Government of the People's Republic of Bangladesh
Ministry of Local Government, Rural Development and Co-operatives
Local Government Division
Local Government Engineering Department (LGED)

City Region Development Project (CRDP)
ADB Loan No. 2695-BAN

Environmental Safeguards Assessment
Initial Environmental Examination (IEE) Report

ROAD AND DRAINAGE SUBPROJECT

Package Nos: CRDP/LGED/MONGLA/NCB/2013/W-01
CRDP/LGED/MONGLA/NCB/2013/W-02
CRDP/LGED/MONGLA/NCB/2013/W-03
CRDP/LGED/MONGLA/NCB/2013/W-04
And
CRDP/LGED/MONGLA/NCB/2013/W-05

Mongla Port Pourashava

September 2013

CURRENCY EQUIVALENTS

(as of 31 March 2013)

Currency unit	–	BDT
BDT 1.00	=	$ 0.0127
$1.00	=	BDT 79

ABBREVIATIONS

ADB	–	Asian Development Bank
BDT	–	Bangladesh Taka
BOQ	–	Bill of Quantities
CEO	–	Chief Executive Officer
CRDP	–	City Region Development Project
DCC	–	Dhaka City Corporation
DMDP	–	Dhaka Metropolitan Development Plan
DOE	–	Department of Environment
DPHE	–	Department of Public Health Engineering
EARF	–	Environmental Assessment and Review Framework
ECR	–	Environmental Conservation Rules
EIA	–	Environmental Impact Assessment
EMP	–	Environmental Management Plan
GRC	–	Grievance Redress Committee
GRM	–	Grievance Redress Mechanism
IEE	–	Initial Environmental Examination
LGED	–	Local Government Engineering Department
LGU	–	Local Government Unit
MDSC	–	Management, Design and Supervision Consultant
NGO	–	Nongovernment Organization
NOC	–	No Objection Certificate
O&M	–	Operations and Maintenance
PIU	–	Project Implementation Unit
PMCU	–	Project Management Coordination Unit
REA	–	Rapid Environmental Assessment
ROW	–	right of way
RPM	–	respiratory particulate matter
RSS	–	resettlement support staff
SPS	–	Safeguard Policy Statement
SWM	–	Solid Waste Management

CONTENTS

List of Tables

List of Figures

Appendices:

Executive Summary

General

ES-01. The Mongla Port Road and Drainage Subproject comprises 14 roads, 1 new bridge, 3 sluice gates, re-excavation of 3 canals and improvement of a pond divided into five packages that will be reconstructed in their original right-of-ways and alignments with improved subgrade, subbase, base course, and surfacing. Most (12) will be constructed including side drain and footpath within their available right-of-way widths. The remaining road (marine diving road) will act as a town protection embankment against tidal surged from the existing river at sides. Provisions of walkways on both sides and greenery space in the middle with HBB on the top will be in the preliminary stage of this type of newly constructed embankment cum road. The existing right-of-way is generally clear, and for which no acquisition or easement for land is required. In some locations it may be difficult to obtain the full roadway design width, in which case the engineer will narrow the width based on what is available, or otherwise manage the problem locally with the landowner, or reduce the dimension of gutter or hard shoulder. A bridge of 22m span will be constructed for transportation and proper drainage of existing khal. 3 existing khals will be re-excavated for proper drain out of water. 3 sluice gates will be constructed for protecting intrusion of back/ excess water from the rivers. Improvement of pond will improve the beautification of the area and environment friendly atmosphere. The design approach on all roadways and all other components is to develop a full crown within the available width and to avoid land acquisition as well as removal of trees along the roadway and all other components.

ES-02. Typical construction related impacts are associated with this type of civil works. Impacts are of limited intensity and short duration, and can be mitigated by appropriate measures including enforced traffic management by the contractor and adoption of good construction practices related to protection of community health and safety. None of the subproject interventions are proposed within locations in or near sensitive ecosystems. The subproject has been categorized as ‘B’ in accordance with ADB's Safeguard Policy Statement (2009) and an IEE is carried out that provides mitigation measures for impacts and a monitoring and reporting protocol.

ES-03. The subproject does not involve any special considerations regarding planning and location, since the roads occupy existing right-of-ways that are generally clear, and for which no acquisition or easement for land is required. In some stretches it may be difficult to obtain the full road width, in which case the engineer will narrow the width based on available land, manage the problem locally with the landowner, or reduce the dimension of hard shoulder; but in any case there is no generalized solution to the problem and it will be dealt with on a case by case basis. There is a high degree of certainty that the improvements can be made without affecting permanent structures.

ES-04. Construction presents the greatest potential for the subproject to exert a negative environmental impact. These are generally associated with maintaining the flow of traffic through the construction zone, safety, convenience and local air quality impacts (dust). Impacts can be mitigated through environmental measures that are set out in the construction contract tender documents. These measures address the following key areas: worker provisions, use of land for construction purposes, sediment controls, community health and safety, site conditions, quarries and haul routes, and other factors. A set of these provisions for use in the subproject tender documents is found in Appendix 3.

ES-05. Once in operation the improved roadways may be responsible for an increase in noise and air emissions from increased vehicular traffic; however it is nearly certain that conditions once the roads are improved will be much better for local residents than would be the case without improvements, by removing severe traffic congestion that is a feature of the

current condition, thereby reducing vehicle noise (honking of horns) and air pollution (idling vehicles). Roadway safety will be enhanced by clearly delineated lane widths, improved signage and shoulders that provide room for pedestrians and slow moving vehicles. Still, speed limits will need to be controlled in order to prevent accidents along the roadways.

ES-06. The overall conclusion of the IEE is that if the mitigation, compensation and enhancement measures are implemented in full, there should be no significant negative environmental impacts as a result of location, design, construction or operation of the subproject. There are significant benefits from recommended mitigation and enhancement measures, and improvements in access and quality of life once the scheme is in operation.

I. INTRODUCTION

A. Background

1. The Government of Bangladesh (GOB) has undertaken the City Region Development Project (CRDP) (the Project) with financial assistance from the Asian Development Bank (ADB) (Loan No. 2695-BAN) together with co-financing from KfW. The CRDP emphasizes economic growth in Dhaka and Khulna city regions of Bangladesh through (i) creation of an enabling environment towards improved governance and capacity building of the local governments, and (ii) prioritized investments in infrastructure sectors in the two regions. The objectives of CRDP are: (i) to improve the regional economic and social context through long-term development plans and investment programs, set within an institutional and regulatory context that will ensure implementation and review; (ii) to improve the capacity and mandate of local government to govern and to invest in improved economic activity at local level; (iii) to improve the economic context for sustainable commercial and industrial growth; and (iv) to meet the economic and social needs of the urban population, as an inclusive aspect of the CRDP.

2. The Project is active in the following City Corporations: Dhaka North and South, Narayanganj, Gazipur and Khulna. Phase 1 subprojects for these locations were identified during the Project Preparation Technical Assistance (PPTA). Under Phase 2A, developed under the loan, 12 pourashavas are being improved through road and drainage subprojects, including Tarabo, Tongi, Sonargaon, Kanchon, Narsingdi, Kaliakoir, Singair, Mongla, Savar, Jessore, Jhikargacha, and Nowapara. Under Phase 2B there are 35 smaller urban centers (in upazilas) located within Dhaka and Khulna City Regions that will receive improvements to their core areas. The Project is formulated to provide opportunities for replication of subprojects in other Local Government Units (LGUs) within the identified city regions.

B. Purpose of the IEE

3. This initial environmental examination (IEE) is for the proposed Mongla Port Road and Drainage Subproject, a Phase 2A project developed during CRDP loan implementation. The purpose of the IEE is to describe the assessment of environmental impacts due to the Subproject based on the detailed design produced under the CRDP, and to specify measures to address impacts. The IEE is based on engineering design information, a field visit, and secondary data to characterize the environment. It contains the results of interviews and consultations with stakeholders. The IEE includes an environmental management plan (EMP) outlining mitigation measures and monitoring requirements, and environmental specifications to be appended to contract documents.

C. Environmental Regulatory Compliance

4. The IEE has been prepared to conform to requirements of the Environmental Assessment Review Framework (EARF) prepared under the PPTA, with Government environmental rules, and with the Safeguard Policy Statement (2009) of the Asian Development Bank (ADB), as described in the following paragraphs.

5. Government of Bangladesh. The provisions for environmental protection and pollution control in Bangladesh are contained in the Environmental Conservation Rules (ECR) 1997. This legislation also provides the principal mechanism for assessing and mitigating the environmental impacts of projects. Projects are classified as green, orange, or red in accordance with Schedule 1 of the ECR. The Department of Environment (DOE) issued an Environmental Clearance Certificate for CRDP subprojects (up through Orange B), excluding water treatment plants and distribution pipe line laying/relaying/extensions, and sanitary landfills, bus and truck terminals by means of a letter No. DOE/ Clearance/5194/2013/180 dated 21/07/2013 shown in Appendix 1. Excluded subprojects are of the Red Category and invoke the environmental assessment process that may include preparation of an EIA. Roadway and drainage improvements such as the Mongla Port Road and Drainage Subproject are categorized as Orange B category projects, and are exempt from further review requirements under DOE rules.

6. Asian Development Bank. ADB categorizes projects as A, B or C depending on severity of impact and level of required environmental assessment, a process that is extended to subprojects, necessitating preparation of an IEE with elements consistent with the ADB SPS: environmental assessment, an environmental management plan (EMP) describing specific mitigation measures to be taken during construction and operation, information disclosure, consultation and participation, the grievance redress mechanism established under the Project, and monitoring and reporting requirements and procedures. The IEE report has been prepared by the Project Management and Coordination Unit (PMCU) for review by the ADB.

