

Initial Environmental Examination

Project Number: 47243-004
August 2018

People's Republic of Bangladesh: Rural Connectivity Improvement Project

Prepared by the Local Government Engineering Department, Ministry of Local Government for the Asian Development Bank (ADB).

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Environmental Assessment Report

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Executive Summary

A. Project Background

1. Bangladesh has a population of about 163 million (2016) and a land area of 147,570 square kilometers, is amongst the most densely-populated countries in the world, and one of the most vulnerable in the world to climate risks. Two-thirds of the country is less than 5 meters above mean sea level and located in the world's largest tropical river deltas of the Ganges, Brahmaputra, and Meghna making it one of the most disaster-prone country in the world with damages accounting for 1% of the GNP annually. About 80% of the population live in rural areas with the agriculture sector contributing about 15.5 % of the Bangladesh GDP in 2015 and comparable to the rest of the South Asia and employs about 50% of the work force. Agricultural development is critical to poverty reduction, as most of the poor in Bangladesh are in rural areas and depend on agriculture for their livelihood. The major challenges in agriculture in Bangladesh are promotion of production technology, nutrition, value chains and maintaining food security. Insufficient rural transport, market infrastructure, and climate change impacts are major constraints. Accordingly, the Seventh Five-Year Plan has put forward specific strategies to overcome the challenges and constraints to agricultural development.

2. Road is the dominant mode of transportation in Bangladesh utilized by over 70% of passengers and 60% of freight traffic. Rural connectivity is a key component of rural development in Bangladesh. Rural roads contribute significantly to generating increased agricultural incomes and productive employment opportunities, alongside promoting access to economic and social services. Rural roads are the virtual lifelines for the vast multitude residing in rural areas. During the past decades, rural infrastructure in Bangladesh has significantly improved. Despite progress, rural connectivity in Bangladesh remains weak, impeding the physical and economic access. About 40% of the rural population has got access to all-weather roads. Only 28% of the roads are paved and in good or fair condition

3. Under the Seventh Five-Year Plan will increase the percentage of “good and fair” conditioned rural roads in the country in a series of steps from 43% in 2016 to 80% in 2020. Aligned with this, the proposed **Rural Connectivity Improvement Project (RCIP)** will improve about 1711.708 km of rural roads to all-weather standards, serving the agriculture sector and 51.5 million rural people (49% of the country's population) living in 34 districts located in five divisions. The project will support the government's agricultural strategy of increasing agricultural productivity, encouraging commercial agriculture and agribusiness development, increasing employment opportunities for rural poor people, and reducing the poverty level. All the rural roads have been selected from the rural road master plans through robust selection criteria which include an objective assessment for prioritization. The selection criteria took into consideration the population size, each district's agricultural potential, the number of agricultural farms and commercial establishments, economic potential, access to education facilities, and flood damaged roads, particularly those roads damaged in 2017.¹

B. Characteristics of existing roads

4. In general, the project roads suffer from poor pavement condition with many potholes, edge fauilures, and depressions. Several sections bounded by ponds on either both or one side

¹ In 2017, successive heavy rains triggered flashfloods and damaged about 7,000 kilometers of rural roads.

has suffered from embankment side slope erosion. Several rain cuts and erosion has encroached of the carriageway which needs urgent repair. Several drainage facilities are damaged or clogged or needs cleaning, while other roads require additional balancing culverts to allow flood waters to cross the road without causing damage. Roadside drains particularly in urban stretches and bazaars are mostly choked with rubbish and silt which renders them non-functional. Overtopping of roads is not common but water-logging is very common particularly in built-up areas. Most of the roads have inadequate road safety provisions. Horizontal and vertical profiles are incoherent to applicable code provisions. Horizontal curve is mostly insufficient in built-up areas.

5. Existing roads under RCIP have varying width and road conditions. Right-of-way is generally 20 m in most cases with reduced width in settlements varying from 3 to 4 m. Major part is 1-lane with or without earthen shoulder. Riding condition is mostly poor to fair. Roadside drains are present in some urban stretches but mostly choked and non-functional. Overtopping of roads is not observed in general but water-logging is very common in built-up areas. Waterways are being crossed in most of the hilly roads. The succeeding Figure illustrates typical existing cross-section.

C. Rural Connectivity Improvement Project

6. The Rural Connectivity Improvement Project (RCIP) builds on the experiences and successes of ADB-supported rural road programs in Nepal, India and Sri Lanka particularly on: (i) strengthening institutional capacity, (ii) designing rural roads to all-weather standards with safety features and made climate-resilient, and (iii) improving road maintenance. LGED owns, improves, and maintains all rural roads of Bangladesh. The Ministry of Local Government, Rural Development and Co-operatives (MOLGRDC) through LGED will be the executing agency. A Dhaka-based project management unit established within LGED will support the implementation of the project. Five project implementation units will be established in Faridpur Cumilla, Jashore Rajshahi and Rangpur. Each PIU will be headed by a Deputy Project Director and will be responsible for day-to-day management of the civil works contracts including environmental safeguards compliance while the thirty-four (34) District Offices will be given additional responsibility of implementing the environmental management plan and environmental monitoring plan through the District Environmental Specialist. The Rural Connectivity Improvement Project (RCIP) will upgrade a total of 1711.708 kms of rural roads spread over 34 districts in 5 divisions.

7. Under the proposed project, key rural roads will be upgraded to all weather, improve road safety, and enhance climate resilience. All upgrading works will be confined within the existing alignment and minimize if not totally avoiding land acquisition. Key improvement features include: i) upgrading of pavement from water bound macadam (WBM) to a more stronger and durable wet mix macadam (WMM) albeit at a higher cost; ii) reconstruction of mostly earthen to hard shoulders on both sides of the road with minimum width of 1m; iii) crest width will be maintained at least 7.5m and carriage width of 5.5 meters; iv) repair and upgrade protection works to include embankment toe protection, palisade, and palliwall or the installation of reinforced cement concrete (RCC) blocks; v) structure improvement in terms of drainages structures such as box culverts, and U-drains; and vi) side slope will be 1.5:1 will be maintained with the option of bio-engineering to protect against erosion.

8. The RCIP has adopted key climate resilience road designs developed under the ADB's Bangladesh: Coastal Climate-Resilient Infrastructure Project². This project is currently being implemented under the Government of Bangladesh's Strategic Program for Climate Resilience

² ADB. [Bangladesh: Coastal Climate-Resilient Infrastructure Project](#).

(SPCR), prepared under the Pilot Program for Climate Resilience (PPCR). The PPCR is a part of the Strategic Climate Fund (SCF) within the Climate Investment Funds (CIF), to pilot and demonstrate ways to mainstream climate resilience in development planning and management. This project, among others attempts to mainstream climate resilient rural road connectivity in selected coastal areas of the country.

9. Project implementation activities are expected to start on November 2018 with the award of contracts, construction works duration is from by December 2018 to November 2020, and maintenance work will commence immediately after and will last until December 2023. Total project's civil works cost is estimated at US\$214 million.³

D. Policy and Legal Framework

10. The Government of Bangladesh has provided various laws and regulation for protection and conservation of natural environment as it pertains to road development. However, a limited environmental laws and regulations are specifically applicable to rural roads upgrading where the existing roads are outside environmentally protected areas including forest lands, construction activities are confined within the existing formation width and existing alignment, and with no or minor land acquisition limited only on curves and junctions to comply with road safety standards which characterizes the proposed roads under RCIP. In addition to the clearances are permissions that includes the environmental clearance certificate (ECC) and site clearance certificate (SCC) and contractors are required to secure Consent to establish (CFE) and Consent to Operate (CFO) for all mix and batching plants, the LGED will implement good environmental practices in constructing and upgrading rural roads first developed by the World Bank and emphasized in the environmental management and monitoring plans.

E. Environmental baseline

11. The project area is divided into administrative 5 divisions, and further into 34 districts. A total of 125 Upazilas will benefit from the 216 rural roads that will be upgraded with a total length of 1711.708 kms. The entire country is divided into 6 climatic regions based on average summer temperatures and annual rainfall, these are: southeastern, northeastern, northern part of the northern region, northwestern, western, southwestern, and south central. In general, rainfall increases from west to east and temperature from north to south. Higher temperatures and rainfall are observed in the southeastern region, while the western and southwestern region has higher temperatures and less rainfall. Rainfall varies from 1,598 mm in the west to 4,197 mm in the east with a rainfall gradient of about 7 mm km⁻¹. The average temperature ranges from 17°C to 20.6°C during winter which at times reduces to 7°C in some places and 26.9°C to 31.1°C during summer and in the northwest region reaches more than 45°C. The northwest region experiences the two extremities that are in clear contrast with the climatic conditions of the rest of the country. The average relative humidity for the whole year ranges from 78.1% to 70.5%, with maximum records occurring in September and minimum in March.

12. Bangladesh has two main land features; a vast expanse of deltaic plain produced by the world's biggest rivers, and a small hilly region located on Chattogram and Coxsbazar where swift rivers emanate. The total land area is 147,610 square kilometers confined along a latitude of 820 kilometers and at its widest is 600 kilometers. It is bounded by India on its west, north, and north

³ LGED has prepared \$300 million project covering 317 roads, however, ADB can only allocate \$200 million to finance 216 roads (1711.71 km) for RCIP in 2018. Based on good implementation progress, additional financing of \$100 million will be provided in 2019 to cover the remaining roads.

east and on the south east by Myanmar. The southern portion is the Bay Bengal and along its coast is a dynamic delta dissected by numerous rivers. Most of the country's territory is below 10 m above mean sea level except for the southeastern border districts of Khagrachhan, Rangamati, Bandarban, and sections of Chattogram and Cox's Bazaar; and the northwestern districts of Thakurgaon and Panchgarh. Bangladesh has virtually no stone to be utilized for use as aggregate or building materials. It does, however, have a plentiful supply of clay, leading to the making of bricks. Soils and clays are extracted through strip-mining and fired to make bricks in relatively small brickfields found throughout the study area. In broad terms alluvium accounts for 77.2% of the country's total area and comprised mostly of alluvial silt and clay, alluvial silt, deltaic silt, March clay and peat, and young gravelly sand which formed during the Holocene or Recent period.

13. The country has a long history of earthquakes and few were considered catastrophic; notably events that occurred in 1762, 1782, 1897, and 1950. The project area lies within an active seismic zone and is mostly classified as medium risk except around Kurigram which is classified as high risk. Bangladesh is in a low-lying delta, formed a dense network of the distributaries Ganges, Brahmaputra, and Meghna rivers and between the Himalayas and the Bay of Bengal. There are more than 230 major rivers and their tributaries and with 75% of the country less than 10m above mean sea level, 80% of the total land area is considered as flood plain. Flooding normally occurs during the monsoon season from June to September. Every year, nearly 26,000 km² or around 18% of the country is flooded. Floods has caused devastation and misery in Bangladesh throughout its history. Seasonal storms, popularly known as nor'westers (*Kalbaishakhi*) occur in the project area. Tornadoes can be associated with severe nor'westers. The frequency of nor'westers is greatest in April and they most often occur in late afternoons. Majority of the cyclones follow the northeasterly directions confined between Khulna and Cox's Bazaar.

14. The LGED monitoring indicated that average PM2.5 concentration in 271 roads is 94 ug/m³ with a minimum and maximum concentrations of 53 ug/m³ and 197 ug/m³. Using the USEPA air quality index (AQI)⁴, and average of 94ug/m³ corresponds to unhealthy air quality when people with respiratory or heart disease, the elderly and children are the groups most at risk. Average noise level of 66 dB(A) across the selected project roads were noted with maximum and minimum observations at 86 and 52 dB(A), respectively. Around 230 rivers flow through the country including 53 international rivers. Rivers in the urban areas are in rapidly deteriorating which includes: Buriganga, Karnaphully, Sangu, Bhairab, Pashur, Rupsha, Nabaganga, Mathavanga, Moyur, Kopotakkya, Shitalakkya, Turag, Baloo, Bongshee, Kaleeganga, Meghna, Brahmaputra, Jamuna, Dhaleshwaree, Tista, Padma, Karatoa, Kushiya, Kirtankhola. In 1993 the Department of Public Health Engineering (DPHE) first detected arsenic in hand tube wells (HTW's) which has become one of the most pressing environmental issues in Bangladesh. The levels of arsenic in groundwater in Bangladesh are some of the highest in the world. At present, occurrence of arsenic in drinking water has been identified in 272 Upazilas under 61 Districts of the country (DPHE, 2009).

15. Bangladesh has a large network of environmentally protected areas, none of the project rural roads are in on near any of these areas.

16. The 34 project districts cover almost half the land area of Bangladesh. In terms of population, the 34 districts represent more 50% of the total population of the country. The 2011 Census shows that 67% of households (HH) in the project area comprise four or more family members. Majority of the population (over 68%) lives in kutcha houses which have walls of organic

⁴ [Air Quality Index Calculator.](#)

materials such as sticks, jute, straw and earth while 9.0% lives in pukka houses. Just over 36 % of total populations in the thirty-four districts are children ages up to 14 years and 57% are of working age. The literacy rate for the population 7 years and above in the project area is 50.69 % which is lower than the national literacy rate of 51.7 %. Majority of the project population, 63.73% population are considered poor. The 2011 census shows that less than 5% of the populations in the project area have reticulated tap water compared with over 10% for Bangladesh. More than 91% of the populations in the project area have access to water from tube well sources and only 4% are reliant on other sources.

17. Most agricultural land in the project area tends to be intensively used with double or triple cropping pattern being common with rice as the main crop. Jute, maize, wheat, potatoes and various vegetables are also grown depending on season and location.

F. Initial environmental examination

18. The civil work components that are anticipated to have substantial interaction with the environment includes: Road alignment and design, utility shifting, construction mobilization, and tree cutting and clearing during the pre-construction phase of the rural road upgrading. Most of the adverse impacts are anticipated to occur during construction phase that includes: road construction (earthworks, earth filling, sub-grade, aggregate sand sub-base; brick aggregates for base course; earthen shoulder construction in layers and converted to hard shoulder; bitumen surfacing), quarries and borrow area site management, construction plants operation for WMM mix and cement batching plants, site-restoration. Minimal environmental impacts are anticipated during operation phase which involves road maintenance and vegetation control.

19. Mitigation measures were identified to reduce the adverse impacts including residual effects. During the pre-construction phase, potential adverse environmental impacts are related to road upgrading design to retain the original geometric shape, upgrading of the shoulders from soft to paved surface, repair and strengthening of embankment slope and toe against erosion, and enhance road safety during project operation phase. Adverse environmental impacts are limited to the potential loss of trees that have encroached on the road embankment and increase risks of road crashes from inadequate road design and localized flooding from inadequate drainage design. During construction, major potential negative impacts from the project includes the loss of productive soil from new borrow areas. Medium potential impacts from increase dust emissions, generation of noise, risks of accident from improper management of borrow areas, and inadequate clean-up operation, restoration and rehabilitation prior to decommissioning.

20. Between 2020–2040, almost coinciding with the project life, there is a predicted change in temperature anomaly (difference between the average baseline and predicted value) in Bangladesh ranging from 0.68-1.8 °C based on General Circulation Model ensemble average of the low (10%) and high (90%), RCP2.6 scenario. There is an increasing maximum temperature trend, departing from the historical average between 1.4°C to 2.3°C with the higher temperature occurring in the northwestern divisions of Rangpur, Rajshahi, and parts of Dhaka. Average monthly rainfall is expected to increase by 67.8mm with the models estimating departure from historical average between 75-225mm per year. Similarly, the predicted future rainfall is expected to maintain an increasing trend. The extreme norther sections of the Rangpur, Dhaka, and southern tip of the Chattogram Divisions are expected to experience the biggest change in rainfall distribution ranging from 350-400mm annually. The implications of the projected increase in rainfall coupled with the existing natural hazards in the project divisions increases the vulnerability of the project roads to climate change variability and extremes. The most dominant natural hazards to the projects roads that can be exacerbated by climate change are flooding and storm

surge. Of the 34 project districts, 20 districts are prone to flood with 25 -year return period with a depth of at least 1.8 meters. However, of the 216 project roads, only a portion of the Pekua Road in Coxsbazar District is prone to storm surge. One of the expected impacts from climate change is the increase in frequency and prolonged submergence of paved rural roads due to increase in rainfall and flood inundation. Studies show that inundation for 45-days, the unit weight reduces by 4.6, 5.8 and 10.6 percent for compaction efforts of 56, 35 and 10 blows, respectively and CBR reductions of 16.7, 29.6 and 37.5 percent, respectively. For surface layer, stability and flow of flexible pavement is affected by the duration of inundation by water. The inundation for 30days causes the flow value increases by about 93 percent and stability reduces by 26 percent. The figures also imply that the longer the period of inundation, the more severe will be the deterioration although the rate of destruction may decrease. To address these risks from climate change the LGED adopted a wet mix macadam pavement construction as opposed to the traditional water bound macadam (WBM), in addition to the climate resilient rural road design observed in the project. The total adaptation costs was estimated at NRs184 million for 216 roads representing about 3% of the total civil works of these roads which was estimated at NRs6.6 billion. The regulatory requirement of compensatory plantation was not included in the adaptation cost.

G. Consultations, Public Consultations and Disclosure

21. The principal consultation method used is the transect walk. A transect walk requires both LGED District Engineers and stakeholders to “walk” or survey the entire stretch and identify issues pertaining to availability of land to accommodate needed engineering, road safety, and climate resilience measures; key sensitive resources like trees, utilities, physical cultural resources; road hazards; and other community requirements that should be considered by the project. It facilitates timely consultation that is early enough to influence the design, provides venue to have a common understanding of the project, voluntary participation is promoted, and inclusive in terms of gender and vulnerable members of the community. There were 7,835 stakeholders that participated in the transect walks organized mainly by the District engineers through the Union Parishad representatives, community officers and the TAG consultants during project preparation. Of the total number of participants, 2,418 were female comprising 30.86%. Inside habitation areas and in village sections where the road is narrow, the road width has been constricted to avoid damage to structures. Following impacts could also occur during civil works period which will cause public nuisance and were all addressed on the detailed project reports: temporary loss of access/disruption of traffic; shifting of utility supply lines causing disruption to the supply; damage to irrigation channels that have been placed across some of the selected roads; dust, noise and vibration impacts will be felt by the people living near road sections during construction works; high vibration levels may damage structures close to the road edge. The civil contracts should include appropriate measures to avoid/ manage the issues of dust, noise. Care should be taken to avoid any accidental damages to common properties such as Shrines, wells, water pipes, stand posts located close to the roads.

22. Information was disclosed through public consultation and more formally by making documents and other materials available in a form and at a location in which they can be easily accessed by stakeholders. This involved making a summary of draft reports available (in the local language) at public locations/upazillas/unions and providing a mechanism for the receipt of comments and making documents available more widely. In this regard, ADB encourages LGED to disclose all documents onto their own website. The full IEE report will be disclosed on the ADB and LGED websites and made available to the interested parties upon request.

23. The Environmental Management Plan (EMP) contains the agreement between LGED and ADB detailing the implementation of mitigation measures, monitoring program, cost estimates,

and institutional arrangement to ensure that no significant adverse impacts results from the project intervention. The total environmental management plan implementation is estimated at US\$1.302M or 0.6% of the total civil works cost. The EMP costs, which includes environmental monitoring, is comprised of the following bill of quantities items: i) Providing and maintaining adequate potable water supply (Water Supply Tube well 01 No. each sub-project) at locality to the entire satisfaction of the E-I-C; ii) Sanitation Toilet 02 Nos.(01 for man & 01 for Woman) each sub-project; iii) Dust Suppression measures (excluding watering for compaction) to the entire satisfaction of the E-I-C; iv) Environmental Monitoring a) Air quality b) Noise level c) Water quality d) Sediment at work site to the entire satisfaction of the E-I-C; v) Prevention of spillage, Leakage of polluting materials to the entire satisfaction of the E-I-C; and Maintain First aid box at site to the entire satisfaction of the E-I-C. Roadwise and packagewise EMP cost were prepared as part of the bid documents. The Ministry of Local Government, Rural Development and Co-operatives (MOLGRDC) through LGED will be the executing agency is responsible for the overall compliance to the ADB SPS 2009 environmental requirements; Government of Bangladesh environmental laws, regulations, and standards; and the EMP. A PMU-RCIP will be organized supported by Division Environmental Specialists, and the contractor environment focal person.

H. Grievance and Redress Mechanism

24. A three-level grievance redress mechanism will be instituted by the LGED immediately. The first level and most accessible and immediate contact for the fastest resolve of grievances are the contractors, and design and supervision consultants on site. Prior to construction of any works, the Division-Environment Specialists (DES), District Engineers, and Contractor-Environment Focal Person (EFP) will ensure local community meetings are held to notify residents and businesses of any temporary disturbances, and to inform them of the Project including all Union Parishads. The second level will be headed by the Executive Engineer-PIU respectively, and the third I by the Project Director-PMU. All grievances will be documented, and resolutions are time-bounded.

I. Conclusion

25. The findings of initial environmental examination roads indicate that impacts are mostly similar and subprojects are unlikely to cause any significant environmental impacts. While some of the impacts are negative there are likely to occur during construction stage, are temporary in nature, and can be mitigated with minor to negligible residual impacts. The project received immense support from local people, as they perceive that this project will improve the overall connectivity and bring various economic opportunities to the people of the project area. All 216 roads included under RCIP were selected based, among others ecological and vulnerability to climate changes more particularly to floods and storm surge. Several rural roads under the LGED's authority were damaged by the 2017 floods and needs immediate attention beyond the regular road maintenance but to incorporate climate resilience design and practices. Accordingly, none of the roads passes through protected areas or encroaches precious ecology (sensitive or protected areas) or any historical or archeologically protected areas. As per selection guidelines, none of the selected road passes through reserved forests either. Few trees cutting though may be involved.

26. Of the total 216 roads, 69 sustained serious flood-damaged last year and 1 road is subject to cyclone-induced surge. Adequate engineering measures like cross drainage structures, slope stabilization, embankment toe protection, improved pavement, are proposed for make the roads more climate resilient and enable to retain function during and after flood events. Three roads received further strengthening through pavement upgrade since these connects to cyclone-

centers which are considered critical facilities in the event of of natural calamities, All the 216 roads are aligned with existing rural roads. As such, land acquisition is nil or very minimal which is also acquired through donations from villagers.

27. Considering insignificant environmental sensitivity, the project is categorized as category B as per ADB Safeguard Policy Statement 2009.

28. The impacts identified are mostly related to alignment selection, land clearing, borrowing earth, and cutting of avenue trees, shifting of utilities and community structures, establishment of construction camp or material storage areas, transportation of material and operation of WMM plant. All identified impacts are either eliminated or minimized through design consideration and suitable mitigative measures. Environmental Management plan covering all stages of road construction (design, construction and operation) is prepared with defined responsibility for its implementation. Environmental Monitoring plan is also prepared to ensure effective implementation of EMPs. LGED has defined institutional setup including specified responsibility for environmental management. Existing capacity of the LGED and PMU for implementing environmental safeguard issues need substantial strengthening. Environmental specialist will be provided at the PMU and Division levels as part of the Project Implementation Consultants to provide the needed expertise.

29. The IEE also indicate that rural road construction works does not warrant further EIA study for subsequent rural road construction works.

J. Key Recommendations

30. Any major changes or any major additional work other than the proposed project activities will require preparation of another environmental assessment. This additional assessment will have to be submitted to LGED, Concerned Government authorities (DoE) and ADB for concurrence before civil works commence.

31. The implementation of prescribed mitigation measures will minimize/avoid the adverse impacts. Moreover, the impacts shall be monitored continually by implementing and updating the Environmental Management plan and Environmental Monitoring Plan. These IEE is prepared based on 216 individual environmental checklists and detailed project reports. Subproject specific EMP shall be improved as per the final provisions made under DPRs. The updated EMP if there is any change shall also be sent to ADB for information.

32. Executing agency shall ensure that EMP and EMoP is included in Bill of Quantity (BoQ) and forms part of bid document and civil works contract. The contractor will specify the quantity and budget for various activities like rehabilitation of borrow earth pits, first aid and Sanitation facilities at construction camp and temporary office/material storage place. The same shall be revised if necessary during project implementation or if there is any change in the project design. Any such change shall be reported to ADB as well.

I. INTRODUCTION

A. Project Background

1. Bangladesh has a population of about 163 million (2016) and a land area of 147,570 square kilometers, is amongst the most densely-populated countries in the world, and also one of the most vulnerable in the world to climate risks. Two-thirds of the country is less than 5 meters above mean sea level and located in the world's largest tropical river deltas of the Ganges, Brahmaputra, and Meghna making it one of the most disaster-prone country in the world with damages accounting for 1% of the GNP annually. Despite this, the economy is growing steadily at an average rate exceeding 6% since 2015 and is expected to continue at slightly faster rate of 6.7% annually until 2020.

2. About 80% of the population live in rural areas with the agriculture sector contributing about 15.5 % of the Bangladesh GDP in 2015 and comparable to the rest of the South Asia and employs about 50% of the work force. Agricultural development is critical to poverty reduction, as most of the poor in Bangladesh are in rural areas and depend on agriculture for their livelihood. The country has achieved near self-sufficiency in rice production achieving a growth rate of 3.2% per year, which is well above the population growth. Agriculture development is necessary to reduce heavy reliance on imported food and other agricultural products, which absorbs 29% of export earnings. The 7th FYP focuses on maintaining the self-sufficiency in cereal production and aiming to have crop diversification, increased productivity, and promoting agro-processing to increase rural income and economic development. The major challenges in agriculture in Bangladesh are promotion of production technology, nutrition, value chains and maintaining food security. Insufficient rural transport, market infrastructure, and climate change impacts are major constraints. Accordingly, the Seventh Five-Year Plan has put forward specific strategies to overcome the challenges and constraints to agricultural development.

3. Road is the dominant mode of transportation in Bangladesh utilized by over 70% of passengers and 60% of freight traffic. Roads are classified according to government agency ownership: (i) highways, and district roads owned and maintained by Roads and Highways Department (RHD); and ii) rural roads owned and maintained by Local Government Engineering Department (LGED). The total road network of Bangladesh covers 374,245 km, of which 352,943 km (94%) are rural roads.

4. Rural connectivity is a key component of rural development in Bangladesh. Rural roads contribute significantly to generating increased agricultural incomes and productive employment opportunities, alongside promoting access to economic and social services. Rural roads are the virtual lifelines for the vast multitude residing in rural areas. Bangladesh has a large network of rural roads, many of these roads were constructed between 1990–2010 on earthen embankments owned by *Union Parishads* or *Zila Parishads* and they are vital to the agricultural sector. Since 1995, the government, with the support of the international development community, has continued to expand and improve the rural roads network. During the past decades, rural infrastructure in Bangladesh has significantly improved. Despite progress, rural connectivity in Bangladesh remains weak, impeding the physical and economic access. About 40% of the rural population has got access to all-weather roads. Only 28% of the roads are paved and in good or fair condition

5. Under the Seventh Five-Year Plan will increase the percentage of “good and fair” conditioned rural roads in the country in a series of steps from 43% in 2016 to 80% in 2020. Aligned with this, the proposed **Rural Connectivity Improvement Project (RCIP)** will improve about 1711.708 km of rural roads to all-weather standards, serving the agriculture sector and 51.5 million rural people (49% of the country’s population) living in 34 districts located in five divisions. The project will support the government’s agricultural strategy of increasing agricultural productivity, encouraging commercial agriculture and agribusiness development, increasing employment opportunities for rural poor people, and reducing the poverty level. All the rural roads have been selected from the rural road master plans through robust selection criteria which include an objective assessment for prioritization. The selection criteria took into consideration the population size, each district’s agricultural potential, the number of agricultural farms and commercial establishments, economic potential, access to education facilities, and flood damaged roads, particularly those roads damaged in 2017.⁵

B. Rural Connectivity Improvement Project

6. The Rural Connectivity Improvement Project (RCIP) builds on the experiences and successes of ADB-supported rural road programs in Nepal, India and Sri Lanka particularly on: (i) strengthening institutional capacity, (ii) designing rural roads to all-weather standards with safety features and made climate-resilient, and (iii) improving road maintenance. LGED owns, improves, and maintains all rural roads of Bangladesh. However, many of the roads in the rural road network, though paved, are in poor condition, with some impassable during the rainy season. To address this issue, the project roads will be improved to all-weather standards and made climate-resilient. This will significantly improve the maintainability of the rural road network. In addition, civil work contracts for the project roads will include post-completion maintenance for 5 years. It aims to assess the efficacy of adapting long-term maintenance by the private sector in Bangladesh and encourage its use where appropriate. The possible benefits include better quality assurance and greater efficiency, which can further enable the prioritization of budget allocation for rural road maintenance.

C. Rural Road Construction Proposal

7. The Ministry of Local Government, Rural Development and Co-operatives (MOLGRDC) through LGED will be the executing agency. A Dhaka-based project management unit established within LGED will support the implementation of the project. Five project implementation units will be established in Faridpur, Cumilla, Jashore, Rajshahi and Rangpur. Each PIU will be headed by a Deputy Project Director and will be responsible for day-to-day management of the civil works contracts including environmental safeguards compliance while the thirty-four (34) District Offices will be given additional responsibility of implementing the environmental management plan and environmental monitoring plan through the District Environmental Specialist.

8. Under the proposed project, key rural roads will be upgraded to all weather, improve road safety, and enhance climate resilience. All upgrading works will be confined within the existing alignment and minimize if not totally avoiding land acquisition. Key improvement features include: i) upgrading of pavement from water bound macadam (WBM) to a more stronger and durable wet mix macadam (WMM) albeit at a higher cost; ii) reconstruction of mostly earthen to hard shoulders on both sides of the road with minimum width of 1m; iii) crest width will be maintained at least 7.5m and carriage width of 5.5 meters; iv) repair and upgrade protection works to include embankment toe protection, palisade, and palliwall or the installation of reinforced cement

⁵ In 2017, successive heavy rains triggered flashfloods and damaged about 7,000 kilometers of rural roads.

concrete (RCC) blocks; v) structure improvement in terms of drainages structures such as box culverts, and U-drains; and vi) side slope will be 1.5:1 will be maintained with the option of bio-engineering to protect against erosion.

9. The RCIP has adopted key climate resilience road designs developed under the ADB's Bangladesh: Coastal Climate-Resilient Infrastructure Project.⁶ This project is currently being implemented under the Government of Bangladesh's Strategic Program for Climate Resilience (SPCR), prepared under the Pilot Program for Climate Resilience (PPCR). The PPCR is a part of the Strategic Climate Fund (SCF) within the Climate Investment Funds (CIF), to pilot and demonstrate ways to mainstream climate resilience in development planning and management. This project, among others attempts to mainstream climate resilient rural road connectivity in selected coastal areas of the country.

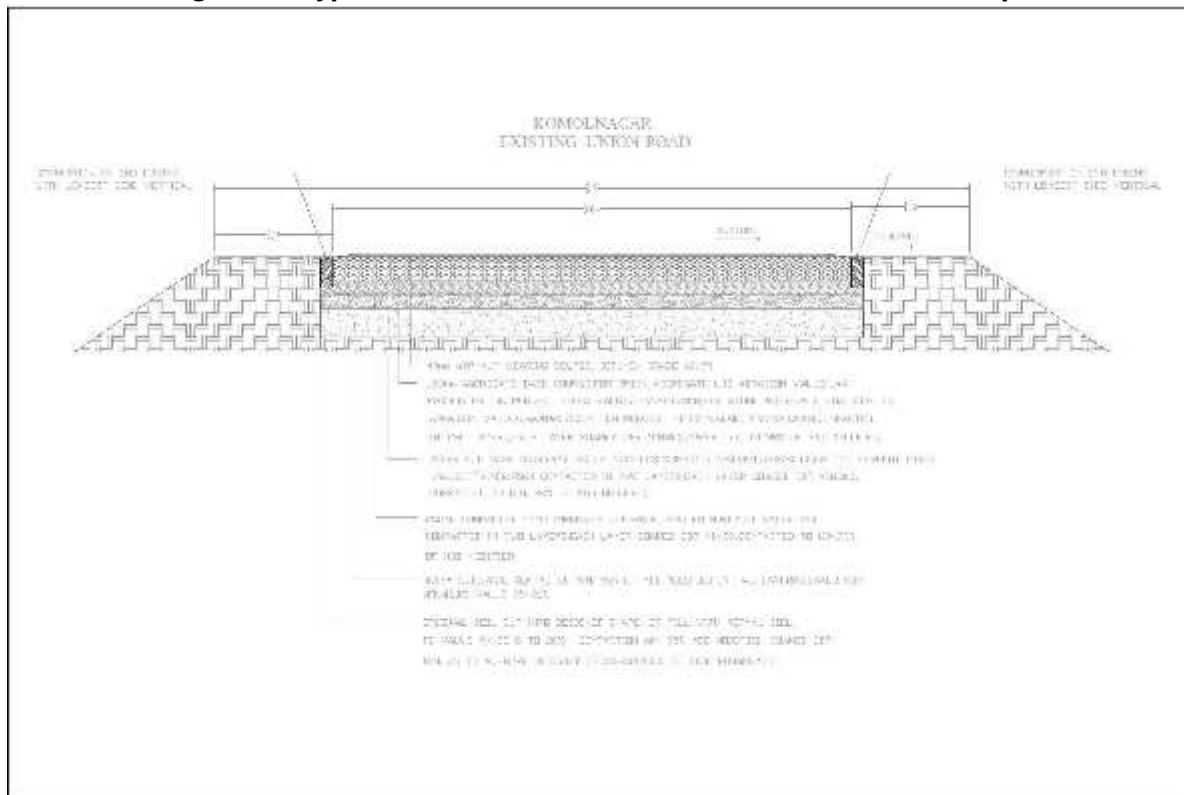
10. The proposed road upgrading activities included planning, construction, and maintenance. Planning includes level survey, soils and materials survey, specification for coarse and fine aggregates, traffic survey, hydrologic survey, prescribed geometric standards, required construction equipment. Construction activities include preparation of earthwork, earth filling, sub-and base preparation, earthen shoulder construction and surfacing. During road maintenance the activities include routine maintenance of sealed road pavement, foot paths, kerbs and channels, storm drainage, and pavement markings. Associated facilities are limited to borrow area and WMM mix plants. No new borrow area will be establish by the project and will only source materials permitted operators. Most of the WMM mix plants will be operated by the contractors, however, if they elect to use third-party suppliers, the operator will show proof of compliance to environmental and local government regulations. Figure 1 presents the typical road cross-section after upgrading works.

11. Project implementation activities are expected to start on November 2018 with the award of contracts, construction works duration is from by December 2018 to November 2020, and maintenance work will commence immediately after and will last until December 2023. Typical construction schedule is provided in **Error! Reference source not found..**

12. Total project's civil works cost is estimated at US\$214 million. LGED has prepared \$300 million project covering 317 roads, however, ADB can only allocate \$200 million to finance 216 roads (1711.71 km) for RCIP in 2018. Based on good implementation progress, additional financing of \$100 million will be provided in 2019 to cover the remaining roads.

⁶ ADB. [Bangladesh: Coastal Climate-Resilient Infrastructure Project.](#)

Figure 1: Typical cross-section of the RCIP Roads after completion



D. IEE Objectives

13. The project is classified as environment category 'B' in accordance with ADB's Safeguard Policy Statement (SPS), 2009 warranting the conduct of an initial environmental examination (IEE) and its documentation. An IEE identifies the environmental issues to be considered at project planning and design stage. This IEE report covers the general environmental profile of the study area and includes an overview of the potential environmental impacts and their magnitude on physical, ecological, economic, and social and cultural resources within the project's influence area during design, construction, and operation stages. An Environmental Management Plan (EMP) is also proposed as part of this report which includes mitigation measures for significant environmental impacts during implementation of the project, environmental monitoring program, and the responsible entities for mitigation and monitoring. An IEE has four basic objectives; (i) identify the environmental issues that should be considered due to project interventions (ii) determine the magnitude of potential environmental concerns and to ensure that environmental considerations are given adequate weight at planning/design stage (iii) identify need for further environmental studies or environmental impact assessment (EIA) and (iv) suggest enhancement measures, if any.

E. Extent of IEE

14. The extent of the IEE was based on on all likely Impacts and risks analyzed in the context of the project's area of influence. It encompasses: (i) the primary project site(s) and related facilities (ii) associated facilities whose viability and existence depend exclusively on the project (iii) areas and communities potentially affected by cumulative impacts from further planned development of any existing project or condition, and other project-related developments that are

realistically defined at the time of assessment; and (iv) areas and communities potentially affected by impacts from unplanned but predictable developments caused by the project that may occur later or at a different location. The core zone of impact is taken as the existing road width measured from embankment toe-to-toe as the existing rural roads do not have a defined right-of-way and its immediate vicinity. The assessment also considers the areas and activities related to associate facilities viz. quarry operation, borrow areas, construction camp, transportation/haulage routes etc. The study area is considered up to 500 mm on either side of road alignment for larger analysis of landuse and other environmental features. Assessment is carried out for all components of environment covering terrestrial and aquatic ecology, soil, water, noise and socio-economic aspects.

F. Study Approach and Methodology

15. This IEE report has been prepared based on road-specific detailed project reports (DPRs), transect walks, and stakeholder consultations to meet the requirements for environmental assessment process and documentation as per ADB's Safeguard Policy Statement (SPS), 2009. The IEE commenced with the preliminary review of legal requirements for the project. This was followed by gathering technical details, numerous technical meetings and discussions with the ADB missions, Department of Environment, Department of Forest, district engineers, Upazillas, and other representatives of the communities. Details are discussed in the succeeding sections.

1. Reconnaissance Survey and Initial Consultations

16. Reconnaissance survey and initial consultations facilitated in designing the nature of the environmental survey and extent of consultations to be carried out along the road alignment. It helped to identify data gaps, decide valued environment components, key stakeholders and key informants who can further substantiate the collected information.

2. Primary Data Collection

17. Environmental resource inventory was prepared of all environmental features viz. terrain, landuse, waterways/water bodies, road side vegetation, sensitive receptors, common property resources, utilities, drainage, flooding/water logging, industries, accident prone areas etc. within the area of interest/core zone. Similarly, floral survey was also carried out. Baseline monitoring was conducted at the locations for which data was not available in environmental assessment report conducted by detailed design team.

3. Secondary Data Collection

18. Secondary sources included detail design report, published government reports, environmental impact assessments conducted in the similar region, government websites, recognized institutions and relevant government departments (e.g. Disaster Management Department, Meteorology Department, forest, statistics).

4. Public Consultations

19. Meaningful consultations were organized with the government agencies, local people/beneficiary population to know the level of project acceptability, understand their concerns, apprehensions, and overall opinion. Information were gathered about existing baseline environmental condition viz. ambient levels and its effects on health, water resources, flora and fauna, socio-economic standing of local people, impact due to loss of land other assets and

common property resources, accident risk during construction and operation stage, perceived benefits and losses, etc. Information thus gathered was used to integrate it in project design and formulate mitigation measures and environmental management plan.

5. Other Tools, Additional Surveys and Studies

20. Climate risk screening identified flood as major risk which may adversely impact the road components like, pavement, embankment and cross drainage structures during design life. To avoid flood induced impact on road components it is essential to incorporate various measures in design. Details of structures, history of floods, water logging/low lying areas, road stretches and bridge liable to submergence along the project road were collected during field visit and the same was corroborated with information available with design team.

6. Assessment of Potential Impacts

21. The assessment of the type, nature, direct, indirect, cumulative or induced impacts and their significance to the physical, biological, and socio-economic components of the environment has been done to ascertain whether the project is environmentally -sustainable or not. Nature of impacts has been classified as significant, insignificant, short-term, long-term, reversible, irreversible etc. After identification of nature and extent of impacts, mitigation measures have been suggested.

7. Preparation of the Environment Management Plan

22. The project specific Environment Management plan has been formulated with an aim to avoid, reduce, mitigate, or compensate for adverse environmental impacts/risks and propose enhancement measures. This includes (i) mitigation of potentially adverse impacts (ii) monitoring of impacts and mitigation measures during project implementation and operation (iii) institutional capacity building and training (iii) compliance to statutory requirements (iv) integration of EMP with Project planning, design, construction and operation.

G. Structure of IEE Report

23. The IEE has been prepared based on the requirements of the Environment Protection Act (EPA), 1996 and Environment Protection Rules (EPR), 1997 of the Government of Bangladesh (GoB), and the ADB Safeguard Policy Statement (SPS), 2009. The content covers following eight chapters, including this introduction chapter:

- Chapter – 1: Introduction
- Chapter – 2: Policy, Legal and Administrative Framework
- Chapter – 3: Description of Project
- Chapter – 4: Description of Environment
- Chapter – 5: Anticipated Impacts and Mitigation Measures
- Chapter – 6: Public Consultation and Information Disclosure
- Chapter - 7: Environmental Management Plan
- Chapter – 8: Grievance Redress Mechanism
- Chapter – 9: Conclusion and Recommendation

II. DESCRIPTION OF THE PROJECT

A. Location of the Project

24. The Rural Connectivity Improvement Project (RCIP) will upgrade a total of 1711.708 kms of rural roads spread over 34 districts in 5 divisions. The division-wise road list along with the road length is shown in the succeeding Table. Of the 5 divisions in terms of length, Khulna has the most with 25% while the Dhaka has the least 14%. In terms of district distribution, Rajshahi has the largest share with 135km followed by Jashore and Dinajpur with 95 and 81 kms, respectively. These three districts combined already accounts for almost 20% of the total project road length. **Error! Reference source not found.** to **Error! Reference source not found.** presents the location of projects roads in each district.

Table 1: Division-wise Road List

Sl. No.	Name of the District	Length of Road (km)		Sl. No.	Name of the District	Length of Road (km)
Dhaka Division				Rajshahi Division		
1.	Faridpur	59.521		21.	Bogura	53.024
2.	Gopalganj	46.734		22.	Chapainawabganj	17.568
3.	Madaripur	64.246		23.	Joypurhat	34.202
4.	Rajbari	24.466		24.	Naogaon	32.422
5.	Shariyatpur	47.955		25.	Natore	31.180
Sub-Total		242.922		26.	Rajshahi	135.954
				Sub-Total		304.35
Chattogram Division				Rangpur Division		
6	B Baria	70.453		27.	Dinajpur	80.691
7	Chandpur	40.139		28.	Gaibandha	51.845
8	Chattogram	46.070		29.	Kurigram	45.383
9	Cumilla	44.014		30.	Lalmonirhat	33.462
10	Coxsbazar	37.954		31.	Nilphamari	51.180
11	Feni	31.932		32.	Panchagarh	26.380
12	Laxmipur	37.565		33.	Rangpur	54.129
13	Noakhali	55.761		34.	Thakurgaon	36.255
Sub-Total		363.888		Sub-Total		379.025
Khulna Division						
14	Chuadanga	65.219				
15	Jashore	94.669				
16	Jhenaidah	65.075				
17	Kushtia	78.835				
18	Magura	53.838				
19	Meherpur	13.081				
20	Narail	50.499				
Sub-Total		421.216				
Grand Total						1711.708

Figure 2: Location of Project Roads in Dhaka Division

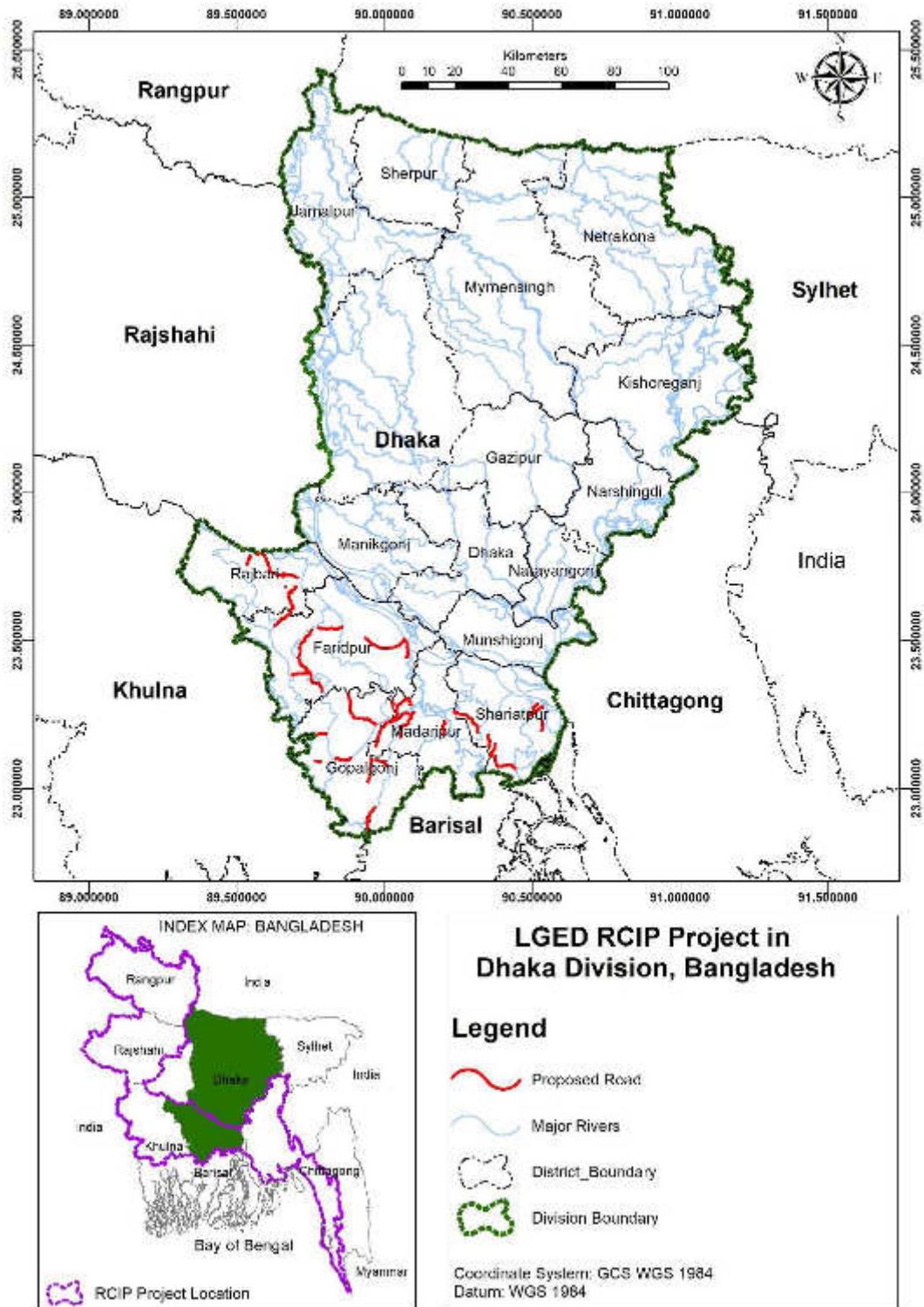


Figure 3: Location of Project Roads in Chattogram Division

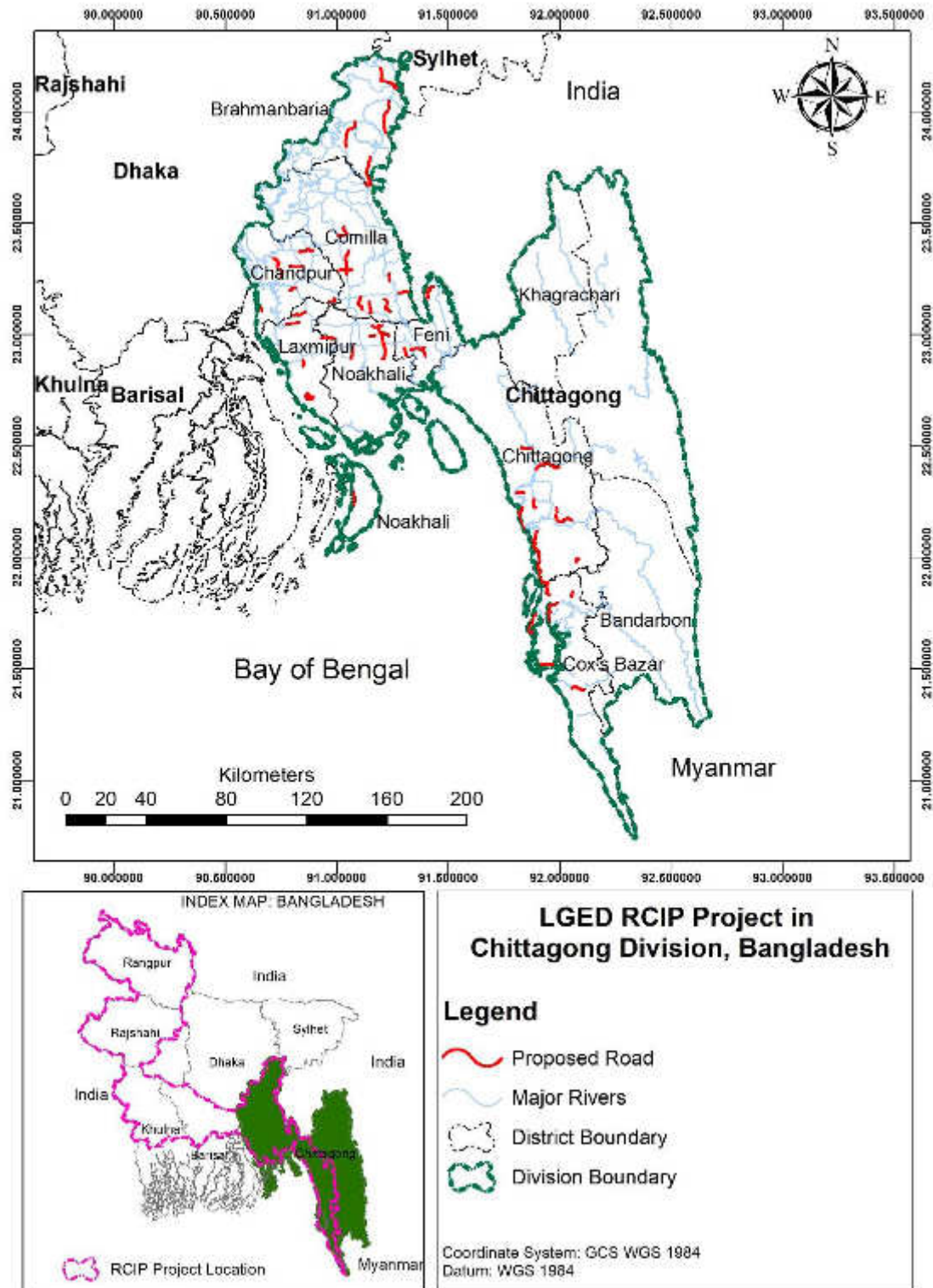


Figure 4: Location of Project Roads in Khulna Division

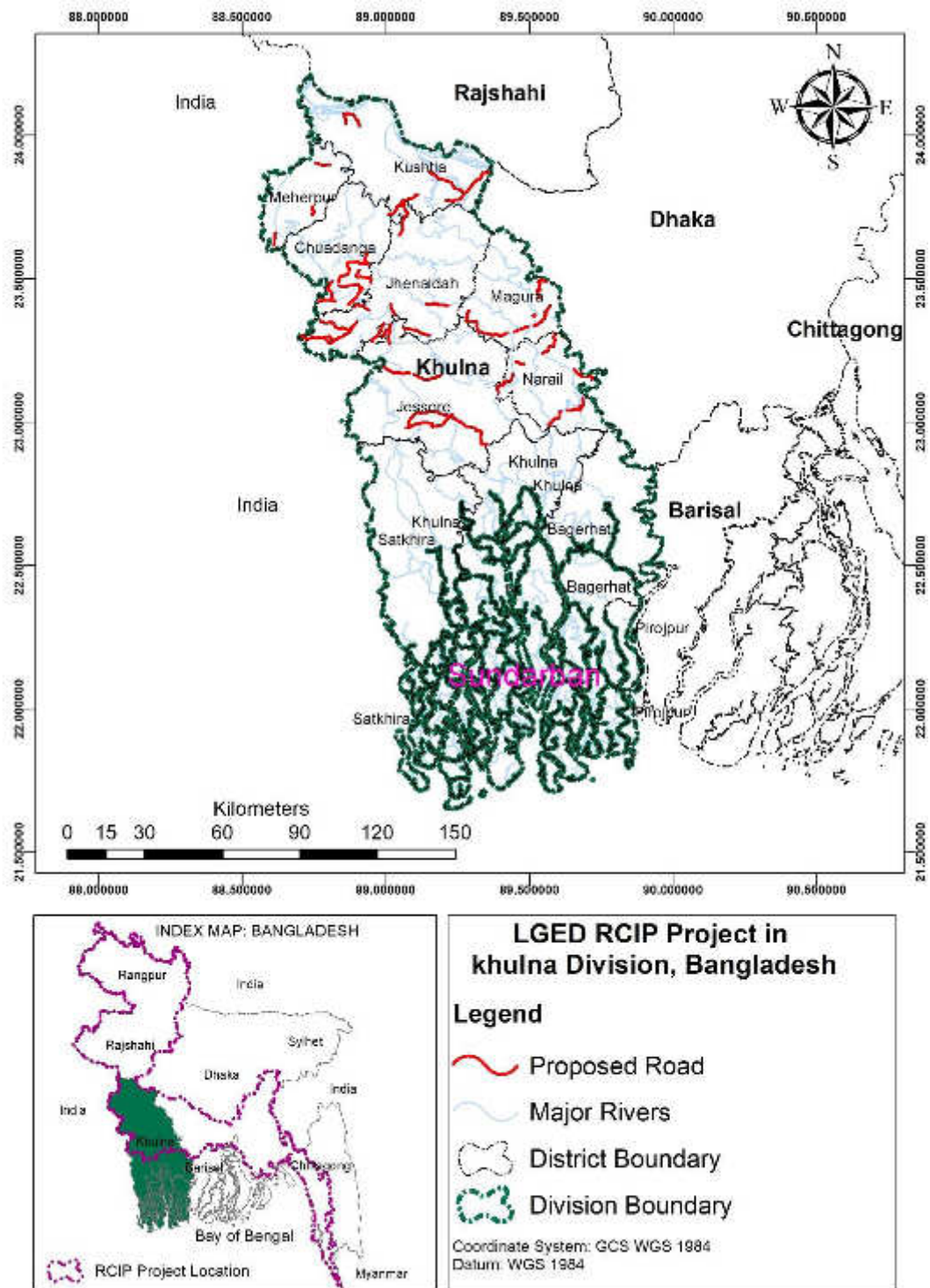


Figure 5: Location of Project Roads in Rajshahi Division

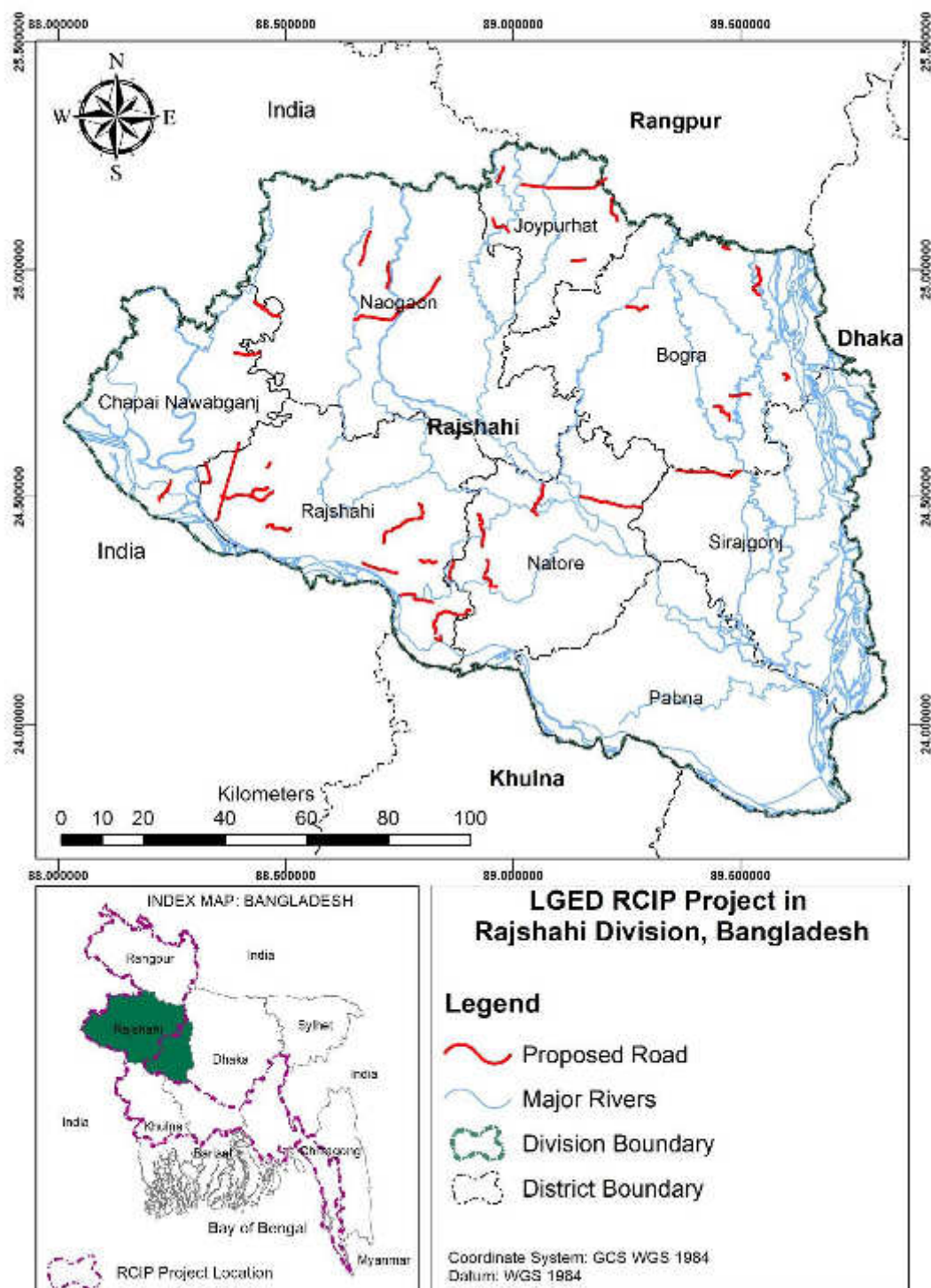


Figure 6: Location of Project Roads in Rangpur Division

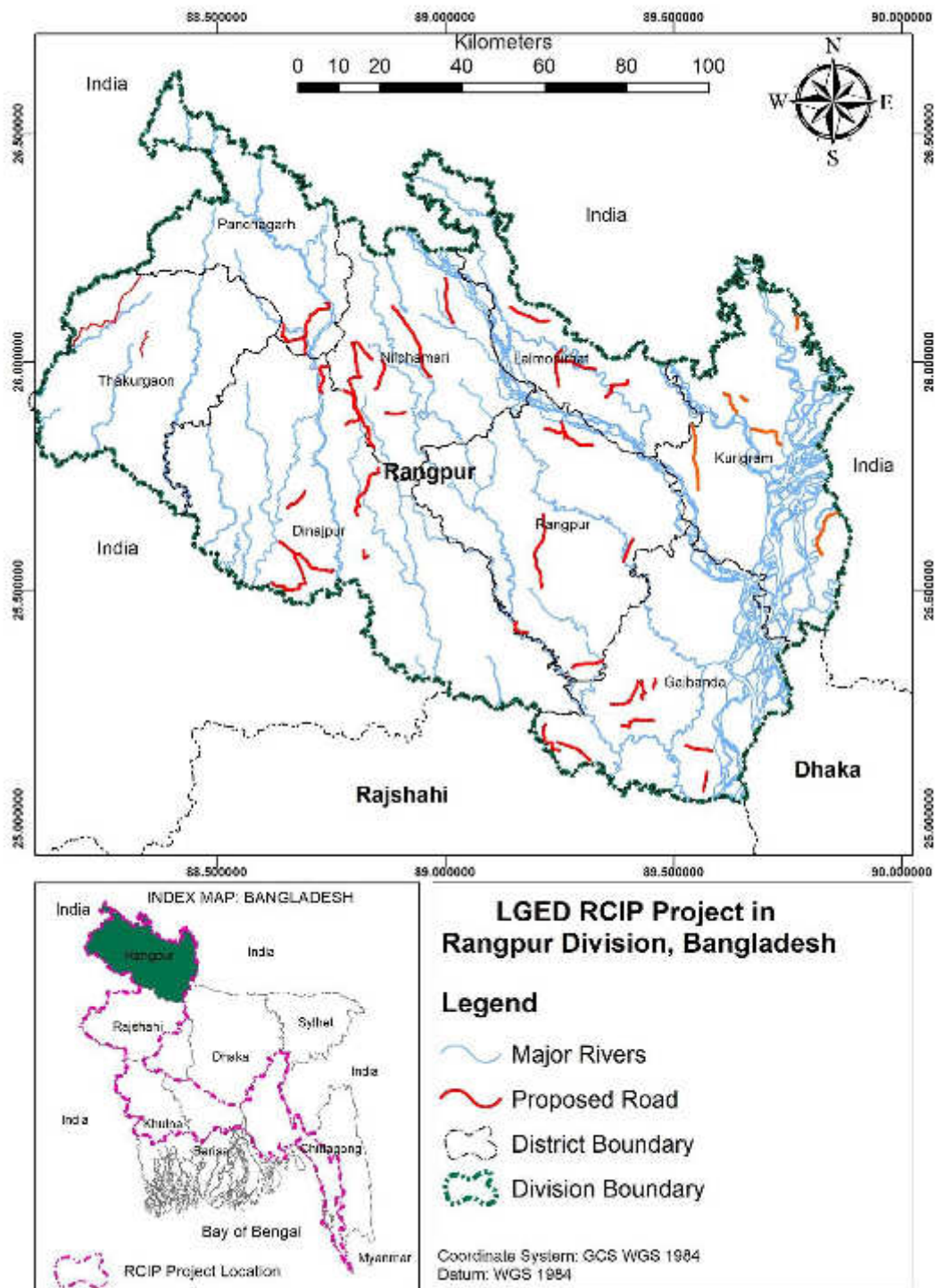


Table 2: RCIP Detailed Proposed Roads (Improvement and Flood Damaged)

