backup for the system is required. This will be part of network maintenance (see OP/ME/2.2).

Granting Access to data

Some RHD GIS applications allow user to display and/or analyze the data without changing or editing. Read only access to the GIS data should be given to this type of users. In this way only supervisor or trained technicians will be granted full read and write permissions to the data. The GIS manager should be responsible for granting data read/write permissions to users.

Another important function in data maintenance is to consider transaction maintenance. This type of application registers items in the database such as when a record was updated, by whom, and from what source the changes came from. A history log is kept on each record and old records being updated can be sent to an archive file. This step may seem unnecessary in the beginning, but as the database enlarges an application such as this will be of great value.

2) Reviewing current data for potential error and Changes

A standard Quality Control (QC) system should be implemented. This should determine what will be checked and what degree of accuracy will be required for RHD GIS. Outline guidance is provided as follows:

Incompleteness of data

Any incomplete GIS features and tabular data should be identified. This should start by checking that all the required GIS layers and the associated tabular information in the database are included and correctly referenced. For example, a Road link should have a complete set of information such as Road Number, Link Number, Start and End Location and Lengths. Checking should be done for the completeness of each geo-feature in the database and then each feature is assigned the correct layer and indexed consistently throughout all GIS maps.
Errors in GIS data

Two types of errors could be encountered: Positional and Attribute. Positional errors are either absolute or relative. Relative accuracy can be measured for the maximum deviation of the interval between two objects on a map and the corresponding interval between the actual objects in the field.

Topological Error

Building the right feature topology is important. Once GIS topology has been defined successfully, other spatial information such as Arc length, polygon area and perimeter lengths may be determined from the GIS database automatically. Therefore, building accurate topology for each feature type is the important for the GIS database development.

3) Detecting Changes and Identifying Sources for Updates

As RHD is a Highway Agency, several internal sources of data updating can be identified such as a new inclusion of a road link in the network, new road construction or changing the class definition of a road. All these changes of data/information should be identified and spatial changes updated in the RHD GIS accordingly.

4) Collection of new Information

When new pieces or sets of information need to be collected and entered into GIS, data collection should be clearly defined. Data collection from other sources is expensive; it requires more labour to make usable in the system. Data quality and standard should be identified for receiving data from outside RHD. Data collection from field by GIS staff is more reliable and more accurate. If good data collection methods and procedures are used.

For example, for a new road inclusion into RHD network, GPS alignment survey can be used. This may be more accurate and cheaper than of other data collection.

5) Applying edits and Tracking changes

Editing the database can become a tedious task. However, it is important to the data integrity that the edits are done accurately and consistently. All changes should be tracked in a way, as described above, that will allow GIS Specialist to determine when the records were updated, by whom, and what level of confidence the data was rated.
6) **Verifying corrections**

Develop a QC process or use procedures to check the corrections. The GIS Specialist will be able to monitor to verify every change and possibly could select a random number of records and confirm that corrections were made correctly.

7) **Updating master database**

Once edits are made and verified that they were updated correctly in the GIS database, the master database should be updated and should be documented accordingly.

8) **Distributing updates to user**

All the amendments and the changes of data should be documented and should be circulated among its potential users. Meta-Data documentation having updated information should be published in RHD Website to ensure that all changes were informed to the users.

5 **REFERENCES**


Development of a Geographic Information System (GIS), **June 1995**

6 **PROCEDURE FLOWCHART** - None.
1 PURPOSE AND SCOPE
The purpose of this procedure is to describe how to re-classify roads. Re-classification of a road should take place if its usage changes. Keeping RMMS Database & GIS representing the reality of the road network.

2 DEFINITIONS
Road Classification – each road is assigned a classification code according to the use of the road and a serial number to distinguish between the individual roads with the same classification. N designate National Highways, R designate Regional roads and Z designate District/Zila roads.

3 RESPONSIBILITIES
Responsibility for Overall Approval
The Ministry of Planning (Planning Commission) – is responsible for ratifying the reclassification of roads.

The Chief Engineer – is responsible for forwarding the recommendations to MoC and the Planning Commission on the reclassification of roads for ratification.

The Additional Chief Engineer – Planning & Maintenance Wing – is responsible for forwarding the recommendations to Chief Engineer RHD for approval.

Reclassification of Roads
SE-Planning & Programming Circle - prepare list of roads to be reclassified and responsible for submitting of the report to ACE of P&M Wing for approval.

The SE-HDM Circle - is responsible for re-numbering and amendment to database and GIS.

Responsible for approval and feedback once reclassified
The SE-Maintenance Circle - is responsible for establish implications to budgets of re-classifying roads.

The SE-Planning & Data Circle - is responsible for establish potential implications of re-classifying roads.

The SE-Road Design & Safety Circle and the SE-Social & Environmental Circle - are responsible for review any impacts of re-classifying roads.
The SE-Planning & Programming Circle & SE-HDM Circle - are responsible for establish development needs resulting from re-classification.

4 METHOD

4.1 IDENTIFY AND APPROVAL

Roads to be re-classified are identified by SE Planning & Programming Circle.

Report issued for review as follows:

- SE-Maintenance: establish implications to budgets of re-classifying roads;
- SE-Planning & Data Circle: establish potential implications of re-classifying roads;
- SE-Road Design & Safety Circle and the SE-Social & Environmental Circle: review any impacts of re-classifying roads;
- SE-Planning & Programming Circle & SE-HDM Circle: establish development needs resulting from re-classification;
- SE- HDM Circle is responsible for providing new maps showing the ratified reclassified roads.

SE’s meet and review list. Recommendations drafted and forwarded to ACE-Planning & Maintenance Wing for approval.

ACE-Planning & Maintenance Wing forwards recommendations to Chief Engineer RHD for approval.

CE forwards recommendation to Secretary for Ministry of Communications and if necessary to the Planning Commission under the Planning Ministry.

When ratification received form all parties the following action should be taken:

i) CE sends approvals to ACE-Planning & Maintenance Wing for passing to SE-HDM Circle who amends Road Numbers and Road Classification details.

ii) SE-HDM Circle issues revised maps for Divisions and Zones and other involved parties.

iii) SE-HDM Circle ensures links to other systems (e.g. Bridge numbering in BMMS) are also updated on system and elsewhere as appropriate.

Re-classification is now complete.

5 REFERENCES

Technical Re-classification Guideline

GIS Guideline
Guideline to Classification of Roads

OP/HDM/2.2 Development and Maintenance of GIS System

6 PROCEDURE FLOWCHART

The procedure flowchart for this procedure is detailed on the next page.
Evaluate road data to decide if road need re-classification

Does road need re-classification?

Yes

Evaluate road data to decide if road need re-classification

Prepare report regarding the re-classification

Does road need re-classification?

No

No

Submit report for re-classification to ACE and CE for approval

CE forward the report for re-classification to MoC for ratification

Does road need re-classification?

No

Yes

EE-Database update database and maps as necessary

Ensure that all Road/Bridge numbers for future projects are updated

End
1 PURPOSE AND SCOPE

The purpose of this operational procedure is to describe the methods of managing and responding to requests for maps and data.

2 DEFINITIONS

The Law of Information Technology ACT

The intent of this policy and procedure is to provide for fair and consistent access to RHD GIS data and map products within the spirit of Information Technology Act of the Government of Bangladesh (GoB). (Please review Information Technology ACT and ICT Policy of GoB for further details).

Service Definitions

GIS Data: Computer files, which contain geographic features of RHD Road network and other related features and tabular information, geo-referenced with earth's surface are considered as GIS Road data. RHD uses GIS data developed within its departments and acquired ancillary data sets from outside sources (e.g. LGED, EGIS, City Corporation etc). RHD developed GIS data sets are updated and maintained by GIS Division staff.

Maps: Digital or hardcopy maps documents can be created for presentation from the RHD GIS. GIS maps are presented on the RHD GIS website (currently under development), and in RHD reports and publications. These maps are considered as public information in most cases and are available for the cost of reproduction.

Access and Distribution

Access: RHD will maintain Internet/Intranet from which users may browse and make query to access GIS data. General users can access some common GIS data and maps. Special users would be given access to use more special types of GIS data.

Distribution: Distribution means GIS maps or data are to be distributed on floppy disk, CDROM or any medium. Hardcopy maps are to be printed in several sizes and scales. Before delivery can be started, (outside RHD, MoC, Planning Commission) and the RHD must receive payment for labour, materials, and shipping costs.

3 RESPONSIBILITIES

The SE-HDM Circle - is responsible for processing requests from outside clients. Depending on the nature of the request he will require EE-database to prepare the maps or data requested.
The EE-Database - are responsible for preparing the answer to the received questions to SE-HDM for approval. SE HDM submits the requested report to the client.

4 METHOD

4.1 DATA AND MAPS REQUEST BY OUTSIDE CLIENTS

1. Prepare written request to SE HDM Circle and fill in the Data Requisition Form, which includes:
   - GIS or other data set name(s)
   - Payment in the amount of Taka per Hardcopy Map (data to be delivered on CD ROM or Floppy disk is to be approved by ACE)
   - Complete GIS Data Distribution Agreement
   - Delivery and contact information as necessary

2. Submit the request to: Superintending Engineer (SE) - HDM Circle

4.2 DATA AND MAPS DELIVERY BY RHD

1. HDM Circle/Database Division staff will receive requests via the SE HDM and upon receipt the staff will process the requests.

2. EE Database will assign AEs for the delivery of data to requester.

Requests will be completed on a first come first served basis. However, RHD’s internal priorities may supersede external requests. Database staff will make the best effort possible to fulfil requests in a timely fashion. No guaranteed delivery dates or times are possible.

RHD GIS map document should have a title, date, contact person, phone number, and source file information printed somewhere on it.

4.3 ACCESS AND DISTRIBUTION RESTRICTIONS

Confidential Information: RHD cannot provide access to or distribute some types of information held within RHD GIS. This data will be identified by database staff and removed from the data before it is distributed.

Non - RHD GIS Data: Some of the organisations and companies from which RHD acquires GIS data copyright or place other usage and distribution restrictions on their data sets. RHD abides by these copyrights and restrictions. RHD will refer the requester to the source organisation when requester requests data on which re-distribution restrictions have been placed.
4.4 CUSTOMISED GIS DATA AND MAP PRODUCTS

RHD does not normally create custom GIS data sets nor does it convert hard copy or digital documents to other formats for distribution purposes. The external users are responsible for performing conversion, digitising, sub-setting, spatial analysis, and graphic representation operations on the data.

RHD creates custom GIS map products only as components of services and product packages, which satisfy its departmental requirements.

**Educational Institutions:** Provision may be given for educational and research institute to access RHD GIS data with no charge compensation.

RHD or other projects may be encouraged to staff additional temporary posts within the HDM Circle to develop and use maps and data in a way that serves both project needs and the future development of the RHD GIS and RMMS systems.

4.5 PAYMENT PROCEDURE

As per Government procedures and rules.

5 REFERENCES

RHD Road User Cost Annual Report - published by the Economics Circle

Indent form - to be developed.

6 PROCEDURE FLOWCHART

The procedure flowchart for this procedure is detailed on the next page.
Start

Request for map/data received by SE HDM

Request handled by EE Database

GIS staff prepare response to client

Database staff prepare response to client

SE HDM approve response to client

Maps or data to be provided to client

End
1  PURPOSE AND SCOPE

Operation and Maintenance of the Road Maintenance Management system is the key task of the HDM Circle, as the foundation on which GIS maps and HDM output, including the RHD Road Network Database Annual reports depends.