II. DESCRIPTION OF THE SUBPROJECT

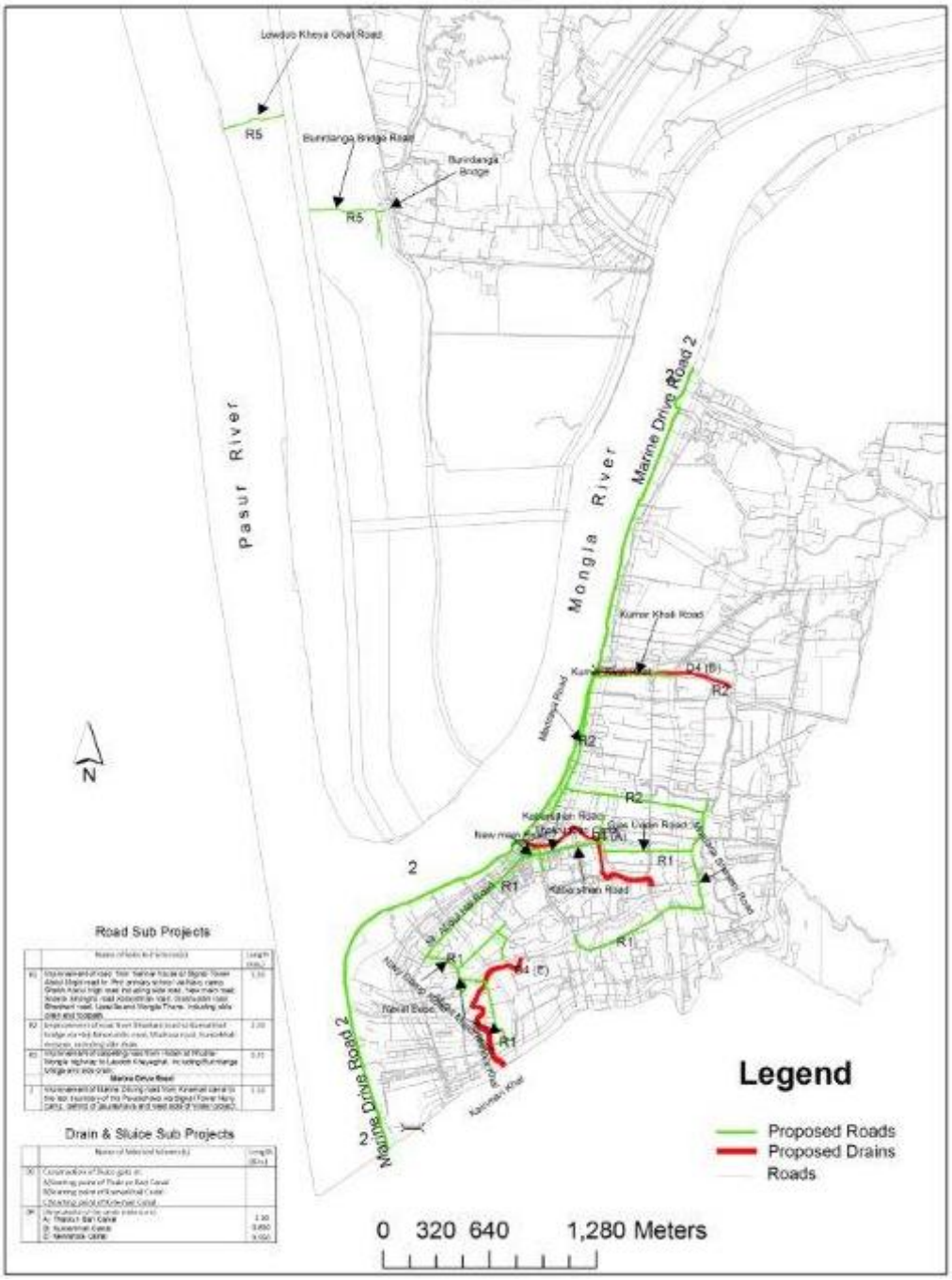
A. Subproject Scope and Components

7. The work consists of four contract packages as shown in Table 1. Locations for various improvements are shown in Figure 1. All improvements will be constructed within existing right-of-ways. The standard width of roadways varies as follows: dual carriageways each 3.66 m (12 ft) as shown in the typical section in Figure 2; undivided roadways of 4.5 – 5.0 m (14.76 – 16.40 ft). Widths may vary depending on available space within buildings and tree lines. The road and drainage improvements total 18.95 km in length. Canal improvements (re-excavation) cover a total of 2.80 km in length. There are three sluice gates to be rebuilt (all under Package 3); improvement of Pond at Mongla Port will be under implementation program under Package 5.

Table 1: Roadway and Drainage Rehabilitation Components

Package No.	Description of Procurement Package Works	Quantity
CRDP/LGED/MONGLA/NCB /2013/W-01	Improvement of RCC Road from Nannar House at Signal Tower Abdul Majid road to Port Primary school via Navy Camp, Sheikh Abdul Hye Road, New Main Road, Sromik Shongho Road, Kaborasthan Road, Giashuddin Road, Vashani Road, Upazila and Mongla Thana, including side drain and Footpath	5.50 km
CRDP/LGED/MONGLA/NCB /2013/W-02	(i) Improvement of RCC road from Vashani road to Kumarkhali Bridge via Hazi Baharuddin road, Madrasa road, Kunarkhali Mosque, including side drain.	3.45 km
	(ii) Improvement of carpeting road from Holsim at Khulna-Mongla highway to Laudob Kheyeghat, including Burirdanga Bridge and side drain.	
CRDP/LGED/MONGLA/NCB /2013/W-03	(i) Re-excavation of the internal canal inside the town at Thakuran Bari canal and Improvement of Sluice gate at canal front side (1.00 km).	1.00 km
	(ii) Re-excavation of the internal canal inside the town at Kumarkhali canal and Improvement of sluice gate at starting point at canal front side (0.85km).	0.85 km
	(iii) Re-excavation of the internal canal inside the town at Kewratola canal and Improvement of sluice gate at starting point Kinemari canal front side (0.95km).	0.95 km
CRDP/LGED/MONGLA/NCB /2013/W-04	(i) Improvement of Marine Driving road from Kainmary canal to edge boundary of Paurashava via signal Tower Navy Camp, behind of Paurashava and west side of Water project.	10.00 km
	(ii) Marine Drive Road along the commercial zone in Mongla Port under Mongla Port Pourashava	
CRDP/LGED/MONGLA/NCB /2013/W-05	Improvement of Pond in Mongla Port under Mongla Port Pourashava	

Figure 1: Mongla Port Pourashava Road and Drainage Proposals



8. Drains will be constructed along all roadways on one or both sides, being 700 mm wide X 1,000 mm deep reinforced concrete slot drains with concrete cover plate. Solar street lighting also will be installed along Marine Driving road.

9. Subgrade and base courses will be rebuilt on some roads, whereas elsewhere new materials will be placed on top of the existing roadway materials. Total excavated depth for development of the road cross-sections to be rebuilt is some 400 mm, as is the depth of materials to be placed on top of existing roads.