Sl. No.	Name of District	Name of Upazila	Name of Schemes	Length (km)	2017 Flood Damaged? (Y/N)
1	Gopalganj	Maksudpur	Tengrakhola-Jalirpar G.C Road	9.000	
2	Gopalganj	Kasiani	Tilchara-Orakandi Road	3.000	
3	Gopalganj	Sadar	Boultali GC - Nizra UPC Road	6.153	
4	Gopalganj	Tungipara	Bashabaria GC-Jhanjhania-Ghagor GC Road.	9.935	
5	Gopalganj	Kotalipara	Kadambari-Kaligonj-Gandiasur GC Road	6.256	
6	Gopalganj	Gopalganj-S	Kajulia UPC - Domrasur Hat Road.	9.800	
7	Gopalganj	Gopalganj-S	Gohala Hat (RHD)- Nizamkandi UPC Road (Sadar Portion)	2.590	
Sub Total for District				46.734	
8	Faridpur	Boalmari	Chandpur GC- Kalinagar G C Road via chittar bazar& Dadpur UP. , Moyendia Bazar up to Vatiapara-MaouaR& H . (Boalmari portion)	9.868	Y
9	Faridpur	Sadar	Kanaipur R&H to chandpur GC vai koshagopalpur road. (sadar part)	2.250	
10	Faridpur	Bhanga	Maligram (R&H) - Kalamirdha GC Road	9.538	
11	Faridpur	Sadarpur	Krishnapur GC-Sadarpur HQ-Piazkhali GC-Dhewkhali-Baliahati GC-Kawlibera-Tarail road(Sadarpur part)	13.770	
12	Faridpur	Boalmari	Boalmari GC - Nagarkanda GC via GC via Moyendia bazar	6.970	
13	Faridpur	Faridpur-S	Bakunda R&H to Kanaipur GC via Tambulkhana Road.	9.025	
14	Faridpur	Madhukhali	Madhukhali RHD -Nimtola GC Road Starting from Madhu. Bus Stand.	8.100	
Sub Total for District				59.521	
15	Madaripur	Rajoir	Paikpara UP-Fultala hat-Dhamarchar Rd.	9.290	Y
16	Madaripur	Rajoir	Takerhat GC-Sreenadi GC-Charmuguria-Khagdi RHD road	8.136	
17	Madaripur	Rajoir	Improvement of Rajoir Upazila H/Q - Sreenadi GC	9.290	
18	Madaripur	Rajoir	Improvement of Sagolchira R&H - Paikpara Union Road	6.280	
19	Madaripur	Rajoir	Takerhat GC - Kadambari GC	12.650	
20	Madaripur	Rajoir	Takerhat GC - Kabirajpur GC via Hossainpur UP	15.220	
21	Madaripur	Rajoir	Sanerpar R&H - Amgram GC road	3.380	
Sub Total for District				64.246	
22	Shariatpur	Sadar	Angaria GC - Chandrapur GC via Binodpur UP Road.	10.100	
23	Shariatpur	Sadar	Chandrapur GC - Kazirtek R&H Road.	4.400	
24	Shariatpur	Bhedarganj	Shakhinpur UP-Gowranga Bazar (Dularchar)	4.820	
25	Shariatpur	Goshairhat	Kalikhola Bazar RHD-Rudrokar RHD via Nagerpara GC, Munshirhat Road.	8.400	
26	Shariatpur	Damuddya	Subachani-Nagerpara Raod.	5.695	
27	Shariatpur	Bhedarganj	Charbhaga UP-Gowranga bazar road.	4.650	
28	Shariatpur	Bhedarganj	Shakhi GC - Mredhakandi RHD Road.	4.600	Y
29	Shariatpur	Shariatpur-S	Balar bazar (Rudrakar)-Subhochani-Moderhat-Negerpara rd.	5.290	
Sub Total for District				47.955	
30	Rajbari	Rajbari-S	Belgachi G.C-Gandimara R&H Road	1.220	Y
31	Rajbari	Rajbari-S	Khankhanapur GC-Falur Dokan R&H via Grils School	3.152	
32	Rajbari	Rajbari-S	Alipur UP-Bagmara Hat via Matipara	7.645	
33	Rajbari	Rajbari-S	Felur Dokan R&H-Kutirhat GC	3.883	
34	Rajbari	Rajbari-S	Kolahat GC-Jamalpur GC	3.315	
35	Rajbari	Rajbari-S	Kamaldia R&H-Panchuria UP via Alipur hat	5.251	

Sl. No.	Name of District	Name of Upazila	Name of Schemes	Length (km)	2017 Flood Damaged? (Y/N)
Sub Total for District				24.466	
36	Cumilla	Chouddagram	Kadoir bazar(Suvapur UPC) -Banggodda GC Road via Unkot, Kayerdhari.	5.086	
37	Cumilla	Chouddagram	Batisha NHW - Tarashail Bazar(Lal Msq) Road via Batisha Up, Debipur.	5.080	
38	Cumilla	Chandina	Baragabindapur-Etbarpur UPC Rd. via Moddhatala, Sitalpur	1.030	
39	Cumilla	Barura	Barura GC -Modaforanj RHD Road	9.314	Y
40	Cumilla	Barura	Paranpur Bazar[R&H]-Payelgacha UP office Road	7.687	Y
41	Cumilla	Monohorgonj	Laksam H/Q - Natherpetua RHD via Munshirhat GC Road.(Monohorgonj Portion)	5.342	
42	Cumilla	Nangalkot	Adra UP-Manikmura Bazar Road via Volainbazar & Ghoramaidan	5.475	Y
43	Cumilla	Laksham	Laksam Upazilla HQ-Chitoshi RHD(Moulana bazar) via Sreeyang Rd.	5.000	
Sub Total for District				44.014	
44	Chandpur	Faridganj	Faridganj GC-Rupsha GC Road.	5.740	
45	Chandpur	Haimchor	Gazipur UP Office to Upazilla Head Quarter	3.383	
46	Chandpur	Faridganj	Pashim subidpur UP to Basara Bazar Road. Via Munshir Hat Bazar	4.601	
47	Chandpur	Hazigonj	Cheangatali GC (Dadasgram up)-Dhadda-Khalpar bazar Road via Shaheb bazar & Pirojpur Bazar	7.620	
48	Chandpur	Kachua	Kachua North UP (Tetuya)-Loskari-Boxagonj bazar road via Duati	6.600	
49	Chandpur	Matlab South	Matlab-Bohori Arong-Karbanda Road	6.273	Y
50	Chandpur	Shahrasti	Chioshi (E) UP Office-Kharihor Bazar road via Kadra bazar	5.922	
Sub Total for District				40.139	
51	B. Baria	Kasba	Sayedabad-Kasba-Nayonpur-Mondabagh Road	18.280	
52	B. Baria	Bancharampur	Bancharampur GC-Jibonganj GC Road via Sonarampur Bazar	22.403	Y
53	B. Baria	Bijohnagar	Chandura R&H-Nurpur GC Road	10.160	
54	B. Baria	Bijohnagar	Nurpur GC-Singerbeel hat Road	7.360	
55	B. Baria	Nabinagar	Bitghar Hat to B.Baria R&H road via Kurighar Hat	12.250	
Sub Total for District				70.453	
56	Chattogram	Boalkhali	Kalurghat-Charandwip-Bhandaljuri-Saraf Bhata-Gudamghar Road (From RHD #126)	6.800	Y
57	Chattogram	Anwara	Upazila Health complex-Peskar hat via Chatari UP Office(Chandpur D.C.Road).	5.000	
58	Chattogram	Anwara	Bairag UPC-CUFL Rd-Parki Bazar via Parki sea Beach Road.	5.500	
60	Chattogram	Lohagara	Adhunagar Khan hat GC to Chunati Hajee Para & RHD	3.220	
61	Chattogram	Banshkhali	Arabsha Bazar GC - Ishwar Babur Hat GC Road Via Bashirullah Miazi hatChonua, Gandamara, Saral, Shadonpur UP (Moulana Ashraf Ali Road)	4.100	
62	Chattogram	Chandanish	Dewanhat-Bailtali-Barma Damirhat G.C-Patiya Road.	16.200	Y
63	Chattogram	Patia	Charlaikhya UP - Dangerchar (Akter Tower House) Road.	5.250	
Sub Total for District				46.070	
64	Coxsbazar	Pekua	Pekua to Arabshah Bazar via Rajakhali Sabuj Bazar Road (From RHD #148)	8.552	
65	Coxsbazar	Moheskhali	Matarbari-Dhalghat Road Via Mogdail Bazar	4.600	

Sl. No.	Name of District	Name of Upazila	Name of Schemes	Length (km)	2017 Flood Damaged? (Y/N)
66	Coxsbazar	Moheskhali	Gorakghata-Ghatibanga Sonadia road.	4.500	
67	Coxsbazar	Chakaria	Harbung Baraitali Road.	6.150	
68	Coxsbazar	Ramu	Chainda - Rajarkul Road.	7.850	Y
69	Coxsbazar	Ramu	Chakmarkul - Montergoda Road. (PM Khali) Road.	6.302	
Sub Total for District				37.954	
70	Noakhali	Senbag	SomirmunshirhatG C- Kutuberhat G C Road	9.000	Y
71	Noakhali	Senbag	Somir Munshirhat GC - RHD (Kesharpar UP) via Chilonia bazar Road	6.442	Y
72	Noakhali	Sonaimuri	Kachihata-Thandar hat Road (Palaoan pol RHW- Amannullapur UP-Eadgha Amin bazar- Amishapara UP)	14.214	
73	Noakhali	Sonaimuri	Dirirjan Bazar -Ambarnogar UP Road.	5.450	
74	Noakhali	Senbag	Senbag-Arjuntala UP Office (Chilonia Bazar).	4.810	
75	Noakhali	Hatiya	Chowhomoni Bazar RHD - Char Changa GC via Majidi Bazar Road	8.600	
76	Noakhali	Begumgonj	Banglabazar-Raigong Road	7.245	Y
Sub Total for District				55.761	
77	Laxmipur	Ramgonj	Ramgonj Nagerdighir hat via Harischar Bazar	5.676	
78	Laxmipur	Sadar	Bhobanigon GC- Refuje Market-Megna Bazar- Chakbazar-Munshirhat Road	9.000	
79	Laxmipur	Raipur	Raipur-Panpara Road	5.889	
80	Laxmipur	Komol Nagar	Lawrancekasher hat-Ander char Road	5.000	
81	Laxmipur	Ramgati	Torabgonj GC - Shantirhat - Hajiganj - Bander hat - Chowdhurirhat - Ramgati Bazar Raod	12.000	
Sub Total for District				37.565	
82	Feni	Parashuram	Parashuram-Kalir bazar-Danikunda bazar-Saldhar bazar-Malipathar-Nilaxi-Fulgazi Road.(Parashuram-Part=ch 00-10.75KM).	8.682	
83	Feni	Sonagazi	Bakter Munshi-Kuthir hat-Fazilerghat-Dagoanbhuyan Road (Dagoanbhuyan-Fazilerghat-Bakthermunshi) Road (From RHD #242).	10.415	
84	Feni	Sonagazi	Motigonj UP-Dasherhat-ChardarbeshUP-Karamotiabazar-Kazir hat Rd	8.815	
85	Feni	Dagonbhuiyan	Dagonbhuiyan-Chowdhury Hat Road	4.020	
Sub Total for District				31.932	
86	Jashore	Monirampur	Monirampur-Nehalpur-Kapalia road	20.063	
87	Jashore	Monirampur	Monirampur-Mukterpur road	18.445	
88	Jashore	Monirampur	Monirampur GC - Bakra GC via Rajgonj GC Road	8.691	
89	Jashore	Chowgacha	Chowgacha (Damodar Battala)-Bidhadharpur Road.	8.760	
90	Jashore	Chowgacha	Purapara GC-Moheshpur Pucca road-Bidhadharpur bazar Road.	7.530	
91	Jashore	Chowgacha	Narayanpur UP Office - Bondelitol Bazar Road.	4.400	
92	Jashore	Sadar	Jessore-Potengali-Kayemkhola GC Road (Jessore-Sadar)	14.380	
93	Jashore	Jhikorgacha	Bangdah GC- Kayemkhola GC via Chutipur Bazar, Mohammadpur Bazar.	12.400	
Sub Total for District				94.669	
94	Kushtia	Kushtia-S	Bittipara Hat R&H-Jamjami G.C via Jhowdia Hat road.	17.050	Y
95	Kushtia	Bheramara	Bheramara-Kuchimora GC-Juniadah GC-Allardarga GC (R&H) Rd.	14.100	
96	Kushtia	Daulatpur	Taragunia G C-Bairagirchar-Moricha UP-Allardargha GC Road	13.230	Y

Sl. No.	Name of District	Name of Upazila	Name of Schemes	Length (km)	2017 Flood Damaged?
					(Y/N)
97	Kushtia	Kumarkhali	Kushtia-Rajbari RHD(Lahini) to Katlagari GC Via Jaduboyra, Sandiara Bazar Road	15.600	Y
98	Kushtia	Khoksha	Kushtia Rajbaria RHD-Panti GC via Jaduboyra-Shandiara bazar Road (Khoksa Portion)	8.410	
99	Kushtia	Khoksha	Khoksa Somaspur-Sengram Kalitola GC pansha roa	10.445	Y
Sub Total for District				78.835	
100	Jhenaidah	Kotchandpur	Kotchandpur GC - Chowgacha GC Road (Kotchandpur Part).	4.700	Y
101	Jhenaidah	Moheshpur	Moheshpur-Bagadanga road	12.255	Y
102	Jhenaidah	Kaliganj	Kaligonj UZ H/Q-Kola GC	9.300	Y
103	Jhenaidah	Kaligonj	Baro Bazar GC-Hakimpur GC Road	6.630	Y
104	Jhenaidah	Jhenaidah-S	Naldanga UP HQ-Tetultala bazar Road	6.150	
105	Jhenaidah	Moheshpur	Moheshpur H/Q-Hashadha GC (Moheshpur Portion)	5.230	
106	Jhenaidah	Moheshpur	Natima UP office (Uzzalpur)-Bhabnagor bazar via ShamKur UP office	5.850	
107	Jhenaidah	Moheshpur	Basbaria UP Office-Vasanpota bazar via Sreepur	4.660	
108	Jhenaidah	Moheshpur	S.B.K UP office (Khalispur)-Krischandapur bazar via Purandarpur	5.900	
109	Jhenaidah	Harinakunda	Harinakunda to HQ to Jhaudia GC (Harikunda portion)	4.400	
Sub Total for District				65.075	
110	Chuadanga	Sadar	Sarajgonj G.C-Hizolgari G.C	13.770	
111	Chuadanga	Sadar	Hizolgari G.C-Uthali R&H (Sadar Portion)	7.950	Y
112	Chuadanga	Jibannagar	Uthali R&H-Hizalgari GC.	2.180	Y
113	Chuadanga	Jibannagar	Andulbaria UP-Grishnagar Bazar Road(Jibonnagar Part)	2.900	Y
114	Chuadanga	Jibannagar	Sontospur R&H - Andulbaria GC - Hashada R&H	19.104	
115	Chuadanga	Jibannagar	Jibannagar R&H- Changkhali Border Road.	6.865	Y
116	Chuadanga	Jibannagar	Daulatgonj GC-Akundabaria R&H.	12.450	Y
Sub Total for District				65.219	
117	Magura	Salikha	Singra-Semakhali road.	11.430	
118	Magura	Mohammadpur	Dohail - Nohata Road	11.200	
119	Magura	Mohammadpur	Bethulia Bazar (Kalukhandi More) to Babukahli UP via Dumurshia Bazar Rd.	5.020	
120	Magura	Magura-S	Berail Polita Gc- Bunagati GC via Nalia Ghat	5.600	
121	Magura	Magura-S	Bogia U.P - Ramnagar bazar via Pukuria, Boroï bazar Rd.	7.462	
122	Magura	Salikha	Semakhali GC - Hazrahati R&H Road	7.500	
123	Magura	Salikha	Hazrahati RHD - Bunagati GC Road.	5.626	
Sub Total for District				53.838	
124	Meherpur	Gangni	Bamonudi GC- Karomdi GC Road	6.450	
125	Meherpur	Sadar	Baradi GC-Gangni HQ Road(Sadar part)	2.900	Y
126	Meherpur	Mujibnagar	Bollovepur RHD -Anandabash GC Road	3.731	
Sub Total for District				13.081	
127	Narail	Kalia	Kalia Public Library-Boradia College More Road	11.220	
128	Narail	Kalia	Kalia Baroipara RHD - Mazirgati GC Road	7.500	Y
129	Narail	Narail-S	Tularampur-Shaikhati Road	9.892	Y
130	Narail	Narail-S	Singasolpur-Chakoi via Rukhali Road	4.742	
131	Narail	Narail-S	Sahabad UP (Alukdia)-Malidanga Minabazar Road	2.330	
132	Narail	Lohagara	Lohagara-Radhanagar Via Itna	10.070	
133	Narail	Lohagara	Naldi UP-Lahuria Rd.	4.745	
Sub Total for District				50.499	
134	Rajshahi	Godagari	Godagari to Kakonhat (Starting from Sadurmore)	13.850	

Sl. No.	Name of District	Name of Upazila	Name of Schemes	Length (km)	2017 Flood Damaged?
					(Y/N)
135	Rajshahi	Godagari	Baliaghata Bazar RHD more to Mundumala GC via Jota Bottola, Hatgobindapur (258m over lapping with RHD)	20.500	
136	Rajshahi	Godagari	Railbazar - Amnura road via Mowlanar gate, Dhuly shanko, Ratahary (Godagari part end at Khaira)	19.500	
137	Rajshahi	Godagari	Basudebpur Sluice Gate-Dariapur ending at Nawabgonj Border	6.760	
138	Rajshahi	Godagari	Pakri UP-Jotgopal	3.370	
139	Rajshahi	Godagari	Godagari UP-Nabinagar Bazar Road	4.900	
140	Rajshahi	Durgapur	Amgachhi GC-Katakhali R&H via Kuhar Rd.	3.000	
141	Rajshahi	Durgapur	Durgapur-Belghoria.	8.780	
142	Rajshahi	Durgapur	Shingahat GC-Amgachi Hat GC	6.250	
143	Rajshahi	Charghat	Holidagachi National high way - Rajshahi University via Belghoria.	8.220	
144	Rajshahi	Charghat	Charghat (Upazila HQ) - Arani GC (Rustompur) via Paglapara more.	9.860	
145	Rajshahi	Puthia	Puthia-Baneswar GC	11.470	
146	Rajshahi	Bagha	Bolihar Eidgah (R&H) - Digha GC via Tetulia hat.	7.596	
147	Rajshahi	Bagha	Chandipur-Arani Rly. station via Bausa UP Office.	11.898	
Sub Total				135.954	
148	Naogaon	Mohadevpur	Mohadevpur-Matazeehat GCM.	3.000	
149	Naogaon	Patnitala	Modhuil GC- Shibpur GC Rd.	8.530	
150	Naogaon	Mohadevpur	Chatra -Mohadebpur (Konjobon).	13.532	Y
151	Naogaon	Mohadevpur	Moshibathan GC - Sultanpur Bazar-Patnitola GC (Part Mohadevpur)	7.360	
Sub Total				32.422	
152	C.Nawabganj	Gomostapur	Akkelpur GC - Shibpur GC via Digha Road.	9.020	
153	C.Nawabganj	Nachole	Sonaichandi-Rohanpur GC (Nachole Portion)	3.700	
154	C.Nawabganj	Nachole	Sonaichandi-Dhansura More	2.758	
155	C.Nawabganj	Sadar	Islampur UP Office to Shahajanpur UP office Road.	2.090	
Sub Total				17.568	
156	Natore	Bagatipara	Bagatipara Upazila H/Q-Tebaria GC Road (Bagatipara part)	5.600	Y
157	Natore	Bagatipara	Jamnagar UP HQ-Jhalmolia Bazar viaVhitorbhag (Bagatipara part)	2.565	
158	Natore	Bagatipara	Madhabbari Hat-Soilkona UP	3.765	
159	Natore	Singra	Khajurtola RHD- Shamaspara GC Road via Dakmondop hat	4.300	
160	Natore	Singra	Singra-Baruhash-Tarash (Singra part).	14.950	
Sub Total for District				31.180	
161	Bogura	Dhunot	Dhunot (Khanonagar)-Amrul U.P. Office Road (Dhunot)	5.200	Y
162	Bogura	Dhunot	Shimabari-Mothurapur-Khatiamari (Ekdhala) Road (Dhunot)	9.180	Y
163	Bogura	Sherpur	Ranirhat-Shimabari (Chandaikona)-Mothurapur Road (From RHD #334)	14.174	Y
164	Bogura	Sherpur	Garidaha UP (Baily Bridge) - Jhanjor Hat Road. via Ramashorpur.	10.000	
165	Bogura	Sherpur	Salfa Bazar(Subli NHW)-Mirjapur U.P Office	5.650	
166	Bogura	Shariakandi	Kamalpur U.P office-Goshaibari hat	5.245	
167	Bogura	Sherpur	Bhaira Bazar - Bishilpur Road	3.575	
Sub Total for District				53.024	
168	Joypurhat	Panchbibi	Panchbibi GC - Salaipur RHD Road	10.107	
169	Joypurhat	Akkelpur	Gopinathpur UP office(Karaitola)-Raikali UP office	8.000	

Sl. No.	Name of District	Name of Upazila	Name of Schemes	Length (km)	2017 Flood Damaged? (Y/N)
170	Joypurhat	Joypurhat-S	Mongalbari hat Rd(Dogachi Up Office)to Durgadaha bazar road	6.270	
171	Joypurhat	Khetlal	Moushumi Bazar (RHD) - Rukindipur GC via Sannyash Ghat (Khatlal portion)	5.570	Y
172	Joypurhat	Kalai	Kalai-Kichok RHD Via Gongadaspur Road	4.255	
Sub Total for District				34.202	
173	Lalmonirhat	Hatibandha	Hatibandha-Daikhowa Hat	9.963	
174	Lalmonirhat	Kaligonj	ZR at Baninagar to DaiKhowa GC.	3.638	
175	Lalmonirhat	Kaligonj	ZR at Baninagar-Durakuti GC.	15.471	
176	Lalmonirhat	Aditmari	Burirhat GC-Bhelabari GC Road	4.390	
Sub Total for District				33.462	
177	Kurigram	Rajarhat	Najimkhan GC-Khadabagh R&H Via Rajarhat	7.570	Y
178	Kurigram	Kurigram-S	Pateswari RHD-Jatrapur GC Road.	10.320	
179	Kurigram	Rowmari	Dantbhanga-Rowmari Via Baitkamari Bazar Road	13.632	Y
180	Kurigram	Fulbari	Karibari GC-Khochabari Via Bhangamor U.P	8.551	Y
181	Kurigram	Bhurungamari	Bangosonahat-Shahi Bazar GC Road.	3.920	
182	Kurigram	Nageswari	Hasnabad UP Office - Newashi GC.	1.390	
Sub Total				45.383	
183	Gaibandha	Gobindaganj	Kamdia GC (UZR)-Birat GC Road.	9.970	
184	Gaibandha	Gobindaganj	Bogra-Rangpur City Road to Nakai Hat via Talukkanapur UP road	9.271	
185	Gaibandha	Saghata	Bonarpara GC-Katucha hat R&H Rd.	6.421	
186	Gaibandha	Saghata	Dakbangla hat-Jumaerbari UP Road.	4.975	Y
187	Gaibandha	Gobindaganj	Shakahar U.P-Fulpukuria Bazar	5.280	
188	Gaibandha	Palashbari	Betkapa UP office-Haritola hat via Muraripur Road	3.150	
189	Gaibandha	Palashbari	Dholbanga Bazar at Zillbandha-Pabnapur UP office Road	5.490	
190	Gaibandha	Palashbari	Dublagari NHW-Dholbanga GC Road via Amlagachi GC	7.288	Y
Sub Total for District				51.845	
191	Rangpur	Mithapukur	Laibag G C (Vimergar) to Bhendabari GC via Runipukur GC & Shukurerhat GC(Mithpukur Part)	19.164	
192	Rangpur	Pirganj	Dhaperhat GC-Chatra GC Road	3.950	
193	Rangpur	Badarganj	Nagerhat GC-Padagonj hat via Arunnesha ghat	8.720	
194	Rangpur	Gangachara	Gangachara UZHQ-Saraibazar via Gajaghanta GC Road	13.200	Y
195	Rangpur	Pirgacha	Chowdhurani GC-Shatibari RHD Road (Pirgacha portion)	5.795	
196	Rangpur	Pirganj	Tukuria hat-Tukuria UP office via Dudiyabari Road	3.300	
Sub Total for District				54.129	
197	Dinajpur	Dinajpur-S	Pulhat R&H to Fasiladanga GC Road.	6.580	Y
198	Dinajpur	Dinajpur-S	Chandaganj R&H to Ranigonjhat GC Road.	5.300	
199	Dinajpur	Dinajpur-S	Fultala-Kamalpur Road.	11.100	
200	Dinajpur	Dinajpur-S	Komalpur-Khanpur Road.	3.345	
201	Dinajpur	Dinajpur-S	Fasiladanga G.C-Mohonpur RHD Rd.	9.365	
Sub Total for Package 1				35.690	
202	Dinajpur	Chirirbandar	Beltoli R&H to Binnakuri GC Road	5.880	
203	Dinajpur	Chirirbandar	Binnakuri GC to Debiganj R&H Road	9.482	
204	Dinajpur	Khanshama	Khansama G.C.-Bhobanigonj Via Joygonj	8.962	
205	Dinajpur	Khanshama	Ramkola GC to RHD at Pakerhat Adarsha Gram via Sabuder hat, Pulerhat, Sheltu shah Madrasha.	14.314	
206	Dinajpur	Chirirbandar	Daulatpur(Ambari hat R&H) to Kutubdanga GC road	6.370	
Sub Total for District				80.698	
207	Thakurgaon	Thakurgaon-S	Bhawlar hat GC-Bhelazan RHD Road.	7.450	Y
208	Thakurgaon	Baliadangi	Lahiri G.C-Fakirganj. G C. Road	6.530	Y

Sl. No.	Name of District	Name of Upazila	Name of Schemes	Length (km)	2017 Flood Damaged? (Y/N)
209	Thakurgaon	Baliadangi	Barabari UP Office (Dangi)-Noyar hat via Jorkali Madhupur Road	7.500	
210	Thakurgaon	Baliadangi	Baliadangi-Dhirgonj G.C .via Badambarihat Road	14.775	
Sub Total for District				36.255	
211	Panchagarh	Debiganj	Fulbari GC - Panchpir GC	9.130	
212	Panchagarh	Debiganj	Debiganj R&H Road (Bat Tree More) - Jharbari GC	17.250	Y
Sub Total for District				26.380	
213	Nilphamari	Nilphamari-S	Nilphamari-Saidpur R&H at Textile Mill - Babrijhar GC .	8.095	
214	Nilphamari	Nilphamari-S	Nilphamari (LSD Godown) - Ramgonj G.C	7.452	
215	Nilphamari	Nilphamari-S	Porarhat GC - Nilphamari- Domar R&H road at Hortokilota bazar via Baruahat - Puler hat - Chawra hat - Tarunibari Rail Station .	4.954	
216	Nilphamari	Jaldhaka	Jaldhaka domar RHW chowpathi-Tangonmari hat G.C.	17.800	
217	Nilphamari	Dimla	ShutibarihatG.C-Kakra Chowpathi R&H Rd.	12.879	
Sub Total for District				51.180	
Total Length RCIP-1				1711.708	

B. Project's environmental category

25. The Asian Development Bank's-Roads and Highways-Rapid Environmental Assessment (REA) Checklist (Appendix A) along with the Project/Site Description were prepared as bases for the categorization. The REA checklist is a summary of individual rapid environmental assessment conducted on each road based on a checklist developed and successfully used in similar projects in India, Sri Lanka, and Nepal⁷.

26. The project is classified as environment Category B based on the ADB Safeguard Policy Statement, 2009 (SPS, 2009). RCIP will upgrade the roads that are existing, with no change in the alignment, no by-passes, and no or minimal land acquisition mainly to occur on curves or junction sections in conformance to LGED road safety guidelines. None of the 216 rural roads proposed to be upgraded under the RCIP is located or near cultural heritage, protected areas including buffer zones, or special area for protecting biodiversity. No historical places or religious structures will be affected, no bridges will be improved and therefore no alteration of local hydrology is anticipated. All anticipated impacts are site specific and mitigation measures are readily designed and easily implemented. Anticipated environmental impacts are typical to road maintenance such as the generation of dust, noise, exhausts from haul trucks and mix plants, and waste from construction and worker camps; water contamination; and occupational health and safety hazards. The LGED's first large-scale foray to wet mix macadam (WMM) pavement construction to build stronger and durable roads avoided adverse impacts usually⁸ attributed to rural road development.

⁷ See various Environmental Assessment and Review Frameworks and Project Administration Manual:

i) <https://www.adb.org/sites/default/files/project-document/61272/40423-013-ind-earf.pdf>
ii) <https://www.adb.org/sites/default/files/project-document/81030/47273-002-earf.pdf> , and
iii) <https://www.adb.org/sites/default/files/project-documents/48218/48218-003-pam-en.pdf>

⁸ Water based macadam pavement, which requires phased construction sequence

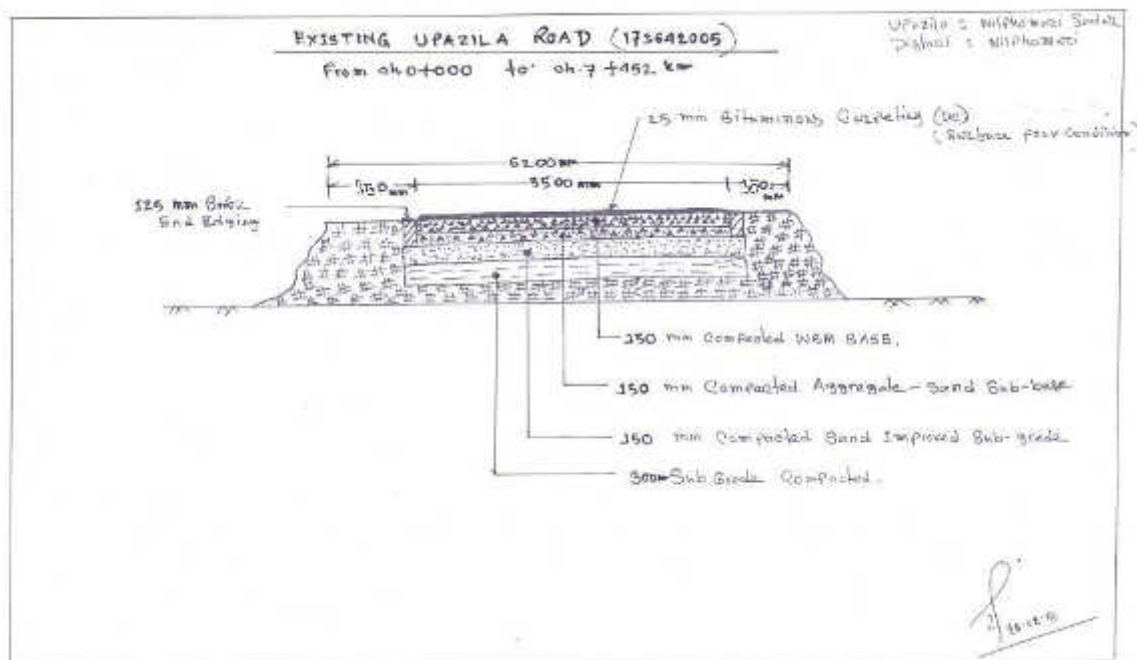
C. Characteristics of existing roads

27. In general, the project roads suffer from poor pavement condition with many potholes, edge failures, and depressions. Several sections bounded by ponds on either both or one side has suffered from embankment side slope erosion. Several rain cuts and erosion has encroached of the carriageway which needs urgent repair. Several drainage facilities are damaged or clogged or needs cleaning, while other roads require additional balancing culverts to allow flood waters to cross the road without causing damage. Roadside drains particularly in urban stretches and bazaars are mostly choked with rubbish and silt which renders them non-functional. Overtopping of roads is not common but water-logging is very common particularly in built-up areas.

28. Most of the roads have inadequate road safety provisions. Horizontal and vertical profiles are incoherent to applicable code provisions. Horizontal curve is mostly insufficient in built-up areas. Vertical curves are deficient to severely deficient throughout the stretches of all sub-projects. Abutting land uses along the project roads are mainly agricultural and settlement accounting for 48% and 37% of the total length, followed by water bodies such as ponds with 14%.

29. Existing roads under RCIP have varying width and road conditions. ROW is generally 20 m in most cases with reduced width in settlements varying from 3 to 4 m. Major part is 1-lane with or without earthen shoulder. Riding condition is mostly poor to fair. Roadside drains are present in some urban stretches but mostly choked and non-functional. Overtopping of roads is not observed in general but water-logging is very common in built-up areas. Waterways are being crossed in most of the hilly roads. The succeeding Figure illustrates typical existing cross-section.

Figure 7: Typical Existing Rural Road Cross-Section.



D. Improvement/Strengthening Proposal

30. All 216 existing key road characteristics and proposed improvements described in the draft IEE. More specifically, the information compiled provides each road's location by district, upazilla, road name and unique identification number assigned by the LGED. Details of the existing road's salient features are provided to include: length, settlement names start and end points, major settlements traversed, existing road land width, general terrain, road configuration expressed in length of carriage width and shoulders, number and location of culverts and u-drains. Finally, recommended upgrading on the salient features are provided.

E. Design and Construction Method

1. The following details the planning, design and construction method adopted by the LGED for the RCIP.

- a) Survey. Level survey is undertaken on all roads true to ground reality to determine the required earthworks. Level survey used level instruments and cross-sections are plotted based on survey data. LGED standards, specifications, design standards and manuals were observed. Temporary bench marks were established at the beginning of each road and assigned an arbitrary value of 10.00m. Cross-sections were taken at 50m interval and closer in curved portions. Survey data processing was accomplished as specified in survey book and X- and L-sections were [prepared using LGED standard software.
- b) Soils and Materials Survey. Guided by LGED Quality Control Manual, soil samples were collected along the road and tested based on LGED's Laboratory Test Frequency. Soil tests and analysis conducted include Atterberg's limit, standard Proctor, California bearing ratio,
- c) Coarse and Fine Aggregates. For road construction and protection works the materials to be used are brick, stone chips, fine and coarse sand, cement, and reinforcement. Several sources of these materials exists within 2-10km from the the road. These materials will be collected for testing to certify the quality.
- d) Traffic Survey. Classified Traffic Count Survey on each road was conducted by trained enumerators for each road. Survey covered two days from 6 am to 10 pm (16 hours), one on a hat-day and one on a non-hat day at two suitable un-biased opposite points of the selected road where traffic counts were tallied. Traffic counts were classified into the following vehicle categories: i) Motorized vehicle comprising of Auto-rickshaw/Tempo/Nasimon, Jeep/Car Taxi , Microbus/Pickup, Motor-cycle, Bus/Minibus, which are passenger-vehicles, and cargo vehicles composed of Truck, Tractor with Trailer, and Covered van/ (Light Truck) with goods; and ii) Non- motorized vehicles comprising of Rickshaw, Rickshaw-van, Bicycle, Bullock Cart and Push cart. Corresponding equivalent single axle road were computed.
- e) Hydrological Survey . Rainfall data, catchment area, time of concentration, and existing cross-drainage structures were collected or computed.
- f) Adopted geometric design standards. The LGED Rural Road Design Standards, 2005 was applied in the RCIP which provides, among others:
 - i. LGED design standards of Upazila Roads (UZR) and Union Roads (UNR) with Crest Widths of 7.30 meters and 5.5 meters, respectively, and carriage/pavement width of 5.5 m and 3.70 m respectively on the existing road embankment;
 - ii. Design Speed of 20 km/hr for carriagewidth of 3.7m and 40km/hr for 5.5-6.7m;

- iii. Right of Way (ROW) interpretation of the horizontal distance between toes on either side of the existing road. It varies depending upon the crest width and embankment height. Any additional space, beyond the toes required for the road improvement will have to be acquired either by donation or purchase;
 - iv. Crest width of 7.3m for plain and rolling terrain;
 - v. Carriageway width of 5.50m will be retained and may be revised based on PCU/hr;
 - vi. Shoulders of 0.9 m is earthen on both sides;
 - vii. Crest width at cross-drainage structures is 7.3m and then then tapered to match with the width of the culvert, which is 5.5 m total;
 - viii. Stopping and passing sight distances according to design speed;
 - ix. Widening of pavement at horizontal curves depending of carriageway width subject to availability of land or regulated speed;
 - x. Camber based on road surface type ranging from 3-5%; xii) vertical alignment minimum gradient of 0.3% for drainage purpose;
 - xi. Side slope of 1.5:1;
 - xii. Alignment Design to follow existing;
 - xiii. Design of junctions;
 - xiv. Pavement Design based on sub-grade strength, projected traffic, and 10 years design life, for RCIP is WMM;
 - xv. Embankment design;
 - xvi. Cross drainage design;
 - xvii. Protective Works & Drainage (side drains, RCC wall; xx) Utility shifting / relocation;
 - xviii. Traffic Management and Road Safety Measures (road furniture; road markings, and cautionary, mandatory and information signs; km stones and 200m stones; delineators and object markers guard posts; guard posts, crash barriers, rumble strips, and speed breakers.
- g) Construction Equipment. For handling of bulk materials like spreading of aggregates in sub-base & base courses by mix-in-place method, use of motor grader & tractor-towed rotator may be done. Compaction of earth layer shall be done by ordinary smooth wheeled roller. But for granular layers both vibratory and smooth wheeled rollers will be applied. It is also considered that, mix plant of medium type & capacity with separate dryer arrangement for aggregate shall be used for bituminous surfacing work that can be easily shifted. A self-propelled or towed bitumen pressure sprayer shall be used for spraying the materials in narrow strips with a pressure hand sprayer. For structural works, concrete shall be mixed in a mechanical mixer and laid manually. The excavation shall be done manually or mechanically using suitable medium size excavators.
- h) Construction methods include:
- i. Preparation for earthwork to restore the design geometric shape. Earthwork necessary to maintain design side slope, earthen shoulder.
 - ii. Earth filling with specified soil having earth layers not more than 150mm in each layer is undertaken and during reshaping of side slopes, benching not more than 30cm in vertical and 60cm in horizontal steps along the sides is maintained. Embankment work layer of earth shall be laid in not more than 150mm thick layers & compacted each layer of the soil at OMC to meet not less than 85% of Standard Proctor Density (As per LGED standard).
 - iii. Sub-grade, earthwork in box cutting on road crest up to 450mm depth will be used for construction of top 250mm as sub-grade. In general, soil in the existing embankment sections is quite good for road construction as those were selected fill. Top 250mm of the subgrade surface shall be compacted at OMC to meet 98% of Standard Proctor

Density by proper control of moisture and by required compaction with a smooth wheeled roller.

- iv. Sub-base. Aggregate Sand Sub-base material in the form of 38mm down crusher run 1st class bricks/picked chips and sand (FM 0.50) mixed in proportion 1:1 in the area to be used in sub-base.
- v. Base. Brick aggregates will be used in base course according to the LGED standard specification.
- vi. Shoulder. Earthen shoulder shall be constructed in layers and compacted to 85% of Proctor's Density. First layer of shoulder shall be laid after the sub-base layer. Thereafter earth layer shall be laid with base layer of pavement and compacted. Hard shoulder will be constructed as per the LGED standards.
- vii. Surfacing. Prime coat consist cut back bitumen prepared by cutting back 60/70 or 80/100 penetration grade and will be applied as primer on Wet Mix Macadam (WMM) layer. Prime coat shall be sprayed on surface with pressure distributor. For Tack coat the binder shall be a penetration grade bitumen applied hot immediately prior to laying of 40mm pre mixed dense bituminous wearing surface.

F. Climate Resilient Rural Road Design

31. Bangladesh is considered one of the most vulnerable countries in the world to climate risks.⁹ Two-thirds of the country is less than 5 meters above mean sea level and located in the world's largest tropical river deltas—the Ganges, Brahmaputra, and Meghna making it one of the most flood prone countries in the world. Natural disasters, like cyclones and floods, cost Bangladesh an average of 1 percent of GDP each year (World Bank 2010).

32. In 2017, heavy rains in March and April triggered flashfloods in the northeastern haor and low lying districts damaging public infrastructure particularly roads in Sylhet, Moulvibazar, Sunamganj, Habiganj, Netrokona, and Kishoreganj. Heavy rains in June and July again triggered monsoon flashfloods in the northeast when flood levels exceeded existing embankment protection levels causing with heavy damage in Sylhet, Moulvibazar, Rangourm Kurigam, Sirajganj, Bogura, Lalmionihat, Gaibandha, and Nilphamari. August heavy rains affected 31 of the 64 districts located north of the Bangladesh¹⁰. These successive floods have damaged about 7,000 kilometers of rural roads¹¹. In 2018, the Executive Committee of the National Economic Council has approved Tk 8,152 Cr to repair damaged rural roads, bridges, and drainage in Rangpur, Rajshahi, and Mymensingh regions.

33. Based on General Circulation Models (GCM), Bangladesh will be 1.5°C warmer and 4 percent wetter by 2050 with stronger seasonal variations. Precipitation is expected to increase by up to 20 percent during the monsoon months July to September that would lead to up to 18 percent higher discharges in the rivers during these months and higher associated flood levels. Severe cyclones are expected to occur more frequently, exacerbated by a potential sea level rise of over 27 cm by 2050 (World Bank 2010). In addition to that, the delta area is subject to land subsidence that aggravates the impacts of sea level rise.

⁹ (Verisk Maplecroft 2014)

¹⁰ <https://reliefweb.int/report/bangladesh/gIEWS-update-bangladesh-severe-floods-2017-affected-large-numbers-people-and>

¹¹ <http://www.atimes.com/article/bangladesh-devastated-third-flood-incurs-severe-losses/>

34. RCIP has adopted key climate resilient road designs from the ADB's BAN: 45084 Coastal Climate-Resilient Infrastructure Project to ensure the proposed road upgrading systematically takes into consideration lessons learned from pilot projects on climate change adaptation. The succeeding Tables presents the climate resilient rural road design parameters adopted in the RCIP. These tables illustrate the RCIP road design has either equaled or exceeded the CCRIP's design values on normal freeboard, slope protection, geo-textile side slope, improve subgrade, cement concrete base, use of geotextiles on the road sub-base, RCC pavement works, reinforced bars, and carpeting. Further, all project roads that passes cyclone shelters will be upgraded to rigid pavement to provide reliable connections with the nearest habitations.

Table 3. Comparison of design parameters between the Coastal Climate Resilient Infrastructure Project (CCRIP) and the proposed Rural Connectivity Improvement Project (RCIP): UPAZILLA ROAD

Description	Climate Resilient Upazila Road (At drain) (Outside the polder)	Climate Resilient Upazila Road without subgrade drain (Outside the polder)	Climate Resilient Upazila Road (At drain) (Inside the polder)	Climate Resilient Upazila Road without subgrade drain (Inside the polder)	Climate Resilient Upazila Road (Rigid Pavement)	Flexible Pavement design of 5.5m wide Road in RCIP	Rigid Pavement 5.5m wide road (Two lane) in RCIP	Equal or Exceeded (Y or N)
Crest width	5.5m	5.5m	5.5m	5.5m	5.5m	7.3m	8.0m – 9.7m	Y
Carriage way width	3.7m	3.7m	3.7m	3.7m	3.7m	5.5m	5.5m	Y
Earthen Shoulder	0.9m	0.9m	0.9m	0.9m	0.9m	0.9m	1.0m - 1.85m	Y
Edging	125mm	125mm	125mm	125mm	125mm	125mm	250mm guide wall	Y
Normal Free Board	600mm	600mm	600mm	600mm	600mm	600mm	600mm	Y
Adaptive Free Board	200mm	200mm	No	No	200mm	No	No	N
Side slope	1:1.5	1:1.5	1:1.5	1:1.5	1:1.5	1:1.5 – 1:2 depending upon the soil type	1:1.5 – 1:2 depending upon the soil type	Y
Special Type of Slope protection by special grass/shrub/herb	Yes	Yes	Yes	Yes	Yes	Turfing in normal condition and embankment slope protection structures, or masonry retaining walls are provided where required	Turfing in normal condition and embankment slope protection structures, or masonry retaining walls are provided where required	Y
Geotextile on the side slopes	Yes	-	Yes	-	-	Geotextile is provided in the side slope protection	Geotextile is provided in the side slope protection	Y
Subgrade drain @ 6m staggered	Yes	No	Yes	-	-	-	-	N
Improved subgrade (sand)	300mm	300mm	300mm	300mm	200mm	250mm	300mm	Y
Subbase	150mm	150mm	150mm	150mm	150mm	225mm	No	Y
Jute geo-textile	-	-	-	-	-	-	Yes	Y
0.18mm thick polyethylene sheet one layer	-	-	-	-	Yes	-	Yes	Y

Description	Climate Resilient Upazila Road (At drain) (Outside the polder)	Climate Resilient Upazila Road without subgrade drain (Outside the polder)	Climate Resilient Upazila Road (At drain) (Inside the polder)	Climate Resilient Upazila Road without subgrade drain (Inside the polder)	Climate Resilient Upazila Road (Rigid Pavement)	Flexible Pavement design of 5.5m wide Road in RCIP	Rigid Pavement 5.5m wide road (Two lane) in RCIP	Equal or Exceeded (Y or N)
Cement concrete base	-	-	-	-	-	-	100mm	Y
RCC Pavement Work	-	-	-	-	200mm	-	200mm	Y
12mm dia MS bar@200mmc/c in both direction	-	-	-	-	Yes	-	Yes	Y
500mm long, 24mm-36mm dia dowel bar @300mm c/c	-	-	-	-	-	-	Yes	Y
Base	150mm	150mm	150mm	150mm	-	150mm	-	Y
Carpeting	25mm	25mm	25mm	25mm	-	40mm	-	Y/No need
Seal Coat	7mm	7mm	7mm	7mm	-	-	-	Y/No need
Pavement camber	3%	3%	3%	3%	3%	3%	3%	Y
Shoulder camber	5%	5%	5%	5%	5%	5%	5%	Y

Table 4. Comparison of design parameters between the Coastal Climate Resilient Infrastructure Project (CCRIP) and the proposed Rural Connectivity Improvement Project (RCIP): UNION ROAD

Description	CCRIP Design					Design adopted in RCIP ¹²		Remarks Equal or Exceeded (Y or N)
	Climate Resilient Union Road (At drain) (Outside the polder)	Climate Resilient Union Road without subgrade drain (Outside the polder)	Climate Resilient Union Road (At drain) (Inside the polder)	Climate Resilient Union Road without subgrade drain (Inside the polder)	Climate Resilient Union Road (Rigid Pavement)	Flexible Pavement design of 3.7m wide Road (Union road) in RCIP	Rigid Pavement 3.7m wide road (Single lane) in RCIP	
Crest width	5.5m	5.5m	5.5m	5.5m	5.5m	5.7m	6.2m – 7.9m	Y/Y
Carriage way width	3.0m	3.0m	3.0m	3.0m	3.0m	3.7m	3.7m	Y/Y
Earthen Shoulder	1.25m	1.25m	1.25m	1.25m	1.25m	1.0m	1.0m – 1.85m	N/Y
Edging	125mm	125mm	125mm	125mm	125mm	125mm	250mm guide wall	Equal/Y
Normal Free Board	600mm	600mm	600mm	600mm	600mm	600mm	600mm	Equal
Adaptive Free Board	200mm	200mm	-	-	-	-	-	N
Side slope	1:1.5	1:1.5	1:1.5	1:1.5	1:1.5	1:1.5 – 1:3 depending upon the soil type	1:1.5 – 1:2 depending upon the soil type	Equal
Special Type of Slope protection by special grass/shrub/herb	Yes	Yes	Yes	Yes	Yes	Turfing in normal condition and embankment slope protection structures, or masonry retaining walls are provided where required	Turfing in normal condition and embankment slope protection structures, or masonry retaining walls are provided where required	Equal
Geotextile on the side slopes	Yes	-	Yes	-	-	Geotextile is provided in the	Geotextile is provided in the	Y/ Exceeded

¹² LGED standard designs are being revised newly by third party and are in process of approval. For RCIP the revised designs have been customized and approved by LGED design Unit. The new designs do not specify upazila roads (UZR) or union roads (UNR), but specify the width. However, for the purpose of these comparisons carriageway of UZR is considered 5.5m and UNR 3.7m.

Description	CCRIP Design					Design adopted in RCIP ¹²		Remarks
	Climate Resilient Union Road (At drain) (Outside the polder)	Climate Resilient Union Road without subgrade drain (Outside the polder)	Climate Resilient Union Road (At drain) (Inside the polder)	Climate Resilient Union Road without subgrade drain (Inside the polder)	Climate Resilient Union Road (Rigid Pavement)	Flexible Pavement design of 3.7m wide Road (Union road) in RCIP	Rigid Pavement 3.7m wide road (Single lane) in RCIP	Equal or Exceeded (Y or N)
						side slope protection	side slope protection	
Subgrade drain @ 6m staggered	Yes	-	Yes	-	-	-	-	No need
Improved subgrade (sand)	300mm	300mm	300mm	300mm	200mm	250mm	250mm	N
Subbase	150mm	150mm	150mm	150mm	150mm	200mm	-	Y
Jute geo-textile	-	-	-	-	-	-	Yes	Y
0.18mm thick polyethylene sheet one layer	-	-	-	-	Yes	-	Yes	Y
Cement concrete base	-	-	-	-	-	-	100mm	Y
RCC Pavement Work	-	-	-	-	125mm	-	200mm	Y
12mm dia MS bar@200mmc/c in both direction	-	-	-	-	Yes	-	Yes	Y
500mm long, 24mm-36mm dia dowel bar @300mm c/c	-	-	-	-	-	-	Yes	Y
Base	150mm	150mm	150mm	150mm	No	150mm	-	Y
Carpeting	25mm	25mm	25mm	25mm	No	40mm	-	Exceeded
Seal Coat	7mm	7mm	7mm	7mm	No	No	-	N/A
Pavement camber	3%	3%	3%	3%	3%	3%	3%	Y
Shoulder camber	5%	5%	5%	5%	5%	5%	5%	Y

G. Traffic

35. The succeeding Tables present the annual average daily traffic for each district and the projected periodic growth rates. Rural roads proposed to be upgraded in the districts of B. Baria, Jashore, Naogaon, Natore, Lalmonirhat, and Panchgarh have the most roads users with at least 2,100 AADT while roads with the least traffic are Bogura and Cumilla with about 500 AADT. CNG or 3-wheeler rickshaws are the dominant traffic on the project roads accounting for about 43% and followed by motorcycles with 36%.

Table 5: Averaged District Annual Average Daily Traffic, 2017

District	Heavy Truck	Medium Truck/covered van	Light Truck/Tractor with Trailer	Mini bus	Micro Bus	Car van taxi	Motor Cycle	3-Wheeler / CNG	Total
Gopalganj	55	19	66	17	42	51	280	429	959
Faridpur	83	29	101	26	64	77	426	652	1,458
Madaripur	41	14	50	13	32	38	212	324	725
Shariatpur	68	24	83	22	53	63	350	536	1,198
Rajbari	43	19	35	12	40	31	203	273	656
Cumilla	37	16	30	11	34	27	174	235	563
Chandpur	50	22	41	15	47	37	237	320	768
B. Baria	124	71	95	42	92	74	1,156	985	2,640
Chattogram	55	25	45	16	52	41	264	356	854
Cox Bazar	51	23	41	15	48	38	242	326	783
Noakhali	55	31	42	19	41	33	510	434	1,163
Laximpur	50	22	41	15	47	37	238	322	772
Feni	63	36	49	22	47	38	591	503	1,349
Jashore	106	61	81	36	79	63	986	840	2,251
Kustia	77	44	59	26	57	46	718	612	1,640
Jhenaidah	71	41	54	24	53	42	660	562	1,507
Chuadanga	84	48	65	29	63	50	787	670	1,796
Magura	56	25	46	17	53	42	268	362	869
Meherpur	79	45	60	27	59	47	733	625	1,674
Narail	57	20	69	18	44	53	293	448	1,003
Rajshahi	69	24	84	22	54	65	355	544	1,217
Naogaon	123	70	94	42	91	73	1,143	974	2,610
C.Nawabganj	45	20	37	13	42	33	215	290	696
Natore	101	58	77	34	75	60	938	799	2,142
Bogura	30	13	25	9	28	22	144	194	466
Joypurhat	66	23	80	21	51	61	337	516	1,154
Lalmonirhat	105	60	80	36	78	63	978	833	2,234
Kurigram	56	25	45	16	52	41	265	357	857
Gaibandha	39	17	32	11	37	29	186	251	602
Rangpur	77	44	59	26	57	46	716	610	1,636
Dinajpur	49	22	40	14	46	36	234	316	758
Thakurgaon	64	22	77	20	49	59	326	499	1,117
Panchgarh	103	59	79	35	76	61	957	815	2,186
Nilphamari	89	51	68	30	67	53	833	709	1,901

Source: RCIP Economic Analysis, 2018

Table 6: RCIP Projected Traffic Growth Rates, in %

Vehicle Type	2017-22	2022-27	2027-32	Beyond 2032
Car/ Van/ Jeep	5	5	4	4
2-Wheel	9	7.5	6	5
Bus	5	4	3	3
Goods Vehicle	6	5	4	3

Auto rickshaw	5	5	4	4
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Source: RCIP Economic Analysis, 2018

H. Construction Material

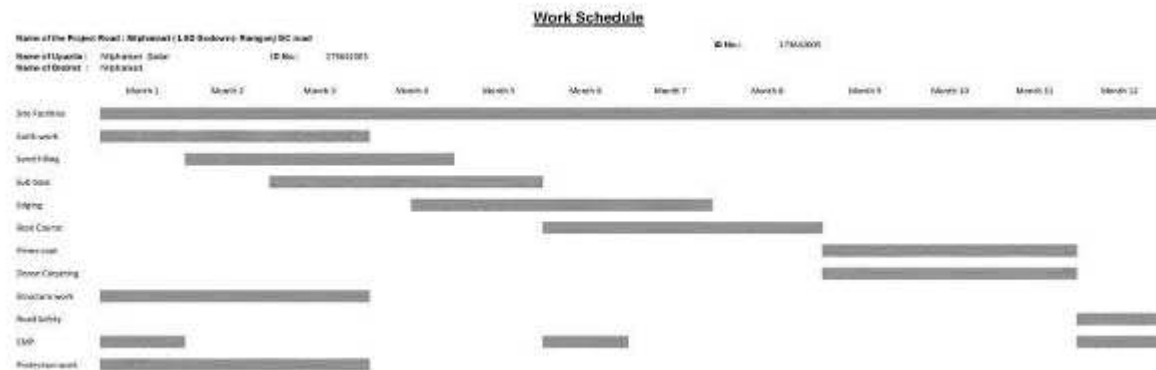
36. Materials such as soil, cement, coarse and fine aggregates, and re-enforcement bars will be procured with 2-10 kilometers vicinity from the project roads. The filling soil be procured from existing borrow pits. Borrow area will be excavated from lands that can used for aquaculture. For road construction and protection works the materials to be used are brick, stone chips, fine and coarse sand, cement, and reinforcement. These materials will be collected for testing to certify the quality.