2.  DEFINITIONS

Database operation includes:

A. Data entry, editing, validation.
B. Data reporting.
C. Data exporting for HDM-4 operation.

RMMS Data includes:

A. Road condition data.
B. Road roughness data.
C. Traffic Data.
D. Pavement inventory data.
E. Deflection data.
F. DCP data.
G. Pavement History data.

3  RESPONSIBILITIES

SE - HDM Circle: Overall supervision of activities of HDM Circle.

EE - Data Collection Division: Responsible for surveys for the data collection.

EE - Database Division: Responsible for data entry, Data checking and validation, editing and reporting.

EE - HDM Operation Division: Responsible for operating RMMS Programme and HDM-4 software for preparing annual road maintenance plan and other HDM-4 analyses.

4  METHOD

4.1  DATA COLLECTION:

The EE - data collection division collects data and submits the same to the EE - Database.
4.2 DATA VALIDATION:

The EE - database receives data from EE - data collection. Data is then entered into the computer, checked and finally edited. Validation checks are mainly incorporated into the programmes of data entry.

4.3 DATA REPORTING:

The EE, database prepares annual database reports for circulation and use by the department or by the outside agencies.

4.4 DATA UTILIZATION:

The main utilization of annual data is made by the EE, HDM Operation. Data is utilized for preparing annual road maintenance needs report-using HDM-4. Data can also be utilized for project formulation, project analysis and for long term budget forecasting.

4.5 FUTURE DEVELOPMENT:

The database will need ongoing development to meet the needs of HDM and GIS, and other RHD survey and reporting requirements. This development is likely to be through consultants assistance (TAPP).

5 REFERENCES


6 PROCEDURE FLOWCHART

The procedure flowchart for this procedure is detailed on the next page.
**Ongoing**

**Start**

- Specialist data collected (e.g. Roughness data) (Data Collection Division)
- Data Collected by Field Offices (Data Collection Division)
- Data Entry and Validation (Database Division)
- Identify and fix errors in database programme (EE database)
- Review Quality of data reported (Database Division)
- Data Reporting (see also OP/HDM/4.3) (Database Division)
- Future database development to meet HDM, GIS, other RHD needs (RHD staff with consultants support-TAPP)
- Data improvement required

**Data utilisation**
- HDM (see OP/HDM/3.1 & 3.2)
- GIS maps (see OP/HDM/2.1 & 2.2)
- Other RHD Departments (see OP/HDM/1.2)

**Review Quality of data reported & utilisation**

**Good results**

**Ongoing**
1 PURPOSE AND SCOPE

The purpose of this procedure is to describe the process for preparation and publication of the RHD Road Network. Annual Database Report by the HDM Circle.

All of the Field Zones and the Planning and Data Circle - Bridge Management Wing are involved in this process. The report provides the basic data for input into the HDM model, which is then used to develop the RHD’s Annual Road Maintenance Plans.

2 DEFINITIONS

**RHD Road Network Database Annual Report** - a summarised report containing road and bridge data for all of the zones of the RHD. The report contains data from traffic counts, road condition surveys, bridge condition surveys, road roughness surveys, deflection cone penetration tests and road inventory of all link established roads and bridges.

**Road Condition Survey (RCS)** - undertaken annually in accordance with the RCS manual to identify the condition of roads in each link in order to evaluate the type of maintenance treatment required.

**Bridge Condition Survey (BCS)** - undertaken in accordance with the BCS manual to various levels of detail.

**Deflection Cone Penetration Tests (DCP)** - to determine the strength of the road pavement for evaluating pavement treatment generally carried out every 5 years.

**Road Roughness**: This is a measurement of riding quality and road surface deterioration and an important factor in determining the vehicle operating cost on poor quality of roads. This survey is done by the AEs of the HDM Circle.

**Road Inventory**: It is a comprehensive physical investigation done in the pavement of the road structure to identify the thickness, types and material characteristics of different pavement layers.

**Traffic count survey**: Information on the volume and type of traffic on the roads for the planning of both road maintenance and improvement policies. This survey will be carried out by the Economics Circle

**IWTA**: It stands for ‘Inland Water Transport Authority’. It is an agency under the Ministry of shipping responsible for dealing with the matters related to transportation in the waterways.

**RNDZR**: It stands for Road Network Database Zonal Report published by the HDM Circle every year.

**RNDAR**: It stands for Road Network Database Annual Report published by the HDM Circle every year.
3 RESPONSIBILITIES

ACE-P&M Wing - To accord approval to RNDZR and RNDAR

ACE-field Zone - To issue instructions to all zonal SEs / EEs to carry out surveys as per request of SE-HDM.

ACE-Bridge Management Wing - To issue instructions to SE-Planning & Data Circle to provide Annual Bridge condition Survey Report and related data.

SE-HDM - Request ACE- Field zone, Mechanical wing, Bridge Management Wing and SE’s of P&M Wing to arrange providing necessary report/data on Road Condition Surveys and for river gaps/navigation Clearance from IWTA.

Review and to make recommendation to RHD Road Network Database Zonal Report and RHD Road Network Database Annual Report.

SE-Mechanical Circles - To provide data on ferries and its location and no. of pontoons.

SE-P&P - To provide list of road schemes/projects in the Annual Development Programme and related data.

Chief Transport Economist - To provide traffic count data as requested by SE-HDM.

EE-Data collections - Distribution of survey data forms to all EE’s of field zones and EE of Bridge Inspection and Planning and serve indent for data.

EE-Database - Verification/checking, analysis and processing of field data. Printing and publication of RHD RNDZR and RHD RNDAR.

Provide maps showing the requested events and important features in the Road Network.

EE-BI & P - Examine data and prepare reports on Bridge Condition Surveys.

EE-Field zone - Examine RCS data and submit report to EE-Database.

Director-IWTA - Supply data on river gaps/navigation clearance in the road alignment.

4 METHOD

(For Road Network Database Zonal Report)
4.1 PRELIMINARY WORKS

The AE-Data Collection make arrangement for printing and distribution of prescribed RCS forms as per requirements for the divisions of field zones and bridge Wing. The EE-Data Collection sent those forms to all the EEs of the field zones.

The SE-HDM Circle requests all the ACEs of the field zones to arrange for carrying out RCS and traffic counts as instructed in the manuals and sent reports within the targeted time.

Allocate budget for surveys by the ACEs of zones.

The EEs of field divisions and Planning Division constitute teams and instruct SDE/SAE to conduct condition survey of the roads in every link under their jurisdiction.

4.2 SURVEYS

(a) The SDE/SAE of the division of the field zones and the wing perform the condition-surveys of the roads respectively by visual inspection at site as per instructions in the manual and guidelines. The survey data are recorded the findings in the form supplied and duly signed and sent to the respective EEs.

(b) Roughness Survey will be carried out by the AE/SDEs of HDM circle.

(c) Traffic counts by the Economic Circle.

4.3 PROCESSING OF DATA AND PREPARATION OF DRAFT RNDZR

The data from the surveys as mentioned in para 4.2 will be the EE’s and received by the SE - HDM/EE-data-base. The EE will check, analysis and process the data made available by different groups. He will instruct AE/SDE of his division to make entry and collate the data of each zone. Under the guidance of EE-database the SDE will prepare the draft database report for each field zone, which will be called’ RHD Road Network Database Zonal Report.

4.4 REVIEW AND APPROVAL OF RNDZR

The draft road database report of zones will be reviewed by the SE-HDM Circle and forwarded to the ACE-P&M Wing for approval. The ACE will give approval to the report and sent to the EE-database for printing the final zonal database report.

4.5 COLLECTION OF DATA FOR PREPARATION OF RNDAR

(For Road Network Database Annual report)
(a) The EE-database will obtain data on ferries and pontoons from the SEs of Mechanical Field Circles / Plant-pool divisions.

(b) Data on river gaps in the road alignment to be obtained from Member-Engineering/Director-Administration of IWTA.

(c) The EE-database Division will obtain the list of road schemes/ projects included in the Annual Development Programme from the P & P Circle (EE programming will be the contact officer).

4.6 PROCESS OF DATA

The EE-database will check, analysis and process data as mentioned in para 4.5 together with the data in the report of Road Network Database of each zone. The SDE/AE-database will collate and enter data in the database and prepare a draft report of RHD Road Network Database Annual Report.

4.7 REVIEW AND APPROVAL

The draft RHD Road Network Database Annual Report will be thoroughly examined and reviewed by the SE-HDM Circle and forwarded to the ACE-P&M Wing for approval. After obtaining the approval of the report, the SE will sent the report to EE-database who will finalise the report and make arrangement for printing and publication of the report of that particular year.

4.8 DISTRIBUTION OF REPORT

The RHD Road Network Database Annual Report including the zonal database report will be distributed by the SE-HDM Circle as per list obtained from the ACE-P&M Wing. In case of distribution of the Annul Database Report to the CE, ACEs and the donor agencies the annual road database of the zones will also be given.

5 REFERENCES

- Road Condition Survey Manual
- Bridge Condition Survey manual
- Traffic counts Manual
- Roughness Manual
- Road Inventory Manual

6 PROCEDURE FLOWCHART

The procedure flowchart for this procedure is detailed on the next page.
Despatch survey data form & request for report to field zone (EE-data collection)

Formal request to ACE zone/wing for survey data report (SE-HDM)

Receive data by SE-HDM

Enter & collate data of each zone in database AE-SDE-HDM Circle

Checking & process of zonal/wing data EE-database

Prepare draft zonal road network database report EE-database

Review & Approve SE/ACE-P&M

Approval by ACE

Yes

Finalize zonal report EE-database

Send final RNDR of zone for preparing RNDAR

No

Print RCS, BCS, T.C data form (AE/SDE database)

Roughness data by AE/SDE-HDM

RCS data from EE-BIP division

Data on BCS, RCS, T.C, roughness DCP road inventory

Traffic data from SE-Economic Circle

DCP & road inventory by Consultant (outside)

BCS data from zones by SDE/SAE

Draft RNDZR (7-zones)

Check & enter data AE/SDE-HDM

Data on ferry & pontoon, river gap and road map

Data on ferry & pontoon, river gap and road map

Data on ferry & pontoon, river gap and road map

Data on ferry & pontoon, river gap and road map

Data on ferry & pontoon, river gap and road map

Check & enter data AE/SDE-HDM

Data on ferry & pontoon, river gap and road map

Analysis, discuss & process RHD road network database annual report (EE-database)

Prepare Draft RHD RNDAR

Review & recommendation by SE-HDM

Approval by ACE

No

No

No

No

No

Yes

Yes

Yes

Yes

Yes

Final RNDZR (7-zones) (Vol.-2)

Final RNDZR (7-zones) (Vol.-2)

Finalize zonal report EE-database

Sent final RNDR of zone for preparing RNDAR

Draft RHD RNDAR

Review & recommendation by SE-HDM

Prepare final RHD RNDAR (Vol.-1) by EE-database

Distribution of RHD RNDAR & RNDZR by ACE-P&M Wing

End

Note: RNDZR = Road Network Database Zonal Report
RNDAR = Road Network Database Annual Report
1 PURPOSE AND SCOPE

This procedure describes how to calibrate the Road Deterioration and Works Effects model (RDWE) and Road User Effects model (RUE) in HDM-4. The sub-models relationships have been developed using structured-empirical approach. The models need to be calibrated for a particular environment and climatic conditions in this case Bangladesh.