Figure 2: Divided Lane Carriageway Typical Section

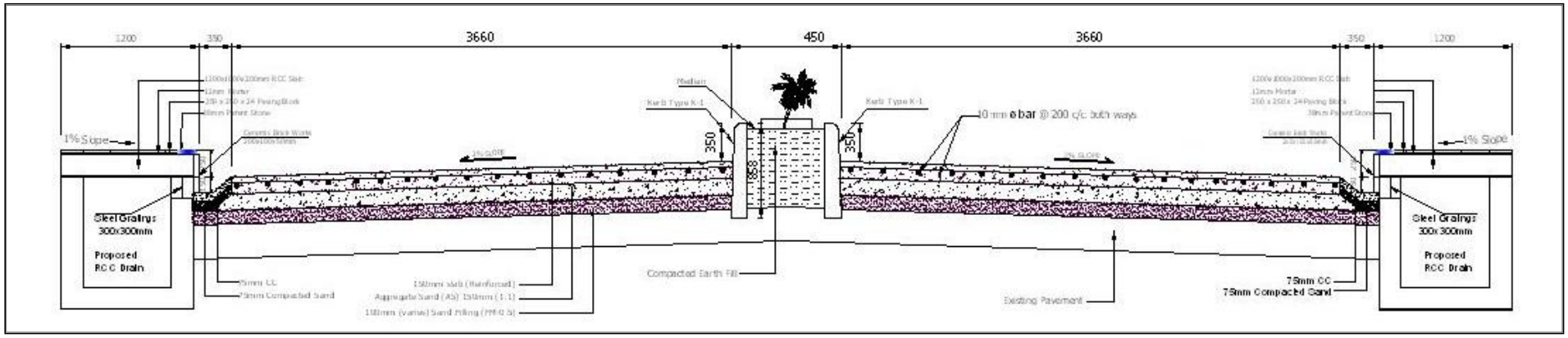
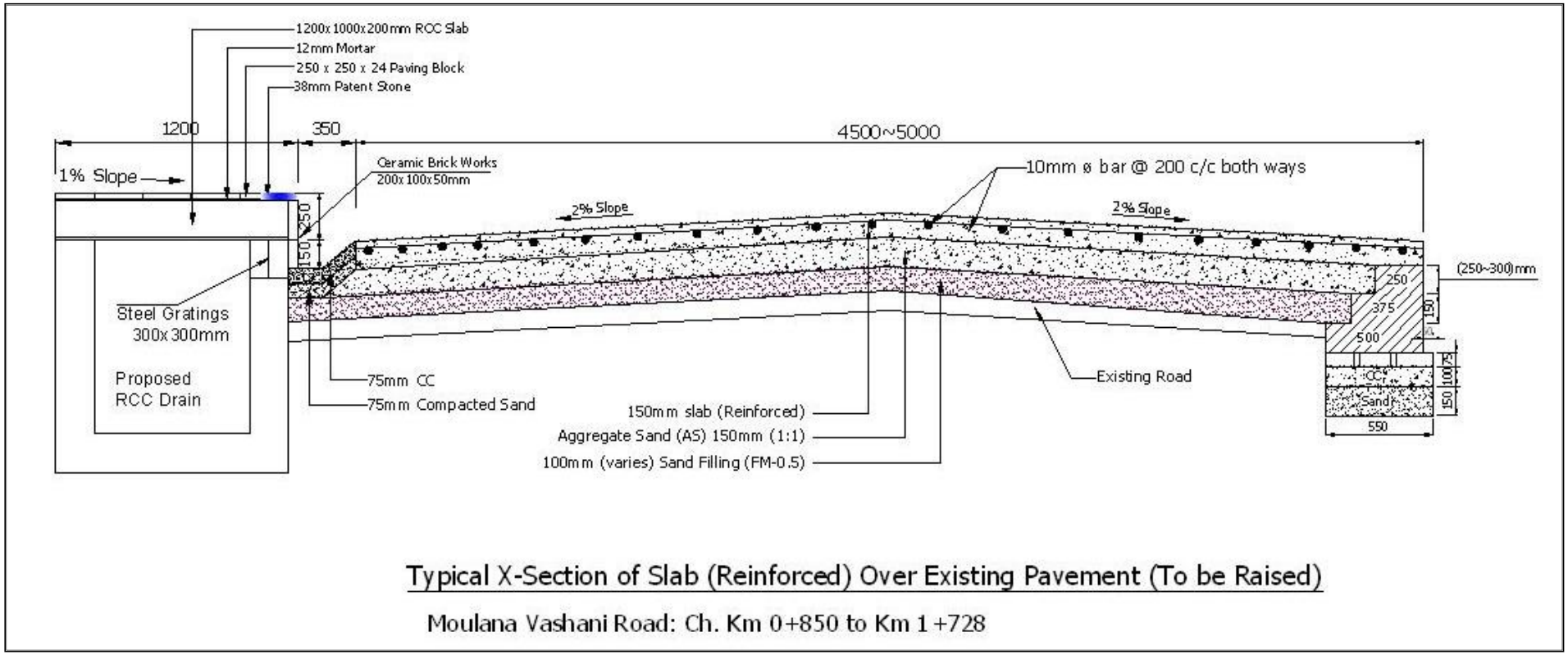


Figure 3: Undivided Lane Carriageway Typical Section



10. These roads are currently in poor repair (bituminous carpeting, HBB, earthen and combinations of those) and in many locations are nearly impassable. Due to long time use by the heavy vehicles the bituminous carpeting roads severely damaged containing cracks, pot holes, edge broken and depressions are prevalent. The HBB and earthen roads are also found damaged and not useful for smooth traffic movement as well. The proposed road system directly or indirectly will connect the existing national, regional and upazila roads network system. The proposed narrow roads have become inadequate to accommodate the growing high volume of traffic and thereby causing severe traffic jams and frequent accidents. After implementation of the project the problems will be alleviated and road users will be benefitted. The single lane road could be widened with walkway, new roads has been proposed to be RCC to cater for increased traffic volume. This will reduce the existing traffic congestion, will reduce journey time and will also enhance the connectivity of the road network to meet the forecast economic and traffic growth targets. Adequate retaining structures like (walls/palasiding and guide walls) will also be provided at the location to protect the road embankment. The roads present a variety of challenges in construction: limited space between property/building lines and tree lines and in some locations narrowly constructed embankments set in the midst of surrounding lowlands subject to seasonal flooding. Some of the roads are under considerable traffic load, whereas for others usage is light.

11. One of the most important aspects of the location and design of city streets is the necessity for providing adequate drainage. Starting point of three canal front side 3 nos. existing sluice gates will be improved and these three canals re-excavation have been proposed for the drainage of the storm water. The surface water will be collected and then disposed off. The water is first collected in longitudinal drains, generally in side drains and then the water is disposed of to the nearest stream or watercourse. Cross drainage structures like culverts and small bridges may be necessary for the disposal of surface water from the road side drains. The water on the pavement surface is removed by providing camber or cross slope to the pavement.

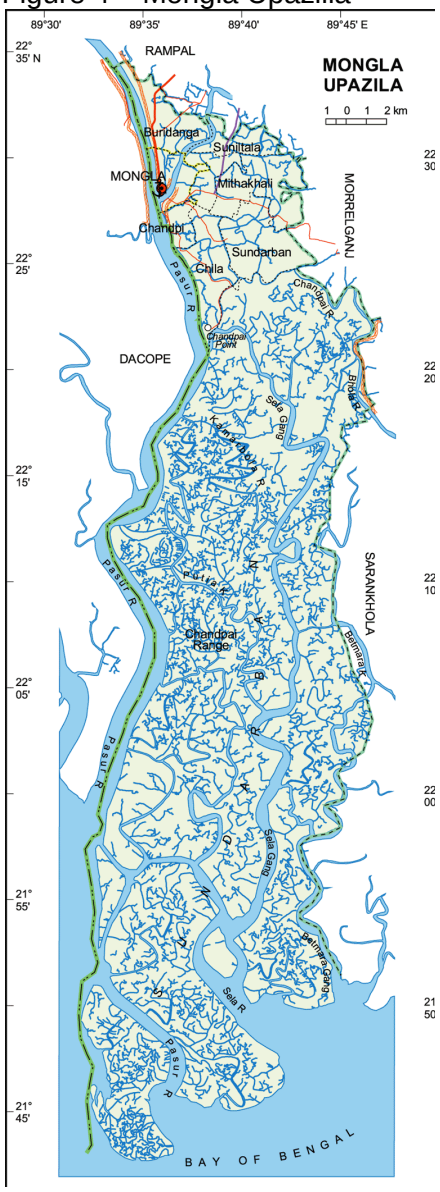
III. DESCRIPTION OF THE ENVIRONMENT

A. Physical Resources

1. Location

12. The subproject is located in Mongla Pourashava, which is in Mongla Subdistrict (Figure 4), Bagerhat District, some 40 km by road S of Khulna. Mongla Thana was established in 1976 and became an upazila in 1983. It consists of one municipality (Mongla), seven union parishads, 37 mouzas and 77 villages. Mongla Pourashava has nine wards and 13 mahallas. The area of the town is 17.79 sq km.[1]

Figure 4 – Mongla Upazilla[1]



2. Topography, Soil and Geology

13. The area is flat and poorly drained with elevations ranging from 4-9 masl. Soils consist of peat and grey floodplain soils. The subdistrict is subject to seasonal flooding, with extensive deeply flooded soil phases and a high level of risk related to long term rises in sea level stemming from global warming. Channelized drainage covers most of the land, in which slowly draining streams will transport surface runoff to local rivers. Conversely, those rivers are part of a regional network that, once flooded, will cause flooding locally and prevent drainage.

3. Climate

14. The daily mean temperature reaches a maximum in May of 28 degrees Celsius, and a minimum of 19 C in Dec-Jan. Daily max-min ranges from 35 C in March to 12 C in January. The monthly rainfall averages 350 mm from June through August, and around 5 mm during Dec and Jan. Mean monthly rainfall is 145 mm.

4. Air Quality

15. No information is available on local air quality. Activities at the Port may generate some local pollution, and with slight wind speeds that average only 5 km/hr over the year, may have an effect on air quality.

5. Surface Water

16. Mongla is located at the confluence of the Mongla River with the Pasur, which flows south from Khulna past Mongla for an additional 70 km before reaching the Bay of Bengal. Not far south of Mongla begin the labyrinthine water passages of the

[1] http://www.banglapedia.org/HT/M_0132.HTM.

Sundarbans, in which innumerable traces of river and stream change with the seasons and may be altered by major flood events.

6. Groundwater

17. Groundwater in Mongla, while abundant, is saline, caused by intrusion from extraction and by overwashing by tidal surges and cyclones. NGOS active in the area report that following the cyclone Aila in 2009 as much as 99% of shallow wells in some areas became saline, and the few fresh water ponds remaining after a year were typically outstripped by demand. Water consumption for drinking is reduced accordingly to inadequate levels.

B. Ecological Resources

18. The area immediately around Mongla Port is a mix of flooded lowlands and cultivated fields used primarily for cultivation of paddy. Further south from the town some 10 km begins the Sundarbans, a maze of meandering streams (Figure 5) interspersed with mangrove forest. The boundary delineating the two ecological zones is distinct (Figure 6). The Sundarbans is a vast ecological resource stretching from the Meghna River west to the Hooghly in India and beyond. It is a main focus of conservation efforts by the Government and international donors.

Figure 5:
Meandering Streams in the Sundarbans

Figure 6: Distinct Ecological Zones
(Google Earth)

19. Significant amounts of biodiversity can be found in the Sundarbans to the south of the project area. In the immediate project area, common birds like crows, sparrows, shaliks, cuckoos etc. and ground dwelling mammals inhabit the area. Aquatic habitats are common due to numerous freshwater lowlands, ponds, wetlands and rivers coursing through the area. Fish diversity in rivers and streams is likely decreasing; one source notes the negative effect of large scale net fishing on movement of anadromous species in the Padma, with consequent loss of diversity.