I. Cost and Implementation Schedule

37. Road construction will be completed within 2 years to be followed by a 5 year maintenance period, both responsibilities of the contractor. Typical road construction schedule is provided in the succeeding Figure. Overlapping 3-month construction activities will be pursued to meet the 2 year construction completion target. Construction activities include earthwork, structural and protective works, followed by sandfilling, sub-base, edging, base course, prime coat, and finally dense carpeting.

38. Total civil works for the 216 rural roads under RCIP is US\$214 million to be implemented from 2019-2023.

Figure 8: Typical Work Schedule for RCIP Road Upgrading



III. POLICY AND LEGAL FRAMEWORK

A. Regulatory Requirements for the Rural Road Upgrading

39. The Government of Bangladesh has provided various laws and regulation for protection and conservation of natural environment as it pertains to road development. However, a limited environmental laws and regulations are specifically applicable to rural roads upgrading where the existing roads are outside environmentally protected areas including forest land, construction activities confined within the existing formation width and existing alignment, and with no or minor land acquisition limited on curves and junctions to comply with road safety standards which characterizes the proposed roads under RCIP. These legislations and applicability to the project are summarized in the in Table below.

Table 7: Applicable Key Environmental Legislations to RCIP

Act/Rule/Law/Ordinance	Responsible Agency/ Ministry/Authority	Key Features-Potential Applicability
Bangladesh Environmental Conservation Act, 1995 (ECA, 1995) and Environment Conservation Rules 1997 (ECR, 1997) the amendment years of Environmental Conservation Rules (2002, 2005, 2010 and 2017) and amendment years for ECA (2000, 2002 and 2010).	Ministry of Environment and Forest	Includes categorization of development projects into green, amber A, Amber B and red. Details procedures for securing environmental clearances for projects that are under red category. Also details procedures for obtaining site clearance for projects.
The National Water Policy, 1999	Ministry of Water Resources	Protection, restoration and enhancement of water resources; Protection of water quality, including strengthening regulations concerning agro-chemicals and industrial effluent; Sanitation and potable water; Fish and fisheries; and Participation of local communities in all water sector development.
Water Pollution Control Ordinance 1970	Ministry of Water Resources	Prevents water pollution
National Policy for Arsenic Mitigation, 2004	Department of Public Health Engineering	Provides a framework for provision of water supply for areas/aquifers with high arsenic levels. Roles of agencies are specified for development of water supply systems, certification of arsenic removal technology, and disposal of treatment sludge. Also, arsenic-prone upazila are identified.
Bangladesh Labour Law, 2006	Ministry of Labor	This Act pertains to the occupational rights and safety of factory workers and the provision of a comfortable working environment and reasonable working conditions.
Land Acquisition Act 1894, Acquisition and Requisition of Immovable Property Ordinance, 1982	Ministry of Land	Outlines procedures and rules for acquiring land and immovable property
Bangladesh Climate Change Strategy and Action Plan (2008)	MOEF	Establishment of six strategic pillars for action, including: (1) food security, social protection and health, (2) disaster management, (3) protective infrastructure, (4) research and knowledge management, (5) decreased carbon development, and (6) capacity building and institutional strengthening.

The Protection and Conservation of Fish Act, 1950 and The Protection and Conservation of Fish Rules, 1985	MOFL	Prohibits and regulates the construction of temporary or permanent of weirs, dams, bunds, embankment and other structures
Wetland Protection Act 2000	Ministry of Water Resources	Advocates protection against degradation and resuscitation of natural water-bodies such as lakes, ponds, beels, khals, tanks, etc. affected by man-made interventions or other causes. Prevents the filling of publicly-owned water bodies and depressions in urban areas for preservation of the natural aquifers and environment. Prevents unplanned construction on riverbanks and indiscriminate clearance of vegetation on newly accreted land.
Embankment & drainage Act,	MOWR	An Act to consolidate the law relating to emb. & drainage
Vehicle Act 1927 & Motor vehicle ordinance 1983	BRTA	Road/traffic safety Vehicular air & noise pollutions Fitness of vehicles& registration

40. During construction, the project will conform to the occupational and health related rules as outlined in the Table below.

Table 8: Labor Laws of Bangladesh

Title of Laws and Rules	Descriptions
Social Security under the Act, 1923 and an amendment in 1980	According to the Act social impact assessment includes the processes of analyzing, monitoring and managing the intended and unintended social consequences, both positive and negative of planned interventions (policies, programs, plans, projects) and any social change processes invoked by those interventions.
Bangladesh Labor Law of 2006	<ul style="list-style-type: none"> - Compliance to the provisions on employment standards, occupational safety and health, welfare and social protection, labor relations and social dialogue, and enforcement - Prohibition of employment of children and adolescent
The Employer's Liability Act, 1938	The Act declares that the doctrine of common employment and of assumed risk shall not be raised as a defense in suits for damages in respect of employment injuries. Under the Maternity Benefit Act, 1939, the Maternity Benefit Act, 1950, the Mines Maternity Benefit Act, 1941, and finally the rules framed there under, female employees are entitled to various benefits for maternity, but in practice they enjoy leave of 6 weeks before and 6 weeks after delivery.
Public Health (Emergency Provisions) Ordinance, 1994	The ordinance calls for special provisions with regard to public health. Whereas an emergency has arisen, it is necessary to make special provision for preventing the spread of human disease, safeguarding public health and providing them adequate medical service and other services essential to the health of respective community and workers in particular during the construction related work.
The Employees State Insurance Act, 1948	It has to be noted that health, injury and sickness benefit should be paid to people, particularly respective workers at work place under the Act.

Bangladesh Factory Act, 1979	The Act requires every workplace including small or large scale construction where women are employed to have an arrangement of childcare services. Based on this Act and Labor Laws - medical facilities, first aid and accident and emergency arrangements are to be provided by the authority to the workers at workplaces.
Water Supply and Sewerage Authority Act, 1996	The Act specify WASA's responsibility to develop and manage water supply and sewerage systems for the public health and environmental conservation.

Table 9: International Environmental Conventions relevant to the project activities

International Environmental Conventions	Details	Relevance
Rio Declaration 1992	United Nations Conference on Environment and Development (UNCED) adopted the global action program for sustainable development called 'Rio Declaration' and 'Agenda 21 'Principle 4 of the Rio Declaration', 1992, to which Bangladesh is a signatory along with a total of 178 countries	No sensitive species are located in the sub-project area. There is no threat to the conservation of flora or fauna.
Convention on Wetland of International Importance Especially as Waterfowl Habitats, Ramsar (1972)	The Ramsar Convention was adopted on 2 February 1971 and entered into force on 21 December 1975. Bangladesh ratified the Convention on 20 April 2002. Bangladesh has two Ramsar Sites (i) parts of Sundarban Reserved Forest (Southwest of Bangladesh); and Tanguar Haour (Northeast of Bangladesh)	The subproject is far away from the Ramsar Site

B. Permissions and Clearance Required for the Project

41. List of required clearances / permissions related to environment are as follow:

- a. Pre-Construction: The environmental clearance certificate (ECC) and site clearance certificate (SCC) from the Department of Environment. The construction, reconstruction, and extension of feeder or local roads is classified as Orange-B Category under the Bangladesh Environment Conservation Act, 1995 as implemented under Environment Conservation Rule, 1997 and guided by the Environment Clearance Procedure, 2010. All Orange-B category projects are required to submit the following list of requirements to the Department of Environment. LGED is responsible to secure the environmental clearance and all No Objection Clearances (NOC) from Union Parishads traversed by each project road. The procedure to secure the environmental clearance for rural road upgrading are as follows:
 - i. File application through prescribed form-3 under Environment Conservation Rules 1997
 - ii. Pay prescribed fees under schedule-13 under Environment Conservation Rules 1997 (Amended 2002)
 - iii. Submit a report on the feasibility of the project
 - iv. Submit report on the Initial Environmental Examination of the project
 - v. Secure No objection certificate (Prescribed Form) from the local authority;

- vi. Submit Emergency plan relating adverse environmental impact and plan for mitigation of the effect of pollution;
- vii. Submit an Outline of the relocation, rehabilitation plan (where applicable); and other necessary information (where applicable).
- b. Other clearances and permits required before constructions includes No Objection Clearance from the local authority or Union Parishad, and tree cutting permit from jurisdictional District Forest Office
- c. During construction: Contractors are required to secure Consent to establish (CFE) and Consent to Operate (CFO) for all mix and batching plants.

C. ADB Safeguard Policy (ADB Safeguards Policy Statement, 2009)

42. The ADB SPS stipulates addressing environmental concerns, if any, of a proposed activity in the initial stages of project preparation. For this, the SPS categorizes proposed components into categories (A, B or C) to determine the level of environmental assessment required to address potential impacts. All three safeguard policies involve a structured process of impact assessment, planning, and mitigation to address the adverse effects of projects throughout the project cycle. The safeguard policies require the following:

- Impacts are identified and assessed early in the project cycle;
- Plans to avoid, minimize, mitigate, or compensate for potential adverse impacts are developed and implemented; and
- Affected people are informed and consulted during project preparation and implementation.

43. These policies apply to all ADB-financed projects, including private sector operations, and to all project components. The internal procedural requirements are detailed in the Operations manual sections and involve similar implementation processes as follows:

- Screening and scoping of the main issues start as soon as potential projects for ADB financing are identified and continue throughout the project cycle;
- Impacts are assessed, safeguard plans summarizing mitigation measures, monitoring program, and institutional arrangements are prepared, and arrangements are made to integrate safeguards into project design and implementation;
- Affected people are consulted during project preparation and implementation and information is disclosed in a form, manner, and language accessible to them, and
- Safeguard plans are disclosed to the general public and the information is updated at various stages in the project cycle. ADB's safeguard policies require that ADB's safeguard requirements are complied with.

44. The ADB screen the projects into categories, these are:

Table 10: ADB Projects Environmental Classification

Category	Category A	Category B	Category C	Category FI
Description	The project is likely to have significant Adverse Environmental Impacts that are sensitive, diverse, or unprecedented.	The project has potential adverse environmental impacts on human populations or environmentally important areas - including wetlands, forests, grasslands, and other natural habitats - are less adverse than those of Category A projects. These impacts are site-	The project is likely to have minimal or no adverse Environmental impacts	The project Involves investment of IFC funds through a financial intermediary, in

	These impacts may affect an area broader than the sites or facilities subject to physical works.	specific; few if any of them are irreversible; and in most cases mitigating measures can be designed more readily than for Category A projects.		subprojects that may result in adverse environmental impacts.
EA Requirements	For a Category A project, the project sponsor is responsible for preparing a report, normally an EIA	EA is narrower than that of Category A EA. Like a Category A EA, it examines the project's potential negative and positive environmental impacts and recommends any measures needed to prevent, minimize, mitigate, or compensate for adverse impacts and improve environmental performance.	Beyond screening, no further EA action is required for a Category C project.	For FI category subproject sponsors requires to carry out appropriate EA for each subproject

D. Good Environmental Management Practices under RCIP

45. The RCIP requires implementing agencies to implement good environmental practices in constructing and upgrading rural roads. These good practices were first developed by the World Bank for India's Pradhan Mantri Gram Sadak Yojana (PMGSY) or Prime Ministers Rural Road Program which "details the factors to be considered during project preparation to avoid/address environmental concerns through modifications in project design and incorporation of mitigation measures."¹³ These practices are to be implemented in conjunction with applicable road construction standards. Good practices covers the entire range of rural road construction activities, these are: project planning and design; site preparation; construction camps; alternate materials for construction; borrow areas; topsoil salvage, storage and replacement; quarry management; water for construction; slope stability and erosion control; waste management; water bodies; drainage; construction plant and equipment management; public and worker's safety and health; cultural properties; tree plantation; managing induced development; natural habitat and biodiversity; consultation for environmental aspects.

46. The ADB's rural Rural Connectivity Improvement Projects have adopted some of these good practices in environmental management and incorporated them in the general environmental management plan and monitoring forms (see Appendix C). The general environmental management plan (GEMP) provides requirements for the following rural road development stages and activities: finalization of alignment; land transfer; land clearing operations; establishment of temporary office and storage area; construction camp sites; mobilization of construction materials - stone aggregates, earth and construction water; transportation of construction materials; diversion of traffic; cut and fill; preparation of embankment and road base; cross drainage structures; tree planting; hot mix plants and laying of bitumen; clean up of construction work sites and disposal of waste; equipment/

¹³<http://documents.worldbank.org/curated/en/854951468044369026/pdf/E25790V30EA0Re1actice010August02010.pdf>

vehicles deployed for construction works; and occupational safety and health hazards at work and camp sites.

47. In cases where national environmental standards and regulations does not exist internationally acceptable levels are adopted published by the World Health Organization or the Environment, Health, and Safety Guidelines of the International Finance Group-WOPrd Bank. Further, when national regulations differ from the performance levels and measures presented in the EHS Guidelines, projects are expected to achieve whichever is more stringent. On occasions, if less stringent levels or measures are appropriate in view of specific project circumstances, full and detailed justification of the applied standard or guideline should be presented in the environmental assessment. For this project key monitoring parameters, where IFC guidevalues takes precedence over national standards are provided in the succeeding Table.

Table 11: Side-by-Side Comparison of RCIP Environmental Quality Monitoring Parameters Standard and IFC Guide Values

Monitoring Parameters	GoB Standards	IFC Guide Values
Air Quality		
Suspended Particulate Matter (SPM)	20 ug/m3 (annual) 150 ug/m3 (24-hr)	20 ug/m3(annual) 50 ug/m3 (24-hour)
Particulate matter =<10u		
Water Quality		
Turbidity	10 NTU (drinking water)	50 mg TSS/li (surface water)
Oil and Grease	0.01 mg/li (drinking water)	10 mg/li (surface water)
Noise		
Residential Area	50 dB(A) (daytime) 40 dB(A) (nighttime)	55 dB(A) (daytime) 45 dB(A) (nighttime)

IV. DESCRIPTION OF ENVIRONMENT

48. The project area, as previously mentioned, is divided into administrative 5 divisions, and further into 34 districts. A total of 125 Upazilas will benefit from the 216 rural roads that will be upgraded with a total length of 1711.708 kms. The succeeding map presents the locations of the proposed roads in each of the project districts.

Figure 9: RCIP Location Map Showing the Roads and Districts



A. Administrative Boundary and Geography

49. The 317 roads of project area cover 8 LGED regions out of 14 regions of LGED and 34 districts out of 64 districts of Bangladesh. Geographically the regions are south eastern and north western of the country. The benefits of the Project work will comprise maintenance and rehabilitation of existing Upazila and Union road of rural areas; existing users will benefit all season movement by using these roads.

B. Physical Environment

1. Climate and Meteorology

50. The entire country is divided into 6 climatic regions based on average summer temperatures and annual rainfall, these are: southeastern, northeastern, northern part of the northern region, northwestern, western, southwestern, and south central as depicted Figure 9. In general, the rainfall increases from west to east and temperature from north to south. Higher temperatures and rainfall are observed in the southeastern region, while the western and southwestern region have higher temperatures and less rainfall.

51. Geographically, Bangladesh extends from 20°34'N to 26°38'N latitude and from 88°01'E to 92°41'E longitude and climatically it is a tropical country. Monsoon dominates throughout the year in most part of the country. Bangladesh has four distinct climatic seasons: (i) the dry winter season from November to February, (ii) the pre-monsoon hot summer season from March to May, (iii) the rainy monsoon season from June to October, and (iv) the post-monsoon season from October to November.

1. Rainfall

52. Mean annual precipitation in Bangladesh is presented in **Error! Reference source not found.** depicting the spatial distribution of rain. Rainfall in Bangladesh varies from 1,598 mm in the west to 4,197 mm in the east with a rainfall gradient of about 7 mm km⁻¹. **Error! Reference source not found.** presents the monthly distribution of rainfall in the country which shows that a highly seasonal distribution with almost 80% of the annual rainfall occurring during monsoon.

53. Tropical depressions or monsoon depressions in the Bay of Bengal defines the summer monsoon season rainfall in Bangladesh. The monsoon depressions move from the Bay of Bengal toward the monsoon trough and produce enormous amounts of rainfall. Most of the rainfall in Bangladesh occurs in monsoon. The monsoon depressions enter Bangladesh from the Bay of Bengal with south-to-north trajectory and then turn toward the northwest and west being deflected by the Meghalaya Plateau. As these depressions move farther and farther inland, their moisture content decreases, resulting in decreasing rainfall toward the northwest and west of Bangladesh. On the other hand, the additional uplifting effect of the Meghalaya plateau increased the rainfall in northeast of Bangladesh.

54. There is also a wide variation in rainfall distribution across the project area. Chuadanga and Rajshahi districts are located inland along the Indian border and have lower annual average rainfall of 1,496.5 mm and 1,542.1 mm, respectively. While Coxsbazar and Maijdi Court stations located along the the southern coast and have higher rainfall with 3,524 mm and 3,155 mm, respectively.

Table 12: Average Monthly Rainfall (mm) in the RCIP Area

Station	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Total
Bogura	8.70	15.20	20.10	80.50	222.00	343.80	406.10	285.30	310.10	126.90	13.10	11.30	1,843.10
Chandpur	6.70	21.10	74.50	162.10	296.40	383.40	424.30	360.60	247.00	124.80	39.80	6.70	2,147.00
Chattogram	5.60	24.40	54.70	147.40	298.60	607.30	727.00	530.60	259.30	184.80	67.50	11.90	2,919.00
Chuadanga	14.80	26.60	20.20	39.80	142.80	235.40	351.70	232.80	297.10	101.30	21.00	13.00	1,496.50
Cumilla	7.50	28.80	66.20	153.90	329.60	329.80	415.50	316.00	226.60	141.60	41.60	8.60	2,066.00
Coxsbazar	4.10	17.00	34.70	121.80	286.80	801.90	924.60	667.10	330.10	213.60	109.40	13.00	3,524.00
Dinajpur	12.30	10.50	11.30	67.10	232.50	335.30	433.60	387.70	383.80	115.10	7.00	10.20	2,006.40
Faridpur	7.00	27.70	51.10	142.40	267.70	345.10	339.80	308.50	264.20	156.10	31.80	11.30	1,953.00
Feni	8.00	35.00	76.80	192.90	383.60	529.90	731.50	536.10	324.80	200.20	52.90	9.90	3,082.00
Jashore	14.80	26.10	44.60	75.40	169.90	298.70	304.10	291.80	236.90	107.90	29.00	5.80	1,615.00
Madaripur	9.70	34.20	60.90	154.30	264.30	384.30	401.50	351.50	246.50	149.60	32.30	5.40	2,094.00
Majdi Court	12.10	30.00	81.20	135.10	340.50	532.70	790.20	637.10	359.10	169.80	58.50	8.80	3,155.00
Rajshahi	11.30	17.50	24.80	63.70	136.40	264.60	320.70	273.90	295.90	106.40	16.30	10.60	1,542.10
Rangpur	9.30	11.80	24.50	104.00	294.40	417.40	464.80	376.10	383.00	132.10	10.50	7.90	2,235.80
Sayed-pur	12.60	6.50	22.70	94.10	221.70	435.20	350.00	350.00	456.30	139.70	11.80	6.70	2,107.30
Sitakunda	5.60	19.60	91.90	184.50	351.00	548.40	726.80	545.60	316.40	240.30	54.20	7.90	3,092.00

Source: BMD Station data

55. Figure 10 and Figure 11 chart Rajshahi and Coxsbazar stations showing the difference between the drier summer weather inland at Rajshahi by comparison to Coxsbazar where approximately twice as much rain falls during the summer monsoon months. Rajshahi has the lowest rainfall of all stations in Bangladesh.

Figure 10: Monthly Average Rainy Days, Rajshahi Meteorological Station

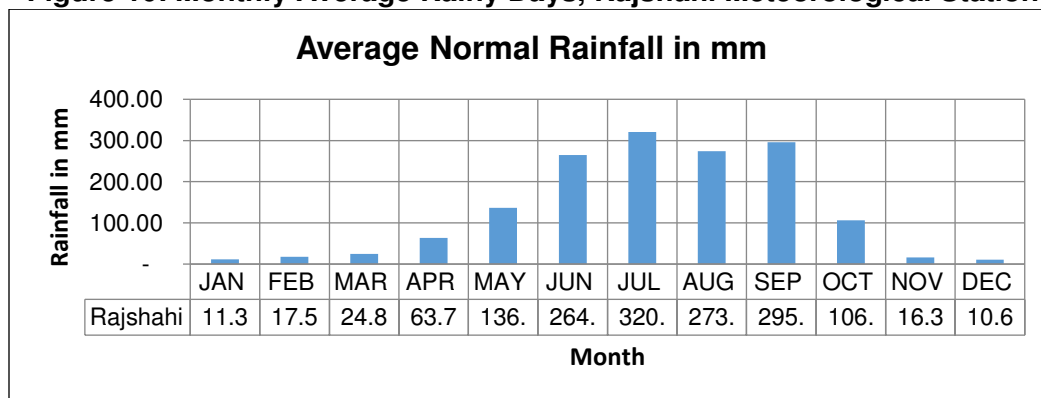
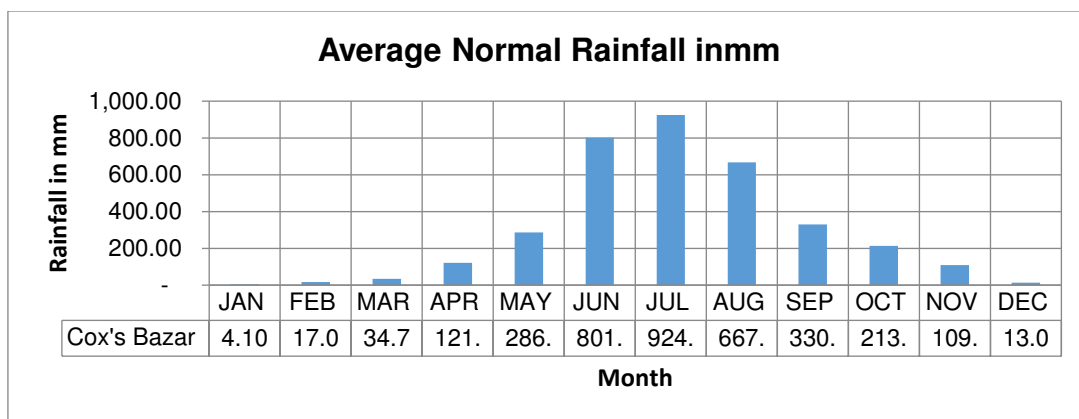


Figure 11: Monthly Average Rainy Days at Coxsbazar Meteorological Station



56. The spatial variation of raindays in the project area reflects that of the country. From October to April there are few days when rain is recorded and in December not one of meteorological stations in the project area registered more than 1 rainy day. During the pre-monsoon, rainfall increases from June to September to about 15 days. Weather stations located along or near the coast have more than half the month with rainy days. Rajshahi has fewest rainy days while Feni located along the coast of Chattogram has the most number of rain days.

2. Temperature and Relative Humidity

57. The average temperature in Bangladesh ranges from 17°C to 20.6°C during winter which at times reduces to 7°C in some places and 26.9°C to 31.1°C during summer and in the northwest region reaches more than 45°C. The northwest region experiences the two extremities that are in clear contrast with the climatic conditions of the rest of the country.

58. Average minimum and maximum temperatures recorded in the meteorological stations located in the project area are provided in the succeeding Tables. Average minimum and maximum temperatures in the summer and the winter months are consistent across the stations with temperatures well above freezing even in the coldest. The highest average maximum temperature occurs during the pre-monsoon months between April and May and recorded in Chuadanga at 36.3oC. While lowest temperatures just above 10oC were recorded in Chuadanga and Dinajpur.

Figure 12: Climate Map of Bangladesh

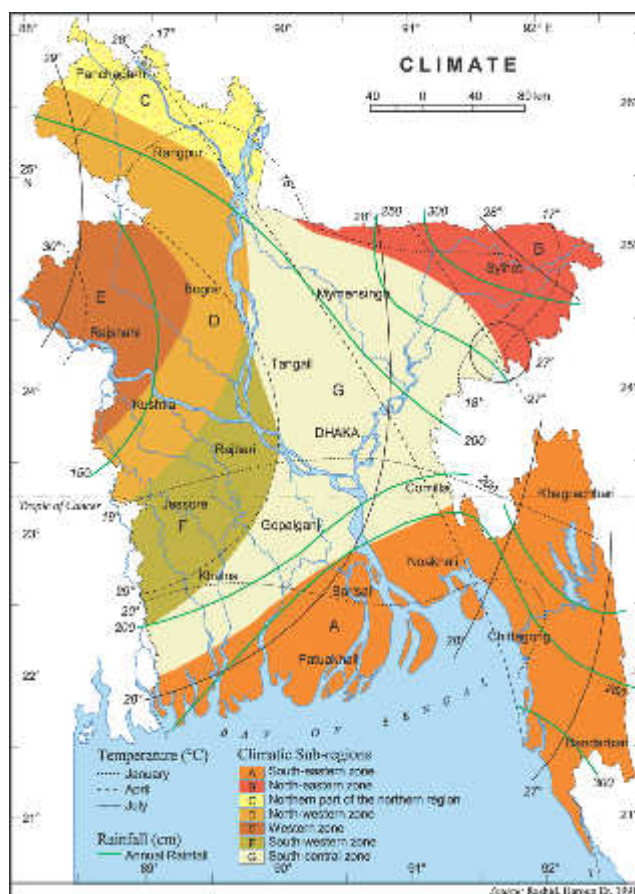


Table 13: Average Minimum Temperature

St_name	JA N	FE B	MA R	AP R	MA Y	JU N	JU L	AU G	SE P	OC T	NO V	DE C
Bogura	11. 7	14	18.4	6	23. 9	25. 8	26	26. 2	25. 5	23. 2	18. 3	13. 4
Chandpur	13. 4	15. 8	20.5	4	24. 5	25. 8	25. 8	25. 9	25. 6	24	19. 9	15
Chattogram	13. 9	16. 2	20.3	4	23. 7	25. 2	25. 1	25. 1	25. 1	24	20. 3	15. 6
Chuadanga	10. 6	14. 1	18.8	4	23. 2	25. 1	26. 2	26. 2	25. 6	23. 5	18. 1	12. 5
Cumilla	12. 1	15. 2	19.7	8	24. 2	25. 3	25. 4	25. 4	25. 2	23. 4	18. 7	13. 3
Cox's_Bazar	15	17	20.7	9	23. 1	25. 2	25. 1	25. 25	25	24. 3	21. 1	16. 5
Dinajpur	10. 4	12. 5	16.9	8	20. 23	25. 5	25. 5	25. 26	25. 1	22. 2	16. 5	11. 9
Faridpur	12. 1	14. 6	19.3	9	22. 24	25. 5	25. 6	25. 9	25. 6	23. 9	19. 2	13. 7
Feni	12. 7	15. 7	20.5	4	23. 4	25. 3	25. 1	25. 2	25. 1	23. 6	19. 3	14. 3
Hatiya	14. 9	17. 2	21.5	1	24. 25	25. 6	25. 4	25. 4	25. 3	24. 6	21. 3	16. 8
M_Court	13. 5	15. 6	19.9	3	23. 7	25. 6	25. 4	25. 4	25. 5	24. 4	20. 4	15. 7
Madaripur	11. 9	14. 8	19.7	1	23. 3	25. 7	25. 7	26. 1	25. 7	23. 9	19. 2	13. 8

Rajshahi	11	13.	17.8	22.	24.	25.	26.	25.	23.	17.	12.
Rangpur	10.	12.	16.6	20.	22.	25.	26.	25.	22.	17.	12.
Sayedpur	10.	13.	17	21.	23.	25.	26.	25.	22.	17.	12.
Sitakunda	12.	15	19.9	23.	24.	25.	25.	25.	23.	19.	14
	2			6	7	5	3	4	2	5	

Source: BMD Station data

Table 14: Average Maximum Temperature

St_name	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Bogura	24.9	27.4	31.8	34.3	33.1	32.6	31.7	32.1	31.8	31.7	30	26.5
Chandpur	24.8	27.5	31.5	32.8	32.8	31.9	31.2	31.5	31.6	31.4	29.3	26
Chattogram	26	28	30.6	31.8	32.3	31.5	30.9	31.1	31.6	31.5	29.8	27
Chuadanga	24.6	28.1	33.2	36.3	35.8	34.1	32.7	33	32.8	32.4	30.1	26.4
Cumilla	25.4	27.7	31	32.2	32.2	31.6	30.9	31.3	31.6	31.4	29.6	26.6
Coxsbazar	26.7	28.5	30.9	32.1	32.3	30.7	30	30.2	30.9	31.6	30	27.5
Dinajpur	23.4	26.4	31.1	33.3	32.6	32.7	31.8	32.1	31.5	31.1	28.9	25.5
Faridpur	24.5	27.6	32.5	34.2	33.3	32.2	31.3	31.4	31.6	31.4	29	25.6
Feni	26	28.3	31.5	32.2	32.3	31.3	30.5	31.1	31.4	31.6	29.9	27
Hatiya	25	27.4	30.6	32	31.9	30.5	29.8	30.1	30.5	30.8	29	25.8
Madaripur	25.4	28.3	32.6	34.1	33.6	32.5	31.7	31.9	32.2	32.2	30	26.7
Majdi Court	25.4	27.7	31.2	32.3	32.3	31.1	30.2	30.4	31	31.2	29.2	26.2
Rajshahi	24.5	27.7	33.1	35.7	34.5	33.4	32.1	32.3	32.2	31.7	29.3	25.8
Rangpur	23.4	26	30.4	32.2	31.9	32.1	31.7	31.9	31.3	30.8	28.6	25.1
Sayedpur	22.8	26.2	30.6	33	32.3	32.1	31.8	32	31.5	31.3	28.9	25.3
Sitakunda	26.3	28.4	30.8	31.9	32	31	30.3	30.8	31.4	31.6	30.1	27.3

Source: BMD Station data

59. The average relative humidity in Bangladesh for the whole year ranges from 78.1% to 70.5%, with maximum records occurring in September and minimum in March. In the project area, humidity follows the same pattern with maximum readings between June and September coinciding with the monsoon rains. Spatial variation indicated highest humidity in Coxsbazar 89%, Hatiya 89%, Majdi Court 88% in July. In contrast, lowest recorded average monthly humidity at 63 % occurs during March in Sayedpur, Dinajpur and Rajshahi.

Table 15: Monthly Normal Humidity (%) in the Project Area

Station	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Bogura	77	70	66	72	78	84	86	85	86	82	77	77
Chandpur	78	73	73	77	80	85	86	85	85	82	78	78
Chattogram	73	70	74	77	79	83	85	85	83	81	78	75
Chuadanga	78	72	65	68	74	83	86	86	86	83	78	78
Cumilla	77	75	77	81	82	86	87	86	86	84	80	79
Coxsbazar	72	71	75	78	80	87	89	88	86	82	77	74
Dinajpur	79	70	63	68	76	82	84	84	85	82	78	78
Faridpur	77	72	67	72	79	85	87	85	85	82	78	78
Feni	76	73	74	79	81	85	87	86	86	84	80	78
Hatiya	76	74	76	79	82	87	89	88	86	84	80	79
Madaripur	77	72	70	74	79	84	86	85	85	82	78	78
Majdi Court	79	76	76	78	81	86	88	87	86	83	80	80
Rajshahi	78	71	63	65	75	83	87	86	86	83	78	78
Rangpur	82	75	68	74	81	85	86	85	87	84	80	81
Sayedpur	78	70	63	70	77	82	83	83	83	80	75	76

Station	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Sitakunda	75	72	74	78	81	85	87	86	85	83	80	78

Source: BMD Station data

3. Wind Speed

60.

61.

62.

63. Figure 15 presents the basic wind speed map of Bangladesh. Basic wind speed is defined as site-specific windspeed that are used in the determination of design wind loads for buildings and other structure. In general, increase to the southeast from 41.4 m/s in Thakurgaon, C. Nawabganj, and Dinajpur to 80.0 m/s in Patuakali, Barguna, and coastal areas of Chattogram and Coxsbazar. In the project are the same spatial difference emerges. Dinajpur the slowest monthly average wind speed with just 1.32 while the fastest was recorded in coastal Chattogram. The succeeding Tables shows the wind speed records for stations of Dinajpur and Chattogram. The two stations exhibit extremes of low and high wind speeds respectively. The Tables show similar seasonal variation with lowest winds registered in November and December and highest in the monsoon period. The strength of winds throughout the year is two or three times stronger in Chattogram than in Dinajpur.

64. Temporal wind speed pattern follows the cycle of gusty winds during the pre-monsoon period and sustained during the summer monsoon. Wind starts to lose speed until November when calms are recorded across all stations in the project area.

Table 16: Normal Wind Speeds (m/s)

Stations	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Bogura	1.3	1.6	2.2	3.1	3.1	2.9	2.7	2.4	1.9	1.2	1	1.1	2.02
Chandpur	0.9	1	1.9	2.8	2.2	2.2	2.1	1.9	1.4	0.9	0.7	0.7	1.56
Chattogram	2.5	3.3	5	7.5	7.4	8.8	8.9	7.9	5.6	3.1	2.1	2.1	5.37
Chuadanga	0.8	1	1.6	2.5	2.4	2.3	2	1.7	1.6	0.9	0.6	0.7	1.5
Cumilla	1.2	1.6	2.8	4.3	4.4	4.6	4.7	4.1	2.7	1.4	0.9	0.9	2.82
Cox's Bazar	3.6	3.9	4.3	4.8	5.4	6.2	6.4	5.8	4.2	3.2	2.9	3.1	4.48
Dinajpur	1	1.2	1.7	2	1.8	1.7	1.6	1.4	1.2	0.8	0.7	0.7	1.32
Faridpur	1.3	1.4	2.4	3.9	4.1	3.8	3.6	3.3	2.7	1.5	1.1	1.1	2.53
Feni	0.8	1.3	2	3	2.8	3.2	3.4	3	2	1	0.7	0.6	1.96
Hatiya	2.3	2.5	3.6	5.1	5	5.8	5.6	4.7	3.4	2.1	1.6	1.7	3.63
M_Court	0.7	1.1	1.8	2.9	2.8	3.4	3.5	3	2	1.1	0.7	0.6	1.98
Madaripur	0.8	0.9	1.5	2.4	2.2	2	2.2	2.1	1.4	0.8	0.6	0.6	1.47
Rajshahi	1.6	1.8	2.3	3.4	3.7	3.6	3.2	2.9	2.5	1.5	1.5	1.7	2.46
Rangpur	1.3	1.6	2.5	3.4	3	2.9	2.8	2.6	2.1	1.6	1.5	1.3	2.22
Sayedpur	2.7	3.1	4.6	4.8	4	3.7	3.6	3.1	2.7	2.1	2	2.2	3.22
Sitakunda	1.1	1.6	2.6	3.2	3.2	3.7	3.5	3.2	2.2	1.2	0.9	0.8	2.26

Source: BMD Station data

Figure 13: Average Wind Speed, Dinajpur Weather Station

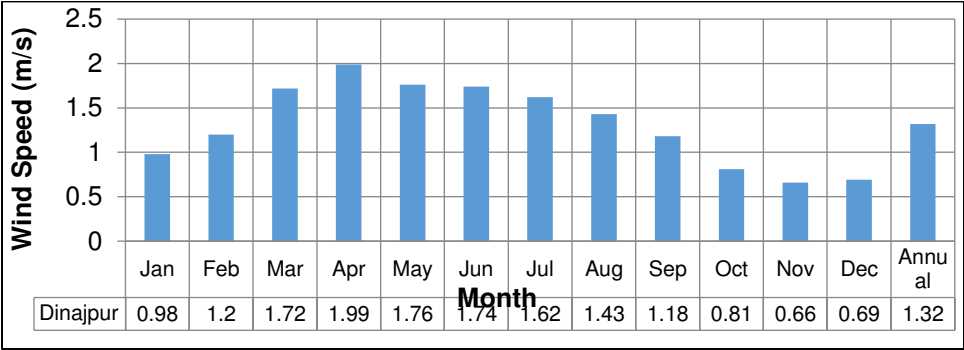


Figure 14: Wind Speed at Chattogram

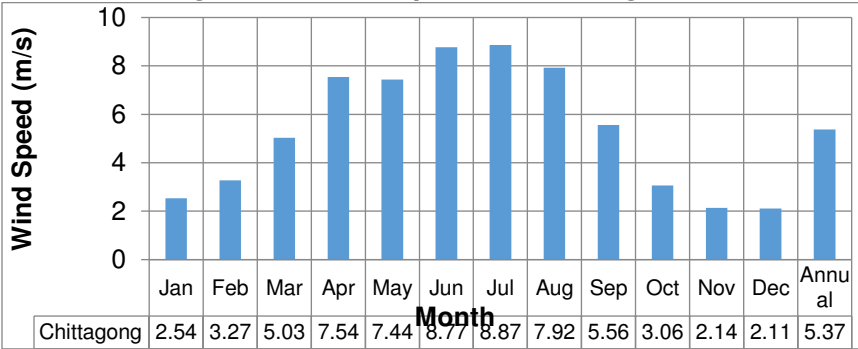
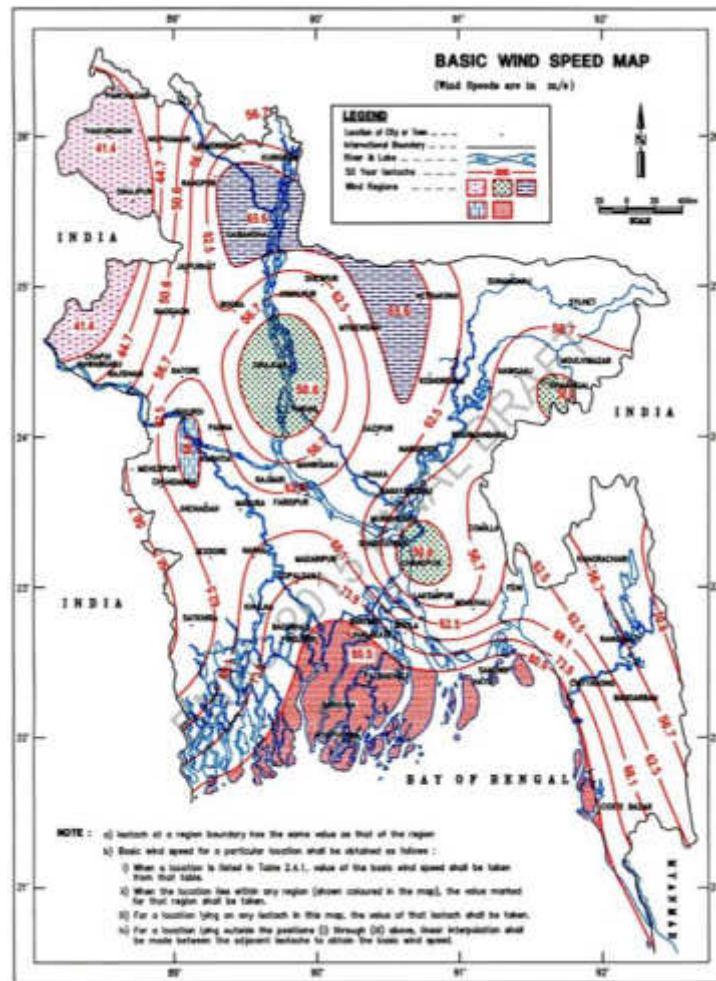


Figure 15: Basic Wind Speed Map, Bangladesh



2. Physical Geography

65. Bangladesh has two main land features; a vast expanse of deltaic plain produced by the world's biggest rivers, and a small hilly region located on Chattogram and Coxsbazar where swift rivers emanate. The total land area is 147,610 square kilometers confined along a latitude of 820 kilometers and at its widest is 600 kilometers. It is bounded by India on its west, north, and north east and on the south east by Myanmar. The southern portion is the Bay Bengal and along its coast is a dynamic delta dissected by numerous rivers.

1. Elevation

66. Figure 16 presents a digital elevation model (DEM) of Bangladesh based on a 300m grid. A DEM is a computerized virtual representation of a continuous surface of the earth in a specified area. This map illustrates most of the country's territory are below 10 m above mean sea level except for the southeastern border districts of khagrachari, Rangamati, Bandarban, and sections of Chattogram and Coxsbazar; and the northwestern districts of Thakurgaon and Panchagarh. The Chattogram Hills rise steeply to 600 to 900 metres, and at 1,052 meters altitude, the highest elevation in Bangladesh in Saka Haphong also in the southeastern region. In the northwest, the monotonous plains of Rajshahi and Rangpur Division are broken by hills rising 100m from old alluvial deposits of the Barind tracts.

2. Slope

67. Figure 17 presents the slope map of Bangladesh with the project area highlighted. The northwestern districts belonging to Rangpur and Rajshahi division have a slope range between 3-6°, while the districts in Dhaka, Khulna, and the northern districts of Chattogram Divisions have a slope between 0-3°. Chattogram division gradually rises to 6-8° and then rises to as steep as 35° and higher along the Myanmar and India borders.

3. Geology

68. Bangladesh has virtually no stone to be utilized for use as aggregate or building materials. It does, however, have a plentiful supply of clay, leading to the making of bricks. Soils and clays are extracted through strip-mining and fired to make bricks in relatively small brickfields found throughout the study area. In broad terms alluvium accounts for 77.2% of the country's total area and comprised mostly of alluvial silt and clay, alluvial silt, deltaic silt, march clay and peat, and young gravelly sand which formed during the Holocene or Recent period. This formation is found along the districts along the Padma and Jamuna rivers; Panchgarh, Thakurgaon, Nilphamari, and Rangpur for gravelly sand; Rajshahi, Natore, Bogura, and Sirajganj for Delatic Silt; Noakhali, Feni, and Laximpur for Chandina Alluvium; and the coastal areas of Chattogram division for valley alluvium and co-alluvium. In the Chattogram division, older formations are found to include St Martin Limestones formed during the Pleistocene age, Tipam sandstone during the Pliocene age, and Bokabil formation during of the Surma group during the Miocene age. Figure 18 presents the geologic map of Bangladesh.

4. Soil

69. The predominant soil groups in the project area are calcareous dark gray flood plain and calcareous brown flood plain soils which are found mostly in Rajshahi, Khulna, Dhaka, and parts of Rangpur Districts. More specifically in Natore, Kushtia, Meherpur, Chuadanga, Jhenaidah, Jashore, Faridpur, and Shariatpur districts. Grey and red-brown terrace soils, which make up about 17 percent of the soils in the country, are generally flood-free and poor in organic matter. In contrast, the vast majority of the country of the soil types is highly fertile.

Figure 16: Digital Elevation Model, Bangladesh

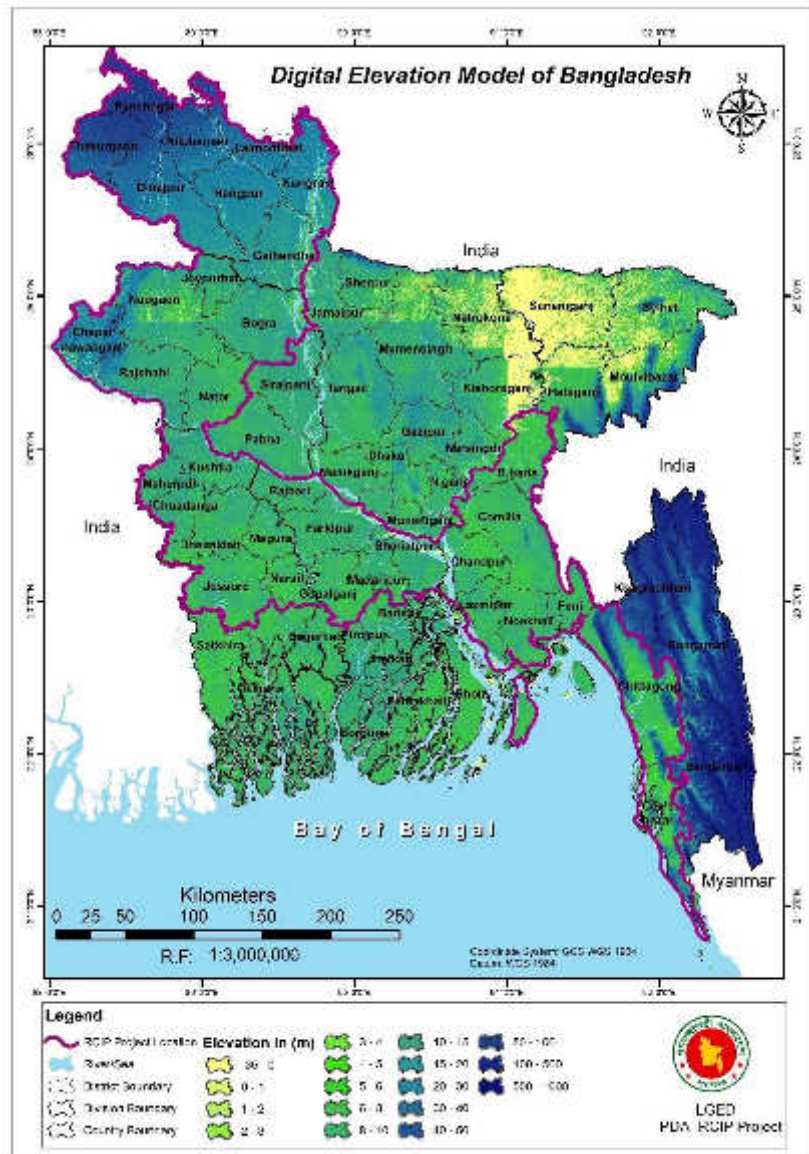


Figure 17: Classified Slope Map of Bangladesh

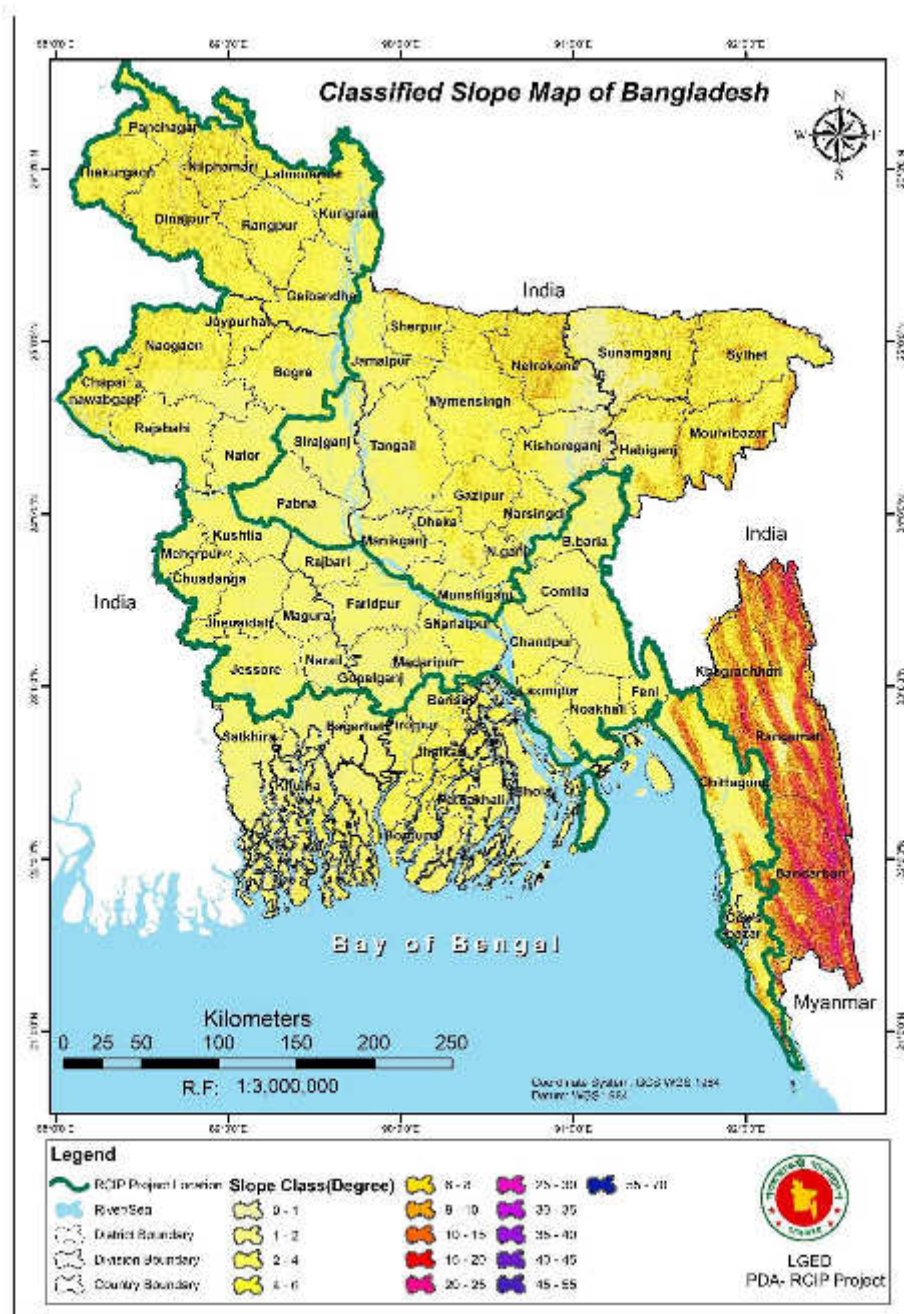
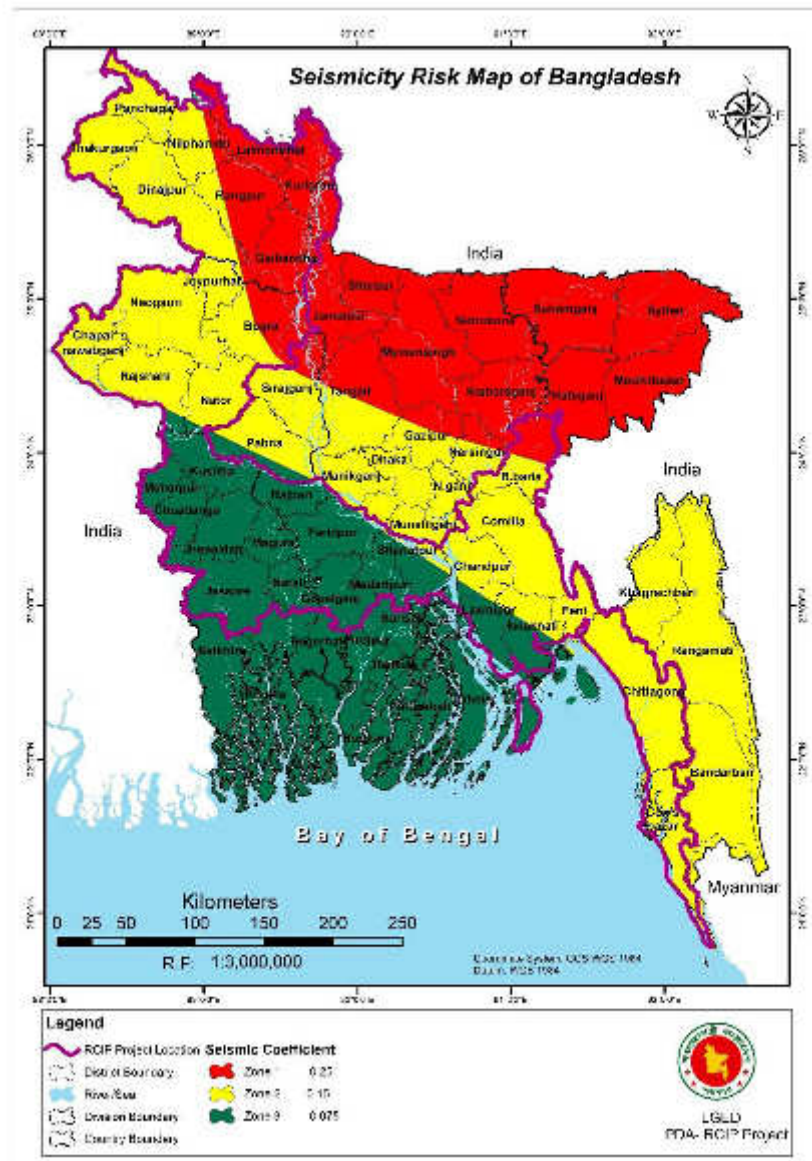


Figure 18: Geologic Map of Bangladesh

5. Seismicity

70. Historical earthquakes had not caused landslides compared to the neighboring countries of India and Myanmar. The country has a long history of earthquakes and few were considered catastrophic; notably events that occurred in 1762, 1782, 1897, and 1950. Bangladesh is classified into three seismic zones as presented in Figure 19. The project area lies within an active seismic zone and is mostly classified as medium risk except around Kurigram which is classified as high risk.

Figure 19: Earthquake Prone Area of Bangladesh



6. Hydrology

71. Rivers and their impact upon the land are the defining features of Bangladesh. The outflow of water from Bangladesh is the third largest in the world, after the Amazon and the Congo systems. Its rivers are young and migratory. Many small lakes and ponds are scattered around the country are created when branches of meandering rivers are cut off. Recent deforestation in Bangladesh and its neighbors has caused rivers to carry larger amount of silt through already burdened river systems, leading to faster, shallower rivers and more prone to flooding. Major floods occur every 2 to 3 years with flash floods in the north occurring during regularly between August and October. Several rivers govern the overall hydrology of the project area. The Brahmaputra/Jamuna and the Ganges/Padma system are in the project area. The Brahmaputra/Jamuna and lower Meghna are the widest rivers, with the latter expanding to almost 8 kilometers in the wet season. The Ganges/Padma, which begins in the Indian state of Uttar Pradesh, enters Bangladesh from the northwest through the Rajshahi Division. It joins the Brahmaputra/Jamuna in the center of the country, northwest of Dhaka, at which point the system fingers into many branches, all heading south to drain into the Bay of Bengal. LGED does not have jurisdiction on the bridges and the proposed project will not upgrade or repair any. Almost all roads are constructed on embankments and elevated from surrounding land. No direct adverse impacts to the river water quality and flow are anticipated. The succeeding Table enumerates the rivers that cross or bounds the roads in each district.

Table 17: Details of Rivers that Cross or Bounds the Project Roads

District	Rivers/Streams
Gopalganj	Madhumati river and several irrigation canal
Faridpur	Chandana and several small irrigation canals.
Madaripur	No large rivers lie in this district, some roads cross and pass adjacent to irrigation canals
Shariatpur	No large rivers lie in this district, some roads cross and pass adjacent to irrigation canals
Rajbari	Some of the proposed road crosses Ganges and Pursali River
Cumilla	There are 12 small and large natural drainages within the proposed project alignment i.e. Gomti, Buri, Titas, Meghna, Marjora khal, Bara khal, Ramprasader khal, Dakatia, Dhunagoda and Kurzon khal
Chandpur	Lower Meghna and several small irrigation canal run along the project road.
Bramanbaria	Buri and Titas is the two major rivers that are crossing the proposed project roads but number of small irrigation canal running along and across the proposed alignment.
Chattogram	There are 12 small and large natural drainages at different proposed project alignment, among them Feni, Sangu, Karnafuli and Kutubdia Channel are major rivers.
Coxsbazar	There are 18 small and large natural drainages (including seasonal streams) within the proposed project alignment. The road crosses Matamuhuri, Manikchari khal, Kutubdia channel, Maheshkhali channel and Baghkhali channel.
Naokhali	No large rivers lie in this section of the proposed project road but some road crosses Wapda khal and Bfn khal
Laxmipur	No large rivers lie in this section of the road but a number of road crosses and passes adjacent to irrigation canal
Feni	Little Feni, Selonia and Matubhuiyan are the major river which the proposed project road alignment crosses.
Jashore	There are 10 small and large natural drainages including seasonal stream within the proposed project alignment. The major river that crosses some of the road alignment are: Bhairab, Kapotakshi, Chitra, Betna, Harihar and Afra khal
Kushtia	Garai and Kumar are the major rivers that crosses the project roads. A number of irrigation canals are adjacent to the project roads.
Jhenaidah	Few of the proposed project road alignment crosses Kumar, Begabati and Kapotakshi river
Chuadanga	Bhairab, Nabaganga, Chitra and Ichamati
Magura	Chitra, Nabaganga and Fatki

District	Rivers/Streams
Meherpur	The two major rivers that the proposed project road alignment crosses are Matabhanga and Bhairab river.
Narail	Bhairab and Nabaganga river also Katakhal khal are the major natural drainages that the proposed project road alignment crosses and There are lots of small irrigation canal that running adjacent to the proposed road alignment.
Rajshahi	Fokirni, Baral and Sib are the major river that the proposed project road alignment crosses
Naogaon	The proposed project road alignment crosses Atrai and Fokirni river. There are several small irrigation canal running adjacent to the proposed project road.
C. Nawabganj	Ganges is the only major river which is crossing the proposed project road alignment.
Natore	The two major river that the proposed project road alignment crosses are Atrai and Baral river
Bogura	Karatoya, Bangali and Charakdaha are the major natural drainages that the proposed project road alignment crosses and There are lots of small irrigation canal that running adjacent to the proposed road alignment.
Joypurhat	Little Jumuna, Chiri, Tulsi Ganga are the major river that the proposed project road alignment crosses
Lalmonirhat	The proposed project road alignment crosses Suti river. There are lots of small irrigation canal that running adjacent to the proposed road alignment.
Kurigram	The road alignment crosses Brahmaputra river but there are many small irrigation canal running along the proposed project.
Gaibandha	Ghagat is the only major river that the proposed project road alignment crosses.
Rangpur	Karatoya, Teesta, Ghagat are the major natural drainages that the proposed project road alignment crosses and There are lots of small irrigation canal that running adjacent to the proposed road alignment.
Dinajpur	There are 12 small and large natural drainages within the proposed project alignment. The major river that crosses the road alignment are as follow Little Jumuna, Atrai, Punarbhaba, Ichamati, dhepa and Tangan
Thakurgaon	The proposed road alignment crosses Tirnai, Nagar and Tangan River
Panchagarh	The proposed road crosses Pathraj, Bulli, Talma and Tangan River
Nilphamari	The road alignment crosses Jamuneswari, Charalkata, Karatoya, Nautara and Chikli Rivers.