2 DEFINITIONS

Road Deterioration and Works Effects model (RDWE):

Pavement deterioration is an inherently complex phenomenon because of the interactions between many of the deterioration mechanisms. For example, total road roughness consists of a number of components representing different distresses, all of which contribute in different ways to the overall roughness value. Thus cracks eventually spall and lead to potholes, which increase roughness, but cracks allow the ingress of water, which in turn, weakens the road structure, the amount depending on the pavement materials and the condition of the drainage system amongst other things. This then leads to deformation or rutting which also contributes to roughness. The magnitude of all these effects depends on traffic, environment, material qualities, maintenance policy, to mention just some of the variables.

The term “roadworks” is used to embrace any change to the physical characteristics of a road and may embrace operations ranging from simple maintenance, such as cleaning detritus from the road surface, to the construction of a new road link. One of the purposes of economic analysis is to find the combination of roadworks, which over an analysis period will deliver the optimum solution for a given funding level. For every dollar spent on roadworks there should be a corresponding benefit of a dollar or more, otherwise the works should not be carried out. Benefits of roadworks can be almost immediate or longer term and arise from reduced society costs (vehicle operation, environmental effects) and/or reduced cost to the road agency in future maintenance of the road.

Road User Effects model (RUE):

The Road User Effects model in HDM-4 comprises analysis of the following:

- Motorised Vehicle speed, operating costs and travel time
- Non-motorised transport speed and operating cost
- Road safety
3 REONSIBILITIES

Superintendent Engineer – HDM Circle – Responsible for instigating the instructions to carry out calibration of the RDWE and RUE models in HDM-4, and approves the report.

Executive Engineer – HDM Operation Division – Responsible for carrying out the calibration of the RDWE and RUE models (RUE models with help from Economic Circle) in HDM-4. Is responsible for the collection of data and for preparing the calibration report for the SE’s approval. EE will assign SDE and AE to complete tasks as necessary.

4 METHOD

4.1 INTRODUCTION

Calibration is the process of adapting the model to a particular environment and conditions. HDM models are structured empirical models based on field observations and research output. In HDM-4, the calibration factors have been kept separate from the original model so that it can be changed easily to adjust with a particular climate and environment. Before using these models, they must be adjusted for local conditions and environments to reasonable predict what take place in a road pavement.

Proper pavement performance is the pre-requisite for economic analysis of road network. The Road Deterioration and Works Effects model (in HDM 4) must be calibrated for Bangladesh environment. Likewise RUE model is to be quantified expanding the evaluation of its components as maximum and accurate as possible to find the total transportation cost.

The main objective of the economic analysis is to reduce the total transportation cost (which is the sum of construction cost, maintenance cost and road user cost). Again road user cost is the sum of vehicle operating cost, travel time cost and accident cost. Some social and environmental factors also contribute to the RUC. The input parameters for these components need to be calibrated for Bangladesh to get the reliable road user cost. The calibrated model needs to be validated with adequate and accurate data. The precision of the model is dependent on the information quality level used in calibration.

4.2 THE LEVEL OF CALIBRATION

The level of calibration depends on the quality of information available and also on type of application, that will dictate the precision it requires. There are three levels of calibration for HDM, which involve low, moderate and major levels of effort and resources.
• Level 1 - determines the values of required basic input parameters, adopts many default values and calibrates the most sensitive parameters with best estimates, desk studies or minimal field surveys.
• Level 2 - Requires measurement of additional input parameters and moderate field surveys to calibrate key predictive relationships to local conditions.
• Level 3 - Undertakes major field surveys and controlled experiments to enhance the existing predictive relationships or to develop new and locally specific relationship for the substitution in the source code of model. Level 3 calibration requires a long-term commitment to basic data collection so their extent spans over several years.

4.2.1 CALIBRATION ISSUES

HDM model focuses on two primary components that determine the physical quantity costs and benefits predicted for the analysis, namely: RDWE and RUE.

The RDWE model calibration focuses on the reliability of pavement distresses that are predicted by the model. There are seven-road deterioration factors used in road deterioration model in HDM-4. These are:

<table>
<thead>
<tr>
<th>Name of the factors</th>
<th>Abbreviation used in HDM-4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Roughness age environment</td>
<td>Kge</td>
</tr>
<tr>
<td>Cracking initiation</td>
<td>Kci</td>
</tr>
<tr>
<td>Cracking progression</td>
<td>Kcp</td>
</tr>
<tr>
<td>Rut Depth progression</td>
<td>Krp</td>
</tr>
<tr>
<td>General Roughness progression</td>
<td>Kgp</td>
</tr>
<tr>
<td>Potholing progression</td>
<td>Kph</td>
</tr>
<tr>
<td>Raveling progression</td>
<td>Kvp</td>
</tr>
</tbody>
</table>

Of these factors Kge, Kci & Kcp have high impact on pavement deterioration. These factors vary primarily with pavement type and surface type, pavement strength, traffic load, pavement age within a particular environment. The default value for these above factors is 1. These factors have been calibrated for Bangladesh. RHD database has been used in the calibration work. The precision of calibration is largely dependent on the accuracy of data used.

The RUE model calibration focuses on ensuring the key RUE model parameters and calibration factors are appropriate for specific conditions. The costs borne by the user of the road users at large in different forms are combined here to reflect the road user effects. In HDM 4 RUE have the following components:
Motorised vehicle (MT) speed, operating costs and travel time. Motorised vehicle speed and operating costs are determined as a function of each vehicle type and characteristics, road geometry, surface type, condition of the under free flow and congested traffic conditions. The vehicle operating cost (VOC) includes the components like, fuel consumption, lubricating oil consumption, tyre wear, parts consumption, maintenance labour hours, depreciation, interest, crew hours and overheads.

Travel time costs include passenger hour during and working and non-working and cargo holding hours. Travel time costs are expressed more appropriately only in economic terms. Additional costs due to impassability of seriously damaged unsealed roads are also included in the total amount of motorised user cost.

Non-motorised vehicle (NMT) speed and operating costs - The speed of non-motorised vehicle affect speed of motorised vehicle and thereby has impact on vehicle operation costs of motorised vehicle. In HDM4, impact of NMT on MT, NMT speeds and NMT operation costs have been modelled.

Road safety - includes accident rates and the unit cost of accident. The components of RUC that are considered at present are vehicle-operating cost, travel time cost and accident cost. These are quantified through field surveys such as vehicle operator survey, passenger and freight time cost survey etc. Quantification and costing of different components of RUE model are important and can help to carry out more accurate and effective economic analysis.
**OP/HDM/3.1 - Calibration of HDM model**

**RD MODELS**
- Crack initiation and progression
- Ravelling initiation and progression
- Potholing initiation and progression
- Edge-break
- Rut depth
- Roughness progression
- Texture depth
- Skid resistance

**WE MODELS**
- Effects of different kinds of maintenance
  (Routine, periodic, Improvement etc.)
- Resets pavement conditions after maintenance
- Uses Road works standards and maintenance strategic

**Vehicle operating speed and cost model (VOC)**
- Vehicle speed, traffic congestion, acceleration noise effects
- Fuel consumption, Lubricating oil consumption, Vehicle operating Tyre consumption, vehicle speed and cost utilisation and service life, model (VOC) parts consumption, labour hours, capital costs, Crew hours, overhead costs

**RUE MODELS**
- Passenger travel time
- Cargo holding time rave

**Travel time cost**

**Accident cost**
- Accident rates
  Types of accidents
  Assessment of accident cost

- Energy balance analysis
  * Energy used by MT vehicles
  * Energy used by NMT vehicles
  * Energy used during construction and Maintenance
- Vehicle emission
  * Types of pollutants
  * Relationship
4.3 Procedure

The procedure for carrying out the calibration of the roughness progression equation is used as an example. Other progression equations in HDM are calibrated using the same procedure.

The following steps should be undertaken to carry out a Level 2 calibration:

1. Site selection:
   a) Select roads having several years' roughness data but no maintenance work done
   b) Roads should have correct traffic data.
   c) Roads should have correct condition data of several years
   d) Select roads having different level of traffic, surface type and road class.

2. The Calibration Worksheet

Open the Excel spreadsheet named: Calibration Template.xls

Rename to Calibration Template.xls to a name that describes the site from which the data comes for example: 001.xls

3. Data Entry

Open the calibration spreadsheet and fill out the following cell’s:

<table>
<thead>
<tr>
<th>Site ID</th>
<th>Sect. ID</th>
<th>Sect. Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>SITE001.0</td>
<td>Link3. Ch:36 to 37</td>
<td>Daudkandi-Mainamati Road (AC)</td>
</tr>
</tbody>
</table>

Then enter the annually roughness data in the appropriate fields in column B:

(Values for this example are: 3.40 – 2.70 – 3.10 – 3.60 for the years indicated in column A)

Roughness

(2) Enter Date and Average Roughness Information

<table>
<thead>
<tr>
<th>Survey Date</th>
<th>Avg Roughness (IRI)</th>
<th>Roughness (IRI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>31/12/97</td>
<td>3.40</td>
<td>3.4</td>
</tr>
<tr>
<td>31/12/98</td>
<td>2.70</td>
<td>2.7</td>
</tr>
<tr>
<td>31/12/99</td>
<td>3.10</td>
<td>3.1</td>
</tr>
<tr>
<td>31/12/00</td>
<td>3.60</td>
<td>3.6</td>
</tr>
</tbody>
</table>

To carry out the calibration press the “Update Cycle1” and “Update Cycle2” buttons.

The built in macros in the spreadsheet will now adjust the factors in the roughness progression equation to give the best fit to the data entered.

On the picture below shows the Initial (blue line) and the revised roughness prediction for site 001.0, as it can be seen the predicted roughness now match the measured roughness with time.
The roughness progression factor $K_{gm}$ (revised) is then to be entered into the HDM-4 software.

**New Calibration Factors**

<table>
<thead>
<tr>
<th></th>
<th>Initial</th>
<th>Revised</th>
</tr>
</thead>
<tbody>
<tr>
<td>$K_{cia}$</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>$K_{cpa}$</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>$K_{gm}$</td>
<td>1,45</td>
<td>0,8</td>
</tr>
<tr>
<td>$K_{gp}$</td>
<td>0,61</td>
<td>0,8</td>
</tr>
<tr>
<td>$K_{rdid}$</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>$K_{rdst}$</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>$K_{rdpd}$</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Cracking Initiation (All Cracks)
Cracking Progression (All Cracks)
Roughness age-environment factor
Roughness Progression factor
Rut depth initiation factor (densification)
Rut depth structural deformation
Rut depth plastic deformation

A detailed description of the roughness progression equation can be found in Reference No. 8 from page B9-1 onwards and will not be further discussed in this procedure.

A similar procedure to the one described above is to be used for calibration of the other progression factors in HDM-4.

**REFERENCES**


5. RMMS database, HDM Circle: Roads and Highways Department, Bangladesh


6 PROCEDURE FLOWCHART

The procedure flowchart for this procedure is detailed on the next page.
Start

Collect RUE Data
(EE Economic Circle)

Collect RDWE Data
(EE HDM O. D.)