C. Economic Development

1. Land Use

20. Total cultivable land in Mongla Upazila is 12,566 hectares, nearly all of which is under single cropping. Total land area in the upazila is 1,461 sq km of which cultivable land represents only a fraction (11%); most of the land is found to the south in the flooded forests of the Sundarbans.

21. The market value of the land of the first grade is Tk 2,000 per 0.01 hectare. There are 17 hats and bazaars.

2. Industry and Agriculture

22. There is an export processing zone in Mongla that is home to Pace Tobacco Industries and recently planned joint venture plant with equal ownership by Bangladesh China and Pakistan to set up a tooth brush and ball pen industry. No complete listing of industry at this EPZ is available. Land is selling in Mongla for use as ship yard, ship breaking yard, tank farm, LPG storage and other industrial application. In addition there are numerous cottage industries such as ice factories, rice mills, blacksmiths and woodworking shops. The main agricultural product of the area is paddy.

3. Infrastructure, Transport and Communications

23. Mongla is connected to Khulna via a two lane roadway. Mongla Port is the second largest port in Bangladesh, accepting ships up to 255 m in length. The port's chief exports include jute, leather, tobacco, frozen fish, and shrimp; major imports include grain, cement, fertilizer, coal, and wood pulp. The port is connected to Khulna via a rail link, and thence to other parts of Bangladesh.

D. Social and Cultural Resources

1. Demography

24. The present Population of Mongla Port Pourashava is around 60,560 of which 57% are males. Religious affiliation is as follows: Muslim 71%, Hindu 25% and the balance is made up of other religions.

2. Health and Educational Facilities

25. There are one health complex, six family planning centres and three private hospitals within the upazila.

3. History, Culture and Tourism

26. Archaeological heritage and relics are generally of local interest only. None of these will be adversely affected by the proposed roadway improvements.

IV. ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

A. Planning, Location and Design

27. The interventions proposed under this component are the outcome from public demand physical conditions discussion with local people and finally field inspections by MDS technical with design engineer. RCC Road provided with side RCC drains and footpath is in consideration in design. There is low lying area and numbers of khals flowing through the area. Khals are flowing to the existing river. Alignment of drain is mainly by the side of existing road designed after proper level survey maintaining smooth slope. Three khals will be re-excavated for proper drain out of surface water from drain to the river. Three Drainage Sluice gates will be constructed at the starting point of khals to prevent intrusion back tide water from the adjacent river. Two Marine Driving roads are proposed. These roads will act as a town protection embankment against tidal surged from the existing river at sides. Provisions of walkways on both sides and greenery space in the middle with HBB on the top will be in the preliminary stage of this type of newly constructed embankment cum road. The existing right-of-way is generally clear, and for which no acquisition or easement for land is required. In some locations it may be difficult to obtain the full roadway design width, in which case the engineer will narrow the width based on what is available, or otherwise manage the problem locally with the landowner, or reduce the dimension of gutter or hard shoulder. In any case there is no generalized solution to the problem and it will be dealt with on a case by case basis (see project technical report). There is a high degree of certainty that the improvements can be made without affecting permanent structures.

28. Drainage is being installed on Roads where space is available at the side of the road. The available widths between property lines and buildings are too narrow to allow for installation of slot drains. Most of the road segments are built on embankments where there is natural drainage into surrounding khals and low lying areas.

B. Construction Phase

29. Construction presents the greatest potential for the subproject to exert a negative environmental impact. These are generally associated with interference with traffic movements, safety, convenience and local air quality impacts (dust). Impacts can be mitigated through environmental measures that are set out in the construction procurement documents. These measures address the following key areas: worker provisions, use of land for construction purposes, sediment controls, community health and safety, site conditions, quarries, materials sourcing and haul routes, and other factors. A set of these provisions for use in the procurement documents is found in Appendix 3.

30. Worker Provisions are meant to insure that the GOB and ADB policies are complied with regarding employment and worker health and safety. Employment criteria relate to minimum age, wage and living provisions, benefits, hours of work, overtime arrangements and overtime compensation, as set out by the GOB. ADB, and by reference the World Bank/IFC performance standards, sets out requirements for a safety and accident prevention program; and provision of safety equipment and training in use. Other aspects of worker provisions include availability of first aid equipment at the jobsite, and provisions for lodging, sanitary and potable water services and other facilities in the event workers are lodged at worker camps near the jobsite.

31. Use of land for construction purposes requires that local authorities be consulted on locations for worker camps and equipment yards, approval is obtained from landowners for temporary use and payments are made to legitimate owners, limits are placed on the types of activities permitted related to resource extraction (cutting

firewood, and harvesting of plants or fish), disposal of wastes at the site is prohibited, and final cleanup of the site is required.

32. Fill materials will be needed to build up embankments for some of the roads. The typical approach in Bangladesh is to obtain fill materials through sand dredging from the nearest available source, a nearby river, generally available through contractors. The fill material must be pumped or hauled by truck, or most typically some combination of the two. For instance it is common practice to dewater the sand at the river's edge, and transport over the entire distance by truck. Or the operation can be set up to pump sand to a location near the construction site, where it is dewatered and then hauled by trucks to the location for placement. Permits for sand dredging are awarded by the local government.

33. In order to reduce sediment losses at the construction site, controls should be implemented that limit the size of areas where there is construction in progress and assure that open excavations and exposed earth will be protected to the extent possible from flowing water. Discharge of any sort of wastewater into natural water bodies is prohibited and construction work where there is a potential for sediment loss will be suspended during rains.

34. To protect community health and safety, a number of provisions need to be put into place related to transport of materials along roadways, accident prevention, dust and noise control and use of flagmen to control traffic flow in the construction zone, location of equipment yards and batch mixing plants, provision of temporary access to shops and homes, and accommodating pedestrian traffic especially in commercial areas and near schools. Special considerations by the contractor will be necessary to assure the flow of traffic through the construction zone.

35. To maintain safe and environmentally acceptable conditions, the Contractor will provide a Site Environmental Management Plan for development of the construction zone, traffic management, worker camps, equipment yards and haul roads that minimizes interference with ongoing activity, noise and air pollution, congestion and visual impact. The contractor is required to avoid damage to any locations or artifacts of historical and archeological significance encountered during the progress of work.

36. The above-described performance rules apply generally to projects for rehabilitation of road and drainage infrastructure in their original alignments, and are practical for use on the present project to mitigate impacts on the environment, the community and human health. These performance rules are described in more detail in Appendix 3, and the monitoring protocol set up for the implementation phase relies on observing contractor conformance with these rules. Mitigation and monitoring requirements are tabulated in the Environmental Management Plan (EMP) found in Sec. **Error! Reference source not found.** of this report. In addition to the general requirements, the following protocols should be observed by the contractor.

37. Given the possibility of high volumes of traffic on some of the roadways during construction, the contractor is urged to set out a plan for accommodating traffic flow (both vehicular and, in places, pedestrian traffic) during construction, which will involve at the minimum:

- Consecutively perform construction on segments of roadway of no longer than 300 m in length before moving to the next length.
- Employ flagmen to control traffic flow through construction zones especially where road surfaces are being reworked.

- Remove construction debris as soon as possible after construction is completed in a given section of roadway; and do not leave piles of earth standing in the roadway for long periods.

38. In regard to the installation of drainage, the PIU should insist that the Contractor close the newly installed drains as quickly as possible (e.g. install covers on the newly installed drop inlets) to limit the amount of dirt that enters the drain, which would only serve to clog the drain and require early cleaning. The contractor should be responsible for turning over to the LGU a newly installed drain free of any obstruction and significant amount of dirt or silt deposits.

C. Operations Phase

39. Once in operation the improved roadways may be responsible for an increase in noise and air emissions from increased vehicular traffic. Still, any future condition needs to be compared to present circumstances, or to future circumstances without any improvement in the roads (future without-project conditions). These circumstances are difficult to predict or estimate; however it is nearly certain that conditions once the roads are improved will be better for local residents than would be the case without improvements. The conclusion is that the project provides improved roadway surfaces that enhance the flow of traffic and improve environmental conditions along the roadway.

40. Roadway safety will be enhanced by improved signage and shoulders that provide room for pedestrians and slow moving vehicles. Still, there will be a tendency for increasing speed because of an improved driving surface. The LGU should install speed barriers wherever there is a potential for congestion, in particular around pedestrian areas such as schools and commercial areas.

41. The project will provide drainage improvements in some areas. The LGU should regularly inspect and maintain the drains by removing residual dirt and repairing any breakage, including the covers of drop inlets, so that the drains do not become clogged and so that they continue to function as originally intended. The CRDP will provide O&M training to LGUs to instill a sense of responsibility for O&M that might not already be present. The LGU should:

- Establish a program of regular visual inspection to identify problems early, before they become critical (breakage, plugging, etc.)
- Ensure that all remedial action is implemented promptly, including clearing sediment and other material that could cause blockage, and conducting any required physical repairs to the drains to prevent leaks.

V. ENVIRONMENTAL MANAGEMENT PLAN

42. The IEE for this package has been prepared in accordance with ADB Safeguard Policy Statement's requirements for environment category B projects and provides mitigation and monitoring measures to ensure no significant impacts as a result of the subproject. The complete IEE can be downloaded from
< http://www.lged.gov.bd/ProjectLibrary.aspx?projectID=237>

43. The environmental management plan (EMP) describes the proposed mitigation measures in relation to potential impacts, and the means for assuring their implementation via monitoring. Institutional arrangements and costs related to mitigation and monitoring are described.