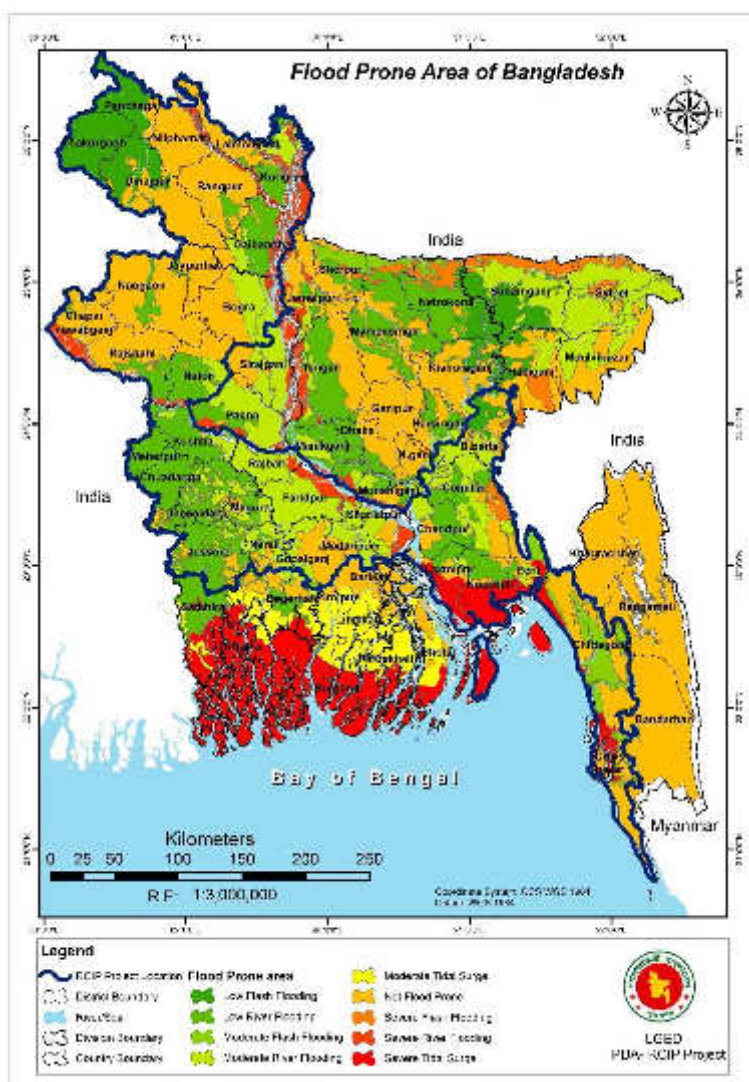
Source: LGED (2018)

7. Flood Risks

72. Four types of flooding occur in Bangladesh which includes normal and flash floods, as well as storm surges in coastal areas. Bangladesh is in a low-lying delta, formed a dense network of the distributaries Ganges, Brahmaputra, and Meghna rivers and between the Himalayas and the Bay of Bengal. As previously mentioned, the territory is mostly low and flat land, with some hilly areas in the northeast and southeast. There are more than 230 major rivers and their tributaries and with 75% of the country less than 10m above mean sea level, 80% of the total land area is considered as flood plain. Flooding normally occurs during the monsoon season from June to September. Every year, nearly 26,000 km² or around 18% of the country is flooded. Floods has caused devastation and misery in Bangladesh throughout its history. The 1988 great flood resulted in 60% of the country being under flood water for more than a month, while the flood in 1998 caused 75% of the country's area to be under water. There were also severe floods in 1966, 1987 and 2007. Floods are annual phenomena that occurs from July and August. Records show that severe floods occur about every 7 years, and catastrophic floods every 33-50 years. The annual rise in river water levels from Padma, Bhramaputra and Meghna Rivers combine to pass through a restricted outlet and into the Bay of Bengal causes vast backwater effect. The tidal levels in the Bay affect the discharge capacity of the lower Meghna. The effects of these high river water levels extend over to most of the country and are main determinant of the drainage condition and capacity. The surface drainage by gravity is limited, but roads in the project area are mostly above prevailing flood levels.

73. According to Bangladesh Department of Disaster Management, regular river floods affect 20% of the country increasing up to 68% in extreme years. The floods of 1988, 1998 and 2004 were particularly catastrophic, resulting in large-scale destruction and loss of lives. Approximately 37%, 43%, 52% and 68% of the country is inundated with floods of return periods of 10, 20, 50 and 100 years respectively. In their study, the percentage of the country inundated due to floods (excluding eastern hilly area, Hatiya, Sandwip and estuary areas around them) for return periods of 25, 50, 100 and 150 years is 57.1%, 61.1%, 80.6% and 81.2% respectively. This indicates that the area subjected to flooding has increased from 52% to 61.1% for 50 years and 68% to 80.6% for the 100-year return period.

Figure 20: Flood-Prone Map of Bangladesh and Project Area

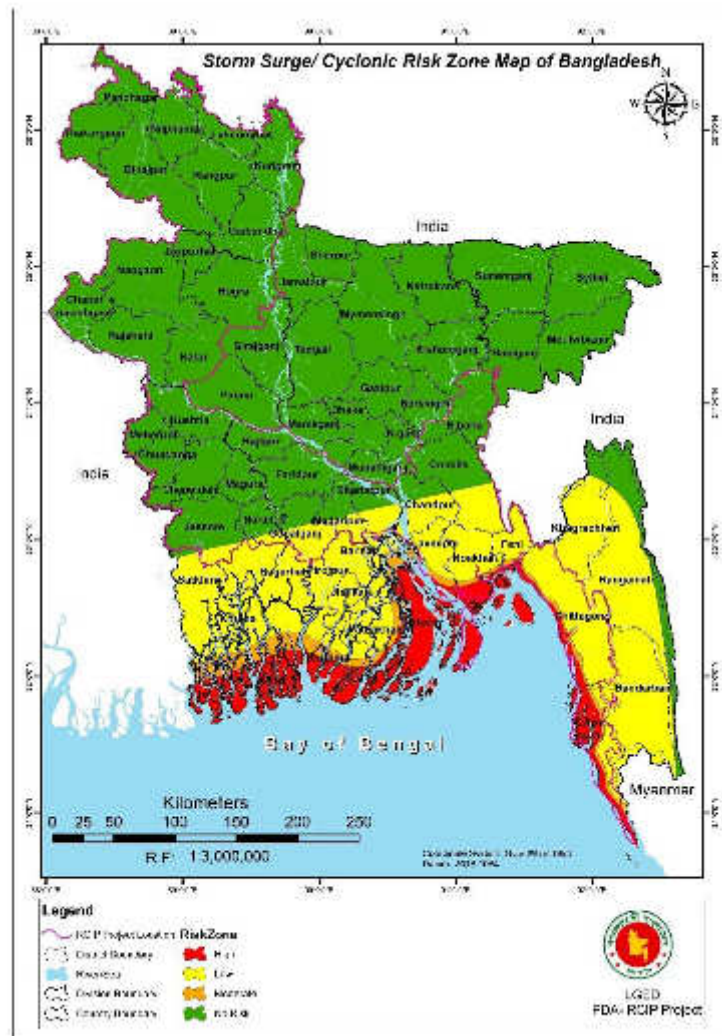


3. Cyclones and Storm Surges

74. Seasonal storms, popularly known as nor'westers (*Kalbaishakhi*) occur in the project area. Tornadoes can be associated with severe nor'westers. The frequency of nor'westers is greatest in April and they most often occur in late afternoons. Majority of the cyclones follow the

northeasterly directions confined between Khulna and Cox's Bazaar. One of the major hazards in the country are tropical cyclones from the Bay of Bengal that are accompanied by storm surges. In 1876, a cyclone generated a surge height of 13.6 m and in 1970 the height was 9.11 m (WARPO, 2005). The 1970 cyclone is the deadliest cyclone that has ever hit the Bangladesh coastline with a wind-speed in excess of 224 km per hour which generated a storm surge between 6.1 to 9.11 m, and killed an estimated 300,000 people. Of the 216 rural roads proposed for upgrading under the RCIP, only 1 road is under the risk of storm surge inundation located in Pekua, Coxsbazar District.

Figure 21: Storm-Surge Map of Bangladesh



C. Environmental Quality

1. Ambient dust levels

75. Within rural areas of Bangladesh, the main sources of outdoor air pollution are brick kilns (Guttikunda, 2009), combustion of wood, coal and biomass for domestic heating and cooking (UNEP, 2002). It is likely in rural areas that the principal air contaminants are particulate matter and volatile organic compounds. Other common sources of rural air pollution include emissions from engine vehicles, and dust during the dry season from construction sites, roads, disturbed areas and cleared agricultural lands. Standard quality of ambient air in different area categories, according to the Bangladesh Environmental Conservation Rules, is provided in succeeding Table.

Table 18: Standards of Ambient Air Quality

Air Pollutant	Standards	Averageing Time
Carbon Monoxide (CO)	10 mg/m ³ (9 ppm) ^a	8-hour
	40 mg/m ³ (35 ppm)	1-hour
Lead (Pb)	0.5 µg/m ³	Annual
Oxides of Nitrogen (NO _x)	100 µg/m ³ (0.053 ppm)	Annual
Suspended Particulate Matter	200 µg/m ³	8-hour
PM ₁₀	50 µg/m ³ ^b	Annual
	150 µg/m ³ ^c	24-hour
PM _{2.5}	15 µg/m ³	Annual
	65 µg/m ³	24-hour
Ozone (O ₃)	235 µg/m ³ (0.12 ppm) ^d	1-hour
	157 µg/m ³ (0.08 ppm)	8-hour
Sulfur dioxide (SO ₂)	80 µg/m ³ (0.03 ppm)	Annual
	365 µg/m ³ (0.14 ppm) ^a	24-hour

Note: i) ppm- Parts Per Million

ii) In this schedule Air Quality Standards means Ambient Air Quality Standards

- Not to be exceeded more than once per year
- Annual average value will be less than or equal to 50 microgram/cubic meter
- Average value of 24 hours will be less or equal to 150 microgram/cubic meter for one day each year.
- Maximum average value for every one hour each year will be equal or less than 0.12 ppm.

Source: DOE. Schedule 2, Rule-12, ECR, 1997. (Bangladesh Gazette, 19 July, 2005).

76. The succeeding presents LGED's PM_{2.5} and noise monitoring of selected RCIP rural roads. The LGED monitoring indicated that average PM_{2.5} concentration in 271 roads is 94 ug/m³ with a minimum and maximum concentrations of 53 ug/m³ and 197 ug/m³. Using the USEPA air quality index (AQI)¹⁴, and average of 94ug/m³ corresponds to unhealthy air quality when people with respiratory or heart disease, the elderly and children are the groups most at risk. Increased aggravation of heart or lung disease and premature mortality in persons with cardiopulmonary disease and the elderly; increased respiratory effects in general population. About 96% of the total observations fall within the unhealthy AQI and the remaining 9 observations corresponding to 3% of the total is considered very unhealthy when of 151-200 denoting a

¹⁴ <https://www.airnow.gov/index.cfm?action=airnow.calculator>

unhealthy air quality when people with respiratory or heart disease, the elderly and children are the groups most at risk. Significant aggravation of heart or lung disease and premature mortality in persons with cardiopulmonary disease and the elderly; significant increase in respiratory effects in general population.

Table 19: PM2.5 in ug/m3 and Noise in dB(A) monitoring of Selected RCIP Roads

S.L No.	Longitude	Latitude	Upazila	District	Dust (PM2.5) $\mu\text{g}/\text{m}^3$	Noise avg. dB (A), decibel	Feature
1	89.39899	24.95121	Bogura Sadar	Bogura	68	78	Bazar
2	89.394	24.94402	Bogura Sadar	Bogura	89	80	Rice mill
3	89.38931	24.93737	Bogura Sadar	Bogura	78	74	Culvert
4	89.38737	24.93295	Bogura Sadar	Bogura	85	67	Mosque
5	89.38004	24.91776	Bogura Sadar	Bogura	80	70	Mosque
6	89.37846	24.91314	Bogura Sadar	Bogura	69	60	Bridge
7	89.3775	24.91008	Bogura Sadar	Bogura	134	86	Brick field
8	89.37581	24.90439	Bogura Sadar	Bogura	70	60	School
9	89.37563	24.90379	Bogura Sadar	Bogura	80	75	Bazar
10	89.37588	24.90256	Bogura Sadar	Bogura	72	76	Bazar
11	89.37354	24.89641	Bogura Sadar	Bogura	93	68	Mosque
12	89.37259	24.89426	Bogura Sadar	Bogura	65	66	Mosque
13	89.36945	24.89166	Bogura Sadar	Bogura	64	60	Mosque
14	89.36591	24.88405	Bogura Sadar	Bogura	84	76	Bazar
15	89.36523	24.88367	Bogura Sadar	Bogura	80	76	Bailly Bridge
16	89.3651	24.88362	Bogura Sadar	Bogura	80	77	School
17	89.36311	24.88321	Bogura Sadar	Bogura	106	83	Start point
18	88.84483	24.69837	Manda	Naogaon	80	71	End point
19	88.83646	24.70143	Manda	Naogaon	79	72	School
20	88.83369	24.70248	Manda	Naogaon	61	68	Mosque
21	88.81775	24.70425	Manda	Naogaon	73	71	School, Mosque
22	88.80745	24.71218	Manda	Naogaon	107	79	School, Mosque
23	88.80382	24.71137	Manda	Naogaon	89	73	Mosque
24	88.79943	24.71019	Manda	Naogaon	117	82	School, College
25	88.78839	24.71047	Manda	Naogaon	90	78	Mosque
26	88.7835	24.71342	Manda	Naogaon	70	73	Mosque

S.L No.	Longitude	Latitude	Upazila	District	Dust (PM2.5) µg/m3	Noise avg. dB (A), decibel	Feature
27	88.76212	24.71807	Manda	Naogaon	78	79	Village
28	88.75777	24.71964	Manda	Naogaon	71	72	Mosque
29	88.75524	24.71951	Manda	Naogaon	68	75	Bridge
30	88.75378	24.72067	Manda	Naogaon	107	78	School
31	88.90517	24.66427	Atrai	Naogaon	142	72	Heath Complex
32	88.90626	24.66369	Atrai	Naogaon	161	74	Bazar
33	88.91009	24.66209	Atrai	Naogaon	93	73	Madrassa
34	88.92481	24.64306	Atrai	Naogaon	93	68	Start point
35	88.91818	24.65298	Atrai	Naogaon	96	70	Village
36	88.92136	24.64893	Atrai	Naogaon	91	67	T-Intersect
37	88.91696	24.65546	Atrai	Naogaon	91	68	Grave
38	88.96455	24.61231	Atrai	Naogaon	123	72	Start point
39	88.66903	24.42235	Paba	Rajshahi	125	86	Market
40	88.67381	24.41049	Paba	Rajshahi	114	83	Brick field
41	88.66808	24.41572	Paba	Rajshahi	109	79	Graveyard
42	88.66822	24.41494	Paba	Rajshahi	108	75	Mosque
43	88.67665	24.40359	Paba	Rajshahi	114	74	Mosque
44	88.67474	24.40371	Paba	Rajshahi	110	76	Graveyard
45	88.67845	24.39839	Paba	Rajshahi	113	78	Bazar
46	88.67147	24.40515	Paba	Rajshahi	110	79	School
47	88.39067	24.50442	Godagari	Rajshahi	138	71	village
48	88.36798	24.49825	Godagari	Rajshahi	92	68	School
49	88.36207	24.4984	Godagari	Rajshahi	100	67	School
50	88.35715	24.50314	Godagari	Rajshahi	102	55	Start Point
51	88.64606	26.0845	Debiganj-2	Panchagarh	65	59	Saw mill & Mosque
52	88.64505	26.07763	Debiganj-2	Panchagarh	61	55	Bridge(Patraj River)
53	88.64531	26.07612	Debiganj-2	Panchagarh	62	56	School
54	88.64554	26.07455	Debiganj-2	Panchagarh	64	58	Bazar
55	88.64487	26.06552	Debiganj-2	Panchagarh	62	55	Mosque
56	88.64406	26.64406	Debiganj-2	Panchagarh	75	59	Village
57	88.64376	26.05568	Debiganj-2	Panchagarh	61	56	School
58	88.64613	26.05567	Debiganj-2	Panchagarh	63	58	Mosque
59	88.65032	26.04989	Debiganj-2	Panchagarh	97	67	Brick field
60	88.65106	26.04481	Debiganj-2	Panchagarh	66	61	School
61	88.65106	26.04462	Debiganj-2	Panchagarh	65	62	Bazar
62	88.65131	26.04459	Debiganj-2	Panchagarh	66	62	Bazar & School
63	88.65221	26.04468	Debiganj-2	Panchagarh	64	61	Mosque

S.L No.	Longitude	Latitude	Upazila	District	Dust (PM2.5) µg/m3	Noise avg. dB (A), decibel	Feature
64	88.65543	26.04538	Debiganj-2	Panchagarh	99	67	Brick field
65	88.66183	26.04688	Debiganj-2	Panchagarh	96	68	Brick field
66	88.66588	26.04803	Debiganj-2	Panchagarh	66	55	Nala
67	88.66799	26.04817	Debiganj-2	Panchagarh	65	56	Mosque
68	88.67035	26.04826	Debiganj-2	Panchagarh	70	60	New culvert
69	88.67146	26.04836	Debiganj-2	Panchagarh	68	59	New culvert
70	88.69273	26.01583	Debiganj-1	Panchagarh	53	58	End
71	88.69269	26.01662	Debiganj-1	Panchagarh	61	60	Culvert
72	88.69247	26.02399	Debiganj-1	Panchagarh	60	59	School
73	88.69284	26.02899	Debiganj-1	Panchagarh	63	61	Mosque
74	88.69433	26.03713	Debiganj-1	Panchagarh	64	63	Mosque
75	88.6938	26.03924	Debiganj-1	Panchagarh	68	62	Madrassa
76	88.69352	26.04125	Debiganj-1	Panchagarh	72	61	School
77	88.69051	26.04903	Debiganj-1	Panchagarh	74	59	School
78	88.69029	26.05146	Debiganj-1	Panchagarh	65	61	Clinic
79	88.69057	26.0543	Debiganj-1	Panchagarh	63	66	Bazar
80	88.69016	26.05477	Debiganj-1	Panchagarh	64	67	Bazar
81	88.69081	26.05546	Debiganj-1	Panchagarh	63	65	Bridge(Patraj River)
82	88.69453	26.07114	Debiganj-1	Panchagarh	63	63	culvert
83	88.69539	26.08262	Debiganj-1	Panchagarh	62	64	School
84	88.69544	26.08298	Debiganj-1	Panchagarh	62	67	Big Bazar
85	88.70221	26.09297	Debiganj-1	Panchagarh	99	62	Brick field
86	88.70378	26.09624	Debiganj-1	Panchagarh	101	62	Brick field
87	88.70377	26.10302	Debiganj-1	Panchagarh	61	63	School
88	88.70874	26.10425	Debiganj-1	Panchagarh	60	65	Mosque
89	88.72108	26.11479	Debiganj-1	Panchagarh	64	69	Bazar
90	88.738	26.11626	Debiganj-1	Panchagarh	64	65	School
91	88.73852	26.1171	Debiganj-1	Panchagarh	55	65	Bazar, UP
92	88.74026	26.11644	Debiganj-1	Panchagarh	55	68	Bridge(Bulli River)
93	88.74509	26.12118	Debiganj-1	Panchagarh	63	65	Bridge(korotoa)
94	88.74563	26.12708	Debiganj-1	Panchagarh	94	64	River & Madrasa
95	88.73816	26.12912	Boda	Panchagarh	72	70	Village
96	88.55984	26.1898	Boda	Panchagarh	76	75	Graveyard & School
97	88.56061	26.19504	Boda	Panchagarh	74	64	Bazar
98	88.86823	25.88753	Sadar-1	Nilphamari	156	75	Bazar,Start
99	88.87055	25.88785	Sadar-1	Nilphamari	115	74	Mosque
100	88.87124	25.88786	Sadar-1	Nilphamari	108	72	School

S.L No.	Longitude	Latitude	Upazila	District	Dust (PM2.5) µg/m3	Noise avg. dB (A), decibel	Feature
101	88.87296	25.88813	Sadar-1	Nilphamari	105	70	BWDB canal
102	88.87714	25.88786	Sadar-1	Nilphamari	60	68	Pond
103	88.87976	25.88721	Sadar-1	Nilphamari	69	54	Graveyard
104	88.88119	25.88685	Sadar-1	Nilphamari	68	55	Graveyard
105	88.88422	25.88684	Sadar-1	Nilphamari	120	71	Mosque, Village
106	88.88618	25.88671	Sadar-1	Nilphamari	124	72	Mosque
107	88.89028	25.88666	Sadar-1	Nilphamari	154	70	Graveyard
108	88.89117	25.88667	Sadar-1	Nilphamari	73	73	Clinic, Up, Mosque, bazar
109	88.89316	25.88662	Sadar-1	Nilphamari	112	70	Bazar
110	88.89462	25.88675	Sadar-1	Nilphamari	134	72	Bazar, settlement end
111	88.90634	25.88858	Sadar-1	Nilphamari	94	70	New culvert
112	88.91024	25.89019	Sadar-1	Nilphamari	113	77	Rice mill
113	88.91155	25.89079	Sadar-1	Nilphamari	95	72	Bazar
114	88.91206	25.89069	Sadar-1	Nilphamari	95	74	Bazar
115	88.91176	25.88761	Sadar-1	Nilphamari	60	71	End, Growth Centre
116	88.85042	25.94233	Sadar-2	Nilphamari	115	76	Starting, Bridge
117	88.85068	25.94279	Sadar-2	Nilphamari	102	72	Mosque
118	88.85524	25.9563	Sadar-2	Nilphamari	109	74	Bazar
119	88.85567	25.95762	Sadar-2	Nilphamari	96	72	Eidgah, Graveyard
120	88.85664	25.96076	Sadar-2	Nilphamari	87	73	Bazar
121	88.85675	25.96113	Sadar-2	Nilphamari	104	77	Bazar, School
122	88.86256	25.97455	Sadar-2	Nilphamari	80	71	Bazar, School, Clinic, Mosque
123	88.86394	25.97908	Sadar-2	Nilphamari	87	77	School, Madrasa
124	88.86404	25.98091	Sadar-2	Nilphamari	92	61	Graveyard, Mazar
125	88.86607	25.98735	Sadar-2	Nilphamari	95	62	Mosque
126	88.86629	25.99238	Sadar-2	Nilphamari	90	69	Mosque
127	88.86598	25.9944	Sadar-2	Nilphamari	114	73	Bazar, Factory
128	88.86247	26.00113	Sadar-2	Nilphamari	89	71	Mosque
129	88.86153	26.00339	Sadar-2	Nilphamari	109	76	Bazar, School
130	88.86082	26.00496	Sadar-2	Nilphamari	110	77	Bazar
131	88.46828	26.05018	Sadar	Thakurgaon	85	74	Bazar
132	88.46363	26.05374	Sadar	Thakurgaon	83	71	School
133	88.46391	26.05874	Sadar	Thakurgaon	110	74	Brick field
134	88.4632	26.0627	Sadar	Thakurgaon	78	76	Kazi Farm factory
135	88.45822	26.0685	Sadar	Thakurgaon	79	74	Bazar
136	88.45779	26.06965	Sadar	Thakurgaon	91	73	Mosque
137	88.45569	26.07313	Sadar	Thakurgaon	111	74	Brick field

S.L No.	Longitude	Latitude	Upazila	District	Dust (PM2.5) µg/m3	Noise avg. dB (A), decibel	Feature
138	88.45384	26.07654	Sadar	Thakurgaon	89	72	School
139	88.4538	26.07845	Sadar	Thakurgaon	92	73	Mondir
140	88.45411	26.08191	Sadar	Thakurgaon	90	72	Tree cut
141	88.45396	26.08679	Sadar	Thakurgaon	89	71	School
142	88.45317	26.0918	Sadar	Thakurgaon	103	75	Brick field
143	88.45171	26.09743	Sadar	Thakurgaon	89	74	Mondir
144	88.4515	26.09878	Sadar	Thakurgaon	91	73	School
145	88.45077	26.10069	Sadar	Thakurgaon	119	75	Chitagang Park
146	88.4509	26.1032	Sadar	Thakurgaon	92	69	Mondir
147	88.45099	26.10461	Sadar	Thakurgaon	90	71	Clinic
148	88.45097	26.10672	Sadar	Thakurgaon	92	74	College
149	88.45083	26.10895	Sadar	Thakurgaon	98	72	Bazar, Ending
150	88.45059	26.10993	Sadar	Thakurgaon	93	71	School
151	88.46833	26.04743	Sadar	Thakurgaon	97	69	Mosque,Madrassa
152	88.46779	26.04498	Sadar	Thakurgaon	123	73	Graveyard
153	88.46747	26.04355	Sadar	Thakurgaon	312	74	Bridge, Broken
154	88.46748	26.04222	Sadar	Thakurgaon	121	74	Graveyard
155	88.46687	26.04022	Sadar	Thakurgaon	103	73	Mosque, Start
156	88.3584	25.85647	Pirganj	Thakurgaon	110	72	Bazar, Start
157	88.35917	25.8518	Pirganj	Thakurgaon	124	71	Polli biddut
158	88.35812	25.8438	Pirganj	Thakurgaon	115	70	Colleage
159	88.35748	25.83916	Pirganj	Thakurgaon	109	71	Mosque
160	88.3562	25.83125	Pirganj	Thakurgaon	107	72	School
161	88.35156	25.82293	Pirganj	Thakurgaon	109	73	Bazar, school, Clinic
162	88.34605	25.81557	Pirganj	Thakurgaon	102	72	Culvert replacement
163	88.33859	25.8039	Pirganj	Thakurgaon	115	71	School
164	88.33697	25.80127	Pirganj	Thakurgaon	109	74	Bazar
165	88.33601	25.80037	Pirganj	Thakurgaon	107	73	School,End
166	88.45601	25.79536	Bochaganj	Dinajpur	108	74	Bazar, Start
167	88.45479	25.78847	Bochaganj	Dinajpur	85	71	Bazar,Mondir
168	88.45493	25.78403	Bochaganj	Dinajpur	96	74	Rice mill
169	88.45168	25.77323	Bochaganj	Dinajpur	112	73	Mosque
170	88.45061	25.77117	Bochaganj	Dinajpur	102	75	Filling station
171	88.4485	25.76664	Bochaganj	Dinajpur	94	71	Bazar
172	88.44523	25.76295	Bochaganj	Dinajpur	109	72	College
173	88.44225	25.75947	Bochaganj	Dinajpur	94	71	Culvert replacement
174	88.44115	25.75495	Bochaganj	Dinajpur	92	71	Mondir

S.L No.	Longitude	Latitude	Upazila	District	Dust (PM2.5) µg/m3	Noise avg. dB (A), decibel	Feature
175	88.43813	25.74334	Bochaganj	Dinajpur	90	70	Culvert repair
176	88.43671	25.7369	Bochaganj	Dinajpur	91	70	Culvert
177	88.43867	25.72176	Bochaganj	Dinajpur	106	72	School
178	88.43684	25.71378	Bochaganj	Dinajpur	82	74	Bazar
179	88.43819	25.71299	Bochaganj	Dinajpur	81	72	School
180	88.44674	25.7092	Bochaganj	Dinajpur	76	69	Khal, Culvert 10 m
181	88.45782	25.70686	Bochaganj	Dinajpur	74	71	School
182	88.45878	25.70661	Bochaganj	Dinajpur	75	69	Bazar, End
183	89.119822	25.38338	Nawabganj	Dinajpur	73	59	Start
184	89.11478	25.37809	Nawabganj	Dinajpur	79	58	Culvert, ch-800
185	89.11429	25.37696	Nawabganj	Dinajpur	164	56	Earthen start, ch-1000
186	89.113678	25.37685	Nawabganj	Dinajpur	146	60	Eidgah
187	89.112931	25.37658	Nawabganj	Dinajpur	118	62	U drain, ch-1100
188	89.112606	25.36961	Nawabganj	Dinajpur	149	64	Agri land
189	89.111118	25.36411	Nawabganj	Dinajpur	86	58	Culvert, ch-2600
190	89.111162	25.36065	Nawabganj	Dinajpur	90	60	Bazar, ch-3000
191	89.111379	25.36004	Nawabganj	Dinajpur	88	60	School, BC start, ch-3100
192	89.111688	25.35809	Nawabganj	Dinajpur	77	54	Culvert, ch3300
193	89.110184	25.35499	Nawabganj	Dinajpur	87	52	Grevyard, pond
194	89.110032	25.35367	Nawabganj	Dinajpur	69	54	Culvert, ch-3900
195	89.109946	25.35135	Nawabganj	Dinajpur	68	54	Earthen star, ch-4100
196	89.109308	25.35042	Nawabganj	Dinajpur	96	55	BC start, ch-4300
197	89.109309	25.35041	Nawabganj	Dinajpur	98	54	Culvert
198	89.11174	25.34438	Nawabganj	Dinajpur	104	55	EP relocate
199	89.111657	25.3434	Nawabganj	Dinajpur	115	56	School, Culvert
200	89.11456	25.33744	Nawabganj	Dinajpur	73	56	School
201	89.115238	25.33711	Nawabganj	Dinajpur	74	58	Nala, Culvert replace
202	89.11555	25.33575	Nawabganj	Dinajpur	102	60	Eidgah
203	89.115963	25.33321	Nawabganj	Dinajpur	90	61	Orphanage, EP relocate
204	89.116354	25.33078	Nawabganj	Dinajpur	102	58	EP relocate
205	89.116539	25.3299	Nawabganj	Dinajpur	160	64	End
206	88.95088	25.49935	Fulbari	Dinajpur	123	74	Bazar, Start
207	88.95079	25.4983	Fulbari	Dinajpur	119	71	College
208	88.94984	25.49491	Fulbari	Dinajpur	123	74	School
209	88.94935	25.49331	Fulbari	Dinajpur	97	69	School
210	88.94899	25.49092	Fulbari	Dinajpur	95	66	Public Library
211	88.94762	25.48513	Fulbari	Dinajpur	92	68	Mondir

S.L No.	Longitude	Latitude	Upazila	District	Dust (PM2.5) µg/m3	Noise avg. dB (A), decibel	Feature
212	88.94626	25.48199	Fulbari	Dinajpur	74	58	Mosque
213	88.94597	25.4801	Fulbari	Dinajpur	75	60	Mosque
214	88.94567	25.47914	Fulbari	Dinajpur	76	61	Graveyard
215	88.94498	25.47674	Fulbari	Dinajpur	86	68	School
216	88.94333	25.47349	Fulbari	Dinajpur	84	62	Madrassa
217	88.92692	25.46073	Fulbari	Dinajpur	97	72	School
218	88.91553	25.44567	Fulbari	Dinajpur	77	64	Mosque
219	88.91339	25.44036	Fulbari	Dinajpur	92	71	Petrol refill Pump
220	88.91288	25.43842	Fulbari	Dinajpur	86	62	Madrassa
221	88.91168	25.43624	Fulbari	Dinajpur	84	56	Health clinic
222	88.91135	25.43537	Fulbari	Dinajpur	82	70	Bazar
223	88.91277	25.43422	Fulbari	Dinajpur	71	60	Mosque
224	88.9132	25.43333	Fulbari	Dinajpur	77	62	School, Culvert replace
225	88.91653	25.43164	Fulbari	Dinajpur	65	58	Mosque, Culvert damage
226	88.91841	25.42939	Fulbari	Dinajpur	85	65	LSD Godown
227	88.91913	25.42871	Fulbari	Dinajpur	86	62	Mosque,Madrassa, Graveyard
228	88.91973	25.42792	Fulbari	Dinajpur	72	65	Culvert replace
229	88.92004	25.42751	Fulbari	Dinajpur	113	76	Bazar, Union Parisad
230	88.9222	25.42566	Fulbari	Dinajpur	109	73	Bazar, Mondir
231	88.92342	25.42454	Fulbari	Dinajpur	123	74	Culvert
232	88.92435	25.42377	Fulbari	Dinajpur	102	72	END, Bazar
233	88.8389	25.54953	Parbatipur	Dinajpur	93	58	Bazar
234	88.838695	25.54998	Parbatipur	Dinajpur	94	54	Culvert
235	88.837743	25.55196	Parbatipur	Dinajpur	98	58	Mosque
236	88.836996	25.55804	Parbatipur	Dinajpur	94	55	Culvert
237	88.837014	25.55818	Parbatipur	Dinajpur	91	58	Madrassa
238	88.837849	25.56076	Parbatipur	Dinajpur	90	55	Culvert(replace)
239	88.839898	25.56707	Parbatipur	Dinajpur	93	54	Madrassa
240	88.840615	25.56962	Parbatipur	Dinajpur	91	55	Culvert
241	88.840925	25.57253	Parbatipur	Dinajpur	165	62	School, UP, Clinic
242	88.842484	25.57773	Parbatipur	Dinajpur	90	54	Culvert
243	88.842778	25.5833	Parbatipur	Dinajpur	92	58	EP relocate
244	88.842497	25.58477	Parbatipur	Dinajpur	94	64	Bazar
245	88.842268	25.58595	Parbatipur	Dinajpur	86	62	School
246	88.840008	25.59447	Parbatipur	Dinajpur	84	58	Mondir
247	88.838565	25.59625	Parbatipur	Dinajpur	88	62	School
248	88.836175	25.59839	Parbatipur	Dinajpur	81	54	Culvert

S.L No.	Longitude	Latitude	Upazila	District	Dust (PM2.5) µg/m3	Noise avg. dB (A), decibel	Feature
249	88.833642	25.60281	Parbatipur	Dinajpur	117	60	School
250	88.83341	25.60314	Parbatipur	Dinajpur	92	54	Clinic
251	88.833342	25.60398	Parbatipur	Dinajpur	90	52	Culvert replace
252	88.834046	25.60859	Parbatipur	Dinajpur	166	68	Brick field
253	88.833946	25.61224	Parbatipur	Dinajpur	145	66	Brick field
254	88.83382	25.61336	Parbatipur	Dinajpur	109	54	Mosque
255	88.834375	25.61686	Parbatipur	Dinajpur	128	55	Graveyard
256	88.833498	25.61876	Parbatipur	Dinajpur	113	58	Mosque, madrasa
257	88.833379	25.62614	Parbatipur	Dinajpur	132	59	School, mosque
258	88.833435	25.62784	Parbatipur	Dinajpur	120	64	Bazar
259	88.834971	25.62971	Parbatipur	Dinajpur	135	62	Bazar, UP
260	88.834354	25.63161	Parbatipur	Dinajpur	165	66	Brick field
261	88.83423	25.63519	Parbatipur	Dinajpur	148	60	Graveyard
262	88.834385	25.63612	Parbatipur	Dinajpur	197	68	Brick field
263	88.83529	25.63845	Parbatipur	Dinajpur	90	54	School
264	88.835659	25.63973	Parbatipur	Dinajpur	92	55	NGO office
265	88.836202	25.64148	Parbatipur	Dinajpur	88	54	Village
266	88.836248	25.64158	Parbatipur	Dinajpur	88	60	School
267	88.84097	25.65012	Parbatipur	Dinajpur	143	58	Schoolmadrasa, mosque
268	88.841594	25.65547	Parbatipur	Dinajpur	90	60	Bazar
269	88.84053	25.65721	Parbatipur	Dinajpur	80	58	Train line crossing
270	88.840467	25.65833	Parbatipur	Dinajpur	82	54	Mosque
271	88.840631	25.6606	Parbatipur	Dinajpur	126	60	End, bazar, School

Source: LGED (2018)

2. Ambient noise levels

77. Noise is another potentially serious threat to the quality of an environment. Noise levels vary at the given locations according to ambient noise, including movement of road-traffic, industrial noise, and general communit. The preceeding table also presents the results of noise monitoring in numerous points along selected rural roads. Average noise level of 66 dB(A) across the selected project roads were noted with maximum and minimum observations at 86 and 52 dB(A), respectively. The standard values for noise as per Schedule 4 of the Standards for Sound of Bangladesh Conservation Rules 1997 are shown in the following Table.

Table 20:Standard Value (dBa) for Noise

Sl. No.	Category of areas	Standards determined at dBa unit	
		Day	Night
a.	Silent zone	50	40

Sl. No.	Category of areas	Standards determined at dBa unit	
		Day	Night
b.	Residential area	55	45
c.	Mixed area(mainly residential area, and also simultaneously used for commercial and industrial purposes)	60	50
d.	Commercial area	70	60
e.	Industrial area	75	70

Notes:

1. The time from 6 a.m. to 9 p.m. is counted as daytime.
2. The time from 9 p.m. to 6 a.m. is counted as night time.
3. Area up to a radius of 100 meters around hospitals or educational institutions or special institutions/ establishments identified/to be identified by the Government is designated as Silent Zones where use of horns of vehicles or other audio signals, and loudspeakers are prohibited

3. Surface Water Quality

78. Bangladesh is a land of rivers. Around 230 rivers flow through the country including 53 international rivers. Rivers in the urban areas are in rapidly deteriorating which includes: Buriganga, Karnaphully, Sangu, Bhairab, Pashur, Rupsha, Nabaganga, Mathavanga, Moyur, Kopotakkya, Shitalakkya, Turag, Baloo, Bongshee, Kaleeganga, Meghna, Brahmaputra, Jamuna, Dhaleshwaree, Tista, Padma, Karatoa, Kushiya, Kirtankhola. The main causes of river pollution are reduction of flows, silt deposition, river erosion, unplanned industrialization, use as open latrines, clothes washing, disposal of untreated wastes, oil spills of different kind from water vessels, and agrochemicals use in agriculture land. As previously mentioned, no bridge will be upgraded under the RCIP and no significant adverse impacts are expected on water quality of nearby roads.

4. Groundwater Quality

79. Government's response to bacterial contamination concerns about surface water supplies in the project area, the domestic water supply is now predominantly groundwater. However, in 1993 the Department of Public Health Engineering (DPHE) first detected arsenic in hand tube wells (HTW's) which has become one of the most pressing environmental issues in Bangladesh. The levels of arsenic in groundwater in Bangladesh are some of the highest in the world. At present, occurrence of arsenic in drinking water has been identified in 272 Upazilas under 61 Districts of the country (DPHE, 2009). The World Health Organization's (WHO) has defined the tolerance limit of arsenic for drinking water at 0.01mg/L while the Bangladesh standard for arsenic in drinking water is 0.05mg/L. There is an excellent availability of groundwater in the project area as indicated by the preponderance of handpumps to supply domestic water requirements. Past studies indicated that iron and arsenic are the major water contaminants for drinking purposes. Groundwater levels in most of Bangladesh are within two meters of the ground surface during July through October. Groundwater levels during the dry season vary across the country depending upon the proximity to surface water, depth and type of aquifer, extent of irrigation, and many other factors.

D. Biological Environment

1. Bio-ecological zoning

80. IUCN-The World Conservation Union has identified 25 bio-ecological zones (2002) in Bangladesh based on physiography, climate, soil type, flooding depth and biodiversity. The Project falls within nine of these defined bio-ecological zones, i.e. (i) Himalayan Piedmont Plain, (ii) Barind Tract, (iii) Teesta Floodplains, (iv) Ganges Floodplains, (v) Meghna Floodplains, (vi) Chalan Beel, (vii) Gopalganj/ Khulna peat lands, (viii) Coastal Plains, and (ix) Meghna Estuarine Floodplains.

2. Ecosystem Diversity

81. The project area predominantly comprised of paddy land/floodplains followed by homesteads, terraces, canals in order of significance. Overall ecosystems in the project area can be divided into following categories:

- a. **Crop fields:** This land is used for paddy cultivation once, twice, or three times in a year and inundated during the monsoon period. In these areas there is least diversity of floral communities, but numerous indigenous fishes and birds that feed in this areas.
- b. **Settlements/homesteads:** This ecosystem is comprised of economic tall plants e.g. jute, maize with undergrowth of wild flora. Homesteads are constructed at comparatively higher elevation and settlement/homestead land exhibits mainly terrestrial ecology. Homestead platforms and higher agricultural land is also used for commercial plantations with fruit and timber yielding trees for furniture making and to meet domestic fuel wood needs.
- c. **Canals and rivers:** Canals and rivers are the main source of surface water in the project area for all ecological components both terrestrial and aquatic. The main rivers are perennial sources of water. Numerous canals also exist and these support scattered hydrophytes in the areas which retain water for at least a part of the year.
- d. **Ponds and ditches:** These are largely closed water wetland area and are controlled to meet human needs for domestic use and for irrigation purposes. Water levels fluctuate widely with the seasons; various smaller water dependent animals are supported in this environment.
- e. **Roadside vegetation:** Consisting of fast growing flora which is planted to protect embankments and roads from soil degradation and erosion. The lower land is occupied by marginal vegetation, while along the road side species indicated in Table 21 are planted by the local communities.
- f. **Mangrove ecosystem:** This system is found in areas of the country with tidal flows and many mangroves species are found mainly in south west Bangladesh outside the project area. The ecotone or transition zone between two ecosystems (tidal and freshwater) had abundant mangrove vegetation. This is now much changed with river levees and canal banks inhibiting the tidal flow to develop fish culture. The main area of mangrove forest is the Sundarbans reserve.

3. Biodiversity

a) Flora

82. **Terrestrial Flora:** The project area in general contains a diversity of species in the different ecosystems described above. In and around homesteads species are planted according to their potential for human use and consumption for timber, fuel and fruit purposes. Trees that are to be found are Gagon Sirish (*Albizia richardiana*), Rendi Sirish (*Albizia saman*), Sada Koro (*Albizia procera*), Mahagoni (*Swietenia mahagoni*), Eucalyptus (*Eucalyptus* sp). For fruit demand (coconuts, banana, dates, mango etc) the following species are grown Narikel (*Cocos nucifera*), Taal (*Borassus flabellifer*), Kola (*Musa* sp.), Khejur (*Phoenix sylvestris*), and Aam (*Mangifera indica*) mainly around homesteads. Bamboo is grown widely. Commercial planted crops are to be found in homesteads, along village roads and directly in crop land and the following three species predominate - Akashmoni (*Acacia moniliformis*), Mahagoni (*Swietenia mahagoni*) and Taal (*Borassus flabellifer*) or the Asian sugar palm. Table 21 indicates the major plant species and their use.

Figure 22: Bio-ecological Zones of Bangladesh

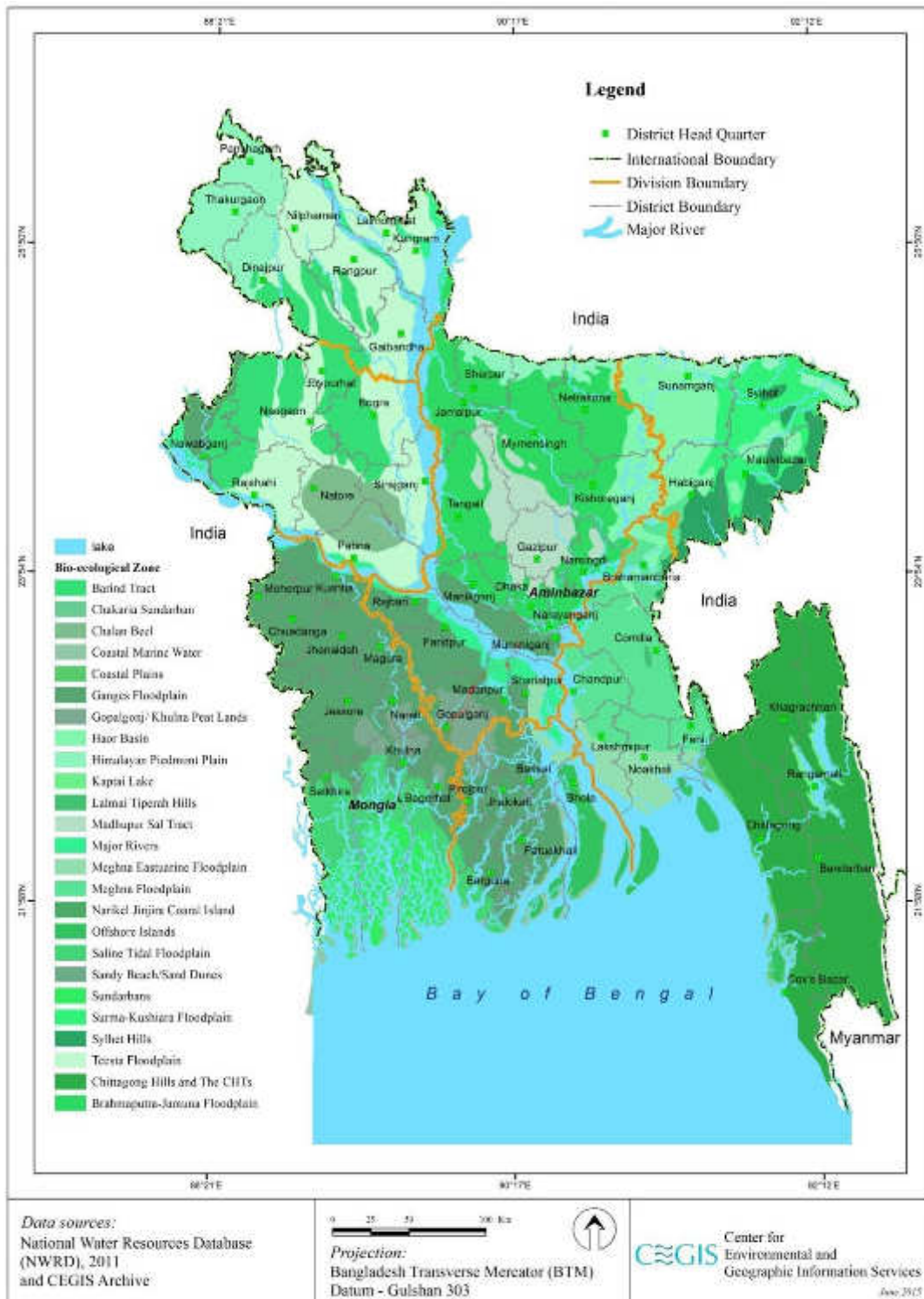


Table 21: Plants Species Growing in the Project Area

Average Height (Meter)	Tree Species	Family	Usage	Density
15-20	Narikel (<i>Cocos nucifera</i>)	Palmae	Fruit and fuel wood	H
10-15	Aam (<i>Mangifera indica</i>)	Anacardiaceae	Fruit and timber	H
20-25	Akashmoni (<i>Acacia sp.</i>)	Mimosaceae	Timber and fuel wood	H
15-20	Bansh (<i>Bamboosa sp.</i>)	Poaceae	Thatching	H
10-15	Mahagoni (<i>Swietenia mahagoni</i>)	Meliaceae	Timber and medicine	H
20-25	Sirish (<i>Albizia lebbek</i>)	Leguminosae	Timber and fuel wood	H
30-35	Chambul (<i>Albizia richardiana</i>)	Leguminosae	Timber	H
25-30	Eucalyptus (<i>Eucalyptus sp.</i>)	Leguminosae	Timber and fuel wood	M
25-30	Rendi Sirish (<i>Albizia saman</i>)	Leguminosae	Timber and fuel wood	M
15-20	Taal (<i>Borassus flabellifer</i>)	Palmae	Fruit and timber	M
9-12	Khajur (<i>Phoenix dactylifera</i>)	Arecaceae	Fruit and fuel wood	M
5-7	Katbel (<i>Limonia acidissima</i>)	Rutaceae	Fruit and timber	L
8-10	Supari (<i>Areca catechu</i>)	Palmae	Timber and fuel wood	M
10-15	Tatul (<i>Tamarindus indica</i>)	Leguminosae	Fruit	L
20-25	Silkoroi (<i>Albizia procera</i>)	Leguminosae	Timber and fuel wood	M
15-20	Sisso (<i>Dalbergia sissoo</i>)	Fabaceae	Timber and fuel wood	M
7-10	Gewa (<i>Excoecaria agallocha</i>)	Euphorbiaceae	Timber and fuel wood	L
6-8	Kawra (<i>Sonneratia apetala</i>)	Sonneratiaceae	Fruit and fuel wood	L
5-8	Kanthal (<i>Artocarpus heterophyllus</i>)	Moraceae	Fruit and timber	M
10-15	Kadom (<i>Anthocephalus chinensis</i>)	Rubiaceae	Timber and fuel wood	L
3-5	Desi Gaeb (<i>Diospyros peregrina</i>)	Ebenaceae	Fruit	L

Note: H = High M = Medium L = Low

83. While cultivated species predominate in the landscape, there are a variety of other species of flora, both native and non-native, to be found on agricultural lands such as *Digitaria spp* (wild grass), *Eclipta alba* (false daisy – a herb), *Echinochola colonum* (jungle rice), *Hemarthra sp* (herbaceous grass), *Polygonum spp* (knotweed family), *Rumex aciculate* (buckwheat family), *Alternanthera sessilis* (aquatic plant), *Dentella repense* (creeping plant), *Cynodon dactylon* (couch grass), and *Cyperus spp* (sedges).

84. **Aquatic Flora:** There is a great floral diversity of aquatic plant life in the river, canals and seasonal floodplains and ditches inside agricultural lands. Among the free-floating species, kochuripana (*Eicchoria crassipes*) is mostly found inside rivers and canals. Shapla (*Nymphaea spp.*) and chandmala (*Nymphoides sp*) grown in floodplains during the monsoon period and comprise the common rooted floating plant. Also, the species *Hydrilla versillata*, and *Hygrorhiza aristata* are present along with the rarer *Enhydra fluctuans* and ludwigia species.

b) Fauna

85. **Terrestrial Fauna:** Mammals species are few or have disappeared completely from much of the area where there is lack of natural forest cover and changed habitat with loss of native plant species. Small mammals are present in forest patch habitats and open grasslands in some locations such as fishing cat (*Felis viverrina*), jungle cat (*Felis chaus*), bengal fox (*Vulp bengalensis*). common mongoose (*Herpestes edwardsi*) and some bats are to be found. Common lizards within the project area include the common skink (*Mabuya carinata*) and the garden lizard (*Calotes versicolor*). Populations of grey monitor (*Varanus bengalensis*) are healthy. Some snakes such as checkered keelback (*Xenochrophis piscator*) and the smooth water snake (*Enhydris enhydris*) are present in wetland areas.

86. **Avian:** Many birds found in the area are reliant on habitat in crop fields, settlement vegetation and the floodplain areas. Mynas, pied starling, sparrow, bulbuls, cuckoo, crows, herons, egrets and babui are common, and various species of raptors such as kites, buzzards and eagles are found in the open area of crop fields and floodplains.

87. **Aquatic Fauna:** There are many fish species present, and seasonal floodplain and water bodies support wide breeding and feeding habitat for indigenous fish. Common amphibian species occurring in the area are common toad, skipper frog, cricket frog and Indian bull frog. Turtles are quite rare, but spotted flapshell (*Lissemys punctate*) and Indian roofed turtles (*pagashura tecta*) do occur in undisturbed ditches and ponds. Water dependent bird species are found along the many rivers, floodplains, ditches e.g. little cormorant, Indian pond heron, common kingfisher, stilts etc.

5. Ecologically Critical Areas

88. The Bangladesh Environment Conservation Act 1995 (ECA'95) includes provision for Ecologically Sensitive Area (ESA) declarations by the Director General of the DoE in certain cases where the ecosystem is in danger of reaching a critical state. The following areas have been declared as sensitive areas under the Act.

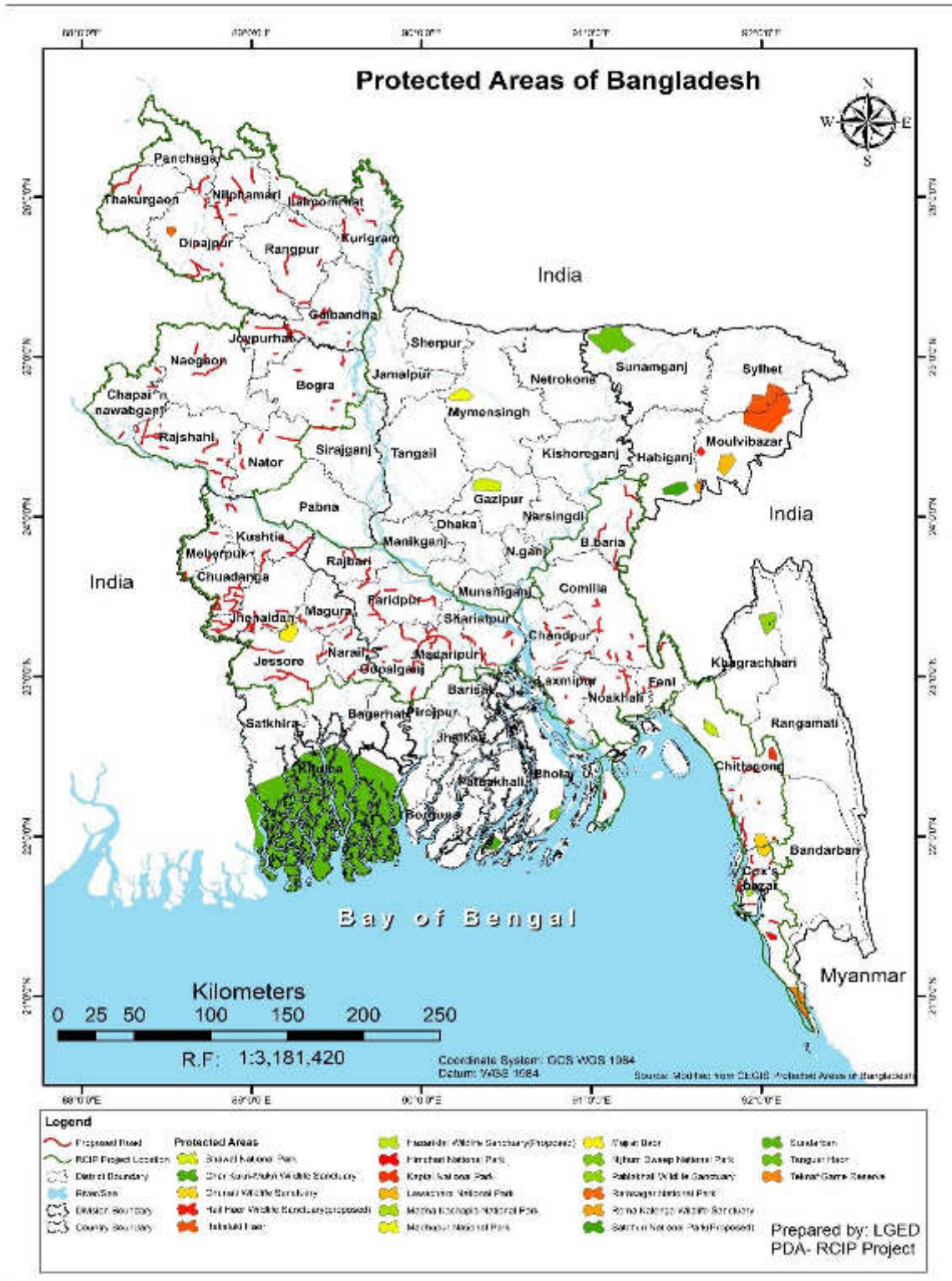
Table 22: Ecologically Sensitive Areas in the Project Area

Sl. No.	Name	Districts	Area (Ha)
1	The Sundarbans	Bagerhat, Khulna, Satkhira	762,034
2	Coxsbazar (Teknaf, Sea beach)	Coxsbazar	10,465
3	St. Martin Island	Coxsbazar	590
4	Sonadia Island	Coxsbazar	4,916
5	Hakaluki Haor	Maulavi Bazar	18,383
6	Tanguar Haor	Sunamganj	9,727
7	Marjat Baor	Jhinaidha	200
8	Gulshan-Banani-Baridhara Lake	Dhaka	n.a

Source: DoE

89. Hakulaki Haor and Tanguar Haor are both marsh wetland systems in Sylhet division in the northeast. The Chattogram Hills which has two wildlife sanctuaries and the Kaptai National Park are also outside the project area. The Sundarbans Delta is situated on the border of India and Bangladesh, where the Ganges, Brahmaputra, and Meghna rivers converge in the Bengal basin. The Sundarbans constitute the largest mangrove forest in the World. None of these declared sensitive areas are in the project area or are affected by the project as shown in the succeeding Table.

Figure 23: Protected Area Map of Bangladesh



E. Socio-Cultural Environment

90. Information on the baseline condition of social and economic resources of the project area is provided below. Several socio-economic indicators are analyzed based on available data from the 2011 census for the 34 project districts.

1. Administrative Area

91. LGED has prepared 317 subprojects within 34 districts of Bangladesh. Within the 34 project districts, the roads are in 179 upazillas. However, ADB is only managed to support 216 roads in 2018 under RCIP. The remaining roads will be financed in 2019 subject to good implementation progress. The succeeding Table presents the distribution of benefitted upazillas roads for overall program.

Table 23: Number of directly benefitted Upazilas by Project Roads

S No.	District	Total LGED proposed subprojects		RCIP subprojects		RCIP 2 subprojects (to be financed in 2019)	
		No	Location in Upazillas	No	Location in Upazillas	No	Location in Upazillas
1	Gopalganj	12	5	7	5	5	2
2	Faridpur	7	5	7	5		
3	Madaripur	15	4	7	1	8	4
4	Shariatpur	8	4	8	4		
5	Rajbari	13	5	6	1	7	4
6	Cumilla	13	10	8	6	5	4
7	Chandpur	7	6	7	6		
8	B. Baria	5	4	5	4		
9	Chattogram	13	11	7	6	6	6
10	Coxsbazar	6	4	6	4		
11	Noakhali	7	4	7	4		
12	Laxmipur	5	5	5	5		
13	Feni	4	3	4	3		
14	Jashore	18	8	8	4	10	6
15	Kushtia	6	5	6	5		
16	Jhenaidah	10	5	10	5		
17	Chuadanga	10	4	7	2	3	2
18	Magura	7	3	7	3		
19	Meherpur	3	3	3	3		
20	Narail	7	3	7	3		
21	Rajshahi	26	9	14	5	12	4
22	Naogaon	10	5	4	2	6	3
23	C.Nawabganj	4	3	4	3		
24	Natore	9	5	5	2	4	3
25	Bogura	13	8	7	3	6	5
26	Joypurhat	5	5	5	5		
27	Lalmonirhat	4	3	4	3		
28	Kurigram	6	6	6	6		
29	Gaibandha	12	6	8	3	4	3
30	Rangpur	6	5	6	5		

S No.	District	Total LGED proposed subprojects		RCIP subprojects		RCIP 2 subprojects (to be financed in 2019)	
		No	Location in Upazillas	No	Location in Upazillas	No	Location in Upazillas
31	Dinajpur	21	10	10	3	11	7
32	Thakurgaon	10	5	4	2	6	5
33	Panchagarh	5	4	2	1	3	3
34	Nilphamari	10	4	5	3	5	3
Total		317	179	216	125	101	64

Source: Social Diligence Report (2018)

2. Population and Households

92. The 34 districts cover less than half the land area of Bangladesh. In terms of population, the 34 districts represent more 50% of the total population of the country. The female to male ratio is close to 1 in all districts. Population densities in Bangladesh are relatively high throughout the country. Panchagarh District has the lowest density of the divisions in the project area and Cumilla District has the highest with more than 1,700 per km².