Data analysis & report
(EE Economic Circle)

Data analysis & report
(EE HDM O. D.)

Submit draft report
(EE HDM O. D. & EE Economic Circle)

Comments
(SE HDM Circle)

Calibration report

Finalise report
(EE HDM O.D. & EE Economic Circle)

Update HDM-4 RUE & RDEW models
(EE HDM O. D.)

End
1 PURPOSE AND SCOPE

The purpose of this procedure is to describe how to prepare the Annual Road Maintenance and Rehabilitation Needs Report, which is mainly a prioritised list of roads (showing road no, link no, name, type of treatment required etc) to be prepared by the Operations Division of the HDM Circle.

The scope of this procedure will extend up to the offices in zones, wings, projects where the Annual Road Maintenance Plan are to be dealt with.

2 DEFINITIONS

**Annual Road Maintenance and Rehabilitation Needs Report:** It is a plan showing the prioritised list of roads for the whole of road network of RHD produced by using HDM Model. The list includes routine, periodic and improvement works prioritised on the basis of npv/cost ratio.

**HDM-4:** It is computer software for Highway Development and Maintenance Management System. It is a decision making tool for checking the engineering and economic viability of the investments in road projects. The World Bank has developed it for use in the developing countries and the annual Road Maintenance Plan is produced with the help of HDM-4.

3 RESPONSIBILITIES

**Superintending Engineer – HDM Circle** – Responsible for instigating the instructions to carry out the annual road network maintenance and rehabilitation needs report using HDM-4 as the, and approves the report.

**Executive Engineer – HDM Operation Division** – Responsible for carrying out the calibration of the RDWE and RUE models in HDM-4. Is responsible for the collection of data and for preparing the calibration report for the SE’s approval. EE will assign SDE and AE to complete tasks as necessary.

4 METHOD

4.1 PREPARATION OF NEEDS REPORT

1. Latest data for the network is used.

2. Details of works in the current year obtained from Monitoring Circle, Foreign Aided Projects and Maintenance Circle.

3. Affected sections flagged in the database for no inclusion in this years report.
The RMMS will now produce the HDM-4 input file. The file is imported to HDM-4, VOC data is updated in HDM-4 and the analysis can now be run as follows:

4. Run HDM with existing data
   • unconstrained budget for the analysis period;
   • constrained budget for the first 5 years equal to the average of the first 5 years unconstrained budget run and unconstrained budget for the remaining analysis period;
   • constrained budget for the first 5 years equal to 75% of the average for the first 5 years unconstrained budget run and unconstrained budget for the remaining analysis period;
   • constrained budget for the first 5 years equal to 50% of the average for the first 5 years unconstrained budget run and unconstrained budget for the remaining analysis period;
   • constrained budget for the first 5 years equal to 25% of the average for the first 5 years unconstrained budget run and unconstrained budget for the remaining analysis period;
   • same procedure as described above is performed using a 3 year period.

5. Prepare graphs showing the implication on the condition (roughness) of the road network of different levels of budgets.

6. In the maintenance and rehabilitation needs report make separate chapters for sections to be included in the ADP, PMP and routine programs.

5 REFERENCES

HDM User Manual - various technical manuals produced by Birmingham University.

6 PROCEDURE FLOWCHART

The Procedure flowchart for this procedure is detailed on the next page.
RHD Operational Procedure – Planning & Maintenance Wing

OP/HDM/3.2 - Preparation of Annual Road Maintenance and Rehabilitation Needs Report

HDM Circle – HDM Operation Division

- RMMS
- Survey data recorded and processed

- Monitoring Circle inform HDM Circle about ongoing projects
- Identify ongoing PMP & ADP projects and flag in database
- Annual Road Network Condition Report
- Prepare input file for HDM run
- Run HDM
  - Unconstrained budget run
  - 3 & 5 years constrained maintenance needs based on the unconstrained run (long lists)
- Update VOC and Unit rates for works

- Prepare 3 & 5 years budget forecasts for MoC and MoF inclusive graphs to explain the implication of increasing or decreasing the budget allocation
- Proposed long list work plan for first year
- Annual Road Networks Maintenance and Rehabilitation Needs Report

- Split long list into a long list for ADP & PMP Projects

- Long list for ADP projects to Planning and Programming Circle
- List of roads to receive Routine Maintenance
- Long list for PMP projects to Maintenance Circle
1 PURPOSE AND SCOPE

This procedure describes the annual road data survey procedure for work carried out by RHD field offices or by Consultants. Bridge surveys is to be carried out by the Bridge Wing, see procedure OP/BPD/2.1.

2 DEFINITIONS - None.

3 RESPONSIBILITIES

Additional Chief Engineer – Planning & Maintenance Wing – approves the method the survey should follow (in-house or out sourced).

Superintending Engineer – HDM Circle – Responsible for instigating the instructions to carry out the annual surveys.

Executive Engineer – Data Collection Division – Responsible for carrying out the Terms of Reference, Engineers estimate and bidding documents for the surveys to be carried out either by RHD field offices or Consultants. He is responsible for (in case of out sourcing) advertising the tender in the newspapers, for distribution of bidding documents, reporting to the SE the result of the bidding process and for recommendation of the consultants to carry out the work. Contract negotiation and supervision of work.

4 METHOD

4.1 SURVEY REQUIREMENTS

The Executive Engineer - Data Collection Division identifies the annual surveys to be carried out.

4.2 WHO DOES THE SURVEYS

SE - HDM Circle decides in consultation with ACE - Planning & Maintenance Wing if the work should be done by consultants or by RHD staff.

4.3 SURVEY BY CONSULTANTS

SE and EE decide the types of survey to be carried out.

EE is responsible for the preparation of bidding documents including an Engineers Estimate.
If the value of the surveys to be carried out is in excess of one crore taka a proposal is made for the approval of MoC.

When approved by MoC the EE invites consulting firms to bid on the surveys.

The Consultants carry out the surveys under supervision of the Data Collection Division.

The Consultants deliver to HDM Circle the results in the format used by RMMS database.

EE-database validates the data received, in case of incorrect data the Consultants are requested to correct the data.

4.4 **SURVEY BY RHD STAFF**

The EE-Data Collection Division instructs the field offices to carry out the required surveys.

Field offices carry out the required surveys and send EE-Database the raw survey sheet after validation of the collected data.

Database Division enters the data into the RMMS database.

Database Division validates the data entered and where discrepancies are found they are either cored based on the received field sheets or the field office is requested to clarify and correct.

5 **REFERENCES**

- RHD Road Condition Survey manual
- RHD Classified Traffic Count Survey manual
- RHD Pavement Inventory and DCP Survey Manual
- RHD Road Roughness Survey manual
- RHD Benkelman Beam Survey manual
- RHD Axle Load Survey manual
- RHD Bridge Condition Survey Manual
- RHD New Contract Documents

6 **PROCEDURE FLOWCHART**

The procedure flowchart for this procedure is detailed on the next page.
DATA:
- Inventory
- Condition
- Traffic Count
- Axle load
- Benkelman Beam
- DCP
- Test Pits
- Roughness

Decision which survey to be carried out in the year

By Consultants
HDM Circle prepare estimate and bid documents

Value of survey > 1 crore taka

Yes

Approved by MoC

No

Approved by CE

RHD engage consultants who carry out the survey and enter the data into RMMS database

If value of survey > 1 crore taka, proceed to Approved by MoC. Otherwise, proceed to Approved by CE.

By RHD
Request the RHD field offices to carry out required surveys

Fields offices carry out required surveys and submit data to HDM Circle

HDM Circle enter data into RMMS database and validate data

Data OK

Yes

Prerequisite for preparation of RHD annual Road Maintenance & Rehabilitation Needs Report (See OP/HDM/3.2)
Publication of RHD Road Network Database Annual Report (See OP/HDM/4.3)

No

End
1 PURPOSE AND SCOPE

This procedure covers the management process for the preparation of budget proposals for routine and periodic maintenance of the RHD road network.

2 DEFINITIONS

Annual RHD Road Network Maintenance & Rehabilitation Needs Report – an annual report containing the prioritised listing of routine and periodic maintenance for the RHD road network based on the HDM-4 computer model.

RHD Revenue Budget – the revenue funding allocated to RHD by the Ministry of Finance

Annual Development Programme (ADP) – is the operational document of the GoB’s 5-year plan and includes all types of GoB funded and foreign aided projects that are ongoing or newly included. The ADP consists of the annual investment programme, which is sub-divided into the different Government sectors. The ADP is published in June and is available to the public.

3 RESPONSIBILITIES

Additional Chief Engineer – Planning & Maintenance Wing (ACE-PMW) – reviews the budget proposals for routine and periodic maintenance prepared by Maintenance Circle based on the output of HDM-4 and recommends it for approval by the CE/RHD.

Superintending Engineer – Maintenance Circle (SE-MC) – prepares the budget proposals for routine and periodic maintenance mainly based on HDM Circle’s Annual RHD Road Network Maintenance & Rehabilitation Needs Report.

Superintending Engineer – HDM Circle (SE-HDM) – responsible for the preparation of the Annual RHD Road Network Maintenance & Rehabilitation Needs Report based on the HDM-4 computer model.

Additional Chief Engineers – Zones (ACE-Z) – responsible for advising SE/MC of required improvements to the road network that should be considered for inclusion under the revenue budget for routine and periodic maintenance.

4 METHOD

4.1 PROGRAMME FOR THE PRODUCTION OF THE ANNUAL RHD ROAD NETWORK MAINTENANCE & REHABILITATION NEEDS REPORT

As soon as possible after the issuance of the Annual Development Programme in June each year, SE-MC should liaise with SE-HDM with respect to the production of the Annual RHD Road Network
Maintenance & Rehabilitation Needs Report for the next financial year. This must be produced during the next nine months i.e. by 1st April of the following year.

SE-MC should obtain written confirmation from SE-HDM that HDM Circle have adequate resources to produce the Report by this deadline, and if not the measures that are needed to be taken to rectify this situation.

SE-HDM should prepare a programme for necessary field surveys needed to run the HDM–4 model and should ensure receipt of economic or other data required from the various Wings and Zones of RHD as input to the model.

4.2 Input Data from Wings and Zones

The Annual RHD Road Network Maintenance & Rehabilitation Needs Report is primarily based on the prioritised routine and periodic road maintenance costs identified in HDM-4. In addition to this there is a requirement for routine and periodic maintenance costs for bridges and culverts and minor improvements to the road network for safety reasons that should be considered as part of this Report.

SE-MC should obtain budget proposals from all Wings and Zones of RHD for input to the Report and advise SE-HDM accordingly. At the same time SE-MC should confirm with the Wings and Zones the timing of, and any changes to, the committed projects within the Annual Development Programme.

4.3 Preparation of Annual RHD Road Network Maintenance & Rehabilitation Needs Report

Although SE-HDM will be responsible for the production of the Annual RHD Road Network Maintenance & Rehabilitation Needs Report, SE-MC should periodically liaise with him to confirm the data collection and running of the HDM-4 model are being undertaken according to the agreed programme. Specifically, during February/March SE-MC should obtain and review preliminary runs of the HDM-4 model to confirm that, subject to any further iteration, the Annual RHD Road Network Maintenance & Rehabilitation Needs Report will be ready by 1st April.