A. Summary of Environmental Impacts and Mitigation Measures

44. The potential adverse impacts of this road and drainage subproject as identified and discussed in Sections IV and the mitigations proposed to reduce impacts to acceptable levels are summarized in Table 2. The table also shows how the mitigation will be implemented, who will be responsible, and where mitigation activities take place.

B. Institutional Arrangements

45. The Local Government Engineering Department (LGED) is the executing agency and has established a Project Management and Coordination Unit (PMCU) for the overall CRDP Project. The PMCU has assigned responsibility for environmental aspects to a particular individual as staff PMCU Safeguard Management Officer (PSMO) who is engaged full time with implementation of the project and oversees work related to monitoring. The PMCU will be assisted by the Environmental Specialists (ES), consultants retained by the PMCU who work alongside the Design and Supervision Consultant (DSC) to support environmental management of subprojects undertaken by the CRDP. Local Government Units (LGUs) are the implementation agencies for subprojects under CRDP. LGUs have established Project Implementation Units (PIUs), each of which undertake construction of the subproject under its jurisdiction, including the Mongla Port Road and Drainage Subproject. Each PIU has appointed an Environmental Management Officer (PEMO) to oversee environmental safeguards during implementation.

46. The PMCU is responsible for procurement of Contractors for specific works, based on the subcontract packages considered most suitable for execution. The Environmental Management Plan and Special Conditions related to environmental protection (Appendix 3) are required to be included in construction procurement documents and become part of contract agreements. For the main construction contracts, the Contractor will be required to prepare a Construction Environmental Management Plan (CEMP) to ensure that construction works do not adversely affect health, safety, amenity, traffic or the environment in the surrounding area. The Contractor's Site Manager is responsible for preparing this plan prior to the start of construction and receiving approval for the plan from the PIU before the start of construction. The Contractor's Site Manager is required to be accountable for environmental aspects of construction. For smaller construction contracts or subcontracts, the (sub-) contractor will still be held accountable for implementation of mitigation measures through a system of quality assurance supervised by the PMCU.

47. The IEE has been finalized during the detailed design phase and the Environmental Management Plan and Special Conditions will be incorporated into the construction procurement documents. The Environmental Specialists (ES) of the PMCU

will assist the PIU to monitor implementation of mitigation measures during construction, to assist the PIU in reporting, and to prepare semi-annual safeguard monitoring reports[2] to be provided to ADB. The ES also will provide training to PMCU and PIU staff, focusing on ADB safeguard policies and procedures, use of verification checklists for monitoring environmental safeguards during construction, and reporting.

C. Grievance Redress Mechanism

48. The Grievance Redress Mechanism, as described in Sec. VI, involves a three tiered process for registering and resolving complaints raised by project affected persons through intervention by the PIU (first level), the local Grievance Redress Committee (second level) of the LGU, or the PMCU (third level). The construction contractor has a role to deliberate along with the PIU and representatives of the PMCU (through the DSCM) solutions to complaints raised by individuals and groups, and to act promptly (within a period appropriate to the nature of the complaint) on executing agreed upon solutions to specific problems, then reporting back to both the PIU and the affected party on solutions undertaken by the contractor. The GRM serves dual functions to register complaints related to both environmental impacts and resettlement and compensation. The contractor will post notices announcing the grievance redress mechanism in local government offices (the Pourashava office) and in strategic places of the subproject's area of influence.

[2] Quarterly reports submitted by the PMCU to ADB will contain a summary of environmental performance during the quarter, whereas a semi-annual safeguard monitoring report, as specified in Item f. under Environment in the Loan Covenant, will provide more detailed information.

Table 2: Potential Environmental Impacts and Mitigation Measures

Potential Negative Impacts	Sig	Dur	Mitigation Activities and Method	Responsibility	Location
PLANNING, LOCATION & DESIGN					
Detailed design fails to incorporate good engineering design practice	S2	P	Analyze, survey and produce a technically and economically feasible designs	MDS, LGED	PMCU office
Spoils impact and mitigation measures	S2	T	Spoil management plan should be submit for approval from PIU for the disposal sites of excavated materials, spoils, construction debris and garbage prior to start of construction work.	MDS, LGED	PMCU office
CONSTRUCTION					
Awareness of surrounding people	S3	T	Inauguration meeting should be held at site headed by local representative	PIU	Project site
Traffic management plan for during construction period	S3	T	Submit a traffic management plan including but not limited to list of roads to be closed, number of flagmen to be designated along length of drainage per work day, type and number of signs/barricades to be used.	Contractor	Project site
Impact on air quality and noise levels due to construction activity	S2	T	Application of water to suppress dust where needed. Prompt removal of spoil materials	Contractor	All activities
Construction blocks access from failure to backfill trenches and removed materials and construction debris	S2	T	Provide means to bypass construction using detours, bridging trenches and providing pathways. Specific clauses in tender documents to complete construction promptly and remove excavated materials and debris.	Contractor	Project Site
Traffic congestion and blockage of paths of travel	S2	T	Provide signage, flagmen and detours around construction as appropriate; where pedestrian traffic is common, provide paths of travel through construction area.	Contractor	Project Site
Traffic and human movement may be disrupted by materials hauling	S3	T	Plan routes to avoid congested areas and narrow roads. Schedule transportation to avoid peak traffic	Contractor	Project Site
Quarters for workers in the proximity of worksites, and equipment/material yards	S3	T	Minimize need for workers quarters, equipment yard and onsite repair facility in work area; provide potable water supply and latrines for workers, and solid waste disposal	Contractor	All activities
Dirt, sediments and sludge causes an inconvenience by blocking pedestrian and vehicular access, nuisance to local residents, and impact on public health.	S2	T	Dispose of spoil material at a location agreed to by the PIU and the property owner. Use tarpaulins to cover dry materials during transport	Contractor	Project Site
			Provide walkways and metal sheets where required to maintain access across for people and vehicles		
			Increase workforce in front of critical areas such as institutions, places of worship, business establishments, hospitals and schools		
			Consult businesses and institutions regarding operating hours and factoring this in work schedules and ensure there is provision of alternate access to businesses and institutions during construction activities, so that there is no closure of these shops or any loss of clientage;		

Potential Negative Impacts	Sig	Dur	Mitigation Activities and Method	Responsibility	Location
			Ensure any damage to properties and utilities will be restored or compensated to pre-work conditions.		
			Materials excavated preceding construction of small drains to be removed from the site quickly.		
			Sediments and sludge excavated from drains, khals and rivers allowed to dewater and dry no longer than one week before removal.		
			Clear path of access for three-wheeled vehicles, rickshaws and pedestrians maintained along routes of usual travel.		
			Excavated materials sufficiently dry or loaded into sealed dump trucks that will not leak materials onto roadways		
Lack of planning during construction fails to properly sequence activities and minimize disturbance/cost.	S2	T	Plan construction to accommodate traffic flow; perform work on one road before beginning work on the second; complete construction on one segment before progressing to new location.	Contractor	Project Site
Drains are clogged at end of construction period.	S2	P	Close or cover newly installed drains to prevent entry of dirt; contractor to turn over to LGU installed drain free of dirt or foreign material.	Contractor	Drainage works
Schools, mosques, hospitals, temples may be disturbed by noise, dust and impeded access	S2	T	Increase work force to complete construction quickly in affected areas. Practice good housekeeping to minimize dust / avoid obstruction in the paths of travel of pedestrians and vehicles	Contractor	All activities
Potential for benefit from employment for local people	S2	T	Provide preferential employment for locals in labor force as specified in construction contract tender documents	Contractor	Project Site
Trees may be removed along drainage easements	S2	P	Avoid removing trees where possible	Contractor	Project Site
Potential for accident and injury of construction workers and public in zone of construction	S2	T	Implement a safety and health plan for workers and require personal protective gear suitable to the type of work being performed. Train in safe work procedures. Maintain a record of accidents that are reported to the supervising engineer. Bar the public from construction areas and barricade and mark excavations	Contractor	Project Site
OPERATION & MAINTENANCE					
Drainage channels are not maintained, solid waste builds up in drains, drains no longer function properly.	S2	P	Prevent deposit of foreign materials (oil, grease, solid waste, plastics) into drains, inspect, repair and clean drain periodically.	GCC	All drains
Appearance and environment will deteriorate if material from drain cleaning piled on adjacent land	S2	T	Dispose of material from blocked drain in location away from roadway and drain	GCC	All drains

Sig = Significance of Impact (S3 = Not Significant, negligible impacts; S2 = Moderate, reversible impacts which are site specific and simple to contain and mitigate; S1 = Significant, potentially irreversible impacts requiring complex mitigation); Dur = Duration of Impact (T = Temporary; P = Permanent)

D. Environmental Monitoring and Reporting

49. Monitoring of mitigation measures during construction is the responsibility of the PIU Environmental Management Officer, supported by the PMCU Environmental Specialists. The monitoring system involves a Monitoring Checklist, which reflects the requirements of the EMP and Special Conditions. The checklist will be filled in quarterly by the PIU, and consists of three sections:

a. A section to be completed one-time-only during the period when the design is being finalized, the project tendered, and construction activities started. This section provides monitoring of four performance indicators: Design and Preparations, Worker Provisions, Gender Equity and Community Based Monitoring. The section also contains information regarding public consultation and follow-up.

b. A section to be completed quarterly during the construction period. This section provides monitoring of two performance indicators: Community Values and Safety, and Hydrology/Water Pollution. This section will be completed for each period quarter of the construction duration.

c. A section to be completed one-time-only during the period when construction work is nearing completion. This section provides monitoring of Project Completion indicators of performance.