Table 24: Demographic Characteristics

SL No	District	Household	Population	Male	Female	Sex Ratio (F/M)	Area Sq/km	Per-sons per Sq/km
1	B Baria	538,937	2,840,498	1,366,711	1,473,787	1.08	1,881.20	1,509.94
2	Bogura	867,137	3,400,874	1,708,806	1,692,068	0.99	2,898.68	1,173.25
3	Chandpur	506,521	2,416,018	1,145,831	1,270,187	1.11	1,645.32	1,468.42
4	Chapai Nawabganj	357,982	1,647,521	810,218	837,303	1.03	1,702.55	967.68
5	Chattogram	1,532,014	7,616,352	3,838,854	3,777,498	0.98	5,282.92	1,441.69
6	Chuadanga	277,464	1,129,015	564,819	564,196	1.00	1,174.10	961.60
7	Cumilla	1,053,572	5,387,288	2,575,018	2,812,270	1.09	3,146.30	1,712.26
8	Coxsbazar	415,954	2,289,990	1,169,604	1,120,389	0.96	2,491.85	918.99
9	Dinajpur	715,773	2,990,128	1,508,670	1,481,458	0.98	3,444.30	868.14
10	Faridpur	420,174	1,912,969	942,245	970,724	1.03	2,052.86	931.86
11	Feni	277,665	1,437,371	694,128	743,243	1.07	990.36	1,451.36
12	Gaibanda	612,283	2,379,255	1,169,127	1,210,128	1.04	2,114.77	1,125.07
13	Gopalganj	249,872	1,172,415	577,868	594,547	1.03	1,468.74	798.25
14	Jenaidah	422,332	1,771,304	886,402	884,902	1.00	1,964.77	901.53
15	Jashore	656,413	2,764,547	1,386,293	1,378,254	0.99	2,606.94	1,060.46
16	Joypurhat	242,556	913,768	459,284	454,484	0.99	1,012.41	902.57
17	Kurigram	508,045	2,069,273	1,010,442	1,058,831	1.05	2,245.04	921.71
18	Kustia	477,289	1,946,838	973,518	973,320	1.00	1,608.80	1,210.12
19	Lalmonirhat	290,444	1,256,099	628,799	627,300	1.00	1,247.37	1,007.00
20	Laxmipur	365,339	1,729,188	827,780	901,408	1.09	1,440.39	1,200.50
21	Madaripur	252,149	1,165,952	574,582	591,370	1.03	1,125.69	1,035.77
22	Magura	205,902	918,419	454,739	463,680	1.02	1,039.10	883.86
23	Meherpur	166,312	655,392	324,634	330,758	1.02	716.08	915.25
24	Naogaon	655,801	2,600,157	1,300,227	1,299,930	1.00	3,435.65	756.82
25	Narail	162,607	721,668	353,527	368,141	1.04	967.99	745.53
26	Natore	423,875	1,706,673	854,183	852,490	1.00	1,900.16	898.17
27	Nilpamari	421,572	1,834,231	922,964	911,267	0.99	1,546.59	1,185.98
28	Noakhali	593,918	3,108,083	1,485,169	1,622,914	1.09	3,685.87	843.24
29	Panchagarh	228,581	987,644	496,725	490,919	0.99	1,404.63	703.13
30	Rajbari	238,153	1,049,778	519,999	529,779	1.02	1,092.28	961.09
31	Rajshahi	633,758	2,595,197	1,309,890	1,285,307	0.98	2,425.37	1,070.02
32	Rangpur	720,180	2,881,086	1,443,816	1,437,270	1.00	2,400.56	1,200.17

SL No	District	Household	Population	Male	Female	Sex Ratio (F/M)	Area Sq/km	Per-sons per Sq/km
33	Shariatpur	247,880	1,155,824	559,075	596,749	1.07	1,174.05	984.48
34	Thakurgaon	320,786	1,390,042	701,281	688,761	0.98	1,781.74	780.16
	Bangladesh	32,173,630	144,043,697	72,109,796	71,933,901	1.00	147,570.00	976.10

Source: Population Census, BBS, 2011

3. Household size

93. The 2011 Census shows that 67% of households (HH) in the project area comprise four or more family members as depicted in the succeeding Table. The average household size in the project area is 4.41 members which is lower than the national average of 4.44 members.

Table 25: Household Size

Districts	No of HHs	No of Persons in Household								Ave. HHs size
		1	2	3	4	5	6	7	8+	
B Baria	537,560	12,262	38,503	69,587	99,433	102,020	81,499	54,363	79893	5.25
Bogura	863,596	35,415	117,832	218,505	245,386	136,966	60,530	25,025	23937	3.88
Champur	503,851	12,457	41,283	81,161	113,634	104,349	69,296	38,254	43417	4.75
Chapai Nawabganj	357,241	9,981	32,514	63,074	91,425	70,049	40,364	21,400	28434	4.59
Chattogram	1,509,724	34,722	124,196	238,137	329,244	293,272	201,516	118,698	169934	4.92
Chuadanga	276,906	7,793	32,042	64,986	82,039	49,280	22,378	9,610	8778	4.05
Cumilla	1,048,984	21,534	73,423	149,928	218,934	211,855	152,908	92,178	128224	5.07
Coxsavar	413,407	6,156	24,451	52,365	72,611	75,020	65,577	47,434	69788	5.23
Dinajpur	713,251	25,974	78,950	151,183	203,034	134,949	64,462	28,021	26678	4.14
Faridpur	418,554	10,886	38,380	75,620	103,993	86,080	51,189	25,803	26603	4.51
Feni	275,466	5,507	18,351	39,612	58,858	56,292	38,785	22,489	35567	5.12
Gaibanda	611,293	31,809	84,510	142,355	165,759	104,571	47,680	19,400	15209	3.88
Gopalganj	248,735	6,768	21,028	40,586	57,761	52,292	33,515	18,011	18774	4.66
Jenaidah	421,296	10,298	45,593	92,818	122,810	79,133	37,483	16,602	16559	4.17
Jashore	653,419	15,991	68,823	147,880	190,875	120,329	58,273	25,832	25416	4.17
Joypurhat	241,990	10,234	35,984	65,967	69,831	35,235	14,376	5,504	4859	3.74
Kurigram	507,102	26,286	62,380	111,368	132,887	88,055	44,183	20,649	21294	4.06
Kustia	476,085	14,687	56,642	110,144	138,060	85,047	38,807	16,581	16117	4.06
Lalmonirhat	289,949	10,681	29,385	55,443	75,210	58,248	32,042	15,039	13901	4.31
Laxmipur	364,260	8,944	31,369	62,014	80,967	72,922	49,369	27,973	30697	4.71
Madaripur	251,581	6,390	21,934	41,585	58,643	54,146	34,779	17,665	16439	4.61
Magura	205,488	4,977	18,829	38,784	55,706	41,627	22,563	10,956	12046	4.44
Meherpur	165,970	5,494	21,576	41,404	49,143	26,664	12,050	4,954	4685	3.93
Naogaon	654,271	23,732	83,405	168,954	187,108	102,254	45,747	20,570	22501	3.95
Narail	162,295	5,085	15,889	30,931	41,314	31,560	18,592	9,185	9739	4.42
Natore	422,917	14,983	51,083	103,558	123,987	68,763	31,307	13,893	15343	4.01
Nilpamari	420,902	14,851	44,160	77,051	107,824	86,892	48,195	21,572	20357	4.34
Noakhali	590,813	11,308	39,236	81,893	116,233	114,659	88,024	56,871	82584	5.20
Panchagar	228,043	7,056	20,913	42,968	63,484	48,690	25,082	10,713	9137	4.31
Rajbari	237,352	6,026	22,515	46,426	64,615	47,237	25,291	12,056	13186	4.39
Rajshahi	630,327	22,653	71,574	155,325	184,726	102,803	47,782	21,552	23912	4.03
Rangpur	717,358	33,611	90,857	167,955	198,453	123,393	57,269	24,091	21729	3.96

Districts	No of HHs	No of Persons in Household								Ave. HHs size
		1	2	3	4	5	6	7	8+	
Shariatpur	246,535	7,543	21,977	39,804	53,800	50,751	35,244	19,233	18183	4.66
Thakurgao n	320,249	9,918	30,393	57,587	91,820	68,465	33,912	14,717	13437	4.30
Total /Avg Project	15,986,770	492,012	1,609,980	3,126,958	4,049,607	2,983,868	1,730,069	906,894	1,087,357	4.41

Source: Population Census, BBS, 2011

4. Housing Condition

94. According to the 2011 census, 9.0% houses identified were pukka houses, i.e. houses fully made of concrete, cement and iron, while a further 19.4% structures were semi-pukka houses built with bamboo mats, timber, earth filled wall and plinth in combination with a bricks and concrete foundation and bamboo and timber roofing. Majority of the population (over 68%) lives in kutcha houses which have walls of organic materials such as sticks, jute, straw and earth. The foundations of kutcha houses are made of earth and bamboo/timber posts and roofs are made of thatched straw and grass with bamboo framing.

Table 26: Type of Housing Structure in the Project Area

Districts	Type of House			
	Pucca	Semi-pucca	Kutcha	Jhupri
B Baria	44,227	73,772	413,660	5,901
Bogura	48,980	179,661	622,894	12,065
Chandpur	36,750	44,158	419,918	3,025
Chapai Nawabganj	46,719	134,117	151,026	25,384
Chattogram	377,078	311,225	729,467	91,947
Chuadanga	61,245	76,828	128,726	10,111
Cumilla	103,881	165,148	765,904	14,051
Cox' Bazar	25,432	48,058	285,037	54,875
Dinajpur	39,354	166,771	470,485	36,645
Faridpur	20,120	120,260	271,792	6,382
Feni	45,793	49,060	177,131	3,477
Gaibanda	12,219	78,497	507,751	12,830
Gopalganj	10,034	30,557	205,595	2,549
Jenaidah	62,694	124,003	217,094	17,512
Jashore	106,899	219,372	293,069	34,083
Joypurhat	14,615	60,597	156,246	10,536
Kurigram	4,581	37,502	457,603	7,420
Kustia	37,169	151,311	282,722	4,787
Lalmonirhat	4,557	24,947	252,093	8,356
Laxmipur	27,759	26,784	300,831	8,881
Madaripur	11,920	39,173	197,424	3,064
Magura	11,135	53,746	137,456	3,155
Meherpur	33,277	55,424	72,099	5,174
Naogaon	34,619	143,166	452,678	23,812
Narail	10,348	39,487	110,888	1,576
Natore	21,901	115,920	272,699	12,401
Nilpamari	10,445	52,076	351,653	6,732
Noakhali	44,757	45,114	475,948	24,989
Panchaghar	4,586	24,257	192,906	6,325
Rajbari	7,806	43,090	179,711	6,745
Rajshahi	80,836	175,247	347,898	26,350
Rangpur	25,692	114,405	554,537	22,728
Shariatpur	6,931	20,785	216,291	2,528
Thakurgaon	8,856	64,633	230,578	15,862

Districts	Type of House			
	Pucca	Semi-pucca	Kutchha	Jhupri
Project Area	1,443,215	3,109,151	10,901,810	532,258

Source: Population Census, BBS, 2011

95. Meherpur and Kurigram districts show the greatest variation in housing type. 53% of houses in Meherpur are either pucca or semi-pucca while only 8% of the houses in Kurigram are recorded as pucca or semi-pucca in construction.

5. Age Structure in Project Area

96. Analysis of age structure shows that just over 36 % of total population in the thirty-four districts are children (ages up to 14 years), 57% are of working age i.e. between 15 to 59 years, which is considered as the active workforce.

Table 27: Population Distributions by Different Age Groups

Districts	Population in Each Age Group									
	00-04	05-09	10-14	15-19	20-24	25-29	30-49	50-59	60-64	65+
B Baria	390,342	453,992	364,226	250,708	228,758	216,325	559,749	160,151	77,455	138,792
Bogura	317,333	377,872	350,712	276,959	313,356	342,676	917,121	240,839	96,083	167,923
Chandpur	262,302	319,443	313,554	238,935	206,671	193,049	514,497	151,185	74,325	142,061
Chapai Nawabganj	173,670	206,838	198,928	152,786	151,824	143,470	403,963	103,492	42,576	69,974
Chattogram	387,208	464,042	473,773	404,994	379,548	352,549	890,697	236,426	98,019	151,595
Chuadanga	108,649	128,691	111,380	88,049	86,312	92,943	244,714	62,462	24,114	40,330
Cumilla	620,037	319,443	313,554	238,935	206,671	193,049	514,497	151,185	74,325	142,061
Coxsbazar	304,568	361,818	318,308	233,578	215,259	201,519	434,035	104,960	45,799	70,146
Dinajpur	296,758	350,957	324,335	253,331	259,973	285,475	781,863	208,336	81,724	147,376
Faridpur	198,949	248,686	235,295	164,515	160,689	162,603	451,461	130,082	57,389	103,300
Feni	151,781	178,159	182,056	159,008	136,791	123,694	299,353	85,827	42,641	78,061
Gaibanda	262,216	319,358	261,271	170,621	195,806	223,808	593,988	164,906	70,423	116,858
Goplaganj	125,808	160,175	150,495	101,606	95,456	96,622	265,622	76,507	35,275	64,506
Jenaidah	108,649	195,706	196,506	146,949	156,724	171,429	475,075	122,338	51,898	95,453
Jashore	245,909	294,454	304,308	241,818	254,017	266,013	744,495	190,926	77,235	145,372
Joypurhat	77,170	93,237	90,824	71,401	79,346	92,050	265,069	68,755	28,430	47,486
Kurigram	231,048	275,159	236,150	153,919	170,964	189,913	506,033	140,104	58,411	107,572
Kustia	177,357	216,674	210,838	159,568	172,861	189,028	523,002	138,236	59,504	99,770
Lalmonirhat	136,964	173,245	146,517	101,682	103,929	114,737	303,369	83,121	33,177	59,358
Laxmipur	205,569	252,821	224,791	167,487	144,947	141,136	355,369	98,912	48,791	89,365
Madaripur	121,266	161,839	151,137	101,560	91,686	92,347	264,050	79,232	38,952	63,280
Magura	90,404	113,370	109,232	74,612	74,391	81,190	232,714	64,284	27,047	51,175
Meherpur	56,142	66,414	69,853	53,167	56,828	63,288	188,808	47,317	18,782	34,793
Naogaon	225,827	274,535	260,427	210,826	241,752	262,485	729,058	186,148	76,331	132,768
Narail	74,305	92,697	86,118	58,687	57,832	60,977	175,337	50,637	22,576	42,502
Natore	155,823	187,847	176,280	140,116	154,588	171,506	467,477	116,898	47,467	88,671
Nilpamari	207,219	253,856	213,612	155,975	153,630	164,797	444,193	117,036	48,695	75,218
Noakhali	381,693	464,520	418,454	313,895	265,789	249,857	611,519	166,520	83,110	152,726
Panchaghar	108,649	128,691	111,380	88,049	86,312	92,943	244,714	62,462	24,114	40,330
Rajbari	381,693	464,520	418,454	313,895	265,789	249,857	611,519	166,520	83,110	152,726

Districts	Population in Each Age Group									
	00-04	05-09	10-14	15-19	20-24	25-29	30-49	50-59	60-64	65+
Rajshahi	217,457	266,932	278,336	237,218	256,913	262,436	717,838	170,478	67,968	119,621
Rangpur	287,170	357,763	318,031	232,511	252,637	270,801	738,094	201,767	80,970	141,342
Shariatpur	130,122	164,940	154,798	102,119	88,047	88,387	248,181	73,358	36,524	68,531
Thakurgaon	147,345	179,315	159,855	11,544	116,764	130,664	351,681	88,963	34,751	61,160
Project	7,367,402	8,568,009	7,933,788	5,871,023	5,882,860	6,033,623	16,069,155	4,310,370	1,867,991	3,302,202

Source: Population Census, BBS, 2011

6. Literacy

97. The literacy rate for the population 7 years and above in the project area is 50.69 % which is lower than the national literacy rate of 51.7 %. Similarly, male and female literacy rates in the project area are lower than that of the country. Narail shows the highest literacy rates at 63.34 % for males and 59.31 % for women, while Coxsbazar has the lowest rates at 40.32 % and 38.22 % respectively. Female literacy rates consistently trail those of men but by only a few percentage points.

Table 28: Literacy Rates by Each District of the Project Area

Districts	Total Literacy		Male Literacy		Female Literacy	
	Total Population	% of Total Literate	Total Male Population	% of Males Literate	Total Female Population	% of Females Literate
B Baria	2,840,498	45.29%	1,366,711	45.74%	1,473,787	44.88%
Bogura	3,400,874	49.38%	1,708,806	52.86%	1,692,068	45.89%
Chandpur	2,416,018	56.78%	1,145,831	56.14%	1,270,187	57.34%
Chapai Nawabganj	1,647,521	42.94%	810,218	41.55%	837,303	44.27%
Chattogram	7,616,352	58.91%	3,838,854	61.13%	3,777,498	56.66%
Chuadanga	1,129,015	45.91%	564,819	46.88%	564,196	44.93%
Cumilla	5,387,288	53.32%	2,575,018	54.08%	2,812,270	52.65%
Cox' Bazar	2,289,990	39.29%	1,169,604	40.32%	1,120,389	38.22%
Dinajpur	2,990,128	52.42%	1,508,670	55.68%	1,481,458	49.12%
Faridpur	1,912,969	48.96%	942,245	50.29%	970,724	47.69%
Feni	1,437,371	59.63%	694,128	61.11%	743,243	58.28%
Gaibanda	2,379,255	42.81%	1,169,127	46.29%	1,210,128	39.50%
Gopalganj	1,172,415	58.09%	577,868	60.30%	594,547	55.98%
Jenaidah	1,771,304	48.40%	886,402	50.45%	884,902	46.35%
Jashore	2,764,547	56.52%	1,386,293	59.38%	1,378,254	53.65%
Joypurhat	913,768	57.48%	459,284	61.39%	454,484	53.55%
Kurigram	2,069,273	42.52%	1,010,442	46.49%	1,058,831	38.80%
Kustia	1,946,838	46.33%	973,518	47.88%	973,320	44.79%
Lalmonirhat	1,256,099	46.09%	628,799	49.30%	627,300	42.89%
Laxmipur	1,729,188	49.40%	827,780	48.94%	901,408	49.81%
Madaripur	1,165,952	47.97%	574,582	50.11%	591,370	45.93%
Magura	918,419	50.64%	454,739	52.87%	463,680	48.48%
Meherpur	2,600,157	46.27%	1,300,227	46.87%	1,299,930	45.69%
Naogaon	721,668	48.22%	353,527	51.29%	368,141	45.17%
Narail	1,706,673	61.27%	854,183	63.34%	852,490	59.31%
Natore	1,834,231	49.59%	922,964	51.90%	911,267	47.29%
Nilpamari	3,108,083	44.37%	1,485,169	47.59%	1,622,914	41.13%
Noakhali	2,523,179	51.29%	1,262,934	51.44%	1,260,245	51.16%
Panchaghar	987,644	53.19%	496,725	56.16%	490,919	50.19%
Rajbari	1,049,778	52.28%	519,999	53.98%	529,779	50.63%
Rajshahi	2,595,197	52.98%	1,309,890	55.84%	1,285,307	50.09%
Rangpur	2,881,086	48.55%	1,443,816	51.25%	1,437,270	45.86%
Shariatpur	1,155,824	47.26%	559,075	47.96%	596,749	46.62%

Districts	Total Literacy		Male Literacy		Female Literacy	
	Total Population	% of Total Literate	Total Male Population	% of Males Literate	Total Female Population	% of Females Literate
Thakurgaon	1,390,042	51.80%	701,281	54.10%	688,761	49.40%
Project	73,708,644	50.69%	36,483,528	52.60%	37,225,119	48.82%

Source: Population Census, BBS, 2011

7. Disability

98. Rates of disability provide an indication of social condition and wellbeing. Table below shows that the overall disability rate in the project area is 1.32%. Six categories are defined in the Census i.e. disability in speech, vision, hearing, physical and mental and autism. Among these categories physical disability is the most significant with 455,095 persons, which is 0.62% of the total population.

Table 29: Distribution of Population by Type of Disability

Districts	Population	Disability						
		Total	Speech	Vision	Hearing	Physical	Mental	Autism
B Baria	2,840,498	33 524	5 844	6 052	3 005	12 522	3 866	2 235
Bogura	3,400,874	51419	6431	10959	4948	20290	6690	2101
Chandpur	2,416,018	46520	5565	9154	3371	21501	4526	2403
Chapai Nawabganj	1,647,521	25409	3313	4909	2491	10364	3415	917
Chattogram	7,616,352	96144	12102	16954	7264	37952	13796	8076
Chuadanga	1,129,015	18979	2357	3883	1838	7755	2246	900
Cumilla	5,387,288	71092	11321	12911	5550	28043	8375	4892
Coxsbazar	2,289,990	33 958	4 801	7 306	3 097	12 365	3 973	2416
Dinajpur	2,990,128	45534	6285	9078	4760	17817	5515	2079
Faridpur	1,912,969	30521	3671	6157	2806	12217	3465	2205
Feni	1,437,371	19286	2602	2849	1188	8519	2781	1347
Gaibanda	2,379,255	47095	5314	12008	4557	17442	4903	2871
Gopalganj	1,172,415	16236	2507	2897	1376	6743	1772	941
Jenaidah	1,771,304	27808	3433	5056	2370	12017	3424	1506
Jashore	2,764,547	37296	4935	5797	3125	16768	4986	1685
Joypurhat	913,768	14089	1832	2989	1447	5351	1835	635
Kurigram	2,069,273	31677	4467	6029	3805	12138	3790	1448
Kustia	1,946,838	26857	3701	4327	2093	11456	3846	1434
Lalmonirhat	1,256,099	20920	2743	4508	2676	7503	2360	1130
Laxmipur	1,729,188	22 172	3 571	3 915	1 670	8 597	2 626	1 793
Madaripur	1,165,952	15006	2260	3216	1325	5343	1808	1054
Magura	918,419	10969	1578	1725	846	4584	1418	818
Meherpur	2,600,157	11402	1368	2067	1017	5104	1320	526
Naogaon	721,668	42194	4969	9117	4017	16555	5669	1867
Narail	1,706,673	11460	1425	2086	1146	4892	1296	615
Natore	1,834,231	27420	3286	4846	2369	11768	3848	1303
Nilpamari	3,108,083	27322	3915	4219	2579	12078	3047	1484
Noakhali	2,523,179	42361	6876	7076	3064	17654	4637	3054
Panchaghar	987,644	15659	1943	35842	18377	66978	19615	9012
Rajbari	1,049,778	17124	2084	3577	1620	6775	2303	765
Rajshahi	2,595,197	40558	4833	7459	3655	17290	5368	1953
Rangpur	2,881,086	46077	6104	8931	4862	18035	5901	2244
Shariatpur	1,155,824	15385	2254	3010	1397	5648	2022	1054
Thakurgaon	1,390,042	21603	2977	4310	2405	8515	2352	1044
Project	73,708,644	971,422	128,451	217,946	104,344	455,095	138,329	65,779
		1.32%	0.17%	0.30%	0.14%	0.62%	0.19%	0.09%

Source: Population Census 2011

8. Occupations and Livelihoods

99. Succeeding Table shows census data of occupation and livelihood for districts in which the Project will be implemented under four very broad categories.

Table 30: Occupation and Livelihood by Districts and for Project Area

Districts	Employment Status			
	Employed	Looking for work	Household work	Do not work
B Baria	621,713	23,087	723,436	627,928
Bogura	1,033,035	21,996	990,953	659,685
Chandpur	550,854	22,617	638,844	621,962
Chapai Nawabganj	460,545	9,800	465,221	331,447
Chittagaong	2,273,836	75,196	1,753,675	1,848,337
Chuadanga	355,090	4,772	330,655	217,758
Cumilla	1,233,128	50,233	1,385,318	1,337,332
Coxsazar	603,046	22,355	527,506	470,687
Dinajpur	912,737	15,884	824,465	589,327
Faridpur	523,043	12,706	511,410	417,173
Feni	326,604	20,282	392,032	368,513
Gaibanda	661,300	15,160	691,438	429,783
Gopalganj	302,467	9,030	304,392	270,507
Jenaidah	533,583	9,906	509,812	363,071
Jashore	832,533	15,604	762,280	613,767
Joypurhat	285,656	6,121	278,749	172,835
Kurigram	563,504	12,552	593,308	393,702
Kustia	586,636	11,324	559,933	394,914
Lalmonirhat	358,719	9,048	344,082	234,041
Laxmipur	386,294	19,581	455,777	409,146
Madaripur	314,275	9,999	299,368	259,137
Magura	254,890	4,472	254,966	200,317
Meherpur	201,377	4,310	203,055	124,094
Naogaon	818,896	16,646	790,318	473,935
Narail	191,159	6,466	199,412	157,629
Natore	516,246	11,675	503,294	331,788
Nilpamari	521,709	12,603	482,329	356,515
Noakhali	651,874	42,918	800,030	767,021
Panchaghar	291,080	6,209	256,156	196,859
Rajbari	299,732	5,050	289,986	222,447
Rajshahi	769,536	20,857	732,713	587,702
Rangpur	844,568	19,624	794,809	577,152
Shariatpur	298,585	8,484	305,022	248,513
Thakurgaon	400,026	370,999	284,917	7,895
Project	19,778,276	927,566	19,239,661	15,282,919

Source: Population Census, BBS, 2011

9. Poverty¹⁵

100. Table below shows 63.73% population in the project districts are poor and Kurigma considered as the poorest with 44.35% or the population considered as extremely poor.

Table 31: Poverty Line

District	Population	% Extreme poor (lower poverty line)	% Poor (Uper poverty line)
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¹⁵ Poverty headcount ratio (%): Percentage of the population that lives below the official national upper poverty line.
Extreme poverty headcount ratio (%): Percentage of the population that lives below the official national lower poverty line

B Baria	2,840,498	15.00	30.00
Bogura	3,400,874	6.70	16.60
Chandpur	2,416,018	30.30	51.00
Chapai Nawabganj	1,647,521	12.10	25.30
Chattogram	7,616,352	4.00	11.50
Chuadanga	1,129,015	10.80	27.70
Cumilla	5,387,288	21.10	37.90
Coxsbazar	2,289,990	16.20	32.70
Dinajpur	2,990,128	21.30	37.90
Faridpur	1,912,969	19.80	36.30
Feni	1,437,371	14.60	25.90
Gaibanda	2,379,255	30.30	48.00
Gopalganj	1,172,415	26.80	42.70
Jenaidah	1,771,304	10.00	24.70
Jashore	2,764,547	18.40	39.00
Joypurhat	913,768	12.90	26.70
Kurigram	2,069,273	44.30	63.70
Kustia	1,946,838	0.80	3.60
Lalmonirhat	1,256,099	16.70	34.50
Laxmipur	1,729,188	18.10	31.20
Madaripur	1,165,952	17.40	34.90
Magura	918,419	25.90	45.40
Meherpur	655,392	5.10	15.20
Naogaon	2,600,157	7.00	16.90
Narail	721,668	7.70	20.00
Natore	1,706,673	21.30	35.10
Nilpamari	1,834,231	18.80	34.80
Noakhali	3,108,083	3.40	9.60
Panchagarh	987,644	12.30	26.70
Rajbari	1,049,778	25.70	41.90
Rajshahi	2,595,197	16.50	31.40
Rangpur	2,881,086	30.10	46.20
Shariatpur	1,155,824	34.40	52.60
Thakurgaon	1,390,042	13.80	27.00
Project	71,840,857	16.48	30.46
Bangladesh		15.72	29.90

10. Land Resources

a) Agro-ecological zones

101. There are 30 agro-ecological zones (AEZ) and 88 sub zones which have been identified in Bangladesh. An AEZ is a zone or region with a unique combination of physiographic (land forms and parent materials), soil properties, soil salinity, depth and duration of seasonal flooding and agro-climatology (FAO/UNDP, 1988, BARC, 2012). Fertility status of these regions varies considerably. Individual farmers have fragmented the land into small pieces causing wide variation in the management of each and every piece of land. This leads to the large difference in the fertility levels even between adjacent plots. The following AEZs partly or fully fall under Project of 128 number selected rural road.

- (i) **Old Himalayan Piedmont Plain (AEZ-1).** This a distinctive region, developed in an old Tista alluvial fan extending from the foot of the Himalayas. It has a complex relief pattern. Deep, rapidly permeable sandy loams and sandy clay loams are predominant in this region. They are strongly acidic in topsoil and moderately acidic in subsoils: Low in weatherable potassium minerals. Seven general soil

types occur in the region, of which non-calcareous brown floodplain soils, black terai soils, and non-calcareous dark grey floodplain soils predominate. Organic matter content is generally higher than in most Floodplain soils of Bangladesh. The natural fertility of the soil is moderate but well sustained. Soil fertility problems include rapid leaching of trace metals. Most of Panchagarh and Thakurgaon districts and the northwestern part of Dinajpur district are included in this zone.

- (ii) **Active Tista Floodplain (AEZ-2).** This region includes the active floodplains of the Tista, Dharla and Dudhkumar rivers. It has a complex patterns of low, generally smooth ridges, inter-ridge depressions, river channels and cut-off channels. The area has irregular patterns of grey stratified sands and silts. They are moderately acidic throughout. Four general soil types occur in the region, and of them, non-calcareous alluvium predominates. Organic matter contents and soil fertility levels are low to medium.
- (iii) **Tista Meander Floodplain (AEZ-3).** This region occupies the major part of the Tista floodplain as well as the floodplain of the Atrai, Little Jamuna, Karatoya, Dharla and Dudhkumar rivers. Most areas have broad floodplain ridges and almost level basins. There is an overall pattern of olive brown, rapidly permeable, loamy soils on the floodplain ridges, and grey or dark grey, slowly permeable, heavy silt loam or silty clay loam soils on the lower land. Eight general soil types occur in the region; they are moderately acidic throughout, low in organic matter content on the higher land, but moderate in the lower parts. Fertility level is low to medium. Soils, in general, have good moisture holding capacity.
- (iv) **Karatoya-Bangali Floodplain (AEZ-4).** This region is very similar to the Tista Meander Floodplain in physiography and soil, and comprises a mixture of Tista and Brahmaputra sediments. Most areas have smooth, broad, floodplain ridges and almost level basins. The soils are grey silt loams and silty clay loams on ridges and grey or dark grey clays in basins. Five general soil types occur in the region, of which non-calcareous grey floodplain and non-calcareous dark grey floodplain soils predominate. The soil is moderately acidic throughout. Organic matter contents are generally low in the cultivated layer of ridge soils and moderate in basins. General fertility is medium. The eastern half of Bogura and most of Sirajganj districts are included in this zone.
- (v) **Lower Atrai Basin (AEZ-5).** This region comprises the low lying area between the Baring Tract and the Ganges river floodplain. It includes the Chalan Beet area. Dark grey, heavy, acidic clays predominate in this smooth low-lying basin land. Seven general soil types occur in the region. Organic matter, and status of other essential nutrients are medium, while the level of available potassium is high. Fertility status of soils is moderate.
- (vi) **Lower Purnarbhaba Floodplain (AEZ-6).** This small region of only 129 sq km occupies basins and beels separated by low floodplain ridges. In this area, dark grey, mottled red, very strongly acid, heavy clays occupy both ridge and basin sites. Organic matter status is medium to high. General fertility level is medium with high potassium bearing minerals. The western part of Naogaon and the northern part of Nawabganj districts are included in this AEZ.
- (vii) **Active Brahmaputra-Jamuna Floodplain (AEZ-7).** This region comprises the belt unstable alluvial land along the Brahmaputra-Jamuna rivers where land is constantly being formed and eroded by shifting river channels. It has an irregular relief of broad and narrow ridges and depressions. The area is occupied by sandy and silty alluvium rich in minerals with slightly alkaline in reaction. Six general soil types occupy the area; of which, only Noncalcareous Alluvium predominates.

Organic matter status is low and fertility status low to medium.

- (viii) **Active Ganges Floodplain (AEZ-10).** The Active Ganges Floodplain comprises young, stratified, alluvium land within and adjoining the shifting channels of the Ganges River and its two main distributaries, the Gorai-Madhumati and Arial Khan. The alluvial formations (chars) are liable to change shape each year as river bank are eroded, new alluvium is deposited within and along channels and older deposits are buried by layers of new alluvium. The relief varies from smooth to irregular, with 2-3 meters or more difference in elevation between the adjacent ridges and depressions. Seasonal flooding varies from shallow to deep at different sites, and may vary in depth by more than a meter between years. The area has complex mixtures of calcareous sandy, silty and clayey alluvium. The general soil types predominately include calcareous alluvium and calcareous brown floodplain soil, which are low in organic matter and mildly alkaline in reaction. The fertility status generally is medium.
- (ix) **High Ganges River Floodplain (AEZ-11).** This region includes the western part of the Ganges River Floodplain which is predominantly highland and medium highland. Most areas have a complex relief of broad and narrow ridges and inter-ridge depressions, separated by areas with smooth broad ridges and basins. There is an overall pattern of olive-brown silt loams and silty clay loams on the upper parts of floodplain ridges and dark grey, mottled brown, mainly clay soils on ridge sites and in basins. Most ridge soils are calcareous throughout. General soil types predominately include Calcareous Dark Grey Floodplain soils and Calcareous Brown Floodplain soils. Organic matter content in brown ridge soils is low and higher in dark grey soils. Soils are slightly alkaline in reaction. General fertility level is low.
- (x) **Low Ganges River Floodplain (AEZ-12).** This region comprises the north-eastern, eastern and south-eastern parts of the Ganges Meander Floodplain which are lower lying than the western part. The ridges are mainly shallowly flooded, but basins become moderately deep or deeply flooded in the rainy season. The soils of the Low Ganges River Floodplains are silt loams and silty clay loams on the ridges and silty clay loams to heavy clays on lower sites. General soil types predominately include calcareous dark grey, grey and calcareous brown floodplain soils. Organic matter content is low in ridges and moderate in the basins. Soils are calcareous in nature having neutral to slightly alkaline in reaction. General fertility level is medium.
- (xi) **Gopalganj-Khulna Beels (AEZ-14).** The region occupies extensive low-lying areas between the Ganges River Floodplain and the Ganges Tidal Floodplain. Almost level, low-lying basins occupy most of the region with low ridges along rivers and creeks. Soils of the area are grey and dark grey acidic heavy clays overlying peat or muck at 25-100 cm. Soft peat and muck occupy perennially wet basin centres. General soil types include mainly Peat and Non-Calcareous Dark Grey Floodplain soils. Organic matter content is medium to high. Fertility level is medium.
- (xii) **Middle Meghna River Floodplain (AEZ 16).** This region occupies the abandoned channel of the Brahmaputra River on the border between greater Dhaka and Cumilla Districts. It includes islands – former Brahmaputra chars, within the Meghna River as well as adjoining parts of the mainland. Soils of the area are grey, loamy on the ridges and grey to dark grey clays in the basins. Grey sands to loamy sands with compact silty topsoil occupy areas of Old Brahmaputra char. The dominant general soil type is non-calcareous grey floodplain soil. Top

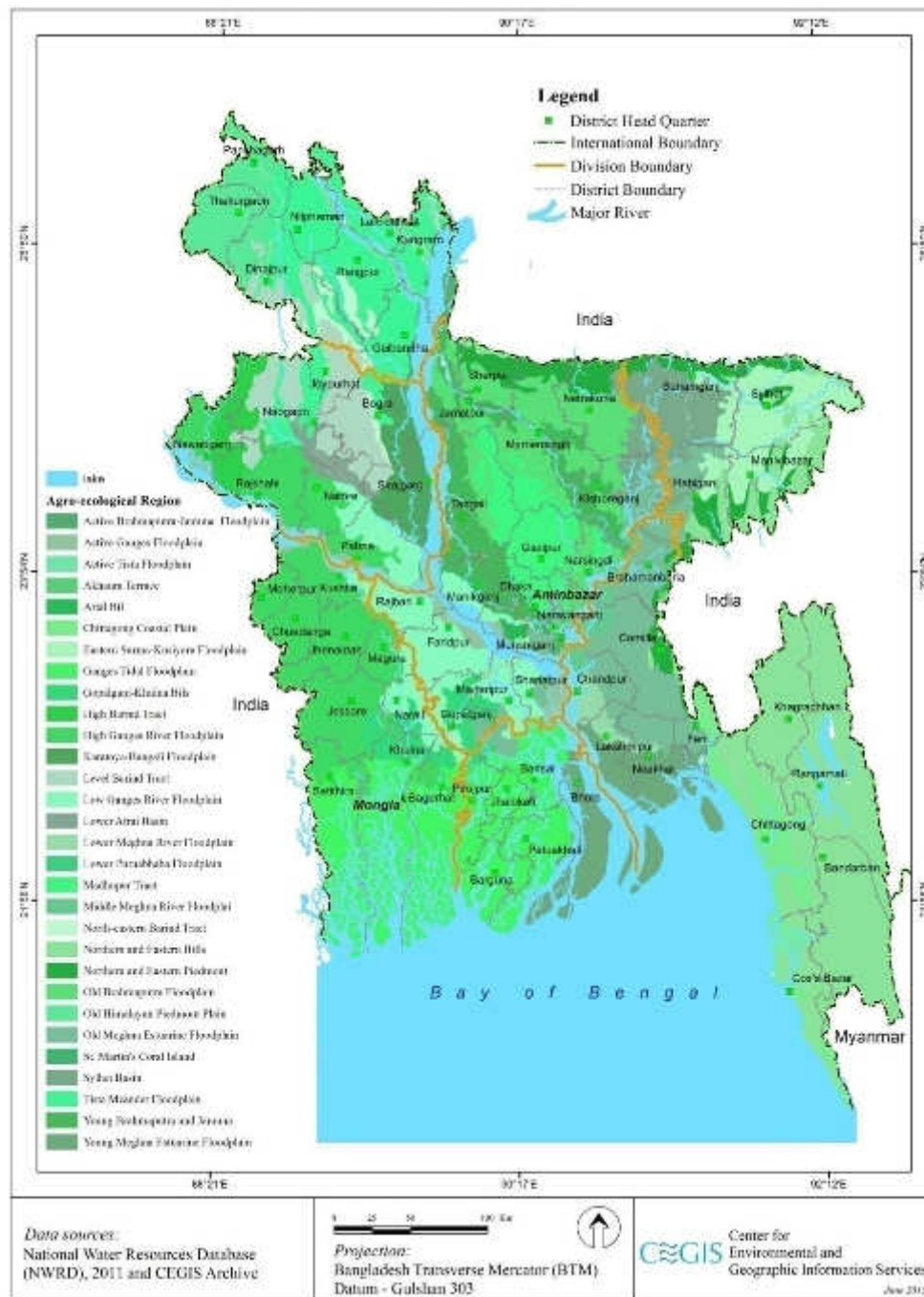
soils are strongly acidic and sub-soils moderately acidic to slightly alkaline. General fertility level is medium with low nitrogen and organic matter contents. The phosphorus and zinc levels are low to medium.

- (xiii) **Lower Meghna River Floodplain (AEZ-17).** This area occupies transitional area between Middle Meghna River Floodplain and the Young Meghna Estuarine Floodplain. The region has slightly irregular relief with little difference in elevation between the ridges and depressions. Soils of this area are relatively uniform. Silt loams occupy relatively higher areas and silty clay loams the depressions. Non calcareous Dark Grey Floodplain and Calcareous Grey Floodplain soils are major components of general type. Top soils are moderately acidic and subsoils neutral in reaction. General fertility level is medium to high with low to medium organic matter status.
- (xiv) **Young Meghna Estuarine Floodplain (AEZ-18).** This region occupies young alluvial land in and adjoining the Meghna estuary. It is almost level with very low ridges and broad depressions. The major soils are grey to olive, deep, calcareous silt loam and silty clay loams and are stratified either throughout or at shallow depth. Calcareous Alluvium and Non calcareous Grey Floodplain soils are the dominant general type. The soils in the south become saline in dry season. Top soils and subsoils of the area are mildly alkaline. General fertility is medium but low in organic matter.
- (xv) **Old Meghna Estuarine Floodplain (AEZ-19).** This region occupies a large area, mainly low-lying between south of the Surma-Kushiyara Floodplain and northern edge of the Young Meghna Estuarine Floodplain. It comprises smooth, almost level, floodplain ridges and shallow basins. Seasonal flooding occurs due to accumulated rainwater. It is moderately deep or deep in the north and west, but it is shallow in the south east. Silt loam soils predominate on highlands and silty clay to clay in low lands. Non-calcareous dark grey floodplain soils are the only general type of the area. Organic matter content of the soils is moderate. Moisture holding capacity is medium. Top-soils are moderately acidic, but sub-soils are neutral in reaction. General fertility level is medium.
- (xvi) **Chattogram Coastal Plains (AEZ- 23).** This region occupies the plain land in greater Chattogram district and the eastern part of Feni district. It is a mixture of piedmont, river, tidal and estuarine floodplain landscapes. The major problem in these soil is high in salinity during the dry season (October to May). Grey silt loams and silty clay loam soils are predominant. Acid Sulphate soil which is potentially extremely acidic occur in mangrove tidal floodplains. Non-calcareous grey floodplain soils, non-calcareous alluvium and acid sulphate soils are most available general soil types of the area. General fertility level of the soils is medium, and nitrogen and potassium are limiting. Status of sulphur is high.
- (xvii) **Level Barind Tract (AEZ-25).** This region is developed over Madhupur Clay. The landscape is almost level and locally irregular along river channels. The predominant soils have a grey silty paddled topsoil with plough pan which either directly overlies grey heavy little weathered Madhupur Clay or merges with the porous silt loam or silty clay loam subsoils having strongly acid clay at greater depth. Shallow Grey Terrace soils and Deep Grey Terrace soils are the major components of general soil types of the area. The soils are low in available moisture holding capacity and slightly acidic to acidic in reaction. Organic matter status is very low and most of the available nutrients are limiting.
- (xviii) **High Barind Tract (AEZ- 26).** This is a very small zone of 16 sq km; it includes the southwestern part of the Barind Tract where the underlying Madhupur

Clay had been uplifted and cut into by deep valleys. The soils include puddled silt loam to silty clay loam in the topsoils and porous silt with mottled plastic clay at varying depth. Deep grey terrace soils and grey valley soils are major components of the general soil types of the area. General fertility status is low, having low status of organic matter.

- (xix) **North Eastern Barind Tract (AEZ-27).** This Zone occupies several discontinuous areas in the south of the Rajpur Division. It has silty or loamy topsoil and clay loams to clay subsoil. The soils are strongly acidic in reaction. Organic matter in the soils is low. General fertility is poor.

Figure 24: Agro-Ecological Zones in Bangladesh



6. Land Use and Land Type

102. Land use in the project area and much of Bangladesh is dominated by human activity. According to the World Bank, only 11.1% of Bangladesh has forest, further only 30.2 % is primary forest, and majority of forests are the Sundarban mangrove forests and the Chattogram Hill

Tracts. Much of the land particularly in the south and central area of the Project are is low lying and subject to flooding in the monsoon season. The land, although low lying is used intensively for agriculture. The basic land use map for Bangladesh is depicted in the succeeding Figure.

Figure 25 General Land Use Map of Bangladesh



103. Based on the transect walks for all the proposed 216 rural roads, the land use of the bordering lands in terms of water bodies, settlement, and agricultural uses is presented in the succeeding Table. The dominant land use is agriculture accounting for 48% of the total road length, followed by settlement with 37%, and waterbodies most ponds with 14%.

Table 32: Roadwise Land Use Based on Transectwalk chainage and Percent of Total Length

Sl. No.	Name of District	Name of Upazila	Name of Schemes	Length (km)	water bodies	Settlement	Agricultural Land	water bodies	settlement	Agricultural Land
					In KM			In Percentage		
1	Gopalganj	Maksudpur	Tengrakhola-Jalirpar G.C Road	9	1.2	2.5	5.4	12.8	27.8	59.4
2	Gopalganj	Kasiani	Tilchara-Orakandi Road	3	0.2	1.5	1.3	6.7	50.0	43.3
3	Gopalganj	Sadar	Boultali GC - Nizra UPC Road	6.153	1.7	2.4	2.1	27.6	39.0	33.4
4	Gopalganj	Tungipara	Bashabaria GC-Jhanjhania-Ghagor GC Road.	9.935	2.5	2.9	4.5	25.2	29.5	45.3
5	Gopalganj	Kotalipara	Kadambari-Kaligonj-Gandiasur GC Road	6.256	0.6	2.8	2.9	9.6	44.8	45.7
6	Gopalganj	Gopalgonj-S	Kajulia UPC - Domrasur Hat Road.	9.8	0.3	2.0	7.6	2.6	20.4	77.0
7	Gopalganj	Gopalgonj-S	Gohala Hat (RHD)- Nizamkandi UPC Road (Sadar Portion)	2.59	0.3	1.7	0.7	9.7	63.7	26.6
8	Faridpur	Boalmari	Chandpur GC- Kalinagar G C Road via chittar bazar& Dadpur UP. , Moyendia Bazar up to Vatiapara-MaouaR& H . (Boalmari portion)	9.868	1.4	5.7	2.8	13.7	57.8	28.6
9	Faridpur	Sadar	Kanaipur R&H to chandpur GC vai koshagopalpur road. (sadar part)	2.25	0.3	1.8	0.2	11.1	80.0	8.9
10	Faridpur	Bhanga	Maligram (R&H) - Kalamirdha GC Road	9.538	0.8	4.1	4.6	8.4	42.9	48.7
11	Faridpur	Sadarpur	Krishnapur GC-Sadarpur HQ-Piazkhali GC-Dhewkhali-Baliahati GC-Kawlibera-Tarail road(Sadarpur part)	13.77	1.1	6.1	6.7	7.6	43.9	48.4
12	Faridpur	Boalmari	Boalmari GC - Nagarkanda GC via GC via Moyendia bazar	6.97	1.1	3.3	2.6	15.8	46.6	37.6
13	Faridpur	Faridpur-S	Bakunda R&H to Kanaipur GC via Tambulkhana Road.	9.025	1.3	5.4	2.4	13.9	59.8	26.3
14	Faridpur	Madhukhali	Madhukhali RHD -Nimtola GC Road Starting from Madhu. Bus Stand.	8.1	1.3	4.5	2.3	16.0	55.6	28.4
15	Madaripur	Rajoir	Paikpara UP-Fultala hat-Dhamarchar Rd.	9.29	1.2	4.4	3.7	12.9	47.4	39.7
16	Madaripur	Rajoir	Takerhat GC-Sreenadi GC- Charmuguria-Khagdi RHD road	8.136	1.1	2.9	4.2	13.5	35.0	51.5
17	Madaripur	Rajoir	Improvement of Rajoir Upazila H/Q - Sreenadi GC	9.29	0.5	2.7	6.2	4.8	28.5	66.6
18	Madaripur	Rajoir	Improvement of Sagolchira R&H - Paikpara Union Road	6.28	0.2	3.8	2.3	2.4	60.5	37.1

19	Madaripur	Rajoir	Takerhat GC - Kadambari GC	12.65	0.5	5.8	6.4	4.0	45.5	50.6
20	Madaripur	Rajoir	Takerhat GC - Kabirajpur GC via Hossainpur UP	15.22	1.3	4.3	9.7	8.2	27.9	63.9
21	Madaripur	Rajoir	Sanerpar R&H - Amgram GC road	3.38	0.3	1.7	1.5	7.4	48.8	43.8
22	Shariatpur	Sadar	Angaria GC - Chandrapur GC via Binodpur UP Road.	10.1	2.5	4.5	3.2	24.8	44.1	31.2
23	Shariatpur	Sadar	Chandrapur GC - Kazirtek R&H Road.	4.4	0.2	2.5	1.8	3.4	55.7	40.9
24	Shariatpur	Bhedarganj	Shakhinpur UP-Gowranga Bazar (Dularchar)	4.82	0.3	2.1	2.5	5.2	43.6	51.2
25	Shariatpur	Goshairhat	Kalikhola Bazar RHD-Rudrokar RHD via Nagerpara GC, Munshirhat Road.	8.4	0.4	5.3	2.7	4.8	63.1	32.1
26	Shariatpur	Damuddya	Subachani-Nagerpara Raod.	5.695	0.3	1.4	4.1	4.4	23.7	71.9
27	Shariatpur	Bhedarganj	Charbhaga UP-Gowranga bazar road.	4.65	0.2	0.9	3.6	3.2	19.4	77.4
28	Shariatpur	Bhedarganj	Shakhi GC - Mredhakandi RHD Road.	4.6	0.1	1.1	3.5	2.2	22.8	75.0
29	Shariatpur	Shariatpur-S	Balar bazar (Rudrakar)-Subhochani-Moderhat-Negerpara rd.	5.29	0.2	1.9	3.2	3.8	35.0	61.2
30	Rajbari	Rajbari-S	Belgachi G.C-Gandimara R&H Road	1.22	0.3	0.7	0.2	20.5	61.1	18.4
31	Rajbari	Rajbari-S	Khankhanapur GC-Falur Dokan R&H via Grils School	3.152	0.6	1.9	0.7	19.0	58.7	22.3
32	Rajbari	Rajbari-S	Alipur UP-Bagmara Hat via Matipara	7.645	1.1	4.1	2.5	13.7	53.9	32.4
33	Rajbari	Rajbari-S	Felur Dokan R&H-Kutirhat GC	3.883	0.2	1.5	2.3	3.9	37.3	58.8
34	Rajbari	Rajbari-S	Kolahat GC-Jamalpur GC	3.315	0.0	0.0	3.3	0.0	0.0	100.0
35	Rajbari	Rajbari-S	Kamaldia R&H-Panchuria UP via Alipur hat	5.251	0.3	2.0	3.1	4.8	37.1	58.1
36	Cumilla	Chouddagram	Kadoir bazar(Suvapur UPC) - Banggodda GC Road via Unkot, Kayerdhari.	5.086	1.9	1.8	1.4	37.4	34.4	28.2
37	Cumilla	Chouddagram	Batisha NHW - Tarashail Bazar(Lal Msq) Road via Batisha Up,Debipur.	5.08	1.5	1.9	1.7	29.5	37.4	33.1
38	Cumilla	Chandina	Baragabindapur-Etbarpur UPC Rd. via Moddhatala, Sitalpur	1.03	0.3	0.5	0.3	24.3	48.5	27.2
39	Cumilla	Barura	Barura GC -Modaforanj RHD Road	9.314	1.8	2.2	5.4	18.8	23.6	57.6
40	Cumilla	Barura	Paranpur Bazar[R&H]-Payelgacha UP office Road	7.687	1.3	2.2	4.2	16.3	29.1	54.6
41	Cumilla	Monohorgonj	Laksam H/Q - Natherpetua RHD via Munshirhat GC Road.(Monohorgonj Portion)	5.342	2.1	1.8	1.5	38.4	32.8	28.9

42	Cumilla	Nangalkot	Adra UP-Manikmura Bazar Road via Volainbazar & Ghoramaidan	5.475	1.9	2.1	1.5	34.7	37.4	27.9
43	Cumilla	Laksham	Laksam Upazilla HQ-Chitoshi RHD(Moulana bazar) via Sreeyang Rd.	5	1.2	1.5	2.4	24.0	29.0	47.0
44	Chandpur	Faridganj	Faridganj GC-Rupsha GC Road.	5.74	1.6	1.9	2.3	27.0	33.1	39.9
45	Chandpur	Haimchor	Gazipur UP Office to Upazilla Head Quarter	3.383	1.2	1.5	0.8	34.0	42.9	23.1
46	Chandpur	Faridganj	Pashim subidpur UP to Basara Bazar Road. Via Munshir Hat Bazar	4.601	1.7	1.8	1.2	36.9	38.0	25.0
47	Chandpur	Hazigonj	Cheangatali GC (Dadasgram up)- Dhadda-Khalpar bazar Road via Shaheb bazar & Pirojpur Bazar	7.62	2.1	2.7	2.9	27.6	34.8	37.7
48	Chandpur	Kachua	Kachua North UP (Tetuya)-Loskari-Boxagonj bazar road via Duati	6.6	1.4	1.6	3.7	21.2	23.5	55.3
49	Chandpur	Matlab South	Matlab-Bohori Arong-Karbanda Road	6.273	2.3	2.7	1.4	35.9	42.2	21.9
50	Chandpur	Shahrasti	Chioshi (E) UP Office-Kharihor Bazar road via Kadra bazar	5.922	1.7	2.3	2.0	27.9	38.8	33.3
51	B. Baria	Kasba	Sayedabad-Kasba-Nayonpur-Mondabagh Road	18.28	2.3	7.8	8.2	12.6	42.4	45.0
52	B. Baria	Bancharampur	Bancharampur GC-Jibonganj GC Road via Sonarampur Bazar	22.403	4.5	4.2	13.7	19.9	18.8	61.3
53	B. Baria	Bijoynagar	Chandura R&H-Nurpur GC Road	10.16	3.0	3.7	3.6	29.0	35.9	35.0
54	B. Baria	Bijoynagar	Nurpur GC-Singerbeel hat Road	7.36	1.6	3.5	2.3	21.7	47.6	30.7
55	B. Baria	Nabinagar	Bitghar Hat to B.Barua R&H road via Kurighar Hat	12.25	2.1	1.9	8.4	16.7	15.1	68.2
56	Chattogram	Boalkhali	Kalurghat-Charandwip-Bhandaljuri-Saraf Bhata-Gudamghar Road (From RHD #126)	6.8	2.4	2.3	2.1	35.3	33.8	30.9
57	Chattogram	Anwara	Upazila Health complex-Peskar hat via Chatari UP Office(Chandpur D.C.Road).	5	1.1	1.6	2.4	21.0	31.0	48.0
58	Chattogram	Anwara	Bairag UPC-CUFL Rd-Parki Bazar via Parki sea Beach Road.	5.5	2.3	2.2	1.1	41.8	39.1	19.1
59	Chattogram	Lohagara	Adhunagar Khan hat GC to Chunati Hajee Para & RHD	3.22	0.5	1.3	1.5	14.0	38.8	47.2
60	Chattogram	Banshkhali	Arabsha Bazar GC - Ishwar Babur Hat GC Road Via Bashirullah Miazi hatChonua,Gandamara,Saral, Shadonpur UP (Moulana Ashraf Ali Road)	4.1	0.8	0.9	2.4	19.5	22.0	58.5

61	Chattogram	Chandanish	Dewanhat-Bailtali-Barma Damirhat G.C-Patiya Road.	16.2	5.4	5.5	5.3	33.3	34.0	32.7
62	Chattogram	Patia	Charlaikhya UP - Dangerchar (Aker Tower House) Road.	5.25	0.2	1.4	3.7	3.8	26.7	69.5
63	Coxsbazar	Pekua	Pekua to Arabshah Bazar via Rajakhali Sabuj Bazar Road (From RHD #148)	8.552	1.2	1.5	6.0	13.4	17.0	69.6
64	Coxsbazar	Moheskhali	Matarbari-Dhalghat Road Via Mogdail Bazar	4.6	0.9	0.5	3.2	19.6	10.9	69.6
65	Coxsbazar	Moheskhali	Gorakghata-Ghatibanga Sonadia road.	4.5	0.8	1.6	2.1	17.8	35.6	46.7
66	Coxsbazar	Chakaria	Harbung Baraitali Road.	6.15	1.6	2.9	1.7	26.0	46.3	27.6
67	Coxsbazar	Ramu	Chainda - Rajarkul Road.	7.85	0.8	3.3	3.8	10.2	42.0	47.8
68	Coxsbazar	Ramu	Chakmarkul - Montergoda Road. (PM Khali) Road.	6.302	1.7	1.7	2.9	27.0	27.0	46.0
69	Noakhali	Senbag	SomirmunshirhatG C- Kutuberhat G C Road	9	2.3	4.4	2.3	25.6	48.9	25.6
70	Noakhali	Senbag	Somir Munshirhat GC - RHD (Kesharpar UP) via Chilonia bazar Road	6.442	1.2	3.1	2.2	18.6	47.3	34.0
71	Noakhali	Sonaimuri	Kachihata-Thanar hat Road (Paloan pol RHW-Amannullapur UP-Eadgha Amin bazar-Amishapara UP)	14.214	2.3	5.3	6.7	16.2	36.9	46.9
72	Noakhali	Sonaimuri	Dirirjan Bazar -Ambarnogar UP Road.	5.45	1.1	2.0	2.4	20.2	35.8	44.0
73	Noakhali	Senbag	Senbag-Arjuntala UP Office (Chilonia Bazar).	4.81	1.0	2.0	1.9	20.8	40.5	38.7
74	Noakhali	Hatiya	Chowhomoni Bazar RHD - Char Changa GC via Majidi Bazar Road	8.6	0.7	3.0	5.0	7.6	34.3	58.1
75	Noakhali	Begumgonj	Banglabazar-Rajgong Road	7.245	1.7	3.6	1.9	23.5	49.7	26.8
76	Laxmipur	Ramgonj	Ramgonj Nagerdighir hat via Harischar Bazar	5.676	2.3	2.6	0.9	39.6	44.9	15.4
77	Laxmipur	Sadar	Bhobanigon GC- Refuje Market-Megna Bazar-Chakbazar-Munshirhat Road	9	3.0	5.0	1.0	33.3	55.6	11.1
78	Laxmipur	Raipur	Raipur-Panpara Road	5.889	2.3	2.7	0.9	39.1	45.0	15.9
79	Laxmipur	Komol Nagar	Lawrancekasher hat-Ander char Road	5	2.1	2.1	0.9	41.0	41.0	18.0
80	Laxmipur	Ramgati	Torabgonj GC - Shantirhat - Hajiganj - Bander hat - Chowdhurirhat - Ramgati Bazar Raod	12	4.3	5.3	2.4	35.8	44.2	20.0
81	Feni	Parashuram	Parashuram-Kalir bazar-Danikunda bazar-Saldhar bazar-Malipathar-Nilaxi-	8.682	1.7	2.9	4.1	19.6	33.4	47.0