4.4 Prepare Budget Proposals for Routine and Periodic Maintenance

Based on the Annual RHD Road Network Maintenance & Rehabilitation Needs Report, and having regard to the approved budget for the current year, SE-MC should prepare a budget requirement for the next financial year for routine and periodic maintenance. Subject to amendment and subsequent approval by ACE-PMW and CE-RHD this would form the basis of the RHD Revenue Budget Allocation Proposal to MoC/MoF.
5 REFERENCES

OP/HDM/3.2 – Preparation of Annual Road Maintenance & Rehabilitation Needs Report

Annual Development Programme

RHD Revenue Budget Allocation

6 PROCEDURE FLOWCHART

The procedure flowchart for this procedure is detailed on the next page.
Agree programme for production of Annual RHD Road Network Maintenance & Rehabilitation Needs Report (SE-MC)

Advise HDM Circle of committed projects and required safety / minor improvements (SE-MC)

Annual RHD Road Network Maintenance & Rehabilitation Needs Reports

Run HDM model for alternative investment cases and prepare ARMP (SE-HDM)

Field survey and economic data

Bridge maintenance requirements OP/BPD/3.1

Prepade budget proposals for routine and periodic maintenance (SE-MC)

Budget request to MoC/MoF

Yes

Approval (ACE-PMW)

No

Yes

Approval (CE-RHD)

No

End
1 PURPOSE AND SCOPE

This procedure covers the process for determining budget allocations for routine and periodic maintenance from the approved RHD Revenue Budget Allocation.

2 DEFINITIONS

RHD Revenue Budget – the revenue funding allocated to RHD by the Ministry of Communications.

Annual RHD Road Network Maintenance & Rehabilitation Needs Report – an annual report containing the prioritised listing of routine and periodic maintenance for the RHD road network based on the HDM–4 computer model.

3 RESPONSIBILITIES

Additional Chief Engineer – Planning & Maintenance Wing (ACE-PMW) – is responsible for submitting the budget proposals for routine and periodic maintenance prepared by Maintenance Circle based on the output of HDM-4.


Executive Engineer – Periodic Maintenance Division (EE-PMD) – responsible for assisting SE/MC in the preparation of budget proposals for periodic maintenance.

Executive Engineer – Routine Maintenance Division (EE-RMD) – responsible for assisting SE/MC in the preparation of budget proposals for routine maintenance.

4 METHOD

4.1 REVISIONS TO RHD REVENUE BUDGET ALLOCATION PROPOSALS

The procedure for identifying the RHD revenue budget requirements for routine and periodic maintenance of the road network is described in OP/MC/1.1. These requirements take the form of a request (or bid) for funding from the Ministry of Finance in competition with other departments/sectors. As a result, it follows that RHD in common with other departments is unlikely to receive the entire funding that it has requested in any particular financial year.
Accordingly, upon notification by MoC of the RHD Revenue Budget Allocation approved by the Ministry of Finance for the financial year, SE/MC will need to re-assess the works that can be undertaken within the allocated budget.

Having regard to the fixed overheads of RHD operations (salaries, buildings, vehicles, etc.) and the paramount importance of routine maintenance of the road network, it follows that any reduction necessary in the RHD requested budget should be concentrated on the proposed periodic maintenance works rather than pro rata on every item in the revenue budget proposals.

The re-allocation of the approved revenue budget between budget heads and Zones will be an iterative process between SE-MC and ACE-PMW until such time as a balance is struck between the equitable distribution of funds between Zones and the national interest in undertaking those projects with the highest economic return (i.e. npv/cost).

4.2 APPROVAL OF RHD BUDGET ALLOCATION FOR ROUTINE AND PERIODIC MAINTENANCE

Following agreement between SE-MC and ACE-PMW to the allocation of funds for routine and periodic maintenance, the revised budget allocations will require the approval of CE-RHD, MoC, and the Ministry of Finance. Specifically, both MoC and the Finance Ministry require to approve the actual distribution of the total revenue budget against specific coded items under revenue head which includes periodic maintenance works that are to be carried out within the financial year, routine maintenance work, staff salaries, operation and maintenance of inspection vehicles and other machinery, ferry operations etc.

Following approval of the distribution of the revenue budget grant among different aforesaid coded items (heads) by the Ministry of Finance and communicated to RHD through the Ministry of Communication, SE-MC prepares the distribution list of the available fund excluding the fund earmarked for Periodic Maintenance Programme (PMP) among different offices including field divisions under field zones. After approval of CE-RHD, this distribution list is circulated among all concerned for utilisation of the fund according to the approved programmes.

5 REFERENCES

OP/HDM/3.2 – Preparation of Annual Road Maintenance & Rehabilitation Needs Report
Annual Development Programme
RHD Revenue Budget Allocation

6 PROCEDURE FLOWCHART

The procedure flowchart for this procedure is detailed on the next page.
OP/MC/1.2 - Budget Allocation for Routine and Periodic Maintenance

Start

Revise RHD Revenue Budget Proposals (SE-MC)

RHD Revenue Budget Allocation from Moc

Prepare Budget Allocation for Routine Maintenance for each Zone (EE-RMD)

Prepare Budget Allocation and schedule for periodic maintenance projects for each Zone (EE-PMD)

CE Approval

No

MoC Approval

No

Finance Ministry Approval

Yes

Yes

Prepare Final Budget Allocation for Routine Maintenance for each Zone (EE-RMD)

Prepare Final Budget Allocation for Periodic Maintenance for each Zone (EE-PMD)

CE Approval

End
1 PURPOSE AND SCOPE

This procedure covers the process for the preparation of the RHD Annual Routine Maintenance Programme based on the approved budget for this work within each zone.

2 DEFINITIONS

Annual RHD Road Network Maintenance & Rehabilitation Needs Report – an annual report containing the prioritised listing of routine and periodic maintenance for the RHD road network based on the HDM-4 computer model.

Budget Allocation for Routine Maintenance – the proportion of the RHD Annual Revenue Budget Allocation from the Ministry of Finance and subsequent distribution of fund among divisions that has been assigned to routine maintenance

Routine Maintenance – Routine maintenance includes day-to-day repair of the roads, bridges and culverts to keep the road traffic worthy. The common routine maintenance activities are the repair of potholes, crack sealing, repair of edge drop, grass cutting, repair of cross drainage, flanks dressing, minor repair to bridge/culvert, sign/signals and approaches to ferry ghat etc. Routine Maintenance also includes minor periodic maintenance as defined in OP/MC/3.1.

3 RESPONSIBILITIES

Additional Chief Engineer – Planning & Maintenance Wing (ACE-PMW) – responsible for planning and monitoring both the routine and periodic maintenance of the RHD road network.

Superintending Engineer – Maintenance Circle (SE-MC) – responsible for the preparation of the division-wise draft fund distribution list for routine maintenance works including overhead costs like staff salaries, operation and maintenance of inspection vehicles/machinery etc.

Executive Engineer – Routine Maintenance Division (EE-RMD) – responsible for the preparation/compilation of the Annual Routine Maintenance Programme for the RHD road network provided by the zones.

4 METHOD

4.1 GENERAL

Routine maintenance of the paved road network within Zones is undertaken by RHD Divisions and sub-Divisions using a direct labour force under the supervision of RHD engineers. The budget allocation to
each Zone for routine maintenance is intended to cover the cost for roads, bridges/culverts and approaches to ferry ghat.

4.2 PREPARATION OF ROUTINE MAINTENANCE PROGRAMME

The RHD Annual RHD Road Network Maintenance & Rehabilitation Needs Report includes a prioritised listing of the roads that have been identified as in need of routine maintenance for each Circle/Division within all Zones. For each road the listing will contain:

Road name
Link number
Length and chainage (from/to)
Routine maintenance treatment required

SE-MC will request the ACE for each Zone to submit the prioritised programme for routine maintenance works of each road division against each road within individual divisional jurisdictions within the allocated fund for respective divisions for the routine maintenance works. Each zone will be supplied with the relevant section of the Annual RHD Road Network Maintenance & Rehabilitation Needs Report.

On the basis of this plan and the updated field condition reports, each division will be required to assess the optimum quantity of repair works to be delivered against major routine maintenance activities within the allocated fund. To obtain timely responses the requests from Maintenance Circle should be processed through the office of the Chief Engineer RHD in the form of an Office Order giving the ACE Zones one month to reply.

4.3 PREPARATION OF ANNUAL ROUTINE MAINTENANCE PROGRAMME

Upon receipt of the requested information, EE-RMD should compile a consolidated road wise programme showing major repair activities for routine maintenance for the entire RHD network, broken down into zones, circles and divisions. This programme should be submitted by EE-RMD to CE-RHD through SE-MC and ACE-PMW for approval. Once approved the Annual Routine Maintenance Programme should be forwarded by SE-MC to the ACE for each Zone together with others on the approved circulation list and posted on the RHD web site by MIS Circle.

5 REFERENCES

Annual RHD Road Network Maintenance & Rehabilitation Needs Report
Annual Budget Allocation for Routine Maintenance
Circulation list for budget allocation

6 PROCEDURE FLOWCHART

The procedure flowchart for this procedure is detailed below.

```
Start

Forward relevant section of annual maintenance needs report and budget allocations to ACE-Zones (EE-RMD)

Prepare consolidated routine maintenance programme for RHD Network (EE-RMD)

CE-RHD Approval

Yes

Annual Routine Maintenance Programme

No

Prioritised programme for routine maintenance (ACE-Zones)

Forward Annual Routine Maintenance Programme to Zones + MIS Circle (SE-MC)

End
```
1 PURPOSE AND SCOPE

This procedure covers the process to be adopted by Routine Maintenance Division within Maintenance Circle in the event of a major incident occurring within any of the Zones. While this procedure focuses on response to flood damage it applies equally to RHD’s response to other emergency situations.

2 DEFINITIONS

Major Incident – can be any event that results in the closure of a road for an indefinite period due to damage, or renders it unsafe for use by the public.

Emergency Works – works carried out on an emergency basis by a Zone to enable the road to be re-opened after a major incident.

Flood information Cell – An emergency cell operating for 24 hours per day during period of flooding in Sarak Bhaban under Routine Maintenance Division to receive information of flood damages in different zones.

3 RESPONSIBILITIES

Executive Engineer – Routine Maintenance Division (EE-RMD) – responsible for maintaining the records on major incidents and notifying all those concerned including MIS Circle for updating RHD web site. He will also compile reports and budget estimates for damages for CE-RHD and MoC.

Executive Engineers – Field Divisions (EE-FD) – responsible for reporting major incidents to EE-RMD, supervising emergency works and preparing reports and estimates for permanent rehabilitation works.

4 METHOD

4.1 MAJOR INCIDENT REPORTING GUIDE

A Major Incident Reporting Guide has previously been prepared and is attached as an Appendix to this Procedure. EE-RMD should ensure that all divisions in the Zones have hard copies of this Guide, that it is placed on the RHD database and that a programme of training of divisional engineers is undertaken in the use of the reporting forms.
4.2 MAJOR INCIDENTS REPORTED BY ZONES

When major incidents occur they must be reported to EE-RMD by the relevant EE-Z at the earliest opportunity. Although notification is likely to be made by telephone in the first instance EE-RMD must insist that the EE-Z provides the required information on form IR-1 in the attached Appendix as soon as possible, and at the very latest by the end of the day on which the incident occurred.