50. Monitoring also requires quarterly performance tracking, which involves:

a. Performance Follow-up, where performance shortfalls noted in prior monitoring are listed and checked against current monitoring results.

b. Community Complaints, where issues raised by the affected community are registered, tracked and outcomes recorded.

c. Performance Indicator Results, where environmental performance against indicators are recorded.

51. Analysis and reporting as done by the PIU involve gathering data from quarterly monitoring and submitting results to the PMCU. The ES will analyze the data and compile results for the contracts active during the quarter. Both quarterly and semi-annual summaries of results will be submitted to the ADB.

52. Table 3 shows the proposed Environmental Monitoring Plan for this subproject, which specifies the various monitoring activities, indicating location, frequency of monitoring and responsibility.

E. Environmental Management and Monitoring Costs

53. Mitigation costs are included in the overall cost for design and supervision consultants and/or the contract bid price for the construction work. Costs for monitoring are covered by the costs for environmental consultants, who will perform the monitoring. Costs associated with land acquisition and compensation are reported in the resettlement plan. No special costs is associated with the environmental mitigation and monitoring measures.

Table 3- Environmental Monitoring Requirements

Mitigation Activities and Method	Location	Responsible for Mitigation	Monitoring Method	Monitoring Frequency	Monitoring Responsibility
PLANNING, LOCATION AND DESIGN					
Analyze, survey and produce a technically and economically feasible design	PMCU office	MDS, LGED	Critical evaluation of design outputs	Continuous	Team Leader & Project Director
Plan the sequence of construction to minimize disruptions	PMCU office	MDS, LGED	Critical evaluation of tender and construction pre-planning	Prior to tender award	Team Leader & Project Director
Incorporate good engineering practice into design	PMCU office	MDS, LGED	Review of design outputs	Before design approval	Team Leader & Project Director
Spoil management plan should be submitted for approval from PIU for the disposal sites of excavated materials, spoils, construction debris and garbage prior to start of construction work.	PMCU office	MDS, LGED	Include environmental clauses; critically evaluate environmental / safety aspect of implementation	Before approval of tender document	Team Leader & Project Director
Environment, Health and safety part of contract documents	PMCU office	MDS, LGED	Include environmental clauses; critically evaluate environmental / safety aspect of implementation	Before approval of tender document	Team Leader & Project Director
CONSTRUCTION					
Inauguration meeting should be held at site headed by local representative	Project site	PIU	CC records	Once before commencement	PIU
Traffic management plan including but not limited to list of roads to be closed, number of flagmen to be designated along length of drainage per work day, type and number of signs/barricades to be used.	Project site	Contractor	Site Visits; CC records	Weekly	MDS, PIU
Application of water to suppress dust where needed. Prompt removal of spoil materials	Construction zone	Contractor	Site Visits; CC records	Weekly	MDS, PIU
Provision of means to bypass construction where necessary using detours, bridging trenches and providing pathways.	Distribution	Contractor	Site visit; resident survey	Weekly	MDS, PIU
Provide flagmen and traffic detours when necessary	Distribution	Contractor	Site visits; CC records	Weekly	MDS, PIU
Plan truck routes to avoid congested areas, narrow roads and peak traffic	All sites	Contractor	Observations off site; CC record	Monthly	MDS, PIU
Dispose of spoil material at a location agreed to by	Construction	Contractor	Site Visits; CC records	Monthly	MDS, PIU

Mitigation Activities and Method	Location	Responsible for Mitigation	Monitoring Method	Monitoring Frequency	Monitoring Responsibility
the PIU and the property owner. Use tarpaulins to cover dry materials during transport	zone				
Materials excavated preceding construction of small drains to be removed from the site quickly.	Construction zone	Contractor	Site visits	Weekly	MDS,PIU
Excavated materials sufficiently dry or loaded into sealed dump trucks that will not leak materials onto roadways	Haul routes	Contractor	Observations on and off site	Weekly	MDS,PIU
Cover or damp down fill material, soil and sand stockpiled on site	Construction zone	Contractor	Site visits	Weekly	MDS,PIU
Only bring construction material to site when needed.	Inhabited areas	Contractor	Site visits; CC records	Weekly	MDS,PIU
Sediments and sludge excavated from drains, khals and rivers allowed to dewater and dry no longer than one week before removal.	Construction zone	Contractor	Site visits; CC records	Weekly	MDS,PIU
Land acquisition / compensation in accord Resettlement Framework*	Where required	GCC	Landowner surveys; LGED record	As needed	MDS,PIU
Clear path of access for three-wheeled vehicles, rickshaws and pedestrians maintained along routes of usual travel.	Construction zone	Contractor	Site visits, CC records	Weekly	MDS,PIU
Increase workforce in front of critical areas such as institutions, place of worship, business establishment, hospitals and schools	Distribution	Contractor	Site visits; CC records	Monthly	MDS,PIU
Consult businesses and institutions regarding operating hours and factoring this in work schedules and ensure there is provision of alternate access to businesses and institutions during construction activities, so that there is no closure of these shops or any loss of clientage	Distribution	GCC	Resident surveys; CC records	Monthly	MDS,PIU
Ensure any damage to properties and utilities will be restored or compensated to pre-work conditions.	Distribution	MDS/GCC	Site visit; design reports	Monthly	MDS,PIU
Plan work with town authorities – work when traffic is light	Distribution	Contractor	Site visits; CC records	Monthly	MDS,PIU
Plan construction to accommodate traffic flow; perform work on one road before beginning work on the second; complete construction on one segment before progressing to new location.	Construction zone	Contractor	Site visits, CC records	Monthly	MDS,PIU

Mitigation Activities and Method	Location	Responsible for Mitigation	Monitoring Method	Monitoring Frequency	Monitoring Responsibility
Develop and apply archaeological protocol to protect chance finds	All sites	MDS and CC	MDS and CC records; Site visits	Weekly	MDS,PIU
Provide walkways and metal sheets where required to maintain access across for people and vehicles	Where needed	Contractor	Design reports; resident surveys	Monthly	MDS,PIU
Minimize need for workers quarters, equipment yard and onsite repair facility in work area; provide potable water supply and latrines for workers, and solid waste disposal	All sites	Contractor	Site visits; CC records	Monthly	MDS,PIU
Exclude public from the site with barricades; provide pedestrian path of travel through work area	All sites	Contractor	Site visits; CC records	Monthly	MDS,PIU
Ensure that workers wear Personal Protective Equipment	All sites	Contractor	Site visits; CC records	Monthly	MDS,PIU
Provide Health and Safety training for all personnel	All sites	Contractor	CC records; worker interviews	Monthly	MDS,PIU
Keep accident reports and records	All sites	Contractor	CC records	Monthly	MDS,PIU
Employ workforce from communities near sites	All sites	Contractor	CC records; worker interviews	Monthly	MDS,PIU
Close or cover newly installed drains to prevent entry of dirt; contractor to turn over to LGU installed drain free of dirt or foreign material.	Construction zone	Contractor	Site visits	Monthly	MDS,PIU
OPERATION AND MAINTENANCE					
Prevent deposit of foreign materials (oil, grease, solid waste, plastics) into drains, inspect, repair and clean drain periodically; dispose of materials removed from drains	Pourashava Office	OM contractor	Site observations	Monthly	Pourashava Office
Dispose of material from blocked drain in location away from roadway and drain	Pourashava Office	OM contractor	Site observations	Monthly	Pourashava Office

VI. PUBLIC CONSULTATION, DISCLOSURE AND GRIEVANCE REDRESS

A. Project Stakeholders

54. The CRDP Project approach for stakeholder involvement relies on the local government unit to be informed of the needs of the local community. Proposals for investment in public facilities are taken up based on recommendations from the LGU, which represent ward commissioners, businessmen, NGOs and citizen's associations, slum improvement committees and average citizens from the wealthy, middle-class and poor strata of the community.

B. Public Consultation

55. Consultation was carried out through meeting with the LGU representatives during project scoping, a group most familiar with the needs of the local communities. In addition, informal discussions were held during the site visit with local people along the roadways, who expressed that the main issue they face has been the poor conditions of roadways. The subproject gains the full support of communities, local businesses and transport operators in the area. It is up to the project implementing agency to insist that the contractor undertake the work in a manner that will cause the least inconvenience to the community.

56. The Project will provide training for staff working in CRDP, consultants and LGU staff on safeguard policies. Further consultation will be conducted during construction, to obtain views from the community on the best means for alleviating impacts.

C. Disclosure

57. Subproject disclosure will follow the following general guidelines:

- Public disclosure meetings during construction to inform the public of progress
- Formal disclosure of completed subproject reports by posting on the LGED website and by making copies available at locations in the towns, informing the public of their availability, and providing a mechanism through which comments can be made.

D. Grievance Redress Mechanism

58. A grievance redress mechanism (GRM) has been set up for the CRDP project to register grievances brought by people in the affected community regarding technical, social and environmental aspects, which is described in the EARF.

VII. FINDINGS, RECOMMENDATION AND CONCLUSION

A. Findings

59. The Mongla Port Road and Drainage Subproject is designed to improve the quality of life of residents by improving traffic flow within neighborhoods of, and along the main corridor entering, Mongla Port Pourashava. Residents and businesses that use these roadways will benefit from the improved roads, allowing better road transport access and reduced travel time. Business that makes up the local economy will benefit from enhanced productivity as a result of time savings from increased urban efficiency.

60. During subproject design, informal meetings were held with affected people to discuss environmental concerns, and further public consultation is anticipated during construction.