			Fulgazi Road.(Parashuram-Part=ch 00-10.75KM).							
82	Feni	Sonagazi	Bakter Munshi-Kuthir hat-Fazilerghat-Dagoanbhuyan Road (Dagoanbhuyan-Fazilerghat-Bakthermunshi) Road (From RHD #242).	10.415	2.4	3.8	4.2	23.0	36.5	40.5
83	Feni	Sonagazi	Motigonj UP-Dasherhat-ChardarbeshUP-Karamotiabazar-Kazir hat Rd	8.815	1.8	2.8	4.2	20.4	31.8	47.8
84	Feni	Dagonbhuiyan	Dagonbhuiyan-Chowdhury Hat Road	4.02	1.2	2.1	0.7	29.9	52.2	17.9
85	Jashore	Monirampur	Monirampur-Nehalpur-Kapalia road	20.063	1.2	11.5	7.4	5.7	57.3	36.9
86	Jashore	Monirampur	Monirampur-Mukterpur road	18.445	0.5	6.3	11.7	2.7	33.9	63.4
87	Jashore	Monirampur	Monirampur GC - Bakra GC via Rajgonj GC Road	8.691	0.5	2.8	5.4	5.8	31.6	62.6
88	Jashore	Chowgacha	Chowgacha (Damodar Battala)-Bidhadharpur Road.	8.76	0.5	6.0	2.4	5.1	67.9	26.9
89	Jashore	Chowgacha	Purapara GC-Moheshpur Pucca road-Bidhadharpur bazar Road.	7.53	0.3	3.6	3.7	3.3	47.8	48.9
90	Jashore	Chowgacha	Narayanpur UP Office - Bondelitol Bazar Road.	4.4	0.3	2.0	2.2	6.8	44.3	48.9
91	Jashore	Sadar	Jessore-Potengali-Kayemkhola GC Road (Jessore-Sadar)	14.38	2.0	7.9	4.5	13.9	54.6	31.5
92	Jashore	Jhikorgacha	Bangdah GC- Kayemkhola GC via Chutipur Bazar, Mohammadpur Bazar.	12.4	0.5	3.7	8.3	3.6	29.8	66.5
93	Kushtia	Kushtia-S	Bittipara Hat R&H-Jamjami G.C via Jhowdia Hat road.	17.05	1.6	3.5	12.0	9.4	20.5	70.1
94	Kushtia	Bheramara	Bheramara-Kuchimora GC-Juniadah GC-Allardarga GC (R&H) Rd.	14.1	0.0	1.0	8.0	0.0	6.7	56.7
95	Kushtia	Daulatpur	Taragunia G C-Bairagirchar-Moricha UP-Allardargha GC Road	13.23	1.3	8.7	3.3	9.4	65.4	25.2
96	Kushtia	Kumarkhali	Kushtia-Rajbari RHD(Lahini) to Katlagari GC Via Jaduboyra, Sandiara Bazar Road	15.6	1.3	5.1	9.2	8.3	32.7	59.0
97	Kushtia	Khoksha	Kushtia Rajbari RHD-Panti GC via Jaduboyra-Shandiara bazar Road (Khoksa Portion)	8.41	0.9	4.7	2.8	10.7	55.9	33.4
98	Kushtia	Khoksha	Khoksa Somaspur-Sengram Kalitola GC pansha roa	10.445	0.9	4.7	4.9	8.6	44.5	46.9
99	Jhenaidah	Kotchandpur	Kotchandpur GC - Chowgacha GC Road (Kotchandpur Part).	4.7	1.0	2.4	1.3	21.3	51.1	27.7
100	Jhenaidah	Moheshpur	Moheshpur-Bagadanga road	12.255	2.4	2.7	7.2	19.6	22.0	58.4

101	Jhenaidah	Kaliganj	Kaligonj UZ H/Q-Kola GC	9.3	1.0	3.5	4.9	10.8	37.1	52.2
102	Jhenaidah	Kaligonj	Baro Bazar GC-Hakimpur GC Road	6.63	1.8	1.5	3.4	26.4	22.6	51.0
103	Jhenaidah	Jhenaidah-S	Naldanga UP HQ-Tetultala bazar Road	6.15	0.8	2.4	3.0	13.0	39.0	48.0
104	Jhenaidah	Moheshpur	Moheshpur H/Q-Hashadha GC (Moheshpur Portion)	5.23	0.4	2.0	2.8	7.6	38.2	54.1
105	Jhenaidah	Moheshpur	Natima UP office (Uzzalpur)-Bhabnagar bazar via ShamKur UP office	5.85	1.4	1.8	2.7	23.9	29.9	46.2
106	Jhenaidah	Moheshpur	Basbaria UP Office-Vasanpota bazar via Sreepur	4.66	0.7	1.3	2.7	15.0	26.8	58.2
107	Jhenaidah	Moheshpur	S.B.K UP office (Khalispur)-Krischandapur bazar via Purandarpur	5.9	0.5	2.5	3.0	7.6	42.4	50.0
108	Jhenaidah	Harinakunda	Harinakunda to HQ to Jhaudia GC (Harikunda portion)	4.4	0.9	1.5	2.1	20.5	33.0	46.6
109	Chuadanga	Sadar	Saraigonj G.C-Hizolgari G.C	13.77	0.8	5.1	7.9	5.8	36.7	57.5
110	Chuadanga	Sadar	Hizolgari G.C-Uthali R&H (Sadar Portion)	7.95	1.3	2.3	4.4	16.4	28.9	54.7
111	Chuadanga	Jibannagar	Uthali R&H-Hizalgari GC.	2.18	0.1	0.7	1.4	4.6	32.1	63.3
112	Chuadanga	Jibannagar	Andulbaria UP-Grishnagar Bazar Road(Jibonnagar Part)	2.9	0.5	0.5	2.0	15.5	17.2	67.2
113	Chuadanga	Jibannagar	Sontospur R&H - Andulbaria GC - Hashada R&H	19.104	1.1	5.8	12.3	5.5	30.1	64.4
114	Chuadanga	Jibannagar	Jibannagar R&H- Changkhali Border Road.	6.865	0.1	1.5	5.3	1.5	21.1	77.4
115	Chuadanga	Jibannagar	Daulatgonj GC-Akundabaria R&H.	12.45	1.3	4.7	6.6	10.0	37.3	52.6
116	Magura	Salikha	Singra-Semakhali road.	11.43	0.4	6.7	4.3	3.5	58.6	37.9
117	Magura	Mohammadpur	Dohail - Nohata Road	11.2	1.8	4.4	5.0	16.1	39.3	44.6
118	Magura	Mohammadpur	Bethulia Bazar (Kalukhandi More) to Babukahli UP via Dumurshia Bazar Rd.	5.02	0.6	1.9	2.6	12.0	36.9	51.2
119	Magura	Magura-S	Berail Polita Gc- Bunagati GC via Nalia Ghat	5.6	0.8	2.8	2.1	13.4	50.0	36.6
120	Magura	Magura-S	Bogia U.P - Ramnagar bazar via Pukuria, Boroï bazar Rd.	7.462	1.3	3.8	2.4	16.8	50.9	32.3
121	Magura	Salikha	Semakhali GC - Hazrahati R&H Road	7.5	0.9	2.8	3.8	12.0	37.3	50.7
122	Magura	Salikha	Hazrahati RHD - Bunagati GC Road.	5.626	0.4	3.0	2.2	7.1	53.3	39.6
123	Meherpur	Gangni	Bamonudi GC- Karomdi GC Road	6.45	0.2	3.8	2.6	2.3	58.1	39.5

124	Meherpur	Sadar	Baradi GC-Gangni HQ Road(Sadar part)	2.9	0.5	1.0	1.5	15.5	34.5	50.0
125	Meherpur	Mujibnagar	Bollovepur RHD -Anandabash GC Road	3.731	0.4	2.2	1.1	10.7	59.0	30.3
126	Narail	Kalia	Kalia Public Library-Boradia College More Road	11.22	1.2	6.3	3.8	10.2	56.1	33.6
127	Narail	Kalia	Kalia Baroipara RHD - Mazirgati GC Road	7.5	2.4	3.2	1.9	32.0	42.7	25.3
128	Narail	Narail-S	Tularampur-Shaikhati Road	9.892	0.6	2.4	7.0	5.6	23.8	70.7
129	Narail	Narail-S	Singasolpur-Chakoi via Rukhali Road	4.742	0.5	1.0	3.3	9.5	21.1	69.4
130	Narail	Narail-S	Sahabad UP (Alukdia)-Malidanga Minabazar Road	2.33	0.4	0.6	1.4	15.0	23.6	61.4
131	Narail	Lohagara	Lohagara-Radhanagar Via Itna	10.07	1.6	7.3	1.2	15.9	72.5	11.6
132	Narail	Lohagara	Naldi UP-Lahuria Rd.	4.745	0.6	0.9	3.3	12.6	17.9	69.4
133	Rajshahi	Godagari	Godagari to Kakonhat (Starting from Sadurmore)	13.85	1.8	4.3	7.8	13.0	31.0	56.0
134	Rajshahi	Godagari	Baliaghata Bazar RHD more to Mundumala GC via Jota Bottola, Hatgobindapur (258m over lapping with RHD)	20.5	2.6	5.9	12.1	12.4	28.8	58.8
135	Rajshahi	Godagari	Railbazar - Amnura road via Mowlanar gate, Dhuly shanko, Ratahary (Godagari part end at Khaira)	19.5	1.7	7.8	10.1	8.7	39.7	51.5
136	Rajshahi	Godagari	Basudebpur Sluice Gate-Dariapur ending at Nawabgonj Border	6.76	0.2	1.8	4.9	2.2	25.9	71.9
137	Rajshahi	Godagari	Pakri UP-Jotgopal	3.37	0.1	0.5	2.8	3.0	14.8	82.2
138	Rajshahi	Godagari	Godagari UP-Nabinagar Bazar Road	4.9	0.6	1.0	3.4	12.2	19.4	68.4
139	Rajshahi	Durgapur	Amgachhi GC-Katakhali R&H via Kuhar Rd.	3	1.2	1.3	0.5	40.0	43.3	16.7
140	Rajshahi	Durgapur	Durgapur-Belghoria.	8.78	2.1	4.1	2.7	23.3	46.1	30.5
141	Rajshahi	Durgapur	Shingahat GC-Amgachi Hat GC	6.25	2.2	2.7	1.4	35.2	43.2	21.6
142	Rajshahi	Charghat	Holidagachi National high way - Rajshahi University via Belghoria.	8.22	1.7	3.9	2.6	20.7	47.4	31.9
143	Rajshahi	Charghat	Charghat (Upazila HQ) - Arani GC (Rustompur) via Paglapara more.	9.86	1.9	5.5	2.5	19.3	55.8	24.9
144	Rajshahi	Puthia	Puthia-Baneswar GC	11.47	3.6	4.5	3.4	31.4	39.2	29.4
145	Rajshahi	Bagha	Bolihar Eidgah (R&H) - Digha GC via Tetulia hat.	7.596	2.0	4.0	1.6	26.3	52.7	21.0

146	Rajshahi	Bagha	Chandipur-Arani Rly. station via Bausa UP Office.	11.898	2.7	6.8	2.4	22.7	56.7	20.6
147	Naogaon	Mohadevpur	Mohadevpur-Matazeehat GCM.	12.4	0.5	3.2	8.8	4.0	25.4	70.6
148	Naogaon	Patnitala	Modhuil GC- Shibpur GC Rd.	8.53	0.5	1.1	7.0	5.9	12.3	81.8
149	Naogaon	Mohadevpur	Chatra -Mohadebpur (Konjobon).	13.41	2.5	3.5	7.4	18.6	26.1	55.3
150	Naogaon	Mohadevpur	Moshibathan GC - Sultanpur Bazar-Patnitola GC (Part Mohadevpur)	7.3	1.5	3.0	2.9	20.5	40.4	39.0
151	C.Nawabganj	Gomostapur	Akkelpur GC - Shibpur GC via Digha Road.	9.02	1.5	3.5	4.1	16.6	38.2	45.1
152	C.Nawabganj	Nachole	Sonaichandi-Rohanpur GC (Nachole Portion)	3.7	0.5	1.5	1.8	12.2	39.2	48.6
153	C.Nawabganj	Nachole	Sonaichandi-Dhansura More	2.758	0.3	1.1	1.4	9.1	39.9	51.1
154	C.Nawabganj	Sadar	Islampur UP Office to Shahajanpur UP office Road.	2.09	0.1	1.2	0.8	4.8	57.4	37.8
155	Natore	Bagatipara	Bagatipara Upazila H/Q-Tebaria GC Road (Bagatipara part)	5.6	1.3	2.9	1.4	23.2	51.8	25.0
156	Natore	Bagatipara	Jamnagor UP HQ-Jhalmolia Bazar viaVhitorbhag (Bagatipara part)	2.565	0.6	1.2	0.8	23.4	44.8	31.8
157	Natore	Bagatipara	Madhabbari Hat-Soilkona UP	3.765	0.5	1.6	1.7	13.3	41.2	45.6
158	Natore	Singra	Khajurtola RHD- Shamaspara GC Road via Dakmondop hat	4.3	1.0	1.0	2.4	22.1	23.3	54.7
159	Natore	Singra	Singra-Baruhash-Tarash (Singra part).	14.95	2.1	1.8	11.1	14.0	12.0	73.9
160	Bogura	Dhunot	Dhunot (Khantonagar)-Amrul U.P. Office Road (Dhunot)	5.2	0.3	1.7	3.2	5.8	32.9	61.3
161	Bogura	Dhunot	Shimabari-Mothurapur-Khatiamari (Ekdhala) Road (Dhunot)	9.18	0.1	3.8	5.3	1.1	41.4	57.5
162	Bogura	Sherpur	Ranirhat-Shimabari (Chandaikona)-Mothurapur Road (From RHD #334)	14.174	0.4	2.6	11.2	2.8	18.3	78.8
163	Bogura	Sherpur	Garidaha UP (Baily Bridge) - Jhanjor Hat Road. via Ramashorpur.	10	0.4	2.6	7.0	4.0	26.0	70.0
164	Bogura	Sherpur	Salfa Bazar(Subli NHW)-Mirjapur U.P Office	5.65	0.0	0.2	4.4	0.0	2.7	77.9
165	Bogura	Shariakandi	Kamalpur U.P office-Goshaibari hat	5.245	0.1	2.2	3.0	1.0	42.5	56.5
166	Bogura	Sherpur	Bhaira Bazar - Bishilpur Road	3.575	0.3	1.6	1.7	7.0	44.8	48.3
167	Joypurhat	Panchbibi	Panchbibi GC - Salaipur RHD Road	10.107	0.2	2.3	7.7	1.5	22.8	75.8
168	Joypurhat	Akkelpur	Gopinathpur UP office(Karaitola)-Raikali UP office .	8	1.6	3.6	2.8	20.0	45.0	35.0

169	Joypurhat	Joypurhat-S	Mongalbari hat Rd(Dogachi Up Office)to Durgadaha bazar road	6.27	1.2	1.8	3.4	18.3	27.9	53.7
170	Joypurhat	Khetlal	Moushumi Bazar (RHD) - Rukindipur GC via Sannyash Ghat (Khatlal portion)	5.57	0.6	1.0	4.0	10.8	17.1	72.2
171	Joypurhat	Kalai	Kalai-Kichok RHD Via Gongadaspur Road	4.255	0.5	0.7	3.2	10.6	15.3	74.1
172	Lalmonirhat	Hatibandha	Hatibandha-Daikhowa Hat	9.963	0.6	4.3	5.2	5.5	42.7	51.8
173	Lalmonirhat	Kaligonj	ZR at Baninagar to DaiKhowa GC.	3.638	0.3	1.0	2.4	6.9	27.5	65.6
174	Lalmonirhat	Kaligonj	ZR at Baninagar-Durakuti GC.	15.471	2.3	7.4	5.9	14.5	47.5	37.9
175	Lalmonirhat	Aditmari	Burirhat GC-Bhelabari GC Road	4.39	0.5	1.3	2.6	10.3	29.6	60.1
176	Kurigram	Rajarhat	Najimkhan GC-Khadabagh R&H Via Rajarhat	7.57	1.1	2.7	3.9	13.9	35.0	51.1
177	Kurigram	Kurigram-S	Pateswari RHD-Jatrapur GC Road.	10.32	0.4	5.7	4.2	3.9	55.2	40.9
178	Kurigram	Rowmari	Dantbhanga-Rowmari Via Baitkamari Bazar Road	13.632	1.0	7.2	5.5	7.3	52.5	40.2
179	Kurigram	Fulbari	Karibari GC-Khochabari Via Bhangamor U.P	8.551	0.4	3.8	4.4	4.7	44.4	50.9
180	Kurigram	Bhurungamari	Bangosonahat-Shahi Bazar GC Road.	3.92	0.2	1.9	1.9	3.8	48.5	47.7
181	Kurigram	Nageswari	Hasnabad UP Office - Newashi GC.	1.39	0.1	0.5	0.9	3.6	32.4	64.0
182	Gaibandha	Gobindaganj	Kamdia GC (UZR)-Birat GC Road.	9.97	1.6	2.5	5.9	16.0	25.1	58.9
183	Gaibandha	Gobindaganj	Bogra-Rangpur City Road to Nakai Hat via Talukkanupur UP road	9.271	1.2	3.6	4.6	12.4	38.3	49.3
184	Gaibandha	Saghata	Bonarpara GC-Katucha hat R&H Rd.	6.421	0.9	2.8	2.8	13.2	42.8	43.9
185	Gaibandha	Saghata	Dakbangla hat-Jumaerbari UP Road.	4.975	1.2	1.4	2.4	23.1	28.1	48.7
186	Gaibandha	Gobindaganj	Shakahar U.P-Fulpukuria Bazar	5.28	0.7	1.1	3.5	12.3	20.8	66.9
187	Gaibandha	Palashbari	Betkapa UP office-Haritala hat via Muraripur Road	3.15	0.3	0.8	2.1	7.9	25.4	66.7
188	Gaibandha	Palashbari	Dholbanga Bazar at Zillbandha-Pabnapur UP office Road	5.49	0.6	2.4	2.5	10.9	42.8	46.3
189	Gaibandha	Palashbari	Dublagari NHW-Dholbanga GC Road via Amlagachi GC	7.288	0.9	3.2	3.2	12.3	43.2	44.4
190	Rangpur	Mithapukur	Lalbag G C (Vimergar) to Bhendabari GC via Runipukur GC & Shukurerhat GC(Mithpukur Part)	19.164	0.7	7.5	11.0	3.7	39.1	57.2
191	Rangpur	Pirganj	Dhaperhat GC-Chatra GC Road	3.95	0.3	1.6	2.1	7.6	40.5	51.9

192	Rangpur	Badarganj	Nagerhat GC-Padagonj hat via Arunnesha ghat	8.72	0.0	0.0	8.7	0.0	0.0	100.0
193	Rangpur	Gangachara	Gangachara UZHQ-Saraibazar via Gajaghanta GC Road	13.2	1.1	7.0	5.2	8.0	53.0	39.0
194	Rangpur	Pirgacha	Chowdhurani GC-Shatibari RHD Road (Pirgacha portion)	5.795	0.8	2.2	2.8	13.8	37.1	49.1
195	Rangpur	Pirganj	Tukuria hat-Tukuria UP office via Dudiya Bari Road	3.3	0.6	1.0	1.7	18.2	30.3	51.5
196	Dinajpur	Dinajpur-S	Pulhat R&H to Fasiladanga GC Road.	6.58	0.4	1.7	4.5	6.1	25.8	68.1
197	Dinajpur	Dinajpur-S	Chandaganj R&H to Ranigonjhat GC Road.	5.3	0.5	2.1	2.7	9.4	39.6	50.9
198	Dinajpur	Dinajpur-S	Fultala-Kamalpur Road.	11.1	1.0	3.3	6.8	9.0	29.7	61.3
199	Dinajpur	Dinajpur-S	Komalpur-Khanpur Road.	3.345	0.3	0.9	2.2	9.0	25.4	65.6
200	Dinajpur	Dinajpur-S	Fasiladanga G.C-Mohonpur RHD Rd.	9.365	0.8	1.7	6.9	8.0	18.2	73.8
201	Dinajpur	Chirirbandar	Beltoli R&H to Binnakuri GC Road	5.88	0.5	1.7	3.8	7.7	28.1	64.3
202	Dinajpur	Chirirbandar	Binnakuri GC to Debiganj R&H Road	9.482	0.6	2.9	6.0	6.3	30.1	63.6
203	Dinajpur	Khanshama	Khansama G.C.-Bhobanigonj Via Joygonj	8.962	0.7	3.7	4.6	7.8	40.7	51.5
204	Dinajpur	Khanshama	Ramkola GC to RHD at Pakerhat Adarsha Gram via Sabuder hat, Pulerhat, Sheltu shah Madrasha.	14.314	1.2	3.6	9.6	8.0	24.8	67.2
205	Dinajpur	Chirirbandar	Daulatpur(Ambari hat R&H) to Kutubdanga GC road	6.37	0.2	1.5	4.8	2.4	22.8	74.9
206	Thakurgaon	Thakurgaon-S	Bhawlar hat GC-Bhelazan RHD Road.	7.45	0.6	3.6	3.3	8.1	47.7	44.3
207	Thakurgaon	Baliadangi	Lahiri G.C-Fakirganj. G C. Road	6.53	0.4	1.9	4.3	6.1	28.3	65.5
208	Thakurgaon	Baliadangi	Barabari UP Office (Dangi)-Noyar hat via Jorkali Madhupur Road	7.5	1.0	3.1	3.4	13.3	41.3	45.3
209	Thakurgaon	Baliadangi	Baliadangi-Dhirgonj G.C .via Badambarihat Road	14.775	1.3	5.2	8.4	8.5	34.9	56.7
210	Panchagarh	Debiganj	Fulbari GC - Panchpir GC	9.13	0.6	3.2	5.4	6.6	34.5	58.9
211	Panchagarh	Debiganj	Debiganj R&H Road (Bat Tree More) - Jharbari GC	17.25	1.2	6.5	9.6	7.0	37.7	55.4
212	Nilphamari	Nilphamari-S	Nilphamari-Saidpur R&H at Textile Mill - Babrijhar GC .	8.095	1.4	3.5	3.2	17.3	43.2	39.5
213	Nilphamari	Nilphamari-S	Nilphamari (LSD Godown) - Ramgonj G.C	7.452	0.6	3.1	3.8	8.1	40.9	51.0
214	Nilphamari	Nilphamari-S	Porarhat GC - Nilphamari- Domar R&H road at Hortokilota bazar via Baruahat -	4.954	0.4	1.8	2.8	8.1	35.3	56.6

			Puler hat - Chawra hat - Tarunibari Rail Station .							
215	Nilphamari	Jaldhaka	Jaldhaka domar RHW choupathi-Tangonmari hat G.C.	17.8	0.6	6.5	10.7	3.4	36.5	60.1
216	Nilphamari	Dimla	ShutibarihatG.C-Kakra Chowpathi R&H Rd.	12.879	1.6	3.5	7.8	12.4	27.2	60.4

F. Agriculture Resources

1. Cropping Pattern and Cropping Intensity in the Project Area

104. Most agricultural land in the project area tends to be intensively used with double or triple cropping pattern being common with rice as the main crop. Jute, maize, wheat, potatoes and various vegetables are also grown depending on season and location.

2. Sources of Drinking Water

105. Access to clean drinking water is a major indicator of social condition and wellbeing. Data from the 2011 census show that less than 5% of the population in the project area have reticulated tap water compared with over 10% for Bangladesh as a whole. More than 91% of the populations in the project area have access to water from tube well sources and only 4% are reliant on other sources.

Table 33: Sources of Drinking Water

Districts	Tap	Tube-well	Other
B Baria	11,690	504,813	21,057
Bogura	35,534	808,148	19,918
Chandpur	30,333	445,330	28,188
Chapai Nawabganj	29,644	314,934	12,668
Chattogram	34,702	1,081,404	81,285
Chuadanga	8,292	262,575	6,043
Cumilla	58,502	937,220	53,262
Coxsazar	9,475	365,613	38,314
Dinajpur	10,227	688,004	15,024
Faridpur	11,710	395,780	11,064
Feni	14,896	248,693	11,872
Gaibanda	6,281	579,934	25,082
Gopalganj	14,467	225,554	8,714
Jenaidah	10,110	401,114	10,076
Jashore	7,691	633,953	11,779
Joypurhat	5,193	229,456	7,345
Kurigram	3,224	490,834	13,048
Kustia	6,908	456,545	12,536
Lalmonirhat	1,814	280,536	7,603
Laxipur	12,908	321,894	29,453
Madaripur	2,470	240,925	8,186
Magura	2,719	198,339	4,434
Meherpur	4,904	155,648	5,422
Naogaon	20,816	587,826	45,633
Narail	1,949	156,756	3,594
Natore	8,750	395,932	18,239
Nilpamari	2,951	405,383	12,572
Noakhali	16,108	525,404	49,296
Panchagarh	2,818	215,601	9,655
Rajbari	1,792	229,369	6,191
Rajshahi	50,994	558,072	21,265
Rangpur	13,490	687,975	15,897
Shariatpur	1,633	235,136	9,766
Thakurgaon	1,298	312,258	6,373
Project Area	768,619	14,576,958	640,854

Population Census, BBS, 2011

106. Sources of drinking water and the level of access to tap water across the 34 administrative districts is similar. In Khulna only 0.41% can access tap water while only 23% in Chattogram. Tube-well water provides most of the water requirement at 98% in Thakurgaon and 92% in Chattogram relying on this source. The share of each source of drinking water in Thakurgaon and Chattogram (out of thirty-four) districts is depicted in succeeding Figures.

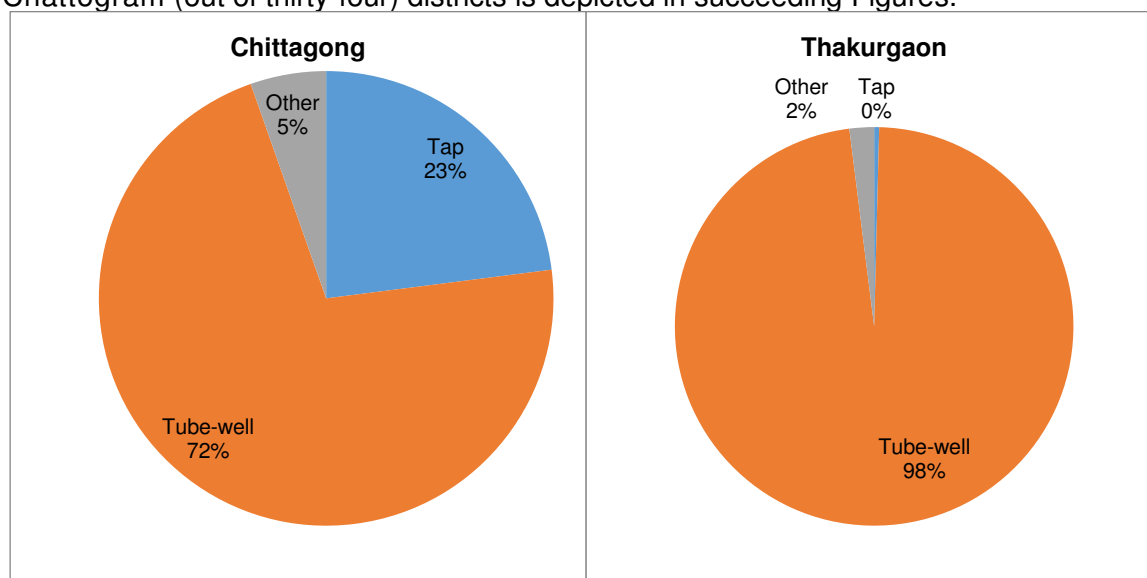


Figure 26: Sources of Drinking Water in Khulna and Rajshahi Divisions Sanitation Facilities

107. According to the population census 2011, 24% of the households in the project area have access to water-sealed sanitation facilities while 36% have non-water-sealed sanitation facilities. Unfortunately, 30% of households have non-sanitary toilet facilities and more than 10% households report that they have no sanitation facility at all. District wise, Naogaon has 18% and 19% households have access to water sealed and non-water sealed sanitation facilities respectively, only 32% have non-sanitary toilet and 31% have no access to sanitation facilities at all.

Table 34: Access to Sanitation Facilities

Districts	Sanitation			
	Water Sealed	Non-water Sealed	Non-sanitary	None
B Baria	114,184	262,922	142,989	17,465
Bogura	290,053	274,243	211,214	88,090
Chandpur	67,522	282,233	141,168	12,928
Chapai Nawabganj	57,687	64,911	189,128	45,520
Chattogram	477,308	688,084	307,480	36,845
Chuadanga	52,457	72,992	132,475	18,986
Cumilla	229,875	574,918	212,078	32,113
Coxsbazar	58,960	155,595	150,791	48,056
Dinajpur	230,897	111,023	204,810	166,525
Faridpur	136,119	198,188	73,466	10,781
Feni	23,642	181,534	65,416	4,869
Gaibanda	65,195	121,046	266,871	158,185
Gopalganj	109,756	102,697	30,590	5,692
Jenaidah	100,963	140,497	157,010	22,830
Jashore	187,077	207,250	229,814	29,282

Districts	Sanitation			
	Water Sealed	Non-water Sealed	Non-sanitary	None
Joypurhat	74,591	49,752	68,980	48,671
Kurigram	91,114	200,466	159,082	56,444
Kustia	123,134	158,719	172,699	21,437
Lalmonirhat	84,228	88,369	89,566	27,790
Laxmipur	61,576	209,040	78,947	14,692
Madaripur	31,605	144,998	71,699	3,279
Magura	87,070	71,905	39,857	6,660
Meherpur	33,569	42,198	77,095	13,112
Naogaon	117,635	122,904	212,611	201,125
Narail	48,451	66,832	42,357	4,659
Natore	113,618	180,684	104,085	24,534
Nilpamari	62,371	76,427	188,724	93,384
Noakhali	119,153	300,380	138,587	32,687
Panchagarh	85,828	62,448	47,626	32,172
Rajbari	93,226	92,248	43,884	7,994
Rajshahi	152,884	180,553	238,898	57,996
Rangpur	125,458	178,745	260,069	153,090
Shariatpur	70,773	131,317	38,561	5,884
Thakurgaon	38,190	50,533	144,860	86,346
Project Area	3,816,169	5,846,651	4,733,487	1,590,123

Source: Population Census, BBS, 2011

3. Access to electricity

108. In the project area, about 52% households have access to electricity in 2011 compared with the national electrification level at 53%. However, there is significant variation in the electrification level among the 34 project districts varying from 20.09% in Lalmonirhat to 79.06% in Chattogram.

Table 35: Access to Electricity

Districts	House Hold with Electric Connections			
	HH with electricity	HH without electricity	% of HH with electricity	% of HH without electricity
B Baria	383,448	154,112	71.33%	28.67%
Bogura	454,086	409,514	52.58%	47.42%
Chandpur	280,040	223,811	55.58%	44.42%
Chapai Nawabganj	173,672	183,574	48.61%	51.39%
Chattogram	1,193,563	316,154	79.06%	20.94%
Chuadanga	167,836	109,074	60.61%	39.39%
Cumilla	785,728	263,256	74.90%	25.10%
Coxsbazar	132,581	280,821	32.07%	67.93%
Dinajpur	280,944	432,311	39.39%	60.61%
Faridpur	203,903	214,651	48.72%	51.28%
Feni	202,236	73,225	73.42%	26.58%
Gaibanda	179,977	431,320	29.44%	70.56%
Gopalganj	122,081	126,654	49.08%	50.92%
Jenaidah	246,779	174,521	58.58%	41.42%
Jashore	399,144	254,279	61.09%	38.91%
Joypurhat	124,861	117,133	51.60%	48.40%
Kurigram	105,552	401,554	20.81%	79.19%
Kustia	305,309	170,680	64.14%	35.86%
Lalmonirhat	58,240	231,713	20.09%	79.91%
Laxmipur	159,416	204,839	43.76%	56.24%
Madaripur	149,063	102,518	59.25%	40.75%
Magura	83,852	121,640	40.81%	59.19%
Meherpur	101,606	64,368	61.22%	38.78%
Naogaon	257,871	396,404	39.41%	60.59%
Narail	74,210	88,089	45.72%	54.28%
Natore	206,523	216,398	48.83%	51.17%
Nilpamari	145,009	275,897	34.45%	65.55%

Districts	House Hold with Electric Connections			
	HH with electricity	HH without electricity	% of HH with electricity	% of HH without electricity
Noakhali	301,729	289,079	51.07%	48.93%
Panchaghar	61,490	166,584	26.96%	73.04%
Rajbari	108,620	128,732	45.76%	54.24%
Rajshahi	391,365	238,966	62.09%	37.91%
Rangpur	273,361	444,001	38.11%	61.89%
Shariatpur	106,450	140,085	43.18%	56.82%
Thakurgaon	110,999	208,930	34.69%	65.31%
Project	8,331,544	7,654,887	52.12%	47.88%

Source: Population Census, BBS, 2011

4. Cultural and Common Property Resources

109. Cultural property means those have a regional and or national cultural heritage significance, e.g., ancient mosque, historic buildings, works of art, archaeological sites, libraries and museums while common property resources refers to properties usually used by the local communities, e.g., educational institutes, religious institutes, eidgah, crematory etc. These properties require to be protected as they contribute to local culture. None of these properties will be affected by the proposed troad upgrading.

V. IMPACT ASSESSMENT AND MITIGATION MEASURES

110. Road improvement projects are likely to bring several changes in the local environment both beneficial and adverse. This section of IEE identifies nature, extent and magnitude of all such likely changes vis-a-vis project activities for all stage of project cycle i.e. pre-construction, construction and operation.

111. This Chapter presents the environmental assessment process and planning undertaken by LGED in addressing the environmental impacts and risk associated with the upgrading of rural roads under the RCIP. This chapter starts with the identification and screening of potential impacts. The identification of impacts starts with the enumeration of the general project components e.g. site mobilization, establishment of camps, road construction, and road operation in consultation with the district engineers and the technical consultants of the LGED. Corresponding interaction of these general components with specific environmental aspects e.g. physical, biological, and human were identified through a series of discussions with the community stakeholders, Union Parishads, and Departments of Environment and Forest.

112. The civil work components that are anticipated to have substantial interaction with the environment are as follows:

- (i) Preconstruction Phase:
 - a. Road alignment and design – involves the screening and selection roads to avoid environment sensitive areas, and survey
 - b. finalization of road alignment including minor geometric realignment particularly on intersections and sharp curves
 - c. Utility shifting – removal and transfer from the carriage way of electric, telephone, and water supply pipelines, gas pipelinedrainage pipes, gas pipelines, and hand pumps.
 - d. Construction mobilization - land clearing, installation of electricity and other utility connections, perimeter fencing, establishment of storage areas, waste disposal, and installation of production equipment (cold mix, concrete batching, rock crusher, casting) in the labor and camp sites.
 - e. Tree cutting and clearing – tree marking, cutting, and grubbing
- ii) Construction Phase:
 - a. Road construction – includes preparation for earthworks to restore design geometric shape; earth filling; sub-grade, earthwork in box cutting on road crest; aggregate sand sub-base; brick aggregates for base course; earthen shoulder construction in layers and converted to hard shoulder; bitumen surfacing;
 - b. Quarries and borrow area site management
 - c. Construction plants operation for WMM mix and cement batching plants
 - d. Site-Restoration involves the clean-up and restoration of construction zones to near its original condition prior to contractor demobilization to include: river beds used for sand mining; camps; hot mix plant, crushers, batching plant sites; and borrow areas rehabilitated.
- iii) Post-Construction Phase:
 - a. Road maintenance
 - b. Vegetation control – involves periodic mechanical mowing, trimming, removal of brush, and removal of trees when necessary to enhance aesthetics and to prevent potential safety hazards (e.g. reduced visibility, obstruction of signs, and debris in the roadway).

A. Identification and Assessment of Environmental Impacts

113. The identification of potential effect requires the definition of the environment into its physical, biological, and human components that are at risk of being impacted in the upgrading of 216 rural roads in 34 project districts. Like the classical Leopold matrix, it involves an integration grid between the valued environmental components and project activities. The valued environmental components for this project were drawn from the environmental baseline and are as follows:

- a. Physical environment – air quality and greenhouse gas emissions, land and soil, surface water quality and quantity, and groundwater quality and quantity,
- b. Biological environment – terrestrial vegetation, mammals, avifauna, and fish species
- c. Human environment – private land and buildings, public infrastructures, sound environment, aesthetic and visual, and community and occupational health and safety.

114. The assessment of potential environmental impacts requires the definition of the effects associated with the rural roads upgrading in terms of intensity, duration, and scope as follows:

- a. **Intensity of the effect:** The intensity of the effect refers to the level of disruption to the component. Three levels have been defined:
 - (i) Low: Little change in the characteristics of the component. Difficult to quantify;
 - (ii) Average: Change in certain characteristics of the component. The change may be quantifiable;
 - (iii) High: Change in all or in the main characteristics of the component. The change is quantifiable
- b. **Duration of the effect:** Duration means the time dimension of the effect. The terms permanent, temporary and short are used to describe the period (time):
 - (i) Short-lived: the effect disappears promptly;
 - (ii) Temporary: the effect is felt during one project activity or, at most, throughout implementation of the project;
 - (iii) Permanent: the effect has repercussions for the life of the infrastructure.
- c. **Scope of the effect:** The scope describes the spatial dimension of the effect caused by an action in the environment. It refers to the distance or area covered by the disruption. The terms regional, local and limited are used to describe the scope:
 - (i) Limited: the scope is limited when the action affects only one environmental element located near the project;
 - (ii) Local: the scope is local when the action affects the study area;
 - (iii) Regional: the scope is regional when the action affects areas beyond the study area
- d. **Assessment of the potential effect.** These three parameters are incorporated into a multicriteria matrix, making it possible to place the potential effect into one of three categories:
 - (i) Major (MAJ): signifies an effect that is permanent and that affects the integrity, diversity and sustainability of the element. Such an effect substantially or irretrievably alters the quality of the environment.
 - (ii) Medium (MED): signifies a perceptible, temporary and/or low return effect that has little impact on the environmental component and is not irreversible. Such an effect is short-lived and/or limited in scope.
 - (iii) Minor (MIN): signifies that the effect is non-existent or virtually non-existent, that it does not affect the environmental component in any observable or quantifiable way and that it is related to a randomly occurring natural effect. As a rule, this would be a short-lived effect, limited in scope.

Table 36: Multi-Criteria Analysis to Determine the Potential Environmental Impacts

Intensity	Scope Duration	Short-lived	Temporary	Permanent
Low	Limited	MIN	MIN	MED
	Local	MIN	MIN	MED
	Regional	MIN	MED	MAJ
Average	Limited	MIN	MED	MED
	Local	MED	MED	MAJ
	Regional	MED	MAJ	MAJ
High	Limited	MED	MAJ	MAJ
	Local	MED	MAJ	MAJ
	Regional	MAJ	MAJ	MAJ

115. The relationship between these project phases and its components, and the environment were established to identify anticipated environmental impact is provided in the succeeding Figure.

Table 37: Grid Displaying the Interaction between Environmental Components and Bangladesh RCIP Roads Upgrading

Environmental Component	Pre-Construction					Construction						Operation	
	Road Alignment and	Construction and Camp Site Location	Utility shifting	Construction	Tree Cutting/Land	Drainage works	Road Construction	Quarries and borrow	Construction plants	Maintenance of bypassed	Site Restoration	Road Maintenance	Vegetation Control
Physical Environment													
Air Quality and GHG				x		x	x	x	x	x	x	x	
Land and Soil		x		x		x	x	x	x		x		
Surface Water Quality and Quantity		x		x		x	x	x	x				
Groundwater Quality and Quantity		x		x				x					
biological environment													
Terrestrial Vegetation	x	x			x		x		x				
Mammals	x	x					x		x				
human environment													
Private Land and Buildings	x	x					x		x				
Public Infrastructures			x				x					x	
Sound Environment				x			x	x	x				
Aesthetic and Visual			x										

Community and OH Safety	x						x	x		x		x	x
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116. Mitigation measures were identified to reduce the adverse impacts including residual effects. The environmental assessment as shown in the succeeding Table revealed the following:

- a. During the pre-construction phase, potential adverse environmental impacts are related to road upgrading design to retain the original geometric shape, upgrading of the shoulders from soft to paved surface, repair and strengthening of embankment slope and toe against erosion, and enhance road safety during project operation phase. Adverse environmental impacts are limited to the potential loss of trees that have encroached on the road embankment and increase risks of road crashes from inadequate road design and localized flooding from inadequate drainage design.
- b. During construction, major potential negative impacts from the project includes the loss of productive soil from new borrow areas. Medium potential impacts from increase dust emissions, generation of noise, risks of accident from improper management of borrow areas, and inadequate clean-up operation, restoration and rehabilitation prior to decommissioning.
- c. Only minor environmental impacts were identified during project operation

Table 38: Analysis of Environmental Impacts-RCIP Roads

S. No.	Project Phase	Project Component	Environmental Components	Description of the Environmental Effects	Intensity	Duration	Scope	Assessment of Potential Effect	Required Mitigation Measures	Significance of Residual Effect
1.	Pre-Construction	Road Alignment and Design	Terrestrial Vegetation	Tree cutting	Low	Permanent	Local	Medium	<p>The road land width requiring clearing shall be clearly demarcated on ground.</p> <p>Avoid or minimize the number of trees to be cleared.</p> <p>Avoid the requirement of forestland for road construction. In case unavoidable, minimise it to extent possible by exploring alternative options. In case, requirement of forestland is unavoidable, determine the legal status of forestland and initiate actions to seek permits for diversion of forestland for non-forest uses (road construction).</p> <p>Forest clearance is to be obtained in accordance with the provisions of Department of Forest (DOF) under the Ministry of Forest and Environment (MoFE) and all conditions related with the clearance must be implemented.</p> <p>In case alignment has trees, which are known to be nesting/breeding places for migratory birds, contact the Department of National Park and Wildlife Conservation for seeking permits and details about non-breeding seasons. In any case, no tree shall be cut in such stretches and construction works are to be strictly scheduled for non-breeding/nesting season</p>	Non-significant

S. No.	Project Phase	Project Component	Environmental Components	Description of the Environmental Effects	Intensity	Duration	Scope	Assessment of Potential Effect	Required Mitigation Measures	Significance of Residual Effect
									and all permit conditions are to be complied. Roadside trees to be removed with prior approval of competent authority. Compensatory plantation at 1:3 based on Forest Department guidelines	
3.	Pre-Construction	Road Alignment and design	Land and Buildings	Localized flooding from inadequate drainage	Average	Permanent	Limited	Medium	Construction of concrete pavement in community areas like bazars with covered side drains considering alignment level and natural drainage channels	Non-significant
4.	Pre-Construction	Road alignment and design	Community Safety	Road crashes	High	Permanent	Local	Major	Make provisions of crash barriers at accident prone areas as identified in the road safety studies. Provision of rumble strips in community areas to regulate speed. Provision of retro-reflective warning sign boards nears school, hospital, religious places and forests areas Provision of proper side-walks /pedestrian zone along the road near habitat areas, school, hospital, religious places and forests Compliance with norms specified in LGED codes for rural roads for curvature and grading Provision of safety kerb at all bridges	significant
5.	Pre-Construction	Construction and Camp Site Location	Land and Building	Disturbance of inhabited areas	Low	Short-lived	Limited	Minimum	The Contractor shall comply with the Factories Act (1965) and amendment thereof The construction campsites shall be located away from any local human	Non-significant

S. No.	Project Phase	Project Component	Environmental Components	Description of the Environmental Effects	Intensity	Duration	Scope	Assessment of Potential Effect	Required Mitigation Measures	Significance of Residual Effect
									<p>settlement areas and preferably located on lands, which are barren/waste lands.</p> <p>The camps shall be located, at a minimum, 5 km from forest areas to deter trespassing of construction labour.</p> <p>The campsites shall be provided with adequate water supply, sanitation and all requisite infrastructure facilities. This would minimize dependence on outside resources, presently being used by local populace and minimize undesirable social friction thereof.</p> <p>The camps shall have septic tank/soak pit of adequate capacity so that it can function properly for the entire duration of its use.</p> <p>After completion of construction works, location of campsites shall be restored to its previous state by undertaking cleanup operations.</p> <p>The location, layout and basic facility provision of each labor camp will be submitted to PIU and and DES prior to their construction. The construction shall commence only after approval of DES and PIU.</p> <p>Preparation of solid waste management plan that includes collection, storage, and disposal subject to the review and approval of the DES.</p>	

S. No.	Project Phase	Project Component	Environmental Components	Description of the Environmental Effects	Intensity	Duration	Scope	Assessment of Potential Effect	Required Mitigation Measures	Significance of Residual Effect
6.	Pre-Construction	Utility shifting	Public infrastructures	Disruption of utility services to local community	Low	Short-lived	Limited	Minor	<p>All telephone and electrical poles/wires, gas pipeline and underground cables should be shifted before start of construction</p> <p>Necessary permission and payments should be made to relevant utility service agencies to allow quick shifting and restoration of utility services. Local people must be informed through appropriate means about the time of shifting of utility structures and potential disruption of services if any.</p>	Non-significant
8.	Pre-Construction	Utility shifting	Aesthetic and visual	Diggings, shifting and reestablishment of poles will impair the view of community areas	Low	Short-lived	Limited	Minor	<p>Immediately complete the utility shifting to reduce the duration of impact and restore the disturbed areas.</p> <p>Provide visual barriers, when necessary, on active construction zones.</p> <p>Consultation with affected people prior to the start of utility shifting presenting construction timelines and guidelines.</p> <p>Proper disposal of demolition debris.</p>	Non-significant
9.	Construction	Site Mobilization	Air quality	Construction of temporary facilities, hauling of equipment and materials may result to short term air quality deterioration	Low	Short-lived	Local	Minor	<p>Transport, loading and unloading of loose and fine materials through covered vehicles.</p> <p>Paved approach roads.</p> <p>Storage areas to be located downwind of the habitation area. Water spraying on earthworks, unpaved haulage roads and other dust prone areas.</p> <p>Provision of PPEs to workers.</p>	Non-significant
10.	Construction	Site Mobilization	Surface water	Accidental spills	Low	Temporary	Limited	Minor	No vehicles or equipment should be parked or refueled near water-bodies, so as to avoid contamination from fuel and lubricants.	Non-significant

S. No.	Project Phase	Project Component	Environmental Components	Description of the Environmental Effects	Intensity	Duration	Scope	Assessment of Potential Effect	Required Mitigation Measures	Significance of Residual Effect
									<p>Oil and grease traps and fueling platforms to be provided at refueling locations.</p> <p>All chemicals and oil shall be stored away from water and concreted platform with catchment pit for spills collection.</p> <p>All equipment operators, drivers, and warehouse personnel will be trained in immediate response for spill containment and eventual clean-up.</p>	
11.	Construction	Site Mobilization	Groundwater quality	Accidental spills when transporting construction materials particularly fuels and lubricants could affect groundwater quality	Low	Temporary	Limited	Minor	<p>Construction vehicles and equipment will be maintained and refueled in such a fashion that oil/diesel spillage does not contaminate the soil.</p> <p>To avoid soil contamination Oil-Interceptors shall be provided at wash down and refueling areas.</p> <p>Waste oil and oil soaked cotton/ cloth shall be stored in containers labeled 'Waste Oil' and 'Hazardous' sold off to authorized vendors</p>	Non-significant
12.	Construction	Site Mobilization	Sound environment	Mobilization of heavy equipment and machineries will increase noise level	Low	Temporary	Limited	Minor	<p>Construction equipment and= machinery to be fitted with silencers and maintained properly. Only IS approved equipment shall be used for construction activities.</p> <p>Timing of noisy activities shall be done during night time and weekends near schools and selected suitable times near temples when there are no visitors,</p>	Non-significant

S. No.	Project Phase	Project Component	Environmental Component	Description of the Environmental Effects	Intensity	Duration	Scope	Assessment of Potential Effect	Required Mitigation Measures	Significance of Residual Effect
									<p>concurrent noisy operations may be separated to reduce the total noise generated, and if possible re-route traffic during construction to avoid the accumulation of noise beyond standards. Else provision of temporary noise barrier at sensitive locations or near sources.</p> <p>Time regulation near residential, built up and forest areas to daylight hours. Honking restrictions near sensitive areas</p>	
13.	Construction	Tree cutting and clearing	Terrestrial Vegetation	Loss of trees and vegetation	High	Permanent	Limited	Major	<p>Avoid or minimize the number of trees to be cleared through minor geometric realignment or eccentric widening.</p> <p>Roadside trees to be removed with prior approval of competent authority.</p>	Non-significant
14.	Construction	Tree cutting and clearing	Avifauna	Disturbance of potential avifaunal habitat	Low	Short-lived	Limited	Minor	Avoid cutting of trees during nesting time for birds	Non-significant
15.	Construction	Drainage work	Land and soil	Compaction of soil and impact on quarry haul roads due to movement or vehicles	Low	Temporary	Limited	Minor	<p>During land clearing operations, topsoil shall be collected, preserved, and reused as a base for turfing of embankment slopes or development of barren areas along roadside.</p> <p>Equipment to be stationed in the designated ROW to avoid compaction.</p> <p>Approach roads/ haulage roads shall be designed along the barren and hard soil area to reduce the compaction.</p>	Non-significant
16.	Construction	Drainage work	Surface water quality	Disturbance of waterway bed	Low	Temporary	Limited	Minor	Provision of Silt fencing shall be made at water bodies.	Non-significant

S. No.	Project Phase	Project Component	Environmental Components	Description of the Environmental Effects	Intensity	Duration	Scope	Assessment of Potential Effect	Required Mitigation Measures	Significance of Residual Effect
				to cause increase suspended solids					<p>Silt/sediment should be collected and stockpiled for possible reuse as surfacing of slopes where they have to be revegetated.</p> <p>Earthworks and stone works to be prevented from impeding natural flow of rivers, streams and water canals or existing drainage system.</p>	
17.	Construction	Drainage work	Public Infrastructure	The works may damage the road used by local and regional population	Low	Temporary	Local	Medium	<p>Temporary access and diversion, with proper drainage facilities shall be planned by the contractor and approved by the PIU.</p> <p>Access to the schools, temples and other public places must be maintained when construction takes place near them.</p> <p>The traffic control plans shall contain details of diversions; traffic safety arrangements during construction; safety measures for Night time traffic and precautions for transportation of hazardous materials.</p> <p>The Contractor will ensure that the diversion/detour is always maintained in running condition, particularly during the monsoon to avoid disruption to traffic flow.</p> <p>On stretches where it is not possible to pass the traffic on the part width of existing carriageway, temporary paved diversions will be constructed.</p>	Non-significant

S. No.	Project Phase	Project Component	Environmental Components	Description of the Environmental Effects	Intensity	Duration	Scope	Assessment of Potential Effect	Required Mitigation Measures	Significance of Residual Effect
									Restriction of construction activity to only one side of the existing road. The contractor shall inform local community of changes to traffic routes, and pedestrian access arrangements with assistance from PIU.	
18.	Construction	Road Construction	Air quality and GHG	Fugitive dust emission and fumes from construction vehicles	High	Short-lived	Local	Medium	<p>Transport, loading and unloading of loose and fine materials through covered vehicles.</p> <p>Paved approach roads. Storage areas to be located downwind of the habitation area. Water spraying on earthworks, unpaved haulage roads and other dust prone areas such as unpaved roads</p> <p>Provision of PPEs to workers. Regular maintenance of machinery and equipment.</p>	Non-significant
19.	Construction	Road Construction	Land and Soil	Slope failure and Soil erosion due to construction activities, earthwork, and cut and fill, stockpiles etc.	Low	Temporary	Limited	Minor	<p>Bio-turfing of embankments to protect slopes. Slope protection by palisade, paliwall, and toe protection, stone pitching, masonry retaining walls, planting of grass and trees.</p> <p>The side slopes of all cut and fill areas will be graded and covered with stone pitching, grass and shrub as per design specifications. Care should be taken that the slope gradient shall not be greater than 2:1.</p>	Non-significant

S. No.	Project Phase	Project Component	Environmental Components	Description of the Environmental Effects	Intensity	Duration	Scope	Assessment of Potential Effect	Required Mitigation Measures	Significance of Residual Effect
									The earth stockpiles to be provided with gentle slopes to prevent soil erosion.	
20.	Construction	Road Construction	Surface water quality and quantity	Sourcing of water during construction could compete with the local demand	Low	Temporary	Limited	Minor	<p>Provisions shall be made to connect road side drains with exit to nearby ponds.</p> <p>Existing drainage system to be maintained and further enhanced. Embankment slopes to be modified suitably to restrict the soil debris entering water bodies.</p> <p>Provision of Silt fencing shall be made at water bodies.</p> <p>Silt/sediment should be collected and stockpiled for possible reuse as surfacing of slopes where they have to be revegetated.</p> <p>Earthworks and stone works to be prevented from impeding natural flow of rivers, streams and water canals or existing drainage system.</p> <p>No vehicles or equipment should be parked or refueled near water-bodies, to avoid contamination from fuel and lubricants.</p> <p>Oil and grease traps and fueling platforms to be provided at refueling locations.</p> <p>All chemicals and oil shall be stored away from water and concrete platform with catchment pit for spills collection.</p>	Non-significant

S. No.	Project Phase	Project Component	Environmental Component	Description of the Environmental Effects	Intensity	Duration	Scope	Assessment of Potential Effect	Required Mitigation Measures	Significance of Residual Effect
									<p>All equipment operators, drivers, and warehouse personnel will be trained in immediate response for spill containment and eventual clean-up.</p> <p>Readily available, simple to understand and preferably written in the local language emergency response procedure, including reporting, will be provided by the contractors</p> <p>Arrangements shall be made by contractor that the water availability and supply to nearby communities remain unaffected.</p>	
21.	Construction	Road Construction	Terrestrial Vegetation	Loss of vegetation	Low	Temporary	Limited	Minor	<p>Minimize tree cutting to the extent possible.</p> <p>Plantation of trees on both sides of the road.</p> <p>Additional plantation near river banks to check erosion as part of compensatory plantation.</p>	Non-significant
22.	Construction	Road Construction	Mammals	Crashes with Domesticated animals	Low	Local	Temporary	Minor	Installation of warning signs on known active mammal crossings for equipment operator to reduce speed.	Nonsignificant
23.	Construction	Road Construction	Private land and Building	Damage to private lands and buildings from vibration due to movement of heavy equipment	Low	Short-lived	Limited	Minor	<p>Route heavily loaded trucks away from residential areas.</p> <p>Select areas with the fewest homes in routing haul trucks.</p> <p>Operate earthmoving equipment as far away from vibration sensitive sites</p> <p>Phase demolition of existing pavement and structures earth moving, and ground impacting activities not to occur simultaneously.</p>	Nonsignificant

S. No.	Project Phase	Project Component	Environmental Components	Description of the Environmental Effects	Intensity	Duration	Scope	Assessment of Potential Effect	Required Mitigation Measures	Significance of Residual Effect
									Avoid nighttime activities. Avoid vibratory rollers and packers near sensitive areas	
24.	Construction	Road Construction	Public Infrastructures	Soil compaction producing vibration can damage buildings and pipes	Low	Short-lived	Limited	Minor	<p>Route heavily loaded trucks away from residential streets.</p> <p>Select streets with the fewest homes in routing haul trucks.</p> <p>Operate earthmoving equipment as far away from vibration sensitive sites</p> <p>Phase demolition of existing pavement and structures earth moving, and ground impacting activities not to occur simultaneously.</p> <p>Avoid nighttime activities.</p> <p>Avoid vibratory rollers and packers near sensitive areas</p>	Nonsignificant
25.	Construction	Road Construction	Sound environment	Noise from construction vehicle, equipment and machinery can elevate ambient noise	High	Short-lived	Local	Medium	<p>All equipment to be timely serviced and properly maintained.</p> <p>Traffic bottlenecks to be removed.</p> <p>Construction equipment and machinery to be fitted with silencers and maintained properly.</p> <p>Only approved equipment shall be used for construction activities.</p> <p>Timing of noisy construction activities shall be done during night time and weekends near schools and selected suitable times near temples when there are no visitors, concurrent noisy</p>	Nonsignificant

S. No.	Project Phase	Project Component	Environmental Components	Description of the Environmental Effects	Intensity	Duration	Scope	Assessment of Potential Effect	Required Mitigation Measures	Significance of Residual Effect
									<p>operations may be separated to reduce the total noise generated, and if possible re-route traffic during construction to avoid the accumulation of noise beyond standards. Else provision of temporary noise barrier at sensitive locations or near sources.</p> <p>Time regulation near residential, built up and forest areas construction shall be restricted to daylight hours.</p> <p>Honking restrictions near sensitive areas</p> <p>PPEs to workers</p>	
27.	Construction	Road Construction	Community and occupational health and safety	Increase human mortality and injuries	Average	Temporary	Local	Medium	<p>The location, layout and basic facility provision of each labor camp will be submitted to DES and PIU prior to construction. The construction shall commence only after approval of DES and PIU. The contractor will maintain necessary living accommodation and ancillary facilities in functional and hygienic manner as approved by the PIU.</p> <p>Adequate water and sanitary latrines with septic tanks attached to soak pits shall be provided.</p> <p>Preventive medical care to be provided to workers including a First-Aid kit that must be available in the camp.</p> <p>Waste disposal facilities such as dust bins must be provided in the camps and regular disposal of waste must be carried out.</p>	Nonsignificant

S. No.	Project Phase	Project Component	Environmental Components	Description of the Environmental Effects	Intensity	Duration	Scope	Assessment of Potential Effect	Required Mitigation Measures	Significance of Residual Effect
									<p>The Contractor will take all precautions to protect the workers from insect and pest to reduce the risk to health.</p> <p>No alcoholic liquor or prohibited drugs will be imported to, sell, give, and barter to the workers of host community.</p> <p>Awareness raising to immigrant workers/local community on communicable and sexually transmitted diseases.</p> <p>Contractors to adopt and maintain safe working practices.</p> <p>Usage of fluorescent and retroreflector signage, in local language at the construction sites</p> <p>Training to workers on safety procedures and precautions.</p> <p>Mandatory appointment of safety officer.</p> <p>All regulations regarding safe excavations, trenches and safe means of entry and egress shall be complied with.</p> <p>Provision of a readily available first aid unit including an adequate supply of dressing materials.</p>	

S. No.	Project Phase	Project Component	Environmental Components	Description of the Environmental Effects	Intensity	Duration	Scope	Assessment of Potential Effect	Required Mitigation Measures	Significance of Residual Effect
									<p>The contractor will not employ any person below the age of 16 years for any work. Use of hazardous material should be minimized and/or restricted. Emergency plan (to be approved by engineer) shall be prepared to respond to any accidents or emergencies.</p> <p>Temporary access and diversion, with proper drainage facilities.</p> <p>Access to the schools, temples and other public places must be maintained when construction takes place near them.</p> <p>Fencing wherever cattle movement is expected.</p> <p>Restrict access to construction sites to authorized personnel.</p> <p>Physical separation must be provided for movement of vehicular and human traffic.</p> <p>Adequate signage must be provided for safe traffic movement.</p>	
28.	Construction	Quarries and borrow sites	Air quality and GHG	Deterioration of air quality along haul road due to increase in dust	Low	Short-lived	Limited	Minor	<p>Transport of materials in covered trucks.</p> <p>Ensure adequate water sprinkling of storage and rock crushing operation.</p>	Nonsignificant
29.	Construction	Quarries and borrow sites	Land and soil	Loss of productive	Average	Permanent	Limited	Major	Non-productive, barren lands, upland shall be used for borrowing earth with the necessary permissions/consents.	