Upon receiving notification of a major incident EE-RMD should immediately notify ACE-PMW. When EE-RMD receives the completed (or partially completed) form IR-1 for the incident he notify MIS Circle for them to update the RHD database for major incidents.

4.3 EMERGENCY WORKS

At the earliest opportunity after a major incident has occurred the relevant ACE-Z will authorize emergency works with a view to making the site safe and / or enable the road to be re-opened. The EE-FD must notify EE-RMD as soon as the road is re-opened who in turn must immediately notify ACE-PMW together with any other organisations that were previously notified of the road closure,

Upon completion of the emergency works the EE-FD should provide EE-RMD with details of the emergency works carried out on form IR-2 in the attached Appendix, whereupon EE-RMD should inform MIS Circle for them to update the RHD database with this information.

4.4 POST – INCIDENT REHABILITATION ASSESSMENT

Based on the information provided in form IR-1, EE-RMD will prepare and forward to the EE-Z the post-incident rehabilitation form IR-3 for completion. Where the damage to a road or bridge indicates that major costs will be incurred for rehabilitation, CE-RHD may require an independent survey to be undertaken to verify the rehabilitation works involved.

Upon receipt of the completed form IR-3, and verification survey if necessary, EE-RMD should prepare a report for submission to CE-RHD through ACE-PMW containing an estimate for the rehabilitation works.

Depending on the scale of works involved CE-RHD will refer the matter to MoC for additional maintenance grant.

4.5 IMPLEMENTATION OF REHABILITATION WORKS

Upon approval to the budget estimate for the rehabilitation works the relevant ACE-Z will arrange for the design and implementation of the works in accordance with standard Operational Procedures, and upon completion EE-RMD will update the RHD database accordingly.
5 REFERENCES

Major Incident Reporting Guide to Inspections & Surveys (MoC) (August 2002).

6 PROCEDURE FLOWCHART

The procedure flowchart for this procedure is detailed on the next page.
Start

Add Major Incident Reporting Guide to RHD database (MIS Circle)

Provide Major Incident Reporting Guide to Zones (EE-RMD)

Training for divisional engineers at RHD Training Centre (RHDTLC)

Notify ACE/PMW, MIS Circle and emergency services if road closed (EE-RMD)

Major Incident Reported by Zone (EE-FD)

Emergency works authorised (ACE-Zone)

Notify ACE/PMW, MIS Circle and emergency services if road re-opened (EE-RMD)

Emergency Works Report (EE-FD)

Post Incident Rehabilitation Assessment Needs Report (EE-FD)

Arrange independent survey for major works if required by CE/RHD (EE-FD)

Prepare report to CE/RHD for budget approval (EE-RMD)

ACE-PMW

ACE-Zone

CE-RHD

MoC

End

Implement Works within CE/RHD approval limits (ACE-Zone)

Implement major works requiring MoC budget approval (ACE-Zone)

Update database on major incidents (MIS Circle)
1 PURPOSE AND SCOPE

This procedure covers the process for the preparation of the RHD Annual Periodic Maintenance Programme based on the approved budget for this work and the schedule of roads requiring this treatment contained in the Annual RHD Road Network Maintenance & Rehabilitation Needs Report.

2 DEFINITIONS

Annual RHD Road Network Maintenance & Rehabilitation Needs Report – a report containing a prioritised list of roads for the whole of the RHD network using the HDM 4 model. The Report includes routine maintenance, periodic maintenance and rehabilitation/reconstruction works needed to be done on different sections of roads prioritised on the basis of the net present value to cost ratio of the proposed individual works.

Budget Allocation for Periodic Maintenance – the proportion of the RHD Annual Revenue Budget Allocation from the Ministry of Finance that has been assigned to major periodic maintenance.

Periodic Maintenance Programme (PMP) – comprises the different types of surface treatments to be applied periodically on the existing pavement to increase the longevity of the pavement as well as to improve the quality of the riding surface. The treatments include premixed bituminous overlay by machine or hand laid method and machine laid DBST or SBST to existing roads.

3 RESPONSIBILITIES

Additional Chief Engineer – Planning & Maintenance Wing (ACE-PMW) – responsible for planning and monitoring the large-scale periodic maintenance works of the RHD road network.

Superintending Engineer – Maintenance Circle (SE-MC) – responsible for the preparation of the Budget Allocation proposal for Annual Periodic Maintenance Programme (PMP) and subsequent activities in connection with procurement of PMP contracts.

Executive Engineer – Periodic Maintenance Division (EE-PMD) – responsible for assisting the SE/MC in the preparation of the contract packages for the Annual Periodic Maintenance Programme including pre-qualification of contractors and selection of contractors for PMP packages.

Executive Engineers – Field Divisions (EE-FD) – responsible for the field verification of contract packages and the preparation of Engineer’s Estimates for these works.
4  METHOD

4.1  GENERAL

Of the total maintenance programme in RHD, Routine maintenance of the paved road network within Zones is undertaken by RHD Field Divisions and sub-Divisions using a direct labour force under the supervision of RHD field engineers. The budget allocation to each Zone for maintenance is intended to cover the overhead costs (salaries, vehicles, buildings, etc.) for each Zone together with the operating costs for routine maintenance in terms of maintenance equipment, labour, materials and fuel.

In addition to routine maintenance by direct labour the field divisions are responsible for the procurement of contractors to undertake periodic maintenance of the road network for which there are two budget allocations:

(i) Minor Periodic Maintenance - unspecified minor works (i.e. not included in the Annual RHD Road Network Maintenance & Rehabilitation Needs Report) that are identified by the field divisions during regular inspections of the road network, which forms part of routine maintenance.

(ii) Major Periodic Maintenance – planned major works that have been included in the large scale Periodic Maintenance Programme (PMP) based on the Annual RHD Road Network Maintenance & Rehabilitation Needs Report.

4.2  PREPARATION OF PERIODIC MAINTENANCE PROGRAMME

Based on the Annual RHD Road Network Maintenance & Rehabilitation Needs Report prepared by the HDM Circle, SE-MC with the assistance of EE-PMD will prepare a tentative PMP programme for the next fiscal year after selecting the appropriate candidate sections of the road network in recognition of the available budget allocation and giving due consideration to rational regional resource distribution, ensuring a balanced economic approach in selection of candidates/types of surface treatment in order to cover the optimum length with the limited fund, location of similar works done in previous years or planned to be carried out in subsequent years through either GOB or foreign aided projects and so on. For each road the listing will contain:

- Road name
- Link number
- Length and Chainage (from / to)
- Periodic maintenance treatment required
The next step will be the preparation of the proposed list of contract packages out of the list of selected candidate road sections giving due consideration to the size of the packages so that wider participation by contractors is encouraged.

Following this will be field verification of the proposed package sections to assess the suitability of the various treatments and to assess the extent of necessary surface preparation (levelling course) and ancillary works as input to the preparation of the Engineer's Estimate for each package.

The final step will be finalisation of the Engineer's Estimate for each package following the field verification and concurrence by the field officials, and on this basis the PMP for the next year will be finalised both in terms of costs and locations.

5 REFERENCES

Annual Road Maintenance & Rehabilitation Needs Report

Annual Budget Allocation for Periodic Maintenance

6 PROCEDURE FLOWCHART

The procedure flowchart for this procedure is detailed on the next page.
Start

Prepare draft RHD periodic maintenance programme (SE/MC)

Prepare list of contract packages (cost and treatment) (SE/MC and ACE/PMW)

Yes

Send to Zones for verification and preparation of BQs (SE/MC)

Field inspections & preparation of Engineer's Estimates for each periodic maintenance work package within Zones (EE/FD)

Prepare zonal programme for periodic maintenance including works estimates and submit to SE/MC (ACE/Z)

Yes

Random field verification of works packages that exceed budget (EE/PMD)

No

Confirm zonal programmes are within budget (EE/PMD)

Combine periodic maintenance programmes from Zones and submit to ACE/PMW for approval (EE/PMD)

Approval (ACE/PMW)

RHD Periodic Maintenance Programme

Notify Zones of the approved periodic maintenance programme for their Zone (EE/PMD)

End
1 PURPOSE AND SCOPE

This procedure describes the process for reviewing feasibility study reports completed outside the Economic Circle. This will include all donor funded projects and those GOB projects not approved directly by the Circle. The Circle will ensure that the reports are consistent with GOB appraisal guidelines.

2 DEFINITIONS

Feasibility Study Reports – Any report completed by a consultant or other Government agency that assesses the feasibility of investing in the maintenance or development of the RHD road and bridge network.

3 RESPONSIBILITIES

Chief Transport Economist - Economics Circle (CTE) – controls and authorises process

Executive Transport Economist - Feasibility Studies Division (ETE-FSD) – conducts review

Assistant Transport Economist - Feasibility Studies Division (ATE-FSD) – collects any information (from secondary sources) needed to verify report

4 METHOD

4.1 REQUEST RECEIVED TO REVIEW FEASIBILITY STUDY

The request will usually be addressed to the CTE from the MOC. Once received the CTE will organise the FSD to conduct the review within the requested timeframe.

4.2 REVIEW OF STUDY

The ETE-FSD will review the study to ensure that it complies with GOB guidelines. This will include checking for mathematical accuracy; suitability and adequacy of data used including construction costs, maintenance costs, road user costs and traffic data; suitability of appraisal process and robustness of results.

4.3 PRODUCE REVIEW REPORT

The review will be written up in a short review report by the ETE-FSD and approved by the CTE. Once approved this will be submitted to the requestor for necessary action.
5 REFERENCES

Bangladesh Bureau of Statistics publications (e.g. Statistical Yearbook)

GOB Appraisal Guidelines- forthcoming under CIDC3

Annual Road User Cost Report, Economics Circle

RHD Road Network Database Annual Report, (Planning & Maintenance Wing)

6 PROCEDURE FLOWCHART

The procedure flowchart for this procedure is detailed below.
1 PURPOSE AND OBJECTIVE

This procedure describes the process for the provision of economic data to RHD and Donors that occurs according to routine and ad hoc requests. This usually requires the collation and presentation of secondary data from RHD and non-RHD sources related to road & road transport development.

2 DEFINITIONS

Economic Data – Any data that is relevant to road sector economic planning according to the needs of other parties.

3 RESPONSIBILITIES

Chief Transport Economist - Economics Circle (CTE) – controls and authorises process

Executive Transport Economist - Economic Policy & Planning Division (ETE-EEPD) – identifies data sources and processes data

Assistant Transport Economist - Economic Policy & Planning Division (ATE-EEPD) – collects information and assists with processing

4 METHOD

4.1 REQUEST RECEIVED TO PROVIDE DATA

The request will usually be addressed to the CTE. Once received the CTE will organise the EPPD to provide the data within the requested timeframe.

4.2 PREPARATION OF DATA

The ETE-EPPD will identify data sources and organise the collection of the required data from RHD and other secondary sources. Once collected the data will be reviewed and necessary adjustments made to present it in the format specified in the request.

4.3 PRODUCE DATA REPORT

The data be presented as a report by the ETE-EPPD and approved by the CTE. Once approved this will be submitted to the requestor for necessary action.