61. The IEE assesses environmental impacts of the proposed road and drainage improvements. Potential negative impacts stem primarily from construction. Mitigation measures have been proposed to reduce negative impacts to acceptable levels. These and other mitigation and enhancement measures are summarized in Table 2, which also shows the location of the impact and the group responsible for mitigation.

62. The improved roads will provide more efficient and effective transport routes, which should improve the local economy by reducing time spent traveling to and from markets, schools and work. Drainage improvements will reduce the potential for flooding along Roads.

63. An environmental monitoring program will be conducted during construction to document the extent that mitigation measures are being carried out. This will include observations of construction practice according to a formal checklist, document checks, and interviews with workers and beneficiaries. Reporting on environmental safeguards will be done in line with the approaches set out for the CRDP.

B. Recommendation

64. The recommendation is that environmental impacts of the subproject, stemming mainly from construction, should be mitigated through the measures described in this report. The LGU supported by the MDSC should follow the prescribed monitoring and reporting procedures to document the extent of mitigation measures being implemented.

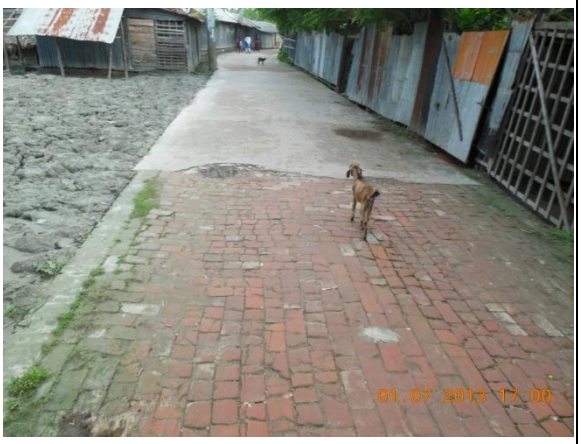
C. Conclusion

65. Environmental impacts of the proposed road and drainage subproject have been assessed. The overall conclusion is that if the mitigation, compensation and enhancement measures are implemented in full, there should be no significant negative environmental impacts as a result of location, design, construction or operation of the subproject. Major improvements in quality of life and public welfare will result once the scheme is in operation.

PHOTOGRAPHS OF EXISTING ROAD CONDITIONS

Port Primary School Road

Vashani Road



Road from Holsim at Khulna Mongla Highway to Laudod Kheyaghat

Marine Driving Road

Hazi Baharuddin Road

Madrasha Road

Appendix 1: Environmental Clearance from Department of Environment

Government of the People's Republic of Bangladesh
Department of Environment
Head Office, Paribesh Bhaban
E-16 Agargaon, Dhaka-1207
www.doe-bd.org

Memo No: DOE/Clearance/5194/2013/180 Date: 21/07/2013

Subject: Environmental Clearance for City Region Development Project.

Ref: Your application on 13/06/2013.

With reference to the above, the Department of Environment (DOE) hereby accords Environmental Clearance to above project excluding the construction of Water Treatment Plant, Water Distribution Pipeline Laying, Sanitary Landfill, Bus and Truck Terminal sub-components.

A copy of the said Environmental Clearance Certificate is attached herewith for your necessary action.

21.07.2013

(Syed Nazmul Ahsan)
Deputy Director (Environmental Clearance)
and
Member Secretary
Environmental Clearance Committee
Phone # 8181778

Mr. Md. Wahidur Rahman
Chief Engineer
Local Government Engineering Department
LGED Bhaban, Agargaon, Dhaka.

Copy Forwarded to :

1) PS to Secretary, Ministry of Environment and Forests, Bangladesh Secretariat, Dhaka.
2) Director, Department of Environment, Dhaka Regional Office, Dhaka.
3) Director, Department of Environment, Khulna Division, Khulna.
4) Assistant Director, Office of the Director General, Department of Environment, Head Office, Dhaka.

Appendix 2: Rapid Environmental Assessment (REA) Checklist: Roadway and Drainage

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT
CITY REGION DEVELOPMENT PROJECT (ADB LOAN 2695-BAN)
Rapid Environmental Assessment (REA) Checklist for Screening of
ROADS AND DRAINAGE SUB - PROJECT

Instructions:

- This checklist is to be prepared to support the environmental classification of a project. It is to be attached to the environmental categorization form that is to be prepared and submitted to the LGED / MDS Consultant
- This checklist is to be completed by the PIU with the assistance of an Environment Specialist
- This checklist focuses on environmental issues and concerns. To ensure that social dimensions are adequately considered, refer also to ADB checklists and handbooks on (i) involuntary resettlement, (ii) indigenous peoples planning, (iii) poverty reduction,
- Answer the questions assuming the "without mitigation" case. The purpose is to identify potential impacts. Use the "REMAKS" section to discuss any anticipated mitigation measures.

Name of the	**Pourashava**	Mongla Port Pourashva
	Urban Center	

Name of Sector: Urban Transport and Drainage

Name of the Scheme: Improvement of RCC road from Nannar House at Signal Towar Abdul Majid road to Port Primary School via Navy Camp and others roads including side drain and footpath

SCREENING QUESTIONS		Yes	No	REMARKS
A.	**The Project**		☐	
●	Road length < 20 Km	√		Length 5.500 km
●	Road length > 20 Km		√	
●	Drainage included with roadway improvements	√		
●	Drainage improvements outside roadway ROW		√	
●	Waterway dredging in addition to drainage works		√	
●	Widening of road formation	√		
●	Repair /Improvement of road	√		Improvement
●	Road Length within/abutting wetland (beel etc.) (m)		√	
●	Road constructed along river or canal (km)		√	
●	Road crossing any stream, canal, river		√	
●	No. of cross-drainage structures per km		√	
●	Frequency of flood on either side of the road		√	

●	Plantation on ROW		√	
B	**Project Siting**			
Will the project area affect any of the following environmentally sensitive areas?				
●	Cultural heritage site		√	
●	Protected Area		√	
●	Wetland		√	
●	Mangrove		√	
●	Estuarine		√	
●	Buffer zone of protected area		√	
●	Special area for protecting biodiversity		√	
●	Bay		√	
C	**Construction**			
♦	Will construction affect critical waterbodies (rivers, irrigation canals, lakes or beels in use by the local community)?		√	
♦	Deterioration of surface water quality due to silt run-off, sanitary wastes from worker camps and chemicals used in construction?		√	
♦	Will air pollution from earth works, rock crushing, cutting and filling works, and chemicals from asphalt processing substantially affect the local community?	√		During Construction work only
♦	Are there community values affected by noise and vibration from blasting and other civil works?	√		During Construction work only, to be mitigated
♦	Will there be excess traffic disturbances due to construction?	√		During Construction work only
♦	Is there an increased risk of road accidents?	√		Safety sign will be installed during construction period
♦	Will there be blockage of access, or negative effect on commercial businesses or street vendors?	√		During Construction work only, to be mitigated
♦	Are there other concerns relating to community impact in the project areas?	√		Minor, Mitigated with standard means
♦	Will the project cause hazardous driving conditions due to interference with current traffic patterns?	√		To be mitigated
♦	Does the project require construction camps and equipment yards?	√		
♦	Will there be social conflicts between construction workers and the community?		√	Local labourer will be engaged
♦	Is there a chance for increasing the spread of HIV/ AIDS and STD?		√	
♦	Does the project require dislocation or involuntary resettlement of people?		√	
D	**Operations**		√	

♦	Does the drainage outfall cause pollution or impact on ecology of receiving water?		√	
♦	Does the drainage outfall discharge to irrigation canal?		√	
♦	Does the drainage outfall affect community water use in areas adjacent to outfall?		√	
♦	Will the project create breeding habitats for mosquitoes?		√	
♦	Will there be increased noise and air pollution resulting from traffic volume?	√		Unavoidable
♦	Is there increased risk of water pollution from vehicles using the road?		√	
♦	Will there be blockage of canals by sediments		√	
♦	Is there a chance for increased spread of water-borne diseases?		√	

Signature of National Environmentalist

Signature of Pouroshava/Upazila Engineer's Office Representative

Appendix 3: Environmental Specifications for Construction Contractor

General

1. The contractor shall review and comply with the environmental management plan (EMP) prepared for the subproject, and will note and implement any particular requirements therein, in addition to those found in this general specification. At the start of construction, the contractor will provide a Construction Environmental Management Plan for compliance with these specifications, including development of the construction zone, worker camps, equipments yards, haul roads and borrow/quarry areas. The contractor's implementation of mitigation measures will be monitored during the course of the work and reported to the ADB.

2. The contractor will post a public notice regarding the nature, extent and cost of the project at the start of the construction zone; and post notices announcing the grievance redress mechanism in local government offices and in strategic places of the subproject's area of influence. For projects with multiple sites, a single notice may be posted at the pourashava, upazilla or municipal office.

3. The Contractor's Project Manager or other technical staff shall serve as focal person for EMP implementation and for responsibilities under the Grievance Redress Mechanism (GRM). The Contractor's Project Manager or other technical staff is required to obtain construction environmental management training and orientation to be provided by an LGED specialist at the start of construction. Costs for implementing requirements set out herein are considered to be incorporated into the unit bid price for quantities unless indicated as paid for through provisional sums.

Worker Provisions

4. GOB criteria for minimum age, wage and living provisions, benefits, hours of work, overtime arrangements and overtime compensation, and leave for illness, maternity, vacation or holiday should be met for all workers. The Contractor will conform to national law in relation to hiring and employment; and will comply with the principle of equal opportunity, fair treatment, and nondiscrimination with respect to the employment relationship. Hiring of project-affected persons, women, residents of project-affected administrative units and disadvantaged groups is encouraged.