S. No.	Project Phase	Project Component	Environmental Components	Description of the Environmental Effects	Intensity	Duration	Scope	Assessment of Potential Effect	Required Mitigation Measures	Significance of Residual Effect
				lands and topsoil					<p>Topsoil to be stockpiled and protected for use at the rehabilitation stage.</p> <p>Borrow areas not to be dug continuously.</p> <p>Aggregates will be sourced from existing licensed quarries.</p>	
30.	Construction	Quarries and borrow sites	Surface water quality	Deterioration of receiving water quality from surface runoff	Low	Temporary	Limited	Minor	Installation of bunds around exposed area Collection of surface runoff in sedimentation pond prior to disposal.	Nonsignificant
31.	Construction	Quarries and borrow sites	Sound Environment	Increase noise level in quarries from blasting, rock crushing, and hauling	Average	Short-lived	Limited	Minor	Comply with the location separation distance from nearest inhabited area Use materials storage piles to attenuate noise	Nonsignificant
32.	Construction	Quarries and borrow sites	Community and occupational health and safety	Increase risk of accident from open borrow areas	Low	Permanent	Limited	Medium	<p>Depths and slopes of borrow pits to be comply with LGED guidelines.</p> <p>To the extent borrow areas shall be sited away from habituated areas.</p> <p>Borrow areas shall be leveled with salvaged material or other filling materials which do not pose contamination of soil. Else, it shall be converted into fishpond in consultation with land owner/community. Rehabilitation of the borrow areas as per Guidelines for re-development of Borrow Areas.</p>	Non-significant

S. No.	Project Phase	Project Component	Environmental Components	Description of the Environmental Effects	Intensity	Duration	Scope	Assessment of Potential Effect	Required Mitigation Measures	Significance of Residual Effect
33.	Construction	Construction Plant operation	Air Quality and GHG	Air quality deterioration from plant combustion and fugitive emissions	Low	Short-lived	Limited	Minor	<p>Batching, WMM mixing plants and crushers preferably downwind direction from the nearest settlement.</p> <p>Only crushers licensed by the GoB shall be used DG sets with stacks of adequate height and use of low Sulphur diesel as fuel.</p>	Non-significant
34.	Construction	Construction Plant and Camp Site Operation	Surface water quality	Deterioration of receiving water quality from batching and cold mix plants effluents	Low	Short-lived	Limited	Minor	<p>Collection of all surface runoff and facility washing to a sedimentation basin prior to disposal</p> <p>Proper collection, storage, and disposal of waste according to the approved solid waste management plan.</p>	
35.	Construction	Construction Plant and Camp Site Operation	Groundwater quality	Deterioration of ground water quality	Low	Temporary	Limited	Minor	<p>Construction vehicles and equipment will be maintained and refueled in such a fashion that oil/diesel spillage does not contaminate the soil.</p> <p>To avoid soil contamination Oil-Interceptors shall be provided at wash down and Refueling areas.</p> <p>Waste oil and oil soaked cotton/ cloth shall be stored in containers labeled 'Waste Oil' and 'Hazardous' sold off to authorized vendors Collection and treatment of sewage in septic tanks</p>	
37.	Construction	Construction Plant and Camp Site Operation	Private lands and buildings	Damage to private lands and properties	Low	Short-lived	Limited	Minor	<p>Locate plants and camp sites away from Community areas.</p> <p>In case of leased properties, ensure the proposed activities are clearly stated in the</p>	Non-significant

S. No.	Project Phase	Project Component	Environmental Components	Description of the Environmental Effects	Intensity	Duration	Scope	Assessment of Potential Effect	Required Mitigation Measures	Significance of Residual Effect
									agreement and nearby properties are consulted and prior consent secured.	
38.	Construction	Construction Plant and Camp Site Operation	Sound Environment	Increase in noise level due to batching plant and hot mix plant operations	Low	Short-lived	Limited	Minor	<p>Observe regular and proper maintenance of plant equipment Install silencers on all tail/ emission pipes</p> <p>Establish multi-layer vegetation in-between the plant and nearest sensitive receptor for attenuation</p> <p>To the extent possible, enclose noise generating equipment with noise barriers</p>	Non-significant
39.	Post Construction	Site Restoration	Land and soil Clean-up Operations, Restoration and Rehabilitation		Low	Short-lived	Limited	Minor	<p>Contractor will prepare site restoration plans, which will be approved by the PIU and DES</p> <p>The clean-up and restoration operations are to be implemented by the contractor prior to demobilization.</p> <p>All construction zones including river-beds, culverts, road-side areas, camps, WMM plant sites, crushers, batching plant sites and any other area used/affected by the project will be left clean and tidy, at the contractor's expense, to the satisfaction of the PIU and DES.</p> <p>All the opened borrow areas will be rehabilitated and DES will certify in this regard.</p>	Non-significant
40.	Operation	Road Repair	Public Infrastructures	Localized flooding and damage to road from clogging of drainage	Low	Short-lived	Limited	Minor	Regular cleaning of drainage before start of monsoon and proper disposal of debris	Non-significant

S. No.	Project Phase	Project Component	Environmental Components	Description of the Environmental Effects	Intensity	Duration	Scope	Assessment of Potential Effect	Required Mitigation Measures	Significance of Residual Effect
41.	Operation	Road Repair	Community and occupational health and safety	Risk of injury to pedestrian and road users	Low	Short-lived	Limited	Minor	<p>Training to workers on safety procedures and precautions.</p> <p>Mandatory appointment of safety officer. Provision of a readily available first aid unit including an adequate supply of dressing materials.</p> <p>The contractor will not employ any person below the age of 16 years for any work</p> <p>Emergency plan (to be approved by engineer) shall be prepared to respond to any accidents or emergencies.</p> <p>Temporary access and diversion, with proper drainage facilities. Access to the schools, temples and other public places must be maintained when construction takes place near them.</p> <p>Fencing wherever cattle movement is expected.</p> <p>Restrict access to construction sites to authorized personnel. Physical separation must be provided for movement of vehicular and human traffic.</p> <p>Adequate signage must be provided for safe traffic movement</p>	Non-significant

S. No.	Project Phase	Project Component	Environmental Components	Description of the Environmental Effects	Intensity	Duration	Scope	Assessment of Potential Effect	Required Mitigation Measures	Significance of Residual Effect
42.	Operation	Vegetation Control	Community and occupational health and safety	Risk of injury to pedestrian and road users	Low	Temporary	Limited	Minor	Vegetation clearing to enhance aesthetic and prevent potential safety hazard like reduced visibility, obstruction of signs, and debris in the roadway.	Non-significant

B. Climate Change Impacts and Risks

1. Climate Change Projection

a. Precipitation and Rainfall

117. Historical monthly average temperature and rainfall from 1901-2015 compiled by the Climatic Research Unit (CRU)–University of East Anglia is presented in the succeeding Table. Average monthly temperature and rainfall are 22.1°C and 190.50 mm. Maximum average monthly temperature and rainfall are 28.1 °C and 512.1mm.

Table 39: Historical Temperature and Rainfall

Month	Historical Average Monthly (1901-2015)		Predicted Rainfall Change (2020-2040) Ensemble			Predicted Max Temperature Change (2020-2040) Ensemble		
	Temp. (°C)	Rainfall (mm)	Low 10%	Median	High (90%)	Low	Median	High
January	18.3	7.7	-8.2	-3.8	1.8	1.8	2.1	2.1
February	20.6	19.3	-9.1	-3.3	15.4	1.1	2.3	2.3
March	25.0	41.2	-43.0	-2.7	33.5	1.1	2.3	2.3
April	27.6	15.8	-17.2	23.0	67.2	0.3	2.0	2.0
May	28.1	270.3	-93.7	67.8	210.7	-0.8	1.4	1.4
June	28.1	482.8	-104.4	22.6	138.6	0.3	1.5	1.5
July	28.	512.1	-114.4	14.5	110.4	0.8	1.7	1.7
August	28.0	432.6	-30.0	56.3	131.2	0.9	1.7	1.7
September	28.0	300.6	-98.6	-3.4	77.4	0.9	1.7	1.7
October	26.7	165.0	-49.3	8.8	90.8	0.6	1.5	1.5
November	23.1	32.1	-26.2	1.2	40.8	0.7	1.7	1.7
December	19.3	6.8	-8.0	-0.5	22.6	1.0	1.9	1.9
Max	28.1	512.1	-8.0	67.8	210.7	1.2	2.3	2.3
Min	18.1	6.8	-114.4	-3.8	1.8	-0.8	1.4	1.4
Avg.	22.1	190.5	150.2	67.8	78.4	0.68	1.8	1.8

Source: Climate Change Portal, The World Bank Group

118. Between 2020-2040, almost coinciding with the project life, there is a predicted change in temperature anomaly (difference between the average baseline and predicted value) in Bangladesh ranging from 0.68-1.8 °C based on General Circulation Model ensemble average of the low (10%) and high (90%), RCP2.6 scenario. Figure 28 illustrates an increasing maximum temperature trend, departing from the historical average between 1.4°C to 2.3°C with the higher temperature occurring in the northwestern divisions of Rangpur, Rajshahi, and parts of Dhaka. Average monthly rainfall is expected to increase by 67.8mm with the models estimating departure from historical average between 75-225mm per year. Similarly, the predicted future rainfall is expected to maintain an increasing trend. The extreme norther sections of the Rangpur, Dhaka, and southern tip of the Chattogram Divisions are expected to experience the biggest change in rainfall distribution ranging from 350-400mm annually.

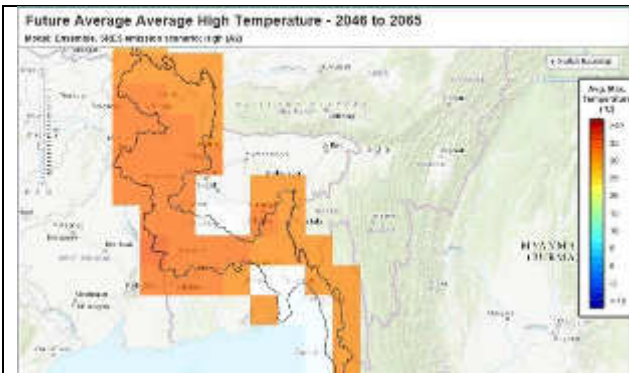


Figure 27: Map of future average of high temperature 2046-2065, Model Ensemble, SRES Emission Scenario: High(A2).

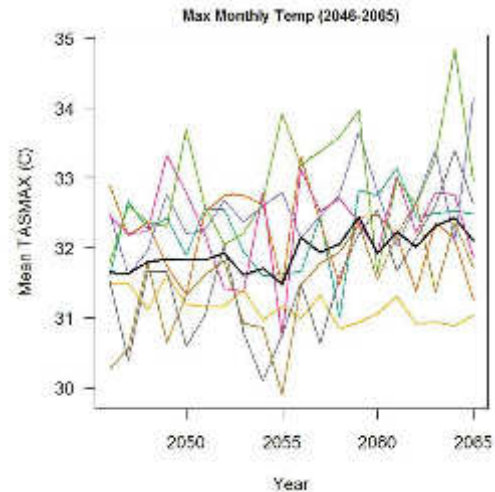


Figure 28: Predicted future average of maximum monthly temperature 2046-2065, Model Ensemble, SRES Emission Scenario: High(A2).

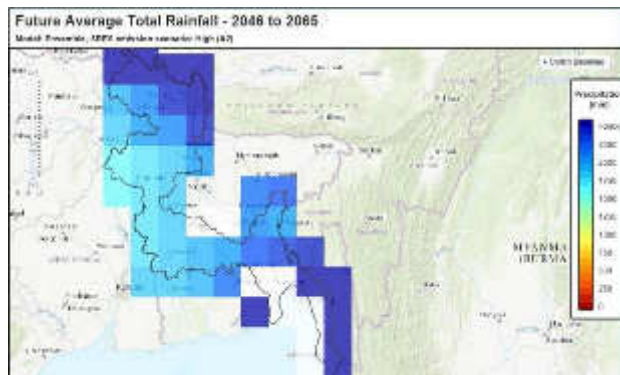


Figure 29: Map of future average in total rainfall 2046-2065, Model Ensemble, SRES Emission Scenario: A2

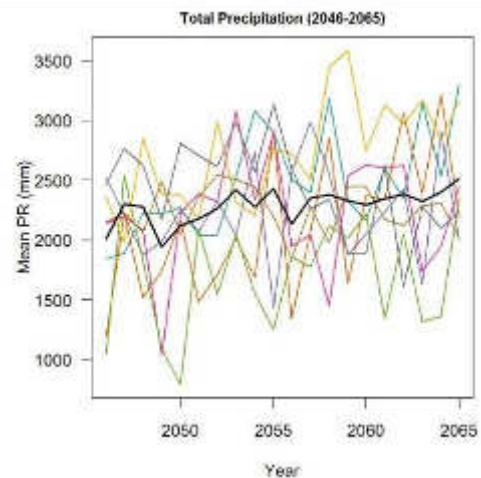
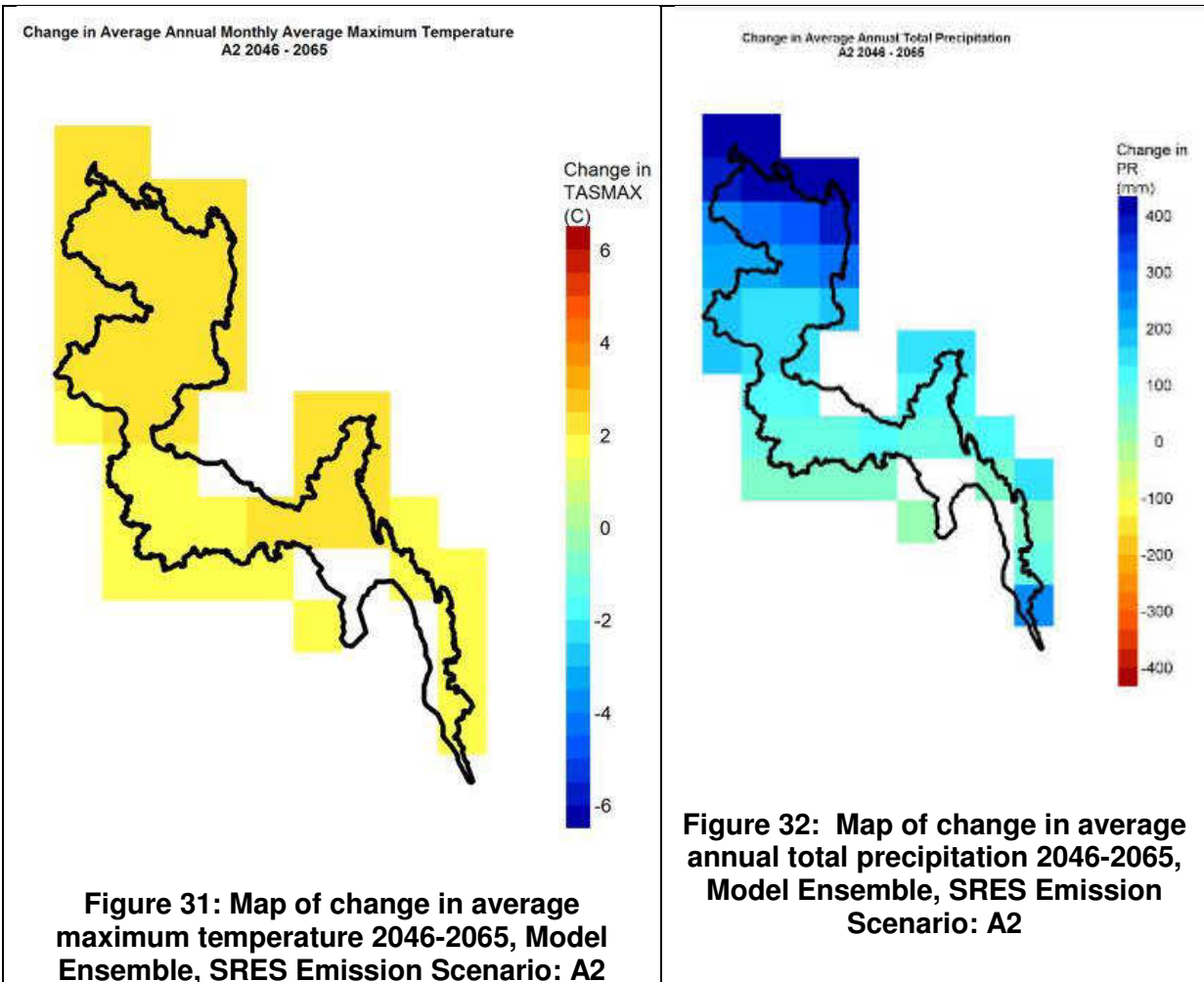


Figure 30: Future average total rainfall 2046-2065, Model Ensemble, SRES Emission Scenario: A2



2. Effect of prolonged submergence on rural roads

119. MJM Alam and M. Zakaria (undated)¹⁶ studied the extent of damaged to road pavement structure due prolonged flood submergence in Bangladesh due to flooding. The assessment focused on flexible pavement, the main pavement used in Bangladesh, and tested for California Bearing Ratio (CBR) for sub-grade and Marshall Stability and Flow for surface layer under 4, 7, 30 and 45 days. The key observations and results area as follow:

- inundation for 45-days, the unit weight reduces by 4.6, 5.8 and 10.6 percent for compaction efforts of 56, 35 and 10 blows, respectively and CBR reductions of 16.7, 29.6 and 37.5 percent, respectively. This implies that the more compact the material, the lower will be the loss of unit weight and strength caused by inundation.
- For surface layer, stability and flow of flexible pavement is affected by the duration of inundation by water. The inundation for 30days causes the flow value increases by about 93 percent and stability reduces by 26 percent. The figures also imply that the longer the

¹⁶ MJM Alam and M Zakaria "Design and Construction of Roads in Flood Affected Areas." Department of Engineering, BUET.

period of inundation, the more severe will be the deterioration although the rate of destruction may decrease.

120. The following figures presents the findings.

Figure 33: Effect of Flood Inundation on Sub-base

Compaction (No of Blows)	Average California Bearing Ratio (CBR) Value			
	4-day Soaking	7-day Soaking	30-day Soaking	45-day Soaking
56	3.5	3.4	3.1	3.0
35	2.7	2.5	2.2	1.9
10	1.6	1.2	1.1	1.0

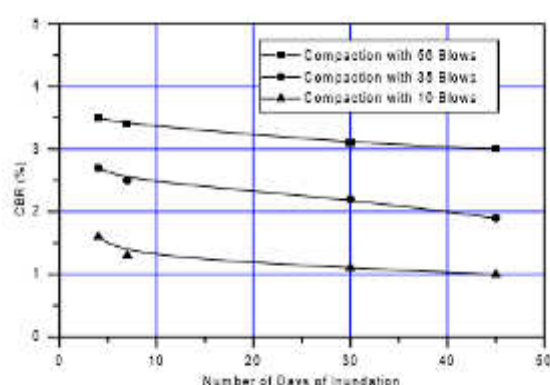
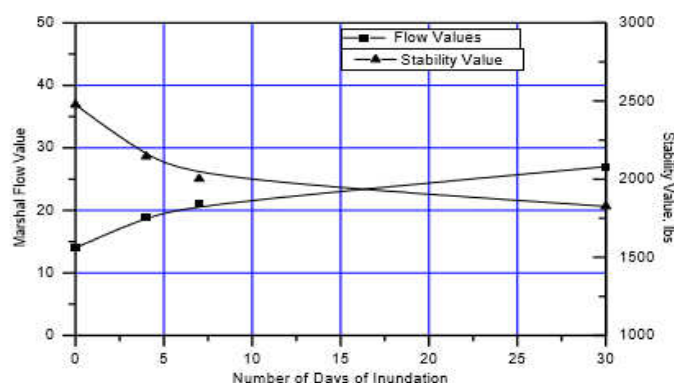


Figure 34: Effect on Inundation on Flow and Stability of Bituminous Surface



3. Natural Hazards and Climate Risks

121. The implications of the projected increases in temperature and rainfall coupled with the existing natural hazards in the divisions increases the vulnerability of the project roads to climate change variability and extremes. The most dominant natural hazards to the projects roads that can be exacerbated by climate change are flooding and storm surge. Of the 34 project districts, 20 districts are prone to flood with 25 -year return period with a depth of at least 1.8 meters. Only a portion of the Pekua Road in Coxsbazar District is prone to storm surge. The succeeding Figures present the flood inundation and storm surge maps of Bangladesh.

Figure 35: Flood Inundation Map 25 Year Return Period

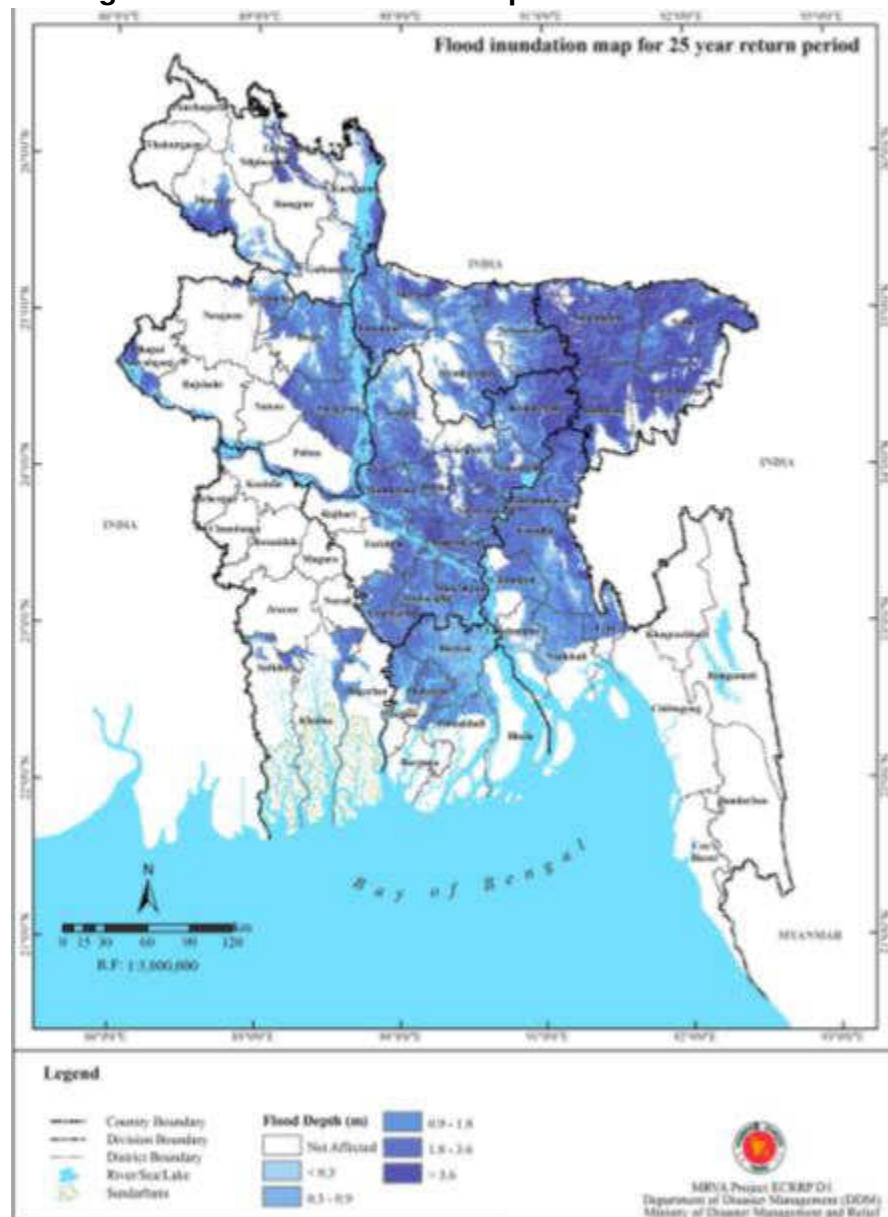


Figure 36: Storm Surge Indundation Map

Table 40: Estimated Climate Change Adaptation Cost

District	Protection Work Cost	Structure Cost	EMP Cost	Bio Engineering	Total
Gopalganj	41,714,407	3,309,708.9	1,953,991	2,250,383	49,228,489
Faridpur	40,245,189	3,140,692.4	1,811,931	2,232,528	47,430,341
Madaripur	59,553,189	4,673,784.8	2,717,971	3,272,791	70,217,736
Shariatpur	38,414,275	3,001,091.8	1,734,082	2,127,119	45,276,568
Rajbari	18,154,929	1,430,407.8	836,391	991,169	21,412,897
Comilla	36,761,383	2,779,244.6	1,529,993	2,144,149	43,214,770
Chandpur	40,219,426	3,148,317.3	1,824,227	2,219,817	47,411,787
B. Baria	52,731,861	4,153,335.6	2,427,450	2,880,481	62,193,127
Chittagong	46,664,986	3,533,121.4	1,949,358	2,715,767	54,863,232
Cox's Bazar	45,154,654	3,557,120.1	2,079,466	2,465,884	53,257,125
Noakhali	49,072,911	3,726,563.9	2,065,491	2,842,867	57,707,833
Laxmipur	24,961,248	1,980,478.0	1,169,237	1,346,594	29,457,558
Feni	20,850,324	1,654,308.6	976,673	1,124,820	24,606,126
Jessore	108,719,187	8,384,647.4	4,755,583	6,147,711	128,007,129
Kushtia	62,249,553	4,576,751.3	2,410,018	3,782,349	73,018,671
Jhenaidah	56,996,078	4,259,959.2	2,303,622	3,381,819	66,941,478
Chuadanga	50,056,039	3,781,603.8	2,079,475	2,922,791	58,839,909
Magura	42,167,181	3,345,632.9	1,975,200	2,274,808	49,762,822
Meherpur	11,668,974	869,232.4	467,547	695,790	13,701,545
Narail	30,848,833	2,360,339.3	1,323,152	1,766,395	36,298,720
Rajshahi	77,294,375	6,132,698.4	3,620,631	4,169,828	91,217,532
Naogaon	55,443,166	4,333,683.3	2,505,894	3,067,462	65,350,206
C.Nawabganj	15,228,295	1,208,245.0	713,325	821,526	17,971,392
Natore	32,207,706	2,514,911.5	1,452,098	1,784,959	37,959,675
Bogra	33,970,006	2,636,941.2	1,509,798	1,900,865	40,017,610
Joypurhat	20,788,559	1,616,259.4	927,489	1,160,300	24,492,608
Lalmonirhat	31,177,182	2,473,663.2	1,460,405	1,681,927	36,793,177
Kurigram	29,531,135	2,188,182.2	1,167,016	1,774,468	34,660,800
Gaibandha	36,030,816	2,783,735.7	1,582,989	2,031,611	42,429,152
Rangpur	42,927,597	3,287,842.7	1,845,864	2,454,135	50,515,439
Dinajpur	81,017,058	9,830,377.0	5,694,875	6,933,803	103,476,114
Thakurgaon	33,905,604	2,600,384.2	1,462,866	1,934,211	39,903,066
Panchagarh	26,107,152	1,913,794.5	1,002,828	1,592,940	30,616,714
Nilphamari	31,370,637	2,489,012.4	1,469,467	1,692,363	37,021,479
Total	1,424,203,919	113,676,072	64,806,403	82,586,429	1,685,272,822

VI. PUBLIC CONSULTATION AND INFORMATION DISCLOSURE

A. Consultation Method and Information Disclosure

123. The ADB SPS 2009 requires consultation with affected communities and stakeholders and their participation in the project design and implementation. These consultations benefit the LGED and ADB to better design the project based on the community's experience, knowledge, and expectations. Some of the key characteristics of meaningful consultations pertains to timing, conduct, gender inclusive, and responsiveness. Consultations are conducted early and sustained throughout the project life and information disclosed in timely manner allow the communities to make informed decisions. Its conduct by the project sponsor is free from coercion ensuring participation is voluntary. The consultations ensure inclusive and responsive to the disadvantage and vulnerable members of the community to ensure their concerns are considered in the project design and implementation. Finally, consultations should show proofs that relevant views generated during the consultation process are considered in the design.

124. The principal consultation method used was through the transect walk. A transect walk requires both LGED District Engineers and stakeholders to "walk" or survey the entire stretch and identify issues pertaining to availability of land to accommodate needed engineering, road safety, and climate resilience measures; key sensitive resources like trees, utilities, physical cultural resources; road hazards; and other community requirements that should be considered by the project. It facilitates timely consultation that is early enough to influence the design, provides venue to have a common understanding of the project, voluntary participation is promoted, and inclusive in terms of gender and vulnerable members of the community.

125. Consultations meetings were also organized the by LGED District Engineers at all community areas to disseminate project information (carried out in local Bengali language). LGED upazila officers, community organizers, local community members took part in the community consultations and the transect walks. An information booklet was distributed prior to the transect walk providing information on the following; identification the project, project proponent, and development partners; description of how the community will participate at various stages of the project cycle; redress grievances mechanism; voluntary land donation procedure; definition of vulnerable affected persons (VAP); support and assistance to VAP; and contact details.

126. The public consultations were carried out between November 2017 to February 2018 as part of the field works and DPR preparation. DPR mandated that public consultation must be done in every union, and market on which the road sections cross. Based on the public consultation a Community Participation Plan (CPP) is prepared for each subproject that means there are 216 CPPs for the RCIP 1.

B. Institutional Level / Stakeholders Consultative Workshop

127. The institutional level consultations were held with representatives of institutions having stakes in implementation of the project. The institutions contacted included fisheries, forest department, and local DOE as part of securing the environmental clearance certificate from the DoE. In addition to these officials, other departments were also contacted on several occasions to include Tehsildars, NGOs, industry department and respective – district and Upazila Offices.

128. The consultation with institutional officials focused on the following issues.

- (i) Project description: Need for the construction of rural roads and benefits of the project.
- (ii) Social and environmental assessment processes for the government and the multilateral funding agency requirements.
- (iii) The extent/nature of negative social and environmental impact and the need for rehabilitation and resettlement in the project. Avoidance & mitigation aspects in the project.
- (iv) People's participation in planning, implementation and Monitoring & Evaluation Stage.
- (v) The consultation process supplemented by distribution of information booklets in Bengali (local language) has made the local community aware of the project and mitigation measures entitlement in view of their vulnerability.

C. Participants to the Transect Walk

129. Appendix D provides the number of participants to the transect walk from each benefited upazillas and unions. There were 7,835 stakeholders that participated in the transect walks organized mainly by the District engineers through the Union Parishad representatives, community officers and the TAG consultants during project preparation. Of the total number of participants, 2,418 were female comprising 30.86%.

D. Results of Public Consultation

130. As already mentioned, inside habitation areas and in village sections where the road is narrow, the road width has been constricted to avoid damage to structures. Following impacts could also occur during civil works period which will cause public nuisance and were all addressed on the detailed project reports. The succeeding Table presents the principal common concerns raised and how they were addressed in the general EMP.

Table 41: Comments raised and how it was addressed in the EMP

Comments and Concerns Raised	EMP Provisions
Temporary loss of access/disruption of traffic	<p>Frame appropriate traffic diversion schemes (in specific stretches as per progress of construction work) and implemented to avoid inconvenience due to construction works to present road users.</p> <p>The traffic diversion signs should be bold and clearly visible particularly at night.</p> <p>Diversion schemes are required to ensure smooth traffic flow, minimize accidents to road users during construction works.</p> <p>Precaution shall be taken to avoid inconvenience to the local community due to movement of materials.</p>
Shifting of utility supply lines causing disruption to the supply.	All public utilities like power transmission cables, telephone cables, water/sewerage lines, drains, tube wells etc falling within road land width shall be inventoried, and arrange for relocation /shifting to adjacent areas in consultation with the respective agencies/authorities.
Damage to irrigation channels that have been	The road construction works will raise, extend and enlarge existing roadway/tracks all along the alignment. Therefore, mitigation measures to contain erosion and drainage problems are essential.

<p>placed across some of the selected roads</p>	<p>The engineering measures for countering soil erosion, slope protection, drainage wherever required shall be considered and implemented as per relevant Road Design Standard 2005 (Rural Road) and Environmental Assessment Guidelines for LGED Projects-2008.</p> <p>Measures like selection of less erodable material for embankment construction, compaction, adequate embankment slopes and turfing shall be considered as per provisions and Technical Specifications for construction of Rural Roads, LGED.</p> <p>Refer to hydrological studies to ensure that construction of drainage structures is not likely to alter drainage pattern, and discharge capacities of drainage structures are designed to facilitate smooth passage of water and heading up or flooding is avoided even in flood season.</p> <p>Schedule the construction works to dry season so that impacts on water quality of stream/river is minimize or avoided.</p> <p>Precaution shall be exercised to prevent oil/lubricant/hydrocarbon contamination of channel bed during construction works.</p> <p>Spillage, if any, shall be immediately cleared with utmost caution to leave no traces.</p> <p>Ensure all construction wastes are removed from work site and stream /riverbeds are to be cleaned up (at least 50 m on both upstream and downstream sides of water courses) after completion of construction but prior to onset of monsoon.</p>
<p>Dust, noise and vibration impacts will be felt by the people living near road sections during construction works. High vibration levels may damage structures close to the road edge. The civil contracts should include appropriate measures to avoid/ manage the issues of dust, noise.</p>	<p>Ensure stone quarries and crushing units have pollution control system; occupational safety procedures/practices in place and regular inspection shall be carried to ensure compliance. This shall be a pre-condition for sourcing of materials from quarries/crushing plants.</p> <p>Dust suppression along transportation links is to be ensured by deploying water tankers with sprinkling system are to be deployed along haul roads.</p> <p>The vehicles deployed for material transportation shall be spillage proof to avoid or minimize the spillage of the material during transportation. Transportation links are to be inspected daily to clear accidental spillage, if any.</p>
<p>Care should be taken to avoid any accidental damages to common properties such as Shrines, wells, water pipes, stand posts located close to the roads.</p>	<p>During clearing operations, any treasure trove, slabs with epigraphically evidence or edicts, sculptural or any material found and appear to have historical importance, it should be brought to the notice of Department of Archaeology (DOA), Bangladesh, and instructions of this Department, if any, must be followed.</p> <p>Small temples, shrines if any is within the road land width, the same may be shifted to adjacent areas in consultation with local community leaders.</p>

	<p>Establish and maintain interaction with local community to ensure that no social resentment sets in due to operations.</p> <p>Contractors shall comply with the National Cultural Policy 2006 and Laws of Archeology -2015 (draft) and also Guidelines for Protecting Physical Cultural Properties</p>
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E. Information Disclosure

131. Information was disclosed through public consultation and more formally by making documents and other materials available in a form and at a location in which they can be easily accessed by stakeholders. This involved making a summary of draft reports available (in the local language) at public locations/upazillas/unions and providing a mechanism for the receipt of comments and making documents available more widely. In this regard, ADB encourages LGED all documents onto their own website. The full IEE report will be disclosed on the ADB and LGED websites and made available to the interested parties upon request. Any future update in the IEE will be reviewed by the ADB prior to disclosure on the ADB website.

132. Monitoring is one of the components of EMP. Monitoring of physical, biological and socio-economic parameters of the environment of this project will be carried out. The outcomes of the monitoring activities will be maintained in a database. The results of monitoring will also be disclosed to the local people, school students and other interested stakeholders. In the process of compliance monitoring of the project construction, local people and construction workers will be consulted. The annual monitoring reports will also be disclosed on the ADB website from the start of construction until the Project Completion Report is finalized.

133. The LGED will extend and expand the consultation and disclosure process during the implementation (construction) of the project. The feedback of the affected people, stakeholders and the public has been incorporated in the detailed project design for implementation during construction.

F. Public Consultation and Communication Plan for future

134. This IEE and other relevant project documents will be made available at public locations in the project affected upazillas and posted on the websites of LGED and ADB. The consultation process will be continued and expanded during the project implementation to ensure stakeholders participate fully in project execution, as well as to implement comprehensive information, education, and communication plan.

135. The public consultation and disclosure program with all interested and affected parties will remain a continuous process throughout the project implementation, and shall include the following:

- (i) Consultations during construction phase
 - a. Public meetings with affected communities to discuss and plan work programs and allow issues to be raised and addressed once construction has started; and

- b. Smaller-scale meetings to discuss and plan construction work with individual communities to reduce disturbance and other impacts, and to provide a mechanism through which stakeholders can participate in project monitoring and evaluation.
- (ii) Project disclosure
 - c. Public information campaigns (via newspaper, flyers, and media) to explain the project to the wider population of the project area and prepare them for disruptions they may experience once construction is underway;
 - d. Public disclosure meetings at key project stages to inform the public of progress and future plans, and to provide copies of summary documents in local language;
 - e. Formal disclosure of completed project reports by making copies available at convenient locations in the project area, and informing the public of their availability; and
 - f. Providing a mechanism through which comments can be made.

136. For the benefit of the community, the executive summary of this IEE may be translated in the local language and made available at (i) District Engineer's Offices, (ii) Division offices, (iii) LGED-PMU; and (iv) contractor's campsites. LGED will be ensured that the hard copies of IEE are kept at places which are conveniently accessible to people, to disclose the document and at the same time creating wider public awareness. An electronic version of the IEE Report will be placed in the official website of executing and implementing agencies and the ADB website after approval of the IEE by ADB.

VII. ENVIRONMENTAL MANAGEMENT PLAN

A. Environmental Management Plan

137. The Environmental Management Plan (EMP) contains the agreement between LGED and ADB detailing the implementation of mitigation measures, monitoring program, cost estimates, and institutional arrangement to ensure that no significant adverse impacts results from the project intervention.

138. The basic objectives of the EMP are to:

- (i) establish the roles and responsibilities of all parties involved in the project's environmental management;
- (ii) ensure implementation of recommended actions aimed at environmental management and its enhancement; and
- (iii) ensure that the environment and its surrounding areas are protected and developed to meet the needs of the local communities including other stakeholders and safeguard and the interests of the common people.

139. An EMP is prepared and presented in **Appendix C** and will form part of the bidding documents. The costs for the mitigation measures other than the compensatory plantation are dealt under the engineering (civil works) and resettlement (compensation) estimate.

140. To be more effective during implementation the EMP will be attached to the tender documents. As part of the environmental management, the procedures for workers' health and safety; public safety and reducing inconvenience and disposal of construction wastes, etc., are also included.

141. A road specific EMP (SEMP) is to be prepared by the contractor based on the general EMP provided in the IEE. The SEMP will perform a risk assessment of all mitigation options and will propose site specific mitigation options that would be appropriate and commensurate with the actual impact. The contractor shall submit SEMP for Engineer's endorsement. The Contractor will not be able to start the construction works before the approval of SEMP from the Engineer.

B. Environmental Management, Monitoring, and Climate Change Adaptation Costs

142. The total environmental management plan implementation is estimated at US\$1.302M or 0.6% of the total civil works cost. The EMP costs, which includes environmental monitoring, is comprised of the following bill of quantities items: i) Providing and maintaining adequate potable water supply (Water Supply Tube well 01 No. each sub-project) at locality to the entire satisfaction of the E-I-C; ii) Sanitation Toilet 02 Nos. (01 for man & 01 for Woman) each sub-project; iii) Dust Suppression measures (excluding watering for compaction) to the entire satisfaction of the E-I-C; iv) Environmental Monitoring a) Air quality b) Noise level c) Water quality d) Sediment at work site to the entire satisfaction of the E-I-C; v) Prevention of spillage, Leakage of polluting materials to the entire satisfaction of the E-I-C; and Maintain First aid box at site to the entire satisfaction of the E-I-C..

143. Since the rural roads to be upgraded are short, with an average length of 7.88 kilometers, the construction period maybe less than 1 year which is shorter than the typical ADB monitoring and reporting frequency requirement of annually for Category B projects like the RCIP

Bangladesh. Similar to rural road connectivity and upgrading projects in India, Sri Lanka, and Nepal, monitoring and reporting are conducted at least five times based on the physical accomplishment and maintenance of the road project as follow: i) once prior to start of construction; ii) second after third month of start of construction or 25% construction, which ever comes first; iii) third report after ninth month of construction or 75% construction, which ever comes first; and iii) fourth and fifth on completion of construction or after one month of first and second year of maintenance period. Annual summaries of the monitoring reports are compiled, project-level environmental performance status assessed, and overall compliance performance is stated to form the annual monitoring reports for review by ADB and public disclosure. Annual monitoring reports are prepared starting from the start of construction until the project completion report is issued.

144. Total adaptation cost is estimated at US\$19.074M representing 9.05% of the total civil works costs.

145. Environmental monitoring is an essential component of the implementation of IEE recommendation. The environmental monitoring programme (EMoP) is prepared to monitor the implementation performance of the EMP.

146. An environmental monitoring plan is prepared focussing the following objectives:

- (i) To ensure that impacts do not exceed the established legal standards
- (ii) To check the implementation of mitigation measures in the manner described in the IEE report
- (iii) To monitor implementation of the EMP.
- (iv) To provide an early warning of potential environmental damage
- (v) To check whether the proposed mitigation measures have achieved the intended results, and or/ other environmental impacts occurred

147. The monitoring plan will be used for performance monitoring of the project. A monitoring plan defining all parameters to be monitored, with tentative location, project stages for measurements, implementation and institutional responsibility for different environmental components is prepared for all stages of project.

C. Institutional Setting to Implement the Environmental Safeguards

148. The Ministry of Local Government, Rural Development and Co-operatives (MOLGRDC) through LGED will be the executing agency is responsible for the overall compliance to the ADB SPS 2009 environmental requirements; Government of Bangladesh environmental laws, regulations, and standards; and this EMP.

149. More specifically, the PMU-RCIP will be the key institution for the successful implementation of the project and ensure compliance to ADB safeguards as contemplated in the environmental management and monitoring plans. The responsibilities of various agencies and parties for implementing environment safeguards are provided below.

150. **PMU** is the LGED Project Management Unit and responsible for the overall compliance to the ADB's SPS 2009 and the all applicable laws and rules under the Ministry of Environment and Forest (MoEF). The PMU will be supported by a Senior Safeguard Specialist (SSS) consultant responsible for ensuring the project complies with the social and environmental safeguard requirements of the ADB. The SSS will coordinate with the five (5) Division Environment

Specialist (D-ES), 34 and District Engineer (EE) to ensure project implementation complies with the PAM and EMP. The PMU-ES is responsible for:

- (i) Ensure compliance to all environment related statutory requirements by the LGED and contractor
- (ii) Review and finalize road specific EMPs prepared by the Division Environment Specialist (DES) and district engineers
- (iii) Overall responsible for the timely endorsement and signing of key documents and forwarding to the respective agency required for processing of clearances and permits to include but not limited to: forestry clearance; tree cutting permit; permission for construction material quarrying; consent to operate WMM mix plants, crushers, and batching plants; consent for disposal of sewage from labour camp; and pollution under control for motor vehicles, etc.
- (iv) Ensure preparation, submissions, and disclosure of annual environmental monitoring reports for disclosure on ADB and LGED websites.
- (v) Ensure all contractors obtain permits, licenses etc. for activities such as operation of asphalt plants, quarries, borrow areas etc. before the implementation of the respective construction activity.
- (vi) Conduct training and workshops on environmental management to include site induction of all staff and workers involved in the construction. These include all district engineers, and staff and laborers of all contractors.
- (vii) Guided by the initial environmental examination approved by the ADB and LGED, design and implement an effective environmental monitoring program. This include but not limited to inspections by the PMU and LGED, self-monitoring by the contractors, inspection protocols for the DES, and Grievance and Redressal Mechanism including intake form and documentation
- (viii) Taking proactive and timely measures to address any environment safeguards related challenges at the national or province/district levels such as delays in processing of clearances during pre-construction stage and significant grievances (during construction stage)
- (ix) Carry out periodic field verification and review environmental compliances by the contractor during project implementation in coordination with the DES and the Contractor's Environment Focal Person (EFC)
- (x) Review and approve for submission to the LGED and ADB annual environmental monitoring reports submitted by D-ES. Lead in complying with disclosure of periodic environmental monitoring reports
- (xi) Ensure grievance redress mechanism as envisaged in the EMP is in place and finalize preparation disclosure of monitoring reports

151. Division Environmental Specialists. Each of the LGED Division will have a consultant Environmental Specialist to support the Additional Chief Engineer and District Engineers in supervising the implementation of the EMP and EMoP by the contractor through the following:

- (i) In coordination with the contractor's EFC and with guidance from the SSS, prepare road-specific EMPs and EMoPs, guided by the general EMP sand based on the more detailed survey

- (ii) Guide and review all sub-plans identified in the IEE and EMP to be prepared by the Contractor to include camp layout, waste/debris management plan, borrow area management plan, traffic management plan.
- (iii) Conduct environmental site induction training¹⁷ to all contractors and PIUs to ensure understanding of the EMP, domestic environmental laws and regulations requirements particularly on the required clearances and permits, training on occupational and community health and safety, timely mobilization of the Contractor's EFC, and review of sub-plans required in the EMP and advise the District Engineer on their adequacy who in turn will instruct the contractor to make necessary revisions
- (iv) Ensure contractors secure necessary permits and clearances
- (v) Ensure the environmental monitoring report template are adapted by the contractor's in the preparation of submission of self-monitoring reports
- (vi) Review monthly environmental monitoring reports prepared by the Contractor-EFC
- (vii) Conduct at least 3 environmental inspections during the construction phase: i) First report at pre construction stage, ii) Second report after three months of start of construction or on completion of 25% construction, and iii) Third report after seven months of start of construction or on completion of 75% of construction,
- (viii) monthly site and follow-up inspection to ensure the veracity of the submitted monitoring reports and enforce the EMP and EMoP
- (ix) Preparing summary monthly, quarterly, and periodic monitoring reports from the periodic compliance inspection monitoring and review of the environmental self-monitoring reports prepared by the Contractor's EFC for the review and guidance of the PCU and PIUs
- (x) Conduct compliance conference with the Contractor to discuss non-compliance and agree on corrective measures with guidance from the CSC-ES
- (xi) Advise the Contractor through the District Engineer and SSS on how to comply with requirements to address non-compliances
- (xii) Report apparent unanticipated impacts, recommend mitigation measures to be implemented by the PCU and update the IEE report
- (xiii) Recommend sanctions to the SSS in case of recalcitrant contractors

152. Contractor. The Contractor is the principal agent to implement the EMP and EMoP during the pre- and during construction stage. Specifically, the contractor will:

- (i) Appoint the Contractor's environment focal person (EFP) and attend the site induction workshop to be organized by the DES and SSS
- (ii) Obtain necessary environmental license(s), permits etc. from relevant agencies as specified in the IEE and this project administration manual for associated facilities for

¹⁷Site induction training includes but not limited to: i) discussion and review of EMP and EMoP detailing how specific environmental risks associated with their Scope of Work will be managed legal compliance, inspection and audits, and progress tracking and reporting; ii) environmental training and awareness needs shall be determined and documented via a training needs analysis prior to commencement; iii) Health and Safety Awareness Course, which details general environmental awareness and specific performance requirements expected on site; and iv) GRM.

project road works, quarries, wet mix plant etc. prior to commencement of civil works contracts

- (iii) As part of detailed survey, collect the baseline data on environmental quality before the start of physical works¹⁸ and continue collection of environmental quality data as given in the Environmental Monitoring Plan during construction and operation
- (iv) Revised the EMP and EMoP, as advised by the DES based on detailed road survey
- (v) Implement all mitigation measures in the EMP and activities in the EMoP
- (vi) Ensure that all workers, site agents, including site supervisors and management participate in training sessions delivered by DES and SSS
- (vii) During the 2-year construction period, submit monthly environmental self-monitoring reports to the District Engineer and DES with guidance from the DES
- (viii) During the 5-year maintenance period, submit quarterly environmental monitoring reports to the PMU
- (ix) Ensure compliance with environmental statutory requirements and contractual obligations
- (x) Participate in resolving issues as a member of the GRC
- (xi) Respond promptly to grievances raised by the local community or any stakeholder and implement environmental corrective actions or additional environmental mitigation measures as necessary.
- (xii) Based on the results of EMP monitoring, cooperate with the DES to implement environmental corrective actions and corrective action plans, as necessary.

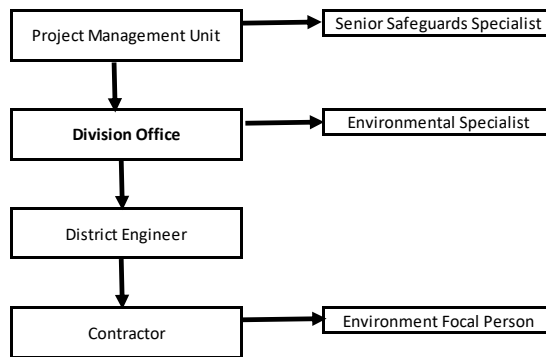
153. In case unanticipated environmental impacts become apparent during project implementation, the LGED immediately inform the ADB to seek guidance on the immediate corrective and reporting actions needed. The ADB will advice the LGED on the scope of IEE update including the EMP or the need to prepare a new environmental assessment. As previously mentioned in public disclosure section, all updates in the IEE is subject to public disclosure.

154. ADB. ADB is responsible for the following:

- (i) Review REA checklist and endorse or modify classification proposed by the EA
- (ii) Review IEE report and disclose the final reports on the ADB website as required;
- (iii) Issue subproject's approval based IEE report;
- (iv) Monitor implementation of the EMP through due diligence missions;
- (v) Provide assistance to the LGED, if required, in carrying out its responsibilities and for building capacity for safeguard compliance;
- (vi) Monitor overall compliance of the subprojects to this PAM; and
- (vii) If necessary provide further guidance to the LGED on the format, content, and scope of the IEE report and annual monitoring reports for submission to ADB.

Figure 37: Project Organisation Structure for EMP Implementation

¹⁸Pre-construction monitoring report



VIII. GRIEVANCE REDRESS MECHANISM

155. The concern/grievances from local/affected people may come up related to inappropriate implementation of various components of EMP or the overall road upgrading itself. These issues will be addressed through acknowledgement, evaluation and corrective action and response approach. A grievance redress mechanism (GRM) will be established to receive, evaluate, and facilitate the resolution of affected people's concerns, complaints, and grievances about the social and environmental performance of the project. The GRM is designed to strengthen existing local grievance and redress system and aggrieved parties may resort to legal redress at any stage. Resorting to legal redress can run parallel to accessing the GRM and it is not dependent on the negative outcome of the GRM. The GRM aims to provide a trusted way to voice and resolve concerns linked to the project, and to be an effective way to address affected people's concerns. The GRM for the project is outlined below and consists of three levels with time-bound schedules and specific persons to address grievances. All administrative expenses to ensure the GRM's effective operation will be borne by the LGED.

A. First Level GRM

156. The first level and most accessible and immediate contact for the fastest resolve of grievances are the contractors, and design and supervision consultants on site. Prior to construction of any works, the Division-Environment Specialists (DES), District Engineers, and Contractor-Environment Focal Person (EFP) will ensure local community meetings are held to notify local residents and businesses of any temporary disturbances, and to inform them of the Project including all Union Parishads.

157. If any complaints arise, the EFP and District Engineer can immediately resolve the complaint on site. The DES can also be involved in grievance redress at this stage. The DES and District Engineer office phone number will be posted in public areas within the project area and construction sites. Any person with a grievance related to the project works can contact the project to file a complaint. The District Engineer may appoint a staff to field and resolve complaints. The District Engineer will document the complaint, and immediately address and resolve the issue with the contractor within 1-2 days, if the complaint remains unresolved at the field level. The District Engineer may seek the assistance of the DES to resolve the issue. The District Engineer will notify the DES that a complaint was received, and whether it was resolved. The District Engineer will fully document the following information: (i) name of the person; (ii) date complaint was received; (iii) nature of complaint; (iv) location, and (v) how the complaint was resolved.

B. Second Level GRM

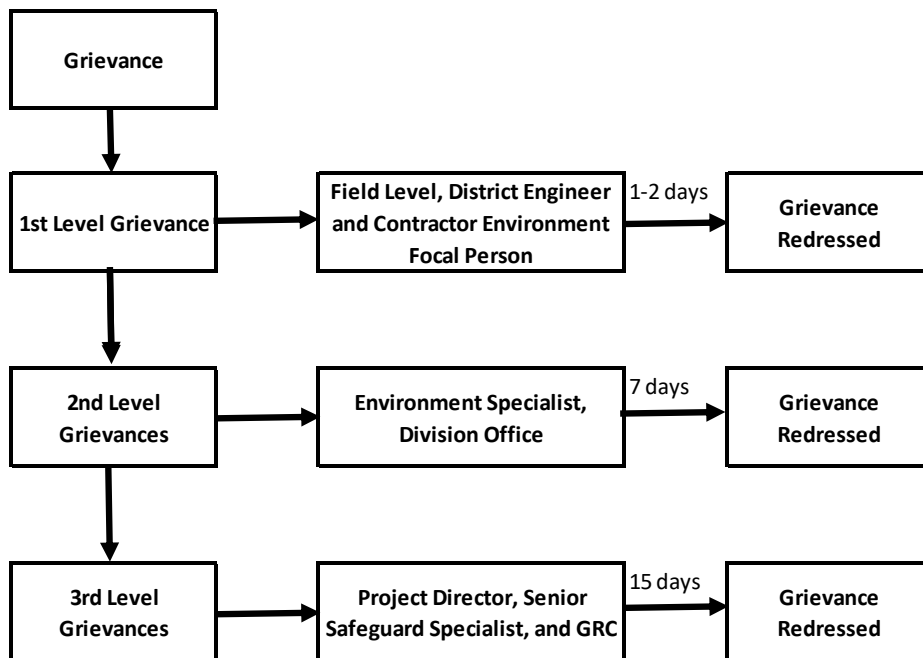
158. Should the grievance remain unresolved; the District Engineer will forward the complaint to the DES. The person filing the grievance will be notified by the DES that the grievance was forwarded by the District Engineer to the DES. The DES will address the grievance. Grievances will be resolved through continuous interactions with affected persons, and the DES will answer queries and resolve grievances regarding various issues including environmental or social impacts. Corrective measures will be undertaken at the field level by the District Engineer and the Contractors EFP within 7 days. The DES will fully document the following information: (i) name of the person; (ii) date complaint was received; (iii) nature of complaint; (iv) location and (v) how the complaint was resolved.

C. Third Level GRM

159. Should the grievance remain unresolved, the DES will request through writing the activation of the to a Grievance Redress Committee (GRC) constituted by the Project Director-PMU, which will, based on review of the grievances, address them in consultation with the DES, District Engineer and Contractor's EFP. The GRC will consist of PMU leadership, affected persons, and local area committee, among others—determined to provide impartial, balanced views on any issues. The GRC should consist of at least five persons. A hearing will be called with the GRC, if necessary, where the affected person can present his/her concern and issues. The process will promote conflict resolution through mediation. The GRC will meet as necessary when there are grievances to be addressed. The GRC will suggest corrective measures at the field level and assign clear responsibilities for implementing its decision within 15 days. The functions of the GRC are as follows: (i) to provide support to affected persons on problems arising from environmental or social disruption, asset acquisition (where required), and eligibility for entitlements, compensation, and assistance; (ii) to record grievances of affected persons, categorize and prioritize them, and provide solutions within 15 days; and (iii) to report to the aggrieved parties developments regarding their grievances and decisions of the GRC. The DES will be responsible for processing and placing all papers before the GRC, recording decisions, issuing minutes of the meetings, and taking follow-up action to see that formal orders are issued and the decisions carried out.

160. ADB's Accountability Mechanism. The objectives of the Accountability Mechanism will be to provide an independent and effective forum for people adversely affected by ADB-assisted projects to voice their concerns and seek solutions to their problems, and to request compliance review of the alleged noncompliance by ADB with its operational policies and procedures that may have caused, or is likely to cause, them direct and material harm.

Figure 38: Grievances Resolution Steps and Processes



Note: PMU-Project Management Unit, SSS- Senior Safeguard Specialis, DES- District Environment Specialist, EFP- Contractor's Environment Focal Person

IX. CONCLUSION AND RECOMMENDATION

A. Conclusion

161. The findings of initial environmental examination roads indicate that impacts are mostly similar and subprojects are unlikely to cause any significant environmental impacts. While some of the impacts are negative there are likely to occur during construction stage, are temporary in nature, and can be mitigated with minor to negligible residual impacts.

162. The project received immense support from local people, as they perceive that this project will improve the overall connectivity and bring various economic opportunities to the people of the project area.

163. All 216 roads included under RCIP were selected based, among others ecological and vulnerability to climate change more particularly to floods and storm surge. Several rural roads under the LGED's authority were damaged by the 2017 floods and needs immediate attention beyond the regular road maintenance but to incorporate climate resilience design and practices. Accordingly, none of the roads passes through protected areas or encroaches precious ecology (sensitive or protected areas) or any historical or archeologically protected areas. As per selection guidelines, none of the selected road passes through reserved forests either. Few trees cutting though may be involved.

164. Of the total 216 roads, 69 sustained serious flood damage last year and 1 road is subject to cyclone-induced surge. Adequate engineering measures like cross drainage structures, slope stabilization, embankment toe protection, improved pavement, are proposed for make the roads more climate resilient and enable to retain function during and after flood events. Three roads received further strengthening through pavement upgrade since these connects to cyclone-centers which are considered critical facilities in the event of of natural calamities,

165. All the 216 roads are aligned with existing rural roads. As such, land acquisition is nil or very minimal which is also acquired through donations from villagers.

166. Considering insignificant environmental sensitivity, the project is categorized as category B as per ADB Safeguard Policy Statement 2009.

167. Categorisation is also made under environmental legislation of Bangladesh, since these rural roads also require environmental clearance in accordance to Bangladesh Environmental Protection Acts and Rules.

168. The impacts identified are mostly related to alignment selection, land clearing, borrowing earth, and cutting of avenue trees, shifting of utilities and community structures, establishment of construction camp or material storage areas, transportation of material and operation of WMM plant. All identified impacts are either eliminated or minimized through design consideration and suitable mitigative measures.

169. Environmental Management plan covering all stages of road construction (design, construction and operation) is prepared with defined responsibility for its implementation. Environmental Monitoring plan is also prepared to ensure effective implementation of EMPs.