5 REFERENCES

Bangladesh Bureau of Statistics publications (e.g. Statistical Yearbook)

GOB Appraisal Guidelines- forthcoming under CIDC-3
Annual Road User Cost Report, Economics Circle
RHD Road Network Database Annual Report, (Planning & Maintenance Wing)

6 PROCEDURE FLOWCHART

The procedure flowchart for this procedure is detailed below.

Start

Request Received to Provide Data (CTE)

Preparation of Data (EE-EPPD)

Data from secondary sources

Data Report

Submit to Requestor

End

Approve (CTE) No MoC/other GoB agencies/ Donors

Produce Data Report (EE-EPPD)
1 PURPOSE AND SCOPE

This procedure describes the process for preparing the RHD Road User Cost Annual Report, which provides a standard set of unit costs to be used in the economic analysis of projects and road management systems.

2 DEFINITIONS

Road User Costs (RUC) - are the costs borne by the people through the use of the road network.

The basic output of the analysis is in terms of:

- Unit operating cost (financial and economic) per kilometre for different types of vehicles (according to various components) both motorised and non-motorised - Vehicle Operating Cost
- Travelling time value per hour for passengers - Travel Time Cost
- Unit casualty costs borne by the economy through a road accident - Accident Cost

Vehicle Operating Cost (VOC) - the physical cost of operating a vehicle such as fuels, spare parts, depreciation, crew costs, etc.

Travel Time Cost (TTC) - the value of time spent in travelling that could be used in other activities.

Accident Cost (ACC) - the physical cost of an accident and the value of injuries and fatalities.

3 RESPONSIBILITIES

Chief Engineer - signs off forward in the final version of the RHD Road User Cost Report.

Chief Transport Economist (CTE) - Economics Circle - reviews, finalises and distributes the RHD Road User Cost Report.

Executive Transport Economist (ETE) – Road User Cost Division - designs and plans the field surveys, analyses the data collected in the surveys and from secondary sources, and prepares the draft RHD Road User Cost Report.

Assistant Transport Economist – Road User Cost Division - conducts and monitors field surveys and collects necessary information from other agencies.

Executive Engineer - Database Division - HDM Circle - liaises with the Economics Circle.
4  METHOD

4.1  QUESTIONNAIRES PREPARED

The Executive Transport Economist - Road User Costs Division (ETE-RUCD), consults with the CTE and designs the questionnaires for the necessary surveys.

4.2  HIRING AND TRAINING OF SURVEY PERSONNEL

The Assistant/Sub-assistant Transport Economist hires the survey personnel and trains the survey team. They arrange the collection of the data from the interviews of passengers, vehicles owners/operators etc., and submit all data to the ETE-RUCD for verification.

4.3  VEHICLE OPERATING COSTS (VOC)

The vehicle operator surveys are conducted in the divisions and districts by the survey team under the supervision of the ETE-RUCD. Information on vehicle, tyre and fuel prices are collected from the different agencies by the Assistant Transport Economist.

4.4  TRAVEL TIME COSTS (TTC)

Necessary information such as income and trip purpose is obtained through interviews of travelling passengers by the survey team under the supervision of the ETE-RUCD. The type of commodity carried, price, durability etc is obtained through interviews of drivers of freight traffic moving on the main and feeder roads in the different regions of country.

4.5  ACCIDENT COSTS (ACC)

Accident data including the number of accidents according to severity, average age, rural/urban accident ratio, is collected from secondary sources by the ETE-RUCD. Data on those costs borne by the economy due to the occurrence of an accident, such as income data, medical costs etc. are collected through interviews by the survey team under the supervision of the ETE-RUCD.

4.6  ANALYSIS AND PROCESSING OF DATA

The Assistant/Sub-assistant Transport Economists submit all survey data collected to the ETE-RUCD, for review and sample verification. The ETE-RUCD, gathers all of the data together, including information from agencies such as BRTA, BPC, NBR, NAVANA etc.

The data is analysed with the use of spreadsheets, to produce unit values, for example, taka per hour spent in travelling by passengers and freight according to type of vehicles. The ETE-RUCD consults
the CTE-Economics Circle, to establish unit values in relation to HDM parameters, such as road roughness.

The RUC results are reviewed by the Chief Transport Economist (CTE) and passed to the Superintending Engineer – HDM Circle as well as other concerned offices.

4.7 HDM MODEL RUN

The Economics Circle process the data using HDM Model and send a draft report to the Chief Transport Economist (CTE) to scrutinise. When the VOC results are approved by the CTE they are sent to the ETE-RUCD for final checking.

4.8 ROAD USERS COST REPORT DISTRIBUTION

The ETE-RUCD prepares the final draft of the RHD Road User Cost Report and submits it to the CTE for final review and forwarded to the Chief Engineer. When the report is finally approved, it is distributed by the CTE according to the agreed circulation list.

5 REFERENCES

RHD Road User Cost Annual Report - published by the Economics Circle
HDM-4 Manual published by TRL
Statistical Yearbook of Bangladesh - published by the Bangladesh Bureau of Statistics
World Bank Technical Paper 234 – Vehicle Operating Costs

6 PROCEDURE FLOWCHART

The procedure flowchart for this procedure is detailed on the next page.
RHD Operational Procedure – Planning & Maintenance Wing

OP/EC/2.1 - Preparation of the RHD Road User Cost Annual Report

Start

Survey Design (preparation of questionnaire, site selection, survey program, hire and training of survey personnel etc)/ETE-RUCD

Passenger and Freight Time Survey for TTC at site/ATE

Operators & Drivers Survey at site for VOC/ATE

Accident Survey at site for ACC/ATE

VOC related data from BRBC, BPC, NBR, BBS, Vehicle & Tyre agencies

Accident related data from Police, Hospitals

Draft RUC Report

Survey data entry, analysis & compilation by ETE RUC Division

HDM Model run for VOC Calculation

Review of the Report by CTE

Okay

No

Yes

End

Final RUC Report

Final Report to CTE

Economics Circle - Road User Cost Division

Approved:

Draft RUC Report

Survey data entry, analysis & compilation by ETE RUC Division

HDM Model run for VOC Calculation

Review of the Report by CTE

Okay

No

Yes

End

Final RUC Report

Final Report to CTE

Economics Circle - Road User Cost Division

Approved:

Draft RUC Report

Survey data entry, analysis & compilation by ETE RUC Division

HDM Model run for VOC Calculation

Review of the Report by CTE

Okay

No

Yes

End

Final RUC Report

Final Report to CTE

Economics Circle - Road User Cost Division

Approved:

Draft RUC Report

Survey data entry, analysis & compilation by ETE RUC Division

HDM Model run for VOC Calculation

Review of the Report by CTE

Okay

No

Yes

End

Final RUC Report

Final Report to CTE

Economics Circle - Road User Cost Division

Approved:

Draft RUC Report

Survey data entry, analysis & compilation by ETE RUC Division

HDM Model run for VOC Calculation

Review of the Report by CTE

Okay

No

Yes

End

Final RUC Report

Final Report to CTE

Economics Circle - Road User Cost Division

Approved:

Draft RUC Report

Survey data entry, analysis & compilation by ETE RUC Division

HDM Model run for VOC Calculation

Review of the Report by CTE

Okay

No

Yes

End

Final RUC Report

Final Report to CTE

Economics Circle - Road User Cost Division

Approved:
1 PURPOSE AND SCOPE

This procedure describes the process for preparing economic feasibility study reports for Roads and Highways Department projects, and deals with the comprehensive economic appraisal of road and bridge projects with the objective of testing the viability of and justification for the projects.

2 DEFINITIONS

Internal Rate of Return (IRR) - a measure of the benefit of the project through a procedure of discounting the future cost and benefit flows setting the NPV equal to zero. Must exceed discount rate for project to be economically viable. Referred to as Economic Internal Rate of Return (EIRR) for economic appraisals and Financial Internal Rate of Return (FIRR) for financial appraisals.

First Year Rate of Return (FYRR) – the ratio of the first year of project benefits to the capital cost. Must exceed one for project to be viable.

Net Present Value (NPV) - is the difference between the discounted present value of the project cost (PVC) and discounted present value of the benefit (PVB) streams. NPV must exceed zero (ie present value benefits are greater than present value costs) for a project to be economically viable.

Benefit Cost Ratio (BCR) – ratio of PVB to PVC. Must exceed one for a project to be economically viable.

3 RESPONSIBILITIES

Chief Transport Economist - Economics Circle (CTE) - reviews and finalises the draft feasibility report.

Executive Transport Economist - Feasibility Studies Division (ETE-FSD) - designs the field surveys, analyses the data collected through surveys and from secondary sources, and prepares the draft economic feasibility study report.

Assistant Transport Economist - Feasibility Studies Division (ATE-FSD) - organises and monitors field surveys and collects necessary information from other agencies.

4 METHOD

4.1 REQUEST RECEIVED FOR AN ECONOMIC FEASIBILITY STUDY

The process starts with a request to the CTE normally from the RHD or the Ministry of Communications. The CTE will request the necessary information to undertake the study, for example the PCP.
4.2 DATA COLLECTION

The collection of data for the study is managed by the ETE-FSD, who initially designs the questionnaires for the necessary surveys for example:

- Origin-destination survey
- Traffic count survey
- Ferry time delay survey
- Ferry system cost survey
- Socio-economic survey

The ETE-FSD hires the necessary survey personnel and ensures that they are trained to obtain accurate data.

The ATE-FSD organises the field surveys and also obtains secondary data from:

- Publications of the Bangladesh Bureau of Statistics
- Economics Circle reports and working papers
- Information provided by other RHD Circles eg. Planning and Ferry Construction Circle

4.3 COST-BENEFIT ANALYSIS AND PREPARATION OF THE DRAFT REPORT

When the information is finally received from the surveys and literature search, the ETE-FSD undertakes the cost-benefit analysis for the project. The cost-benefit analysis is a major element of the study. The estimated project costs are obtained from the Project Concept Paper, provided to the CTE. The financial costs are converted into economic costs for the purpose of the analysis and evaluation.

The ETE-FSD will then use his experience and knowledge to identify the economic benefits of the project. Every project, whether it is a road or bridge project will have some source of benefit depending on the nature of project. For example in a purely bridge construction study the savings are mainly in the ferry system costs and also in providing user cost savings in ferry crossing time and saving in time-related vehicle operating costs which are estimated both in terms of financial and economic values.

The undiscounted cashflow of the project over its life is estimated both in financial and economic terms. In order to arrive at their present value, both the cost and benefit streams are discounted. The results are given in terms of FYRR, EIRR, NPV and BCR upon which the recommendation for implementation is made.
4.4 **ECONOMIC FEASIBILITY STUDY REPORT DISTRIBUTION**

The ETE-FSD prepares the final draft of the Economic Feasibility Study Report and submits it to the CTE for final review. When the report is finalised, it is distributed by the CTE according to the circulation list agreed with the CE.