5. The contractor shall implement a safety and accident prevention program involving provision, training and use of safety equipment; minimum skills qualifications for operators and drivers; and record keeping related to accidents.

6. The Contractor will provide Personal Protective Equipment (PPE) to workers that offer adequate protection to the worker without incurring unnecessary inconvenience in its use[3]. Proper maintenance of PPE, including cleaning when dirty and replacement when damaged or worn out; and proper use of PPE should be part of training programs, as appropriate.

7. The contractor will maintain first aid kits onsite along with instructions for use, and personnel trained in basic first aid emergency response measures. In case of injury,

[3] Depending on the application PPE may include safety glasses with or without side-shields, and protective shades; plastic helmets with top and side impact protection; hearing protectors (ear plugs or ear muffs); safety shoes and boots for protection against moving & falling objects, liquids and chemicals; gloves made of rubber or synthetic materials; facemasks with appropriate filters for dust removal and air purification; single or multi-gas personal monitors; portable or supplied air; on-site rescue equipment, and insulating clothing, body suits and aprons of appropriate materials.

the contractor shall arrange treatment of the injured worker(s) and bear the cost of treatment.

8. Laborers and others resident at the site will be provided with lodging in a camp setting, potable water supply, food service facilities and adequate means for maintaining personal hygiene and solid/liquid waste disposal.

9. Safe drinking water will provided at the worksite with sufficient numbers of access points to assure availability for workers. Water will be periodically tested for and assured safe from bacteriological contamination.

10. HIV/AIDS awareness should be incorporated into the contractor's policy and outreach toward workers.

Gender Equity

11. The contractor shall provide equal wage payment for work of equal value for women, as required by the Government of Bangladesh. Separate sanitation and bathing facilities shall be provided for women at work camps and at the construction site.

12. The contractor is encouraged to engage women laborers, project affected women and destitute persons on works suitable for them, and shall follow ILO conventions and relevant protocols. The contractor shall consult with the Women's Ward Councilor and others on the availability of women workers including indigenous women workers in the area to engage them in work suitable to their skills.

Use of Land for Construction Purposes

13. The worksite and ancillary sites shall be surveyed and pegged prior to construction to ensure correct lines and grades for alignments, earth fill, side slopes, flow lines and trees to be removed or preserved in accordance with the design. Final verification of affected persons and assets shall be undertaken prior to the commencement of the works.

14. The contractor will obtain approval from landowners for temporary use of land for ancillary sites such as labor camps and construction yards. Local authorities will be consulted on locations, which will in no case be within 100 m of sensitive receptors such as hospitals, schools, residential communities or identified archaeological, religious or cultural sites. The contractor shall obtain approval and permits from the concerned District Collector for sand mining in rivers. An ancillary site shall be above flood level, at least 10m away from watercourses, and its size kept to a minimum to reduce vegetation clearance and ground disturbance.

15. The contractor will not encroach upon vacant land, or damage forests, wildlife or fisheries in the project area. The Contractor will execute a plan for preventing firewood gathering in the project area and prohibit among workers possession of instruments or poisonous substances for killing or capturing fish or wildlife.

16. Vegetation clearance shall be confined to the minimum area required for construction. Trees within the boundaries of ancillary sites shall be retained wherever possible.

17. Cutting trees is prohibited except inside the construction zone, on upper and lower slopes requiring stabilization, and in quarry areas. Trees to be removed must be specified in the Project plans and specifications. Pits resulting from removal of trees

and stumps shall be backfilled and compacted. The contractor shall dispose of removed vegetation at locations approved by the Engineer.

18. No fuel, oil, or parts cleaning fluids shall be spilled, wasted or disposed of at the project site. Secondary containment (earth or concrete berm with bottom and sides sealed with plastic sheeting) at least equal to the capacity of the fuel storage tank shall be provided at fueling stations. Hazardous materials shall be stored above flood level and at least 20m away from any water course.

19. After completion of occupancy, all affected areas within the general project boundary shall be graded to their original elevation or to a continuous sloping grade that allows positive drainage. Machinery, equipment, structures, contaminated earth, plant matter and waste or unused materials shall be removed and disposed of at locations approved by the Engineer.

Sediment Controls and Spoil Materials

20. Areas to be cleared and excavated are limited to areas where construction will take place. The areas will be protected from flowing water including sheet runoff. The contractor will limit sediment loss from exposed surfaces. Existing drainage patterns should be maintained during construction to the extent possible.

21. Discharge of wastewater into water bodies is prohibited as is the discharge of wash water from concrete trucks to waterways. . Land clearing activity will be suspended during rains to limit sediment loss.

22. Topsoil shall be removed from areas of fill or sub-surface excavation and stockpiled at designated locations for reuse in covering embankment slopes, berms, and other disturbed areas.

23. Unsuitable and spoil materials shall be disposed promptly and properly from the site at locations approved by the Engineer.

Community Values

24. Vehicles transporting dirt, sand and construction materials capable of producing dust will be covered when traveling through community areas or along roadways in use by the public. Vehicles will operate within the legal speed limits in populated areas. The operation of moving equipment in locations accessible to the public will be done in a manner so as to prevent the occurrence of incidents and accidents.

25. The Contractor should use available means to prevent accidents by emphasizing safety aspects among drivers; assuring sufficient driving skills and requiring licensing of drivers; adopting limits for trip duration and arranging driver rosters to avoid overtiredness; specifying and obtaining approval from the PIU in advance, and adhering to, haul routes between borrow areas and the project site; avoiding dangerous routes and times of day to reduce the risk of accidents; use of speed control devices (governors) on trucks, and remote monitoring of driver actions.

26. The contractor is responsible for regular spraying of roadway surfaces in use as haul routes and of sites under construction as well as temporary detours where these locations are accessed by the public. The contractor will remove excess debris during construction and after completion of the item of work.

27. The contractor will locate aggregate crushing and batch mix plants at sufficient distance (at least one km) from populated areas, houses, schools and hospitals so as

to reduce air pollution and noise. The contractor shall protect, conserve and maintain access to social and cultural properties in the project area including schools, mosques, hospitals, temples, shrines, graveyards, tourism sites and other public places. The contractor may increase the workforce to minimize the duration of construction in such areas.

28. The Contractor will post flagmen at intersections of transit paths for construction vehicles and local traffic, and along traffic lanes where work is in progress. Traffic detours will be clearly marked.

29. The contractor will provide a path for transit of pedestrians and vehicular traffic through or around the construction area; and barricade open excavations to prevent injury to the public.

30. The contractor shall ensure that working hours do not extend beyond 7.00 a.m. to 7.00 p.m. to avoid undue disturbance of the local people.

31. The contractor shall avoid trenching near to buildings, walls and existing buried pipelines. If unavoidable, the contractor shall provide adequate protective measures to prevent damage.

32. The contractor will avoid blocking access to land, homes and businesses; where unavoidable, the contractor will provide temporary access to affected properties and reinstate permanent access on completion of work; minimize the area under construction at any one time and the duration of works at any one location; and minimize impacts on infrastructure, access and services. Backfill and sealing of construction trenches shall be done promptly.

33. The contractor will install signs and lighting, where there is nighttime traffic, in the vicinity of works on public roads, and restrict access to the construction site by the public.

34. All construction machinery and vehicles to be used in works shall be of proven efficiency and shall conform to GOB standards for emissions and noise levels. The contractor shall regularly maintain the construction machinery and vehicles so that emissions, vibrations and noise levels conform to GOB's relevant standards. The Contractor shall prohibit the use of air horns in settlement areas.

35. The contractor shall promptly reinstate any services and reinstall any physical facilities that are cut, disconnected or damaged during construction activities, and shall maintain or provide temporary services that are interrupted by construction. The Engineer shall inspect and certify the adequacy of all reinstated services and facilities.

<u>Site Conditions, Quarries and Haul Routes</u>

36. At the start of construction, the contractor will provide a Site Environmental Management Plan for development of the construction zone, worker camps, equipment yards, haul roads and quarry areas.

37. Haul routes will minimize interference with ongoing activity in the area. Routes shall be approved by the PIU. Haul roads and transport/equipment routes shall be kept within the construction zone, unless authorized by the PIU.

38. Selection of borrow pits, quarry sites and haul routes shall minimize noise and air pollution in the site vicinity, visual impacts in inhabited areas, impacts on land use, air and noise emissions along haul routes, and congestion in populated areas.

39. Quarry and borrow pit locations will be permitted for use by the local authority, and shall be pre-existing sites, e.g. already in use prior to the start of the construction. Newly opened quarry locations require approval of the PIU.

40. The contractor shall select borrow pits that are free from organic materials. The use of dredged materials from rivers is permitted if the materials are sandy and free from organic matter. Topsoil from farmland should not be used as fill.

41. The contractor shall stockpile construction materials in such a way as to prevent any loss of materials to watercourses. Stockpiling of backfill shall be done outside the right of way and not on the side slopes of roads.

42. Borrow pits shall be restricted to areas within the construction zone as defined by right-of-ways for roads, embankments and irrigation canals. Borrow pits along linear alignments will be interconnected; smoothly excavated; of uniform depth, width and slope; and graded to drain after use.

Archeological and Cultural Relics

43. The Contractor will stop construction on discovery of objects of archeological origin; and notify the PIU, who will contact the Department of Archaeology, Ministry of Cultural Affairs to investigate and, if desirable, undertake recovery. Work must remain halted at the specific location until investigation is complete.