170. LGED has defined institutional setup including specified responsibility for environmental management. Existing capacity of the LGED and PMU for implementing environmental safeguard issues need substantial strengthening. Environmental specialist will be provided at the PMU and Division levels as part of the Project Implementation Consultants to provide the needed expertise.

171. The IEE also indicate that rural road construction works does not warrant further EIA study for subsequent rural road construction works.

B. Key Recommendations

172. Any major changes or any major additional work other than the proposed project activities will require preparation of another environmental assessment. This additional assessment will have to be submitted to LGED, Concerned Government authorities(DoE) and ADB for concurrence before civil works commence.

173. The implementation of prescribed mitigation measures will minimize/avoid the adverse impacts. Moreover, the impacts shall be monitored continually by implementing and updating the Environmental Management plan and Environmental Monitoring Plan. These IEE is prepared based on 216 individual environmental checklists and detailed project reports. Subproject specific EMP shall be improved as per the final provisions made under DPRs. The updated EMP if there is any change shall also be sent to ADB for information.

174. Executing agency shall ensure that EMP and EMoP is included in Bill of Quantity (BoQ) and forms part of bid document and civil works contract. The contractor will specify the quantity and budget for various activities like rehabilitation of borrow earth pits, first aid and Sanitation facilities at construction camp and temporary office/material storage place. The same shall be revised if necessary during project implementation or if there is any change in the project design. Any such change shall be reported to ADB as well.

Appendices



Appendix A: Rapid Environmental Assessment (REA) Checklist

Instructions:

- (i) The project team completes this checklist to support the environmental classification of a project. It is to be attached to the environmental categorization form and submitted to the Environment and Safeguards Division (RSES), for endorsement by Director, RSES and for approval by the Chief Compliance Officer.
- (ii) This checklist focuses on environmental issues and concerns. To ensure that social dimensions are adequately considered, refer also to ADB's (a) checklists on involuntary resettlement and Indigenous Peoples; (b) poverty reduction handbook; (c) staff guide to consultation and participation; and (d) gender checklists.
- (iii) Answer the questions assuming the "without mitigation" case. The purpose is to identify potential impacts. Use the "remarks" section to discuss any anticipated mitigation measures.

Country/Project Title: BAN: Rural Connectivity Improvement Project (RCIP)

Sector Division: South Asia Environment, Natural Resources, and Agriculture Division

Screening Questions	Yes	No	Remarks
A. Project Siting Is the project area adjacent to or within any of the following environmentally sensitive areas?			
▪ Cultural heritage site		√	None of the roads is located adjacent or within any archaeologically protected monument or culturally important structures. In cases of few roads, some religious structures like temples are located close to the roads.
▪ Protected Area		√	None of road is located within or near any protected area including respective buffer zones
▪ Wetland		√	No protected or classified wet land is located close to any roads. However, few village ponds are located close to some of the roads
▪ Mangrove		√	None of the roads is located in coastal areas.
▪ Estuarine	√		A section of the Pekua road in Chittagong is located in an estuarine area that currently serves as the main connectivity of the vast salt production ponds to the market.
▪ Buffer zone of protected area		√	No such area is located in the project vicinity.
▪ Special area for protecting biodiversity		√	No such area is located in the project vicinity.
B. Potential Environmental Impacts Will the Project cause...			

Screening Questions	Yes	No	Remarks
<ul style="list-style-type: none"> Encroachment on historical/cultural areas; disfiguration of landscape by road embankments, cuts, fills, and quarries? 		√	No encroachment on historical or cultural areas is expected by any of the roads. Project activity involves upgrading of 217 rural roads damaged by past floods, lack of maintenance, and poor road safety. All roads are existing and all improvement works will be limited to the embankment width (distance between toes). Borrow earth will be sourced from barren land or authorised places with provision of borrow area rehabilitation.
<ul style="list-style-type: none"> Encroachment on precious ecology (e.g. sensitive or protected areas)? 		√	None of the roads passes through or close to any protected areas (wild life sanctuaries, or national park or other ecologically important sites). Only cutting of few trees is involved mainly to re-establish the formation width, reinforce the embankment slopes, and maintain the safe width for 2 way traffic.
<ul style="list-style-type: none"> Alteration of surface water hydrology of waterways crossed by roads, resulting in increased sediment in streams affected by increased soil erosion at construction site? 		√	Several roads will pass across or run parallel rivers, streams, and irrigation canals. No new bridges will be constructed under the project as this is beyond the jurisdiction of the LGED. However pipe culverts will be constructed across streams for drainage balancing and protect irrigation field crossings. Numerous village ponds are also located close to roads. Adequate provisions are proposed for bank stabilisation and prevention of silt runoff to avoid sedimentation in these water bodies during construction and operation phases.
<ul style="list-style-type: none"> Deterioration of surface water quality due to silt runoff and sanitary wastes from worker-based camps and chemicals used in construction? 		√	None of the construction camps are proposed close to any water body. No harmful chemical are likely to be used for road construction. Septic tank is proposed for sewage disposal at each construction camp. Adequate provision is proposed for prevention of silt runoff during construction.
<ul style="list-style-type: none"> Increased local air pollution due to rock crushing, cutting and filling works, and chemicals from asphalt processing? 	√		Localised air pollution is expected. Dust separation measures like spraying of water on unpaved haulage routes are proposed to minimise the dust generation. Asphalt mixing plant will be located away from habitat area with adequate stack height for emission dispersion.

Screening Questions	Yes	No	Remarks
<ul style="list-style-type: none"> Risks and vulnerabilities related to occupational health and safety due to physical, chemical, biological, and radiological hazards during project construction and operation during project construction and operation? 	√		<p>Workers may get exposed to dust and noise during construction activities. However the exposure levels are likely to be short and insignificant. Workers will be provided requisite PPEs to minimise such exposure and associated harmful occupational health effects.</p> <p>Traffic on these rural roads are high, passing through several bazars. Strict traffic management to separate pedestrians and other users from the active construction fronts and timing of construction activities during off-peak hours will be implemented. The LGED's shift from the labour-intensive and time consuming WBM to a more mechanized WMM will reduce the time for construction by almost 30%.</p>
<ul style="list-style-type: none"> Noise and vibration due to blasting and other civil works? 		√	No blasting is involved. No significant noise generation as most road construction activities will be relying on manual labour.
<ul style="list-style-type: none"> dislocation or involuntary resettlement of people? 		√	No involuntary resettlement of people is involved.
<ul style="list-style-type: none"> Dislocation and compulsory resettlement of people living in right-of-way? 		√	No displacement of people is involved.
<ul style="list-style-type: none"> Disproportionate impacts on the poor, women and children, Indigenous Peoples or other vulnerable groups? 		√	No such impact is anticipated.
<ul style="list-style-type: none"> Other social concerns relating to inconveniences in living conditions in the project areas that may trigger cases of upper respiratory problems and stress? 	√		<p>Pavement scarification; existing pavement demolition, removal, and hauling; and soil and brick chips transport, and embankment shaping have the potential to generate fugitive dust. Asphaltic fumes from the WMM self-propelled pavement finisher may cause stress and nuisance. Dust from construction materials transport will be reduced through the use of covered trucks, dust from unpaved road travel and material storage/staging piles will be reduced through water suppression, exposure from asphalt fumes may be reduced through scheduling of paving activities by avoiding times where number of receptors is minimal (e.g. day time in residential areas, night time in bazars).</p>

Screening Questions	Yes	No	Remarks
<ul style="list-style-type: none"> Hazardous driving conditions where construction interferes with pre-existing roads? 	√		The relatively regular high traffic in the project roads will pose risk as available carriageway will be constricted if not temporarily blocked during construction period particularly during paving. Traffic management by the contractor in coordination with the jurisdictional local authorities. Prior informed consent from the local authorities will be secured by the all contractors at least 15 days prior to implementation. Notices will be posted at the beginning and end points of all construction fronts at least 7 consecutive days prior to start of construction.
<ul style="list-style-type: none"> Poor sanitation and solid waste disposal in construction camps and work sites, and possible transmission of communicable diseases (such as STI's and HIV/AIDS) from workers to local populations? 		√	Provision is made for the disposal of sewage through septic tanks and solid waste through composting or controlled land burial, is planned. As such camp size will be small (about 50 workers) and no such transmission of diseases is expected. Periodic health check-up may be organised to this. Awareness will be created amongst the workers about hygiene and health protection.
<ul style="list-style-type: none"> Creation of temporary breeding habitats for diseases such as those transmitted by mosquitoes and rodents? 		√	No such condition is anticipated. All borrow areas will be either be covered or converted to ponds based on agreements with the landowner. Campsite drainage system will be designed to allow natural flow and avoid pond formation
<ul style="list-style-type: none"> Accident risks associated with increased vehicular traffic, leading to accidental spills of toxic materials? 	√		Being rural road, traffic volume is expected low and probability of accident is minimal. Adequate traffic management measures will be taken to prevent hazardous traffic conditions during construction phase. Adequate signage, speed control measures will be taken close to sensitive locations such as schools, temple or hospitals.

Screening Questions	Yes	No	Remarks
<ul style="list-style-type: none"> Increased noise and air pollution resulting from traffic volume? 	√		<p>Air and noise pollution may increase during construction phase. But the same is likely to be confined within few meters of either side of the road (approximately 150m). Dust suppression measures such as spraying of water and distribution of PPE to workers will be adopted.</p> <p>Impulsive but intermittent noise level increase may occur during operation phase.</p> <p>Air pollution level rather will reduced on paved road compared to unpaved road conditions.</p>
<ul style="list-style-type: none"> Increased risk of water pollution from oil, grease and fuel spills, and other materials from vehicles using the road? 	√		<p>This possibility is minimal but cannot be ruled out. Adequate signage and crash barriers near water body will be proposed to prevent any such incident.</p>
<ul style="list-style-type: none"> Social conflicts if workers from other regions or countries are hired? 		√	<p>Most of the workers will be hired locally.</p>
<ul style="list-style-type: none"> Large population influx during project construction and operation that causes increased burden on social infrastructure and services (such as water supply and sanitation systems)? 		√	<p>Most of the workers will be hired locally. Average road length is 14 kilometres and it is expected that a single construction camp will be established for each civil works construction package composed of several roads. Size of construction camp is expected host between 30-50 workers with the bulk of the manual labour to be provided by the host communities. This size is unlikely to cause any significant burden on social infrastructure and services.</p>
<ul style="list-style-type: none"> Risks to community health and safety due to the transport, storage, and use and/or disposal of materials such as explosives, fuel and other chemicals during construction and operation? 		√	<p>The construction material (aggregate from approved quarries, borrow earth, Bitumen) will be sourced from nearby sources/approved sources. No explosive or chemicals are likely to be used. Bitumen waste if any generated during construction will either recycled or disposed in a controlled manner.</p>
<ul style="list-style-type: none"> Community safety risks due to both accidental and natural causes, especially where the structural elements or components of the project are accessible to members of the affected community or where their failure could result in injury to the community throughout project construction, operation and decommissioning. 		√	<p>No such impacts are anticipated. Safe access is provided to all villagers using the road. Adequate signage as well as guides is posted at work place.</p>

A Checklist for Preliminary Climate Risk Screening

Country/Project Title: BAN: Rural Connectivity Improvement Project

Sector: Agriculture

Subsector: Rural Roads

Division/Department: Environment, Natural Resources, and Agriculture Division

Screening Questions		Score	Remarks ¹
Location and Design of project	Is siting and/or routing of the project (or its components) likely to be affected by climate conditions including extreme weather related events such as floods, droughts, storms, landslides?	0	Siting is not an option for RCIP as all roads to be upgraded are already existing and all improvements are confined within the embankment width. Project selection criteria is expanded from the traditional socio-economic impacts to include roads that were damaged during the 2017 flood season.
	Would the project design (e.g. the clearance for bridges) need to consider any hydro-meteorological parameters level, (e.g., sea-peak river flow, reliable water level, peak wind speed etc)?	1	The RCIP road design already incorporated key lessons from the on-going Coastal Climate Resilient Infrastructure Project (CCRIP). These design features include: normal freeboard, slope protection, geo-textile side slope, improve subgrade, cement concrete base, use of geotextiles on the road sub-base, RCC pavement works, reinforced bars, and carpeting.
Materials and Maintenance	Would weather, current and likely future climate conditions(e.g. prevailing humidity level, temperature contrast between hot summer days and cold winter days, exposure to wind and humidity hydro-meteorological parameters likely affect the selection of project inputs over the life of project outputs (e.g. construction material)?	1	As previously mentioned, the RCIP proposed rural road upgrading incorporated key design parameters from the CCRIP. Further, the RCIP is the first large scale project of the LGED that WMM will be employed as opposed to WBM due partly to its ability to withstand longer submergence to flood waters as opposed to the traditional practice of using WBM pavement.
	Would weather, current and likely future climate conditions, and related extreme events likely affect the maintenance (scheduling and cost) of project output(s) ?	0	The project has incorporated 5 year maintenance in the construction contracts which internalized risks of higher maintenance from future climate condition including extreme events.
Performance of project outputs	Would weather/climate conditions, and related extreme events likely affect the performance (e.g. annual power production) of project output(s) (e.g. hydro-power generation facilities) throughout their design life time?	1	The RCIP has internalized key climate resilience designs for rural roads based on Bangladesh experiences. The LGED has adopted a more robust pavement that can withstand longer flood submergence and increased rainfall. Protection works such as palisade, palliwall, and RCC blocks to buttress embankment sides slopes are integrated in the design to better resist erosion against floods. Balancing culverts have wither been added or enlarged to allow flood waters cross the roads. In community and commercial areas, and where the road connects to cyclone centers cement concrete pavement with paved drains were preferred.

Options for answers and corresponding score are provided below:

Response	Score
Not Likely	0
Likely	1
Very Likely	2

Responses when added that provide a score of 0 will be considered low risk project. If adding all responses will result to a score of 1-4 and that no score of 2 was given to any single response, the project will be assigned a medium risk category. A total score of 5 or more (which include providing a score of 1 in all responses) or a 2 in any single response, will be categorized as high risk project.

Result of Initial Screening (Low, Medium, High): MEDIUM

Other

Comments: _____

Prepared by: Lee Ming Tai

¹ If possible, provide details on the sensitivity of project components to climate conditions, such as how climate parameters are considered in design standards for infrastructure components, how changes in key climate parameters and sea level might affect the siting/routing of project, the selection of construction material and/or scheduling, performances and/or the maintenance cost/scheduling of project outputs.

Appendix B. Table 3: RCIP Road's Salient Features and Improvement Proposals

SI No.	District	Upazila	Road and Road ID	Existing Road's Salient Features	Improvement Proposal
1	Kurigram	Kurigram Sadar	Pateswari RHD-Jatrapur GC Road (UZR) (ID : 149522001)	<p>Length : 10.40 km, Starting Point : At Pateswari GC RHD Ending Point : At Jatrapur GC, Major Settlements : Purbo Bhogdanga, Sobondah, Moratari, Sardarpara,, Ghogadah, Dubaachri, Kajoldah, Kamarhaillah, KatlamariGhonoshampur, Jatrapur Existing road land width : 12.09m –16.00m, Terrain : Plain Configuration : Existing 3.70m with 0.90m hard shoulder on both sides Box Culvert : Existing 17 nos. at Ch.0 +154 km, Ch.0 +342 km, Ch. 1+425 km, Ch. Ch. 2+097 to 2+107 km, Ch.02+435 km, Ch. 2+647km to 2+651km, Ch. 3+516km to 3+522km, Ch. 4+091km to 4+094km, Ch.0 5+010km, Ch.0 5+144km, Ch. 7+821km to 7+824km, Ch. 6+720 km to 6+721.5 km, Ch. 6+886 km to 6+889 km, Ch. 7+821km to 7+824km, Ch. 8+833km to 8+841km, Ch. 9+025km to 9+033km, Ch. 9+369km to 9+384km, U Drain: Existing 2 nos. at Ch.1 +580 km, Ch.8 +318 km</p>	<p>Length : 10.40 km Configuration : Proposed: 5.50m with 0.90 m both side soft shoulder all through Box Culvert : Proposed replacement 4 no. at Ch. 2+647km to 2+651km, Ch. 3+516km to 3+522km, Ch. 4+091km to 4+094km and Ch. 7+821km to 7+824km U-drain : Proposed for replacement 1 no. at Ch.1 +580 km</p>
2	Kurigram	Fulbari	Karibari GC-Khochabari Via Bhangamor U.P (UNR) (ID : 149183001)	<p>Length : 8.60 km, Starting Point : At Kharibari Ending Point : Khochabari Abason Bridge, Major Settlements : Rabaitari, Ram ram Sen, Bhangamore, khochabari Existing road land width : 12.00m –14.00m, Terrain : Plain Configuration : Existing 3.00m with 0.65m hard shoulder on both sides Box Culvert : Existing 1 nos. U Drain: Existing 1 nos.</p>	<p>Length : 8.6 km Configuration : Proposed: 3.7m with 0.90 m both side soft shoulder all through Cross Drainage Structure : Nil</p>

SI No.	District	Upazila	Road and Road ID	Existing Road's Salient Features	Improvement Proposal
				RCC Bridge : 6Nos	
3	Kurigram	Bhurungamari	Bangosonahat-Shahi Bazar GC Road.(ID : 149062001)	Length : 3.920 km, Starting Point : At Bongosonahat Bridge Point Ending Point : At Shahi Bazar GC Major Settlements : Bongosonahat, Shahi Bazar, Sotipury, Khochabary, Banurkuhti, Dakshin Baldia Existing road land width : 13.35m –16.35m, Terrain : Plain Configuration : Existing 3.66m with 0.60 m soft shoulder on both sides Box Culvert : 6 Nos	Length : 3.920 km Configuration : Proposed: 3.66m with 0.90 m both side soft shoulder all through Box Culvert : 1 Nos U-drain :
4	Kurigram	Nageswari	Hasnabad UP Office - Newashi GC. (ID: 149613041)	Length : 1.390 km, Starting Point : At Schoolerhat Ending Point : At Newashi GC Major Settlements : Schoolerhat, Hendopara, Uttar Hasnabad Existing road land width : 12m –14m, Terrain : Plain Configuration : Existing 3.00m with 0.50 m soft shoulder on both sides	Length : 1.390 km Configuration : Proposed: 3.70m with 1.00 m both side soft shoulder all through Box Culvert : 3 Nos U-drain : 2 Nos.
5	Kurigram	Rowmari	Dantbhanga-Rowmari Via Baitkamari Bazar Road (UNR) (ID#149793010)	Length : 9.885 km, Starting Point : Satkaraibari Ending Point : Rowmari Degree College Major Settlements : Satkoraibari, Katerchar, kowniarchar, Dhontola, Balugram, Tapurchar, Pakiura, Baitkamari, College Para Existing road land width : 10m –15m, Terrain : Plain Configuration : Existing 3.00m with 0.50 m soft shoulder on both sides Regulator: 1 No	Length : 9.885 km Configuration : Proposed: 3.70m with 0.9 m both side soft shoulder all through Slope Drain : 10 Nos RCC Cross Drain: 8 Nos Side Drain: 150 m
6	Kurigram	Rajarhat	Najimkhan GC-Khadabagh R&H Via Rajarhat (UZR)	Length : 7.57 km Starting Point : At Nilphamari – Saidpur R&H at Textile Mills.	Length : 7.57 km Configuration : Proposed 5.50 m with 0.90 m earthen shoulder on both side

SI No.	District	Upazila	Road and Road ID	Existing Road's Salient Features	Improvement Proposal
			(ID#149772001)	Ending Point : At Babrijhar Growth Center Major Settlements : Nazimkhan Bazar, Rajarhat Bazar, Baburbazar, Baddyer Bazar, Panga, Khadabagh Existing road land width : Terrain : Plain Configuration : Existing 3.70 m with 0.90 m earthen shoulder on both side of the road Box Culvert : Existing Box Culvert 8 nos.	Slab Culvert : 1No
7	Jessore	Monirampur	Monirampur-Nehalpur-Kapalia road (UZR) (ID : 241612003)	Length : 20.063 km Starting Point : At Jessore-Satkhira RHD at Mohonpur Ending Point : At Kapalia Bazar. Major Settlements : Mohonpur, Kamalpur, Baliadanga, Masna, Khanpur, Silimpur, Gopalpur, Bahirghoria, Parala, Satgati, Khatuadanga, Kaziara, Nehalpur, Kalibari, Monohorpur, Khakundi and Kapalia Existing road land width : 9.50m-14.00 m Terrain : Plain Configuration : Existing 3.70 m with 1.20 m both side earthen shoulder Box Culvert : Existing 4 Nos at Ch. 2+589, Ch.0+270, Ch. 16+019, Ch. 16+262 U Drain : Existing 3 Nos. at Ch.5+683, Ch.19+018, Ch.19+118 OFC : Existing 5 Nos. at Ch. 1+528, Ch.10+505, Ch.11+172, Ch.14+371, Ch.17+353, Bridge : Existing 1 no. at Ch.19+932 to 19+976 Pipe culvert : Existing 33 nos at Ch. 0+595, Ch.1+015, Ch. 1+225, Ch.2+625, Ch.3+730, Ch.4+155, Ch.4+452, Ch.4+730, Ch.4+836, Ch.5+088, Ch.5+310, Ch.8+310, Ch.8+562, Ch.9+716, Ch.10+050, Ch.10+135, Ch.10+805, Ch.11+415, Ch.11+603, Ch.11+825, Ch.13+690, Ch.15+563, Ch.15+682, Ch. 15+928, Ch.16+160, Ch.16+438, Ch.16+826, Ch.16+925, Ch.17+000, Ch.17+668, Ch.17+832,	Length : 20.063 km Configuration : Proposed 5.5 m with 1.20 m both side earthen shoulder Box culvert : Proposed 20 Nos. at Ch 14371m, Ch. 17353m, Ch. 270m , ch. 595m, ch. 4155m, ch. 4452m, ch. 4730m, ch. 4836m, ch. 5088m, ch. 5310m, ch. 8310m, ch. 8562m, ch. 9716m, ch. 10050m, ch. 10805m, ch. 11603m, ch. 13690m, ch. 15928m, ch. 16435m & ch. 17668m U drain : Proposed 14 nos. at ch. 1015m, Ch. 3730m, ch. 10135m, ch. 11415m, ch. 11825m, ch. 15563m, ch. 15682m, ch. 16160m, ch. 16826m, ch. 16925m, ch. 17000m, ch. 17832m, ch. 18132m & ch. 18865m

SI No.	District	Upazila	Road and Road ID	Existing Road's Salient Features	Improvement Proposal
				Ch.18+132, Ch.18+865	
8	Jessore	Monirampur	Monirampur GC - Bakra GC via Rajgonj GC Road (UZR) (ID:241612001)	Length : 20.35 km Starting Point : Komolpur Bazar Ending Point : Bakra Bazar Major Settlements : Komolpur, Joka, Solokhada, Dumurkhali, Ruposhpur & Panchpota Existing road land width : 9.50-14.00 m Terrain : Plain Configuration : Existing 3.7 m with 1.20 m Earthen Shoulder Irrigation Drain : 1 No U Drain : 4 Nos Pipe Culvert : 17 Nos Box Culvert: 12 Nos	Length : 8.691km Configuration : Proposed 5.5 m with 0.90 m both side earthen shoulder U Drain : 4 Nos Pipe Culvert : 17 Nos Box Culvert: 12 Nos
9	Jessore	Monirampur	Nehalpur GC-Payria GC via Takerghat Road (UZR) (ID:241612006)	Length : 3.737 km Starting Point : At Nehalpur Kalibari Bazaar Ending Point : At Panchakori Bazaar Major Settlements : Nehalpur, Balidha, Panchakori Existing road land width : 8.0-12.0 m Terrain : Plain Configuration : Existing 3.7 m with 0.5 m Earthen Shoulder RCC Bridge : 1 Nos Box Culvert : 4 Nos OFC: 1 No U Drain : 8 Nos Pipe Culvert : 3 Nos	Length : 3.737 km Configuration : Proposed 5.5 m with 0.90 m both side earthen shoulder U Drain : 08 Nos Box Culvert : 03 Nos
10	Jessore	Monirampur	Monirampur-Mukterpur road (UZR) (ID : 241612008)	Length : 20.65 km Starting Point : Jessore-Satkhira RHD at Mohonpur. Ending Point : At Muktapur. Major Settlements : Mohonpur, Taherpur, Juranpur, Paton, Maziali, Chandpur, Goribpur, Jalalpur, Khorinchi, Khedapara, Bosontopur, Tetulia, Enayetpur, Khatura, Kayemkhola, Mutapur Existing road land width : 9.50-14.00 m	Length : 18.445 km Configuration : Proposed 5.5 m with 0.90 m both side earthen shoulder U Drain : 19 Nos Box Culvert : 28 Nos OFC : 2 Nos

SI No.	District	Upazila	Road and Road ID	Existing Road's Salient Features	Improvement Proposal
				Terrain : Plain Configuration : Existing 3.7 m with 1.2 m Earthen Shoulder RCC Bridge : 1 Nos Box Culvert : 14 Nos OFC: 3Nos Pipe Culvert : 44 Nos U Drain : 15 Nos	
11	Jessore	Monirampur	Lawri (Madrasha) RHD-Khedapara GC Road (ID;241612016)	Length : 14.850 Km Starting Point :Lawri (Madrasha) Ending Point : AtKhedapara GC Major Settlements : Ramnagar, Lawri, Halsa, Kashirpur, Mazhiali, Chandpur, Krishnabati, Helanchi, Jalalpur, Khorinchi r, Galda, Khedapara Existing road land width : 15.09 m - 21.00 m Terrain : Plain Configuration : Existing 3.7 m with 0.90 m Earthen Shoulder	Length : 14.850 Km Configuration : Proposed 5.5 m with 0.90 m both side earthen shoulder
12	Jessore	Bagherpara	Jessore-Narail RHD at Dhalgrammore to Narikelbaria via Dhalgram Bazar (ID: 241092003)	Length : 8.275 km Starting Point : At Bagherpara - Kaligonj RHD Ending Point : At Chaturbaria GC Major Settlements : Chandipur, Khalia Kesobpur, Rajapur, Chotto Kundra, Chandpur Holihutto, Chaturbaria Existing road land width : 15.09 m - 21.00 m Terrain : Plain Configuration : Existing 3.66 m with 0.90 m Earthen Shoulder U drain : 6 Nos Box Culvert : 4 Nos OFC: 2 Nos	Length : 8.275km Configuration : Proposed 3.66 m with 0.90 m both side earthen shoulder U Drain : 8 Nos
13	Jessore	Bagherpara	Khajura-Chaturbaria road.	Length : 8.275 km Starting Point : At Bagherpara –Kaligong	Length :8.275 km Configuration : Proposed 3.66 m with

SI No.	District	Upazila	Road and Road ID	Existing Road's Salient Features	Improvement Proposal
			(ID:241092013)	RHD(Khajura Bazar GC) Ending Point : At Chaturbaria Bazar GC Major Settlements : Chandipur, Khalia Kesobpur, Rajapur, Chotto Khudra, Uttar chadpur Holihutto, Chaturbaria villages Existing road land width : 15.09 m - 21.00 m Terrain : Plain Configuration : Existing 3.66 m with 0.90 m Earthen Shoulder	0.90 m both side earthen shoulder
14	Jessore	Sadar	Jessore- Potengali - Kayemkhola GC Road. (UZR) (ID :241472002)	Length : 8.275 km Starting Point : At Jessore (GC) Ending Point : At Kayemkhola Bazar(GC) Major Settlements : Kholadanga, Bhikutia, Arispur, Potengali, sujalpur, Eranda, Dattapara, Diara, Dumdia ,Narangali, Halsa & Kayemkhola Existing road land width : 9.8m – 13.75m Terrain : Plain Configuration : Existing 5.5 m with 0.30 m Earthen Shoulder U drain : 11 Nos Box Culvert : 20 Nos Pipe Culvert: 11 Nos Bridge : 1 No	Length : 8.275km Configuration : Proposed 5.5 m with 0.91 m both side earthen shoulder U Drain : 17 Nos
15	Jessore	Abhoynagar	Nowapara Upazila H/Q (Shankarpasha Bazar Ghat) - Narail-Fultala RHD at Sukpara more Road. (UZR) (ID:241042005)	Length : 9.3 km Starting Point : At Nowapara Upazila H/Q Ending Point : At Narail Fultala RHD Terrain : Plain Configuration : Existing 3.7 m with 0.90 m Earthen Shoulder U Drain : 2 nos Box Culvert : 5 Nos Pipe Culvert: 11 Nos	Length : 4.789km Configuration : Proposed 3.7 m with 0.9 m both side earthen shoulder Box Culvert : 28 Nos
16	Jessore	Abhoynagar	Nowapara Upazila H/Q-Monirampur via	Length : 7.3 km Starting Point : Nowapara Live Stock office	Length : 24.628 km Configuration : Proposed 5.5 m with

SI No.	District	Upazila	Road and Road ID	Existing Road's Salient Features	Improvement Proposal
			Moshiahati,Nehalpur Road. (UZR) (ID: 241042006)	Ending Point : Moshiahati Bazar Major Settlements : Sarkhola, Dumurtala,Kultia,Moshiahati Existing road land width : 8.00m-16.00m Terrain : Plain Configuration : Existing 3.66 m with 1.8 m Earthen Shoulder RCC Bridge : 1 No Box Culvert : 5 Nos	0.90 m both side earthen shoulder Cross Drainage Work : Nil
17	Jessore	Abhoynagar	Jessore Khulna RHD Bhangagate (Badamtala) - Amtala GC via Moricha, Nawly Bazar Road (UZR) (ID: 241042007)	Length : 24.628 km Starting Point : Shankarpasha Feri Ghat Ending Point : Amtola Growth Center Major Settlements : Sreedharpur, Baghutia, Shuvorara, Siddipasha Existing road land width : 10.00 m - 15.00 m Terrain : Plain Configuration : Existing 3.66 m with 0.90 m Earthen Shoulder Cross drain : 9 Nos Box Culvert : 3 Nos RCC Bridge: 6 Nos	Length : 24.628km Configuration : Proposed 3.66 m with 0.90 m both side earthen shoulder Cross Drain : 9 Nos
18	Jessore	Chowgacha	Chowgacha (Damodar Battala)- Bidhadharpur Road. (UZR) (ID:241112009)	Length : 7.62 km Starting Point : Patvora village Ending Point : Modonpur Chowrasta Major Settlements : Patvora, Naranpur ,Vogobanpur , Elismari, Modonpu Existing road land width : 12m-15m Terrain : Plain Configuration : Existing 3.66 m with 0.90 m Earthen Shoulder U drain : 7 Nos Box Culvert : 1 No OFC: 2 Nos	Length : 5.65km Configuration : Proposed 3.66 m with 0.90 m both side earthen shoulder Box Culvert : 3 Nos
19	Jessore	Chowgacha	Purapara GC- Moheshpur Pucca	Length : 11.65 km Starting Point : Mandarbaria	Length : 5.65km Configuration : Proposed 3.66 m with

SI No.	District	Upazila	Road and Road ID	Existing Road's Salient Features	Improvement Proposal
			road-Bidhadharpur bazar Road. (UZR) (ID:241112011)	Ending Point : Khoderchara Bottala. Major Settlements : Mandarbaria, Chandpara, Fastala, Goatoli, Borokanpur. Existing road land width : 12m-15m Terrain : Plain Configuration : Existing 3.66 m with 0.90 m Earthen Shoulder U drain : 1 No Box Culvert : 7 Nos Pipe Culvert: 2 Nos	0.90 m both side earthen shoulder Cross Drain : 9 Nos
20	Jessore	Chowgacha	Narayanpur UP Office - Bondelitol Bazar Road. (UNR) (ID:241113018)	Length : 4.4 km Starting Point : Bondalitola Bazar Ending Point : Narayanpur UP Office Major Settlements : Bondalitola Bazar, Narayanpur, Chandpara Terrain : Plain Configuration : Existing 3.66 m with 0.90 m Earthen Shoulder RCC Bridge: 2 Nos	Length : 4.4 km Configuration : Proposed 3.66 m with 0.90 m both side earthen shoulder U dRAIN : 9 Nos
21	Jessore	Jhikorgacha	Bakra GC- Baganchara GC via Sankarpur UPC (UZR) (ID:241232003)	Length : 10.86 km Starting Point : At Bakra Bazar(GC) Ending Point : At Baganchara Bazar(GC) Major Settlements : Bakra Bazar, Ulakol Bazar, Sankarpu Ferighat Bazar, Baganchara Bazar GC Terrain : Plain Configuration : Existing 3.7 m with 1.15 m Earthen Shoulder RCC Bridge: 2 Nos Pipe Culvert: 28 Nos Box Culvert : 7 Nos U Drain : 5 Nos OFC: 2 Nos	Length : 10.86 km Configuration : Proposed 5.5 m with 0.90 m both side earthen shoulder U DRAIN : 9 Nos
22	Jessore	Jhikorgacha	Bangdah GC- Kayemkhola GC via Chutipur Bazar,	Length : 12.4 km Starting Point : At Bangdah Bazar(GC) Ending Point : At Kayemkhola Bazar(GC)	Length : 12.4 km Configuration : Proposed 5.5 m with 0.90 m both side earthen shoulder

SI No.	District	Upazila	Road and Road ID	Existing Road's Salient Features	Improvement Proposal
			Mohammadpur Bazar (UZR) (ID:241232010)	Major Settlements : Chutipur Bazar, Mohammadpur Bazar, Kayemkhola GC Terrain : Plain Configuration : Existing 3.7 m with 1.15 m Earthen Shoulder Cross Drain : 27 Nos	Surface DRAIN : 3636m Cross Drain : 4 Nos
23	Jessore	Sarsha	Benapole - Baganchra GC via Goga UP H/Q Road (UZR) (ID:241902007)	Length : 19.94 km Starting Point : At Benapole Bazar Bonpara, Shaghata Ending Point : At Goga Bazar Major Settlements : Benapole Bazar, Chotoanchra, Khoridanga, Shikri Village, Baropota Bazar, Rahamotpur, Kaliani Village & Goga Bazar Existing Road Land Width : 8.50m – 13.10m Terrain : Plain Configuration : 3.66m with 0.80m soft shoulder on both sides, Box Culvert : 13 Nos U drain : 23 Nos RCC Bridge : 2 Nos Pipe Culvert : 9 Nos Slab Culvert : 8 Nos	Length : 9.141 km Configuration : 3.70 m with 0.90m both side soft shoulder all through U Drain : 5 Nos Box Culvert : 7 Nos Surface Drain : 258m
24	Jessore	Keshobpur	Chuknagar-Katakhali Road (UZR) (ID: 241382003)	Length : 7.200 km Starting Point : Chuknagar Bazar Bonpara, Shaghata Ending Point : Kalagachi Bazar Major Settlements : Sannasgacha, Verchi, Daskhahunia, Sarutia, Sufalakati, Kayemkhola, Sarutia (North), Kalagachi Existing Road Land Width : 10.00m – 14.00m Terrain : Plain Configuration : 3.7m with 1.05 soft shoulder on both sides Box Culvert : 3 Nos Pipe Culvert : 16 Nos	Length : 7.200 km Configuration : 5.50 m with 0.90m both side soft shoulder all through U Drain : 5 Nos Box Culvert : 16 Nos
25	Gaibandha	Shaghata	Dakbanglahat - Jumarbari UP Road	Length : 4.975km Starting Point : At Dakbangla More, Saghata	Length : 4.975km Configuration : Proposed 4.26 m with

SI No.	District	Upazila	Road and Road ID	Existing Road's Salient Features	Improvement Proposal
			(ID: 132883011)	Ending Point : At Jumarbari G.C Major Settlements : Khamarpabantair, Pabantair, Bengarpara, Amdirpara, Jatiarpara, Thaikorerpara, Jumarbari Existing road land width : 15.00 m - 18.00 m Terrain : Plain Configuration : Existing 3.00 m with 0.75 m Earthen Shoulder Structure : Existing 1 No Sluice gate at Ch. 2339 to Ch. 2342	1.20 m both side earthen shoulder
26	Gaibandha	Shaghata	Bonarpara GC-Katucha hat R&H Rd. (ID : 132882006)	Length : 6.421 km Starting Point : At Upazila H/Q Bonpara, Shaghata Ending Point : At Kachua Hat G.C Major Settlements : Shimultair, Talian, Shampur, Mazbari, Khamar Dhanaruha Existing Road Land Width : 6.00-8.00m Terrain : Plain Configuration : 3.00m with 0.45m soft shoulder on both sides, Box Culvert : 13 Nos U drain : 6 Nos RCC Bridge : 2 Nos	Length : 6.421 km Configuration : 3.70 m with 0.90m both side soft shoulder all through U Drain : 6 Nos Box Culvert : 7 Nos (replace)
27	Gaibandha	Sadullapur	Madargonj GC-Laxmipur G.C Road via Kantanagar.(ID : 132822013)	Length : 10.443 km Starting Point : At Mirpur Bazar Ending Point : At Kantanagar Bazar Major Settlements : Mirpur, Boro Daudpur, Junidpur, Tarf Kamal, Lichur Bagan, Tafaf Fazil, Sandiapur, Mohishbandi, Bhangamore Existing Road Land Width : 7.00-17.19m Terrain : Plain Configuration : 3.70m with 0.90m soft shoulder on both sides, Box Culvert : 2 Nos U drain : 8 Nos Pipe Culvert : 2 Nos	Length : 10.433 km Configuration : 3.66 m with 0.90 m both side soft shoulder all through U Drain : 7 Nos Box Culvert : 1 Nos

SI No.	District	Upazila	Road and Road ID	Existing Road's Salient Features	Improvement Proposal
				RCC Bridge : 2 Nos Sluice Gate : 1 No	
28	Gaibandha	Sadullapur	Kunjo Mohipur Uttarpara - Pollasbari Border via Idulpur U.P office (ID : 132823019)	Length : 5.370 km Starting Point : At Kunjo Mohipur Uttarpara Ending Point : At Polashbari Bazar Major Settlements : Kunjo Mohipur, Idilpur, Harani, Gobindo Roy Pukur Par, Tajnagar Existing Road Land Width : 8.50-15.25m Terrain : Plain Configuration : 3.70m with 0.90m soft shoulder on both sides, Box Culvert : 3 Nos Pipe Culvert : 7 Nos Slab Culvert : 1 No	Length : 5.370 km Configuration : 3.66 m with 0.90 m both side soft shoulder all through U Drain : 7 Nos Box Culvert : 7 Nos
29	Gaibandha	Sadar	Dariapur- Laxmipur(UZR) (ID#132242004)	Length : 7.254 km Starting Point : At Dariapur GC Ending Point : At Laxmipur GC Major Settlements : Dariapur, Gorerbatha Mazar,Dhandhonipara, Malibari Mathbazar, Khordo malibari, Malibari Chowrastha,Balaatta,Nandirvita,Laxmipur Existing road land width : 15.09 m - 21.00 m Terrain : Plain Configuration : Existing 3.66 m with 0.90 m Earthen Shoulder U drain : 1 No Box Culvert : 3 Nos OFC: 1 Nos RCC Bridge : 4 Nos Pipe Culvert : 1 No	Length : 7.254km Configuration : Proposed 3.66 m with 0.90 m both side earthen shoulder
30	Gaibandha	Gobindaganj	Kamdia GC (UZR)- Birat GC Road. (UZR) (ID#132302011)	Length : 9.27 km Starting Point : kamdia Bazar Ending Point : Raza Birat Hat Major Settlements : Kamdia Bazar, Enayetpur, Aligram, Ayabhangi, Dashlal, Raza Birat hat	Length : 9.97 km Configuration : Proposed 3.7 m with 1.15 m both side earthen shoulder Cross Drain : 7 Nos

SI No.	District	Upazila	Road and Road ID	Existing Road's Salient Features	Improvement Proposal
				Terrain : Plain Configuration : Existing 3.7 m with 1.15 m Earthen Shoulder Box Culvert : 10 Nos OFB: 1 Nos Pipe Culvert : 4 Nos U Drain: 9 Nos	
31	Gaibandha	Gobindaganj	Bogra-Rangpur City Road to Nakai Hat via Talukkanupur UP road (UZR) (ID#132302012)	Length : 9.27 km Starting Point : NHW Road at Jumma Ghor Tinmatha Ending Point : RHW Road at Nakai hat Major Settlements : ChakSinhadanga,Kapasias,Talukkanupur,Damadarpur, Khuksia,Nakai Existing road land width : 12.00 m - 15.00 m Terrain : Plain Configuration : Existing 3.7 m with 0.90 m Earthen Shoulder Box Culvert : 8 Nos OFC: 1 Nos RCC Bridge : 3 Nos Pipe Culvert : 2 Nos	Length : 9.271km Configuration : Proposed 3.7 m with 1.0 m both side earthen shoulder RCC U Drain : 25 Nos Box Culvert : 6 Nos
32	Gaibandha	Gobindaganj	Shakahar U.P-Fulpukuria Bazar (UNR) (ID#132303002)	Length : 8.6 km Starting Point : Shakhar UP Mor Ending Point : Islampur Bazar Major Settlements : Shakhahar, Khurshal, Parol Batoali, islampur Bazr Terrain : Plain Configuration : Existing 3.7 m with 0.90 m Earthen Shoulder Box Culvert : 2 Nos OFC: 1 No Pipe Culvert : 2 Nos	Length : 5.28 km Configuration : Proposed 3.7 m with 0.9 m both side earthen shoulder Cross Drain : 13 Nos Box Culvert : 7 Nos
33	Gaibandha	Sundarganj	Sundargonj-Materhat G.C (FRA) (ID : 132912005)	Length : 12.778 km Starting Point : At Collegemore Sundorgonj Ending Point : At Materhat GC	Length : 12.778 km Configuration : 3.70 m with 0.90 m both side soft shoulder all through

SI No.	District	Upazila	Road and Road ID	Existing Road's Salient Features	Improvement Proposal
				Major Settlements : Dakhin Dumaitari, Zhinia, Paran, Uttar Maruadaha, Dakhin Maruadaha, Paschim Chaporhati, Purbo Chaporhati Existing Road Land Width : 8.00-12.00m Terrain : Plain Configuration : 3.70m with 0.60m soft shoulder on both sides, Box Culvert : 20 Nos U drain : 3 Nos Pipe Culvert : 15 Nos Slab Culvert : 3 No	U Drain : 5 Nos Box Culvert : 1 Nos
34	Gaibandha	Palashbari	Betkapa UP office-Haritala hat via Muraripur Road (ID : 132673014)	Length : 3.15 km Starting Point : At Collegemore Sundorgonj Ending Point : At Materhat GC Major Settlements : Dakhin Dumaitari, Zhinia, Paran, Uttar Maruadaha, Dakhin Maruadaha, Paschim Chaporhati, Purbo Chaporhati Existing Road Land Width : 8.00-12.00m Terrain : Plain Configuration : 3.70m with 0.60m soft shoulder on both sides, Box Culvert : 20 Nos U drain : 3 Nos Pipe Culvert : 15 Nos Slab Culvert : 3 No	Length : 3.15 km Configuration : 3.70 m with 0.90 m both side soft shoulder all through U Drain : 20 Nos Box Culvert : 2 Nos
35	Gaibandha	Palashbari	Dholbanga Bazar at Zillbandha-Pabnapur UP office Road (ID: 132673005)	Length : 5.49 km Starting Point : At Dholvanga Ending Point : At Armeir Bazar Existing Road Land Width : 8.00-12.00m Terrain : Plain Configuration : 3.70m with 0.60m soft shoulder on both sides, Box Culvert : 2 Nos Pipe Culvert : 1 No Open Foundation Culvert : 2 No	Length : 5.49 km Configuration : 3.70 m with 0.90 m both side soft shoulder all through Box Culvert : 2 Nos U Drain ; 20 Nos

SI No.	District	Upazila	Road and Road ID	Existing Road's Salient Features	Improvement Proposal
36	Gaibandha	Palashbari	Dublagari NHW-Dholbanga GC Road via Amlagachi GC (ID:132672010)	Length : 7.288 km Starting Point : At Natun Bazar Ending Point : At Dholbhanga Major Settlements : Natun Gachi, Amlagachi Hat, Futani Bazar, Dholbhanga Bazar Existing Road Land Width : 8.00-12.00m Terrain : Plain Configuration : 3.70m with 0.60m soft shoulder on both sides, Box Culvert : 2 Nos Pipe Culvert : 1 No Open Foundation Culvert : 2 No	Length : 7.288 km Configuration : 3.70 m with 0.90 m both side soft shoulder all through Box Culvert : 3 Nos
37	Panchagorh	Debiganj	Debiganj R&H Road (Bat Tree More) - Jharbari GC (ID: 177342002)	Length : Existing 17.25 km BC road Starting Point : At Pakuritola Bazar Ending Point : At Joyram bazar Major Settlements : Pakuritola, Oviram Para, Shorif Bazar, Boder Hat, kalibari Chorangi, Kamarpara, Moumari, Proadhanath, Kaliganj, Dararpar , Motasonnasi, Paikarpara, Fulbari, Loxinarayoni, Jaliapara, Fultola, Joyram Existing road land width : 12.09m – 13.05m Terrain : Plain Configuration : Existing 3.70 m with 0.90 m earthen shoulder at both sides Box Culvert : Existing 24 Nos. Box Culvert At Ch. 2901 , 3985, 4065, 4938, 5242, 5868, 7048, 8128, 8918, 9203, 9395, 9959, 10436, 11497, 12560, 13079, 14104, 15104, 15386, 15792, 16200, 16261, 16604, 17157 RCC Bridge : Existing 2 nos. RCC Bridge at Ch. 2284m and 12247m Cross Drain : Existing 1 no. Cross Drain at Ch. 14330	Length : Proposed BC road – 16.60 km and RCC road – 650 m Configuration : Proposed 5.50 m with 0.90 m earthen shoulder at both sides Surface Drain : Total length=850.00 m (At Ch. At 00-40m= 40m R/S, 1550-1650m= 100m L/S, Ch. 8919-9370m=451m R/S, Ch.12650-12909m=259m R/S) Box Culvert : Proposed replacement 11 nos. Box Culvert at Ch., 3985, 7048, 8128, 9203, 9335, 10436, 14104, 15792, 16261, 16604, 17157 Cross Drain : Proposed 5 nos. Cross Drain at Ch.7132, 9111,12700,12715,14890 and 1 No cross drain is replace at Ch.14330 Slope Drain : Proposed 11 nos. at Ch. 5+871km, 5+892km, 5+916km, 12430km, 12450km,12470km,12500km 12430km, 12445km, 12475km, & 12495km
38	Panchagorh	Debiganj	Fulbari GC - Panchpir	Length : 9.13 km	Length : 9.130 km

SI No.	District	Upazila	Road and Road ID	Existing Road's Salient Features	Improvement Proposal
			GC (ID :177342003)	Starting Point : Fulbari GC Ending Point : Panchpir GC Major Settlement: Terrain : Plain Existing Road Land Width : 12-18m Configuration : Existing 3.7m with 0.90m soft shoulder on both sides, Box Culvert : 11 Nos Slab Culvert : 2 No RCC Bridge : 1 Nos U Drain : 1 Nos	Configuration : Proposed: 5.5 m with 0.90 m both side soft shoulder all through
39	Panchagorh	Sadar	Panchagarh - Harivasha Road. (ID : 177732001)	Length : 10.55 km Starting Point : Jalashi Bazar Bazar ,Panchagarh Ending Point : Harivasha G.C (Bazar) Major Settlement: Jalshi, , Boleapara,Maghai(Talma),Bishmoni,Shekerhat,Panima tch,Mahonjhar, Basuniapara, Khalpara & Harivasha Existing Road Land Width : 13.5-18.5m Terrain : Plain Configuration : Existing 3.7m with 0.90m soft shoulder on both sides, Box Culvert : 9 Nos Slab Culvert : 2 No RCC Bridge : 2 Nos	Length : 10.55 km Configuration : Proposed: 5.5 m with 0.90 m both side soft shoulder all through Box Culvert : 1 No
40	Panchagorh	Tetulia	Tetulia Gobra Bridge - Shalbahan GC Road (ID: 177902005)	Length : 9.70 km Starting Point : Gobra Bridge Ending Point : Salbahan Hat Major Settlement: Sahebjote, Dangapara, Aziznagar, Mathafata, Biralijote, Khalpara, Pranjote, Namagoch, Velkugoch, Pramanikpara, Gobragoch, Sarkerpara, Dariagoch, Salbahan Existing Road Land Width : 10.28m – 11.15m Terrain : Plain	Length : 9.70 km Configuration : Proposed: 5.5 m with 0.90 m both side soft shoulder all through Box Culvert : 6 No (4 nos repair) Cross Drain : 3 Nos Surface Drain : 510m

SI No.	District	Upazila	Road and Road ID	Existing Road's Salient Features	Improvement Proposal
				Configuration : Existing 3.66 m with 0.90m soft shoulder on both sides, Box Culvert : 11 Nos Cross Drain : 2 No	
41	Panchagorh	Atwari	Fakirgonj hat GC - Shathkhamar R&H Road (ID : 177042001)	Length : 9.70 km Starting Point : Fakirgonj hat GC Ending Point : Shathkhamar R&H Major Settlement : Choto Dap, Boro Dap, Radhanagar, MALigaon, Ranigonj, Namajpora, Sholohori, Kalkuti, Shamagaon, Bolrampur, Kurulia, Sathkumar Existing Road Land Width : 12.m – 13m Terrain : Plain Configuration : Existing 3.66 m with 0.90m soft shoulder on both sides, Box Culvert : 20 Nos Cross Drain : 2 No Slab Culvert : 5 nos Pipe culvert : 1 nos RCC girder bridge : 2 Nos	Length : 9.70 km Configuration : Proposed: 5.5 m with 0.90 m both side soft shoulder all through Box Culvert : 6 No U drain : 1 Nos
42	Rangpur	Pirgacha	Chowdhurani GC – Shatibari RHD Road (ID:185732006)	Length : 5.795 Km Starting Point : At Chowdhurani GC Ending Point : At Shatibari RHD Road Major Settlements : Kutubbos, Ramchandrapara, Sullipara, KoikuriNayapara, Monglakuti, Koikuri & Jalalgonj. Existing road land width : 12.66m – 17.56m, Terrain : Plain Configuration : Existing 3.70m with 0.90m hard shoulder and 0.3 Earthen shoulder on both sides Box Culvert : Existing 11 nos. at Ch.334, Ch. 477, Ch. 810, Ch. 974, Ch. 1604, Ch. 2054, Ch. 2115, Ch. 3565, Ch. 4269, Ch. 4520, Ch. 5070, Ch. 5795m RCC Bridge : Existing 1 Nos Ch. 5795m	Length : 5.795 Km Configuration : Proposed: 5.50m with 0.90 m both side soft shoulder all through Box Culvert : Proposed replacement . at 334 m to 340m1no-2x3.00x3.00m Double Vent RCC Box Culvert ,at 1604 to 1617m & 3565 to 3572m 2nos- 3x4.50x4.50m Three Vent RCC Box Culvert (Replacement). Cross-drain : Proposed new 1 no. at Ch. 160 m Surface Drain : 494.00m

SI No.	District	Upazila	Road and Road ID	Existing Road's Salient Features	Improvement Proposal
43	Rangpur	Badarganj	Nagerhat GC- Padagonj hat via Arunnesha ghat (ID : 185033011)	Length : 8.720 km Starting Point : Nagerhat GC Ending Point : Padaganjhat GC Major Settlement: Nagerhat GC,Vagitable Bazar, Arunnessa ,Bazar,Sarderpara,Padaganj Terrain : Plain Existing road land width : 10m – 15m Configuration : Existing 3.0m with 0.90m soft shoulder on both sides, Box Culvert : 1 Nos Slab Culvert : 2 Nos U Drain : 2 Nos RCC Bridge : 2 Nos	Length : 8.720 km Configuration : Proposed: 3.70m with 1.00 m both side soft shoulder all through U Drain : 4 nos Slope Drain : 2 Nos Box culvert : 3 Nos
44	Rangpur	Mithapukur	Lalbag G C (Vimergar) to Bhendabari GC via Runipukur GC & Shukurerhat GC(Mithpukur Part) (ID : 185582001)	Length : 19.164 km Starting Point : Vimergar Ending Point : Bhendabari Bazer Major Settlement: Vimergan, Ershadmore bazer, Shukurerhat,Moshlembazer,Abirerpara,Sowmilebazer, Saltigopalpur bazer,Banderpara,Panthapukur& Bhendabari Bazar Terrain : Plain Existing road land width : 10.50m – 12.50m Configuration : Existing 3.70m with 0.90m hard shoulder and 0.60m soft shoulder on both sides, Box Culvert : 19 Nos Pipe Culvert : 1 Nos U Drain : 3 Nos RCC Bridge : 1 Nos	Length : 19.164 km Configuration : Proposed: 5.50m with 0.90 m both side soft shoulder all through U Drain : 4 nos
45	Rangpur	Gangachara	Gangachara UZHQ- Saraibazar via Gajaghanta GC Road (ID : 185272005)	Length : 13.20 km Starting Point : Gangachara GC Ending Point : Saraibazar Major Settlement: Gangachara Starpara, P. Mandrain,	Length : 13.20 km Configuration : Proposed: 5.50m with 0.90 m both side soft shoulder all through

SI No.	District	Upazila	Road and Road ID	Existing Road's Salient Features	Improvement Proposal
				Changmari, kurirmore, Chanmari, Balarghat, Banarai para ,Gogajghanta,Boro rupai, Jamchara,. Chaddomatha, Khafila bazar, Haragach Terrain : Plain Existing road land width : 12.75m – 17.52m Configuration : Existing 3.70m with 0.75m soft shoulder on both sides, Box Culvert : 10 Nos U Drain : 3 Nos Pipe Culvert : 6 Nos Bridge : 2 Nos	U Drain : 1 nos (replacement) Box Culvert : 5 nos (1 No replacement) Surface Drain : 240m
46	Rangpur	Pirganj	Dhaperhat GC-Chatra GC Road (ID : 185762001)	Length : 3.964 km Starting Point : Laldighi Mela at Joypur Ending Point : Chatra hat Major Settlement: Joypur, Islampur, Chatra, Eklimpur Terrain : Plain Existing road land width : 15.09m – 21.55m Configuration : Existing 3.70m with 0.99m soft shoulder on both sides, Box Culvert : 8 Nos Slab Culvert : 2 Nos	Length : 3.964 km Configuration : Proposed: 5.50m with 0.90 m both side soft shoulder all through Box Culvert : 1 nos
47	Rangpur	Pirganj	Tukuria hat-Tukuria UP office via Dudiabari Road (ID : 185763011)	Length : 3.200 km Starting Point : Tukuria hat Ending Point : Dudiabari Bottola Bazar Major Settlement: Tukuria, Nidirampur, Dudiabari Terrain : Plain Existing road land width : 10.00m – 15.00m Configuration : Existing 3.70m with 0.90m soft shoulder on both sides, U drain : 1 Nos Bridge : 1 No Slab Culvert : 3 Nos	Length : 3.200 km Configuration : Proposed: 5.50m with 0.90 m both side soft shoulder all through U Drain : 22 nos
48	Magura	Sadar	Bogia U.P -	Length : 7.462 km	Length : 7.462 km

SI No.	District	Upazila	Road and Road ID	Existing Road's Salient Features	Improvement Proposal
			Ramnagar bazar via Pukuria, Boro bazar Rd(UNR) (ID:255573009)	Starting Point : Alookdia GC & R&H Ending Point : Ramnagar Bazar & Jessore-Dhaka National High Way Major Settlements : Alookdia, Grehagram, Pukuria, CharPukuria, Hatathpara, Bagbaria, Paturia, Durgapur & Ramnagar Existing Road Land Width : 10m – 16m Terrain : Plain Configuration : Existing 3.00m with 0.60m soft shoulder on both sides Box Culvert : Existing 5 nos culvert. at ch. 0+550km, 1+047km, 5+868km, 6+119km, 6+835 and 1 BWDB Regulator at ch 5+891km. U Drain : Existing: 4 nos. U-drain at ch. 0+070km, 0+974km, 1+233km, 1+450km	Configuration : Proposed: 3.70m with 1.00 m both side soft shoulder all through Box Culvert : Proposed: 1 nos. box culvert at Ch.6+835km (To be replaced) Surface Drain : Proposed: 427.00 m (At ch. 0+000-ch.0+305=305 m and ch.7+340-ch.7+462=122 m)
49	Magura	Sadar	Berail Polita Gc-Bunagati GC via Nalia Ghat (ID:255572004)	Length : 5.56 km Starting Point : Baruilpalita Ending Point : Bunagati Major Settlement: Palita, Sattabangpur, Gubtali, potakhali, Shimulia, Naliarghat Terrain : Plain Configuration : Existing 3.6m with 0.60m soft shoulder on both sides, U Drain : 1 No box Culvert : 1 No	Length : 5.56 km Configuration : Proposed: 5.5 m with 0.90 m both side soft shoulder all through Box Culvert : 1 No Surface Drain ; 200m
50	Magura	Mohammadpur	Dohail - Nohata Road(UZR) (ID:255662001)	Length : 11.2 km Starting Point : Dohail Ending Point : nohata Major Settlement: Dohail, Balidia, Fulbari Bazar Terrain : Plain Configuration : Existing 3.7m with 0.90m soft shoulder on both sides, Pipe Culvert : 7 Nos	Length : 11.2 km Configuration : Proposed: 5.5 m with 0.90 m both side soft shoulder all through

SI No.	District	Upazila	Road and Road ID	Existing Road's Salient Features	Improvement Proposal
				Slab Culvert : 8 No RCC Bridge : 2 Nos	
51	Magura	Mohammadpur	Bethulia Bazar (Kalukhandi More) to Babukahli UP via Dumurshia Bazar Rd. (UNR) (ID:255663014)	Length : 11.32km Starting Point : bETHULIA bAZAR Ending Point :Babukhali Major Settlements : Binodpur, Dumersia, Babukhali bazar Existing Road Land Width : 10.5-18.5m Terrain : Plain Configuration : Existing 3.77m with 0.9m hard shoulder on both sides Pipe Culvert : 2 Nos Slab Culvert : 4 No U Drain : 13 Nos RCCBridge : 1 No	Length : 5.02 km Configuration : Proposed: 3.7m with 0.9m shoulder on both sides all through U Drain : 2 Nos
52	Magura	Salikha	Singra-Semakhali road. (UZR) (ID: 255852001)	Length : 11.54km Starting Point : At Singra Bazar Ending Point :At Simakhali Bazar Major Settlements :Singra, Tilkhori,Shabolhat, Dakhin Sabalat, Chaturbari, Gobindapur, Chandra,Piarpur & Simakhali. Existing Road