5 **REFERENCES**

Statistical Year Book of Bangladesh and other Bangladesh Bureau of Statistics publications

Annual RHD Road User Cost Report (Latest)

6 **PROCEDURE FLOWCHART**

The procedure flowchart for this procedure is detailed on the next page. This flowchart assumes feasibility study can be conducted within the Economics Circle budget. Otherwise it will be done by outside consultants, maintained by the Economics Circle.
RHD Operational Procedure - Planning & Maintenance Wing
OP/EC/3.1 - Preparation of Economic Feasibility Study Reports

Economic Circle - Feasibility Studies Division
Approved

Start

Request CTE

Request Economic Study RHD+

Questionnaires ETE-FSD

Traffic Survey conducted if required (see OP/EC/3.2)

Field survey defined survey teams hired trainee ETE-FSD

Surveys organised data ATE-FSD

Secondary Data from BBS, RHD Circle

Unit inputs from current RUC Report (see OP/EC/2.1)

Analysis+ of data and cost analyse ETE-FSD

Project Concept Report

Draft Feasibility Study

Draft Feasibility Report ETE-FSD

Report CTE

Approve

Yes

Final Feasibility Report to meet

Final report CTE

Inputs to PcPs etc. e.g (see OP/PPC/2.2)

End
1 PURPOSE AND SCOPE

The Economics Circle with need to conduct traffic studies for the following reasons:

Complex economic feasibility studies and appraisals where there will be significant re-assignment of traffic on the road network (such as an urban bypass);

Development of Traffic forecast model

Assessment of traffic volumes on toll roads taking into account the toll elasticity of demand;

Assessments of road and junction capacity and strategic studies of traffic movements.

The traffic studies could be conducted anywhere in the county and will include traffic surveys, data analysis, matrix building and traffic modelling.

2 DEFINITIONS

Toll Elasticity of Demand – the responsiveness of traffic demand to toll charges

Traffic Matrix – a table of the origins and destinations of person and/or vehicle trips for a particular area

Average Annual Daily Traffic (AADT) – the most commonly used unit of account for traffic volumes; equal to 1/365 of the total annual traffic volumes

Origin/Destination Survey (O/D) – interview survey used to establish trip-making profiles, usually of a sample population.

Manual Classified Count (MCC) – traffic volume count conducted by hand tally of observed traffic movements classified into vehicle categories by direction and time period

Travel Time Survey (TTS) – survey of existing vehicle travel times normally conducted using the moving observer technique

3 RESPONSIBILITIES

Chief Transport Economist – approves survey programme and budget

Executive Transport Economist – Feasibility Studies Division – designs and plans the field surveys, analyses the data and runs the traffic model

Assistant Transport Economist – Road User Cost Division – conducts field surveys
4  METHOD

4.1  DEFINE SCOPE OF STUDY

The request for a traffic study will normally be received as part of the request to conduct a feasibility study as part of the PCP preparation process. The CTE and ETE – FSD will review existing data and define what additional data is required. They will also define what level of analysis is needed and if a traffic model needs calibrating. They will write terms of reference for the works to be undertaken either by the Circle or Consultants. The ETE-FSD will define a budget for the study which will agreed by the CTE.

4.2  BUDGET APPROVAL AND APPOINT CONSULTANT

The CTE and ACE Planning and Maintenance will decide whether the works will be conducted internally or externally and agree a budget. If the works are to be conducted externally consultants will be appointed in accordance with OP/PC/2.4.

4.3  CONDUCT TRAFFIC SURVEYS

The traffic surveys may include traffic volume (usually manual classified counts), origin/destination, and travel time surveys. If conducted in-house the Assistant/Sub Assistant transport economist will hire the survey personnel required, train the team and conduct the surveys according to the RHD traffic counting manuals.

4.4  ANALYSE DATA

The traffic data will need to be processed and analysed in accordance with international best practise, particularly for complex schemes such as by passes in urban areas. No RHD procedures existed at the time of writing. Outputs will include link traffic volume AADT; average link speeds; Origin/Destination matrices.

4.5  TRAFFIC MODELLING

If a traffic model is calibrated a validation report will have to agreed by the CTE and ETE-FSD before forecasting is undertaken.

4.6  PRODUCE REPORT

The results of the study will be prepared in hard and soft copy and distributed to the requested and ACE Planning and Maintenance.
5 REFERENCES

HDM-4 Manual published by TRL
RHD Classified Traffic Counts Manual October 2001
Economics Working Paper E2 – National Traffic Census
Economic Working Paper E3 – Automatic Traffic Counters
Economic Working Paper E4 - Traffic Congestion Modelling

6 PROCEDURE FLOWCHART

The procedure flowchart for this procedure is detailed on the next page.
Start

Request received through ACE-PMW

Define scope of study (CTE/ETE-FSD)

Large Project (e.g. FAP)

Obtain Budget (e.g. FAP) and Approval (ACE-PMW)

Appoint Consultant (CTE) (see OP/PPC/2.4)

Conduct Traffic Survey (ETE-FSD)

Analysis of Data (ETE-FSD)

Traffic Modelling (ETE-FSD)

Approve Traffic Model (CTE)

Traffic Model Validation Report

Final Analysis & Reporting (CTE)

Traffic Study Report

End

Small Scheme (e.g. GoB Fund)

Decide it can be done directly by Economics Circle (CTE)

Obtain Budget (e.g. FAP) and Approval (ACE-PMW)

Appoint Consultant (CTE) (see OP/PPC/2.4)

Conduct Traffic Survey (ETE-FSD)

Analysis of Data (ETE-FSD)

Traffic Modelling (ETE-FSD)

Approve Traffic Model (CTE)

Traffic Model Validation Report

Final Analysis & Reporting (CTE)

Traffic Study Report

End

May be produced as input to economic feasibility studies (OP/EC/3.1)
1 PURPOSE AND SCOPE

The post project economic evaluation compares baseline conditions in the study area with those resulting from the project. This evaluates the achievements of the project against the predicted outcomes. The evaluation is highly dependent on the accuracy of the baseline data and may include the assessment of impacts on traffic, socio-economic indicators, environment, flooding and other parameters depending on the project objectives.

2 DEFINITIONS

Post Economic Evaluation – comparison of out turn economic impacts of completed project with predicted impacts from feasibility study; vital to the understanding of the success of the investment and for designing future projects.

3 RESPONSIBILITIES

Chief Transport Economist – approves survey programme and budget.

Executive Transport Economist – Economic Feasibility Studies Division – designs and plans the field surveys, analyses the data and prepare the report.

Assistant Transport Economist – Economic Feasibility Studies Division – conducts field surveys.

4 METHOD

4.1 DEFINE SCOPE OF STUDY

The request for a post project evaluation will normally be received from the MOC. The CTE and ETE – FSD will review the baseline data and define what surveys are required to collect post project completion data. They will write terms of reference for the works to be undertaken either by the Circle or Consultants. The ETE-FSD will define a budget for the study, which will agree by the CTE.

4.2 BUDGET APPROVAL AND APPOINT CONSULTANT

The CTE and ACE Planning & Maintenance Wing will decide whether the works will be conducted internally or externally and agree a budget. If the works are to be conducted externally consultants will be appointed in accordance with OP/PC/2.4.
4.3 **CONDUCT SURVEYS**

Traffic surveys may include traffic volume, origin/destination, axle load and travel time surveys. If conducted in-house the Assistant/Sub Assistant transport economist will hire the survey personnel required, train the team and conduct the surveys according to the RHD traffic counting manuals. Other surveys may include socio-economic impacts; at the time of writing the requirements for these had not been defined.

4.4 **ANALYSIS**

The analysis will be undertaken in accordance with international best practise; no RHD procedures existed at the time of writing.

4.5 **PRODUCE REPORT**

The results of the study will be prepared in hard and soft copy and distributed to those requested and CE-RHD & ACE Planning & Maintenance Wing.

5 **REFERENCES**

HDM-4 Manual published by PIARC

RHD Classified Traffic Counts Manual October 2001

Economics Working Paper E2 – National Traffic Census

Economic Working Paper E3 – Automatic Traffic Counters

Economic Working Paper E4- Traffic Congestion Modelling

6 **PROCEDURE FLOWCHART**

The procedure flowchart for this procedure is detailed on the next page.
Start

Request received through ACE-PMW

Define scope of study (CTE)

Obtain Budget (e.g. FAP) and Approval (ACE-PMW)

Appoint Consultant (CTE) (see OP/PC/2.4)

Conduct Surveys (ETE-FSD)
Traffic Survey (see OP/EC/3.2)

Analysis ETE-FSD

Secondary Data

Produce Report (ETE-FSD)

Original Feasibility Study (see OP/EC/3.1)

Post Evaluation Report

End
1 PURPOSE AND SCOPE

The Socio-economic indicators database will contain a range of data reflecting the socio-economic profile of different areas. The exact scope and nature of the data may include information on population segregated by gender, employment, agriculture, industry, education, health & sanitation and other community facilities. This may be linked to the GIS database and RMMS, and used to evaluate impact of changes with to the RHD Network in order to assess the impact of RHD's work on the GoB’s wider goal of poverty alleviation (Ref. National Land Transport Policy).

2 DEFINITIONS

Socio Economic Indicators—Indicators of the social and economic impacts of a project on the population segregated by gender, in the area of influence of the scheme. This may include population characteristics, employment characteristics, income characteristics and the location of community facilities.

3 RESPONSIBILITIES

Chief Transport Economist – approves database development and budget.

Executive Transport Economist – Economic Planning & Policy Division (ETE-EPPD)– designs and plans surveys, analyses data and supervises input to database.

Assistant Transport Economist – Economic Planning & Policy Division (ATE-EPPD)– development and conducts field surveys and enters data as required.

4 METHOD - TO BE DEFINED.

5 REFERENCES - None.

6 PROCEDURE FLOWCHART - To be developed.
1 PURPOSE AND SCOPE

The Economics Circle is required to produce a number of specialist reports including regular documents for Conferences and presentations and ad hoc requests from RHD and the MOC. In addition, the Circle also has to provide certain types of traffic, project and economic data at the request of RHD and the MOC. Data is nearly always from secondary sources. These tasks take up a considerable amount of the Circle's time.

2 DEFINITIONS - None.

3 RESPONSIBILITIES

Chief Transport Economist – Approves and assists in production of all documents and data

Executive Transport Economist – Economic Policy & Planning Division - writes reports and analyses data

Assistant Transport Economist – Economic Policy & Planning Division - collects data and assists with analysis

4 METHOD

4.1 RECEIVE REQUEST AND ALLOCATE RESOURCES

The request normally originates from the MOC or CE-RHD. The CTE will receive this request and instruct the ETE-EPPD to conduct the works required.

4.2 COLLECT DATA

Data is normally collected from secondary sources including RHD publications and databases and published documents from the Bangladesh Bureau of Statistics and others.

4.3 WRITE REPORT AND/OR PREPARE DATA

The ETE-EPPD will prepare the report or data as requested, usually using previous report formats as a guide.

4.4 APPROVE AND SUBMIT REPORT

The CTE will take necessary action to approve the report.
MANAGEMENT MANUAL VOLUME 3

RHD Operational Procedure - Planning & Maintenance Wing

OP/EC/4.2 - Preparation of Specialist Economic Reports and Data

Economic Circle - Economic Policy & Planning Division  Approved

5 REFERENCES

6 PROCEDURE FLOWCHART

The procedure flowchart for this procedure is detailed on the next page.
Start

Receive Request and Allocate Resources (CTE)

Collect Data (ETE-EPPD)

Write Report and/or Prepare Data (ETE-EPPD)

Approve (CTE)

Yes

Submit to Request or Approval (CTE)

Request or Approval (e.g. Joint Chief, Planning cell)

Yes

Specialist Economic Report/Data

End

No

Yes

No

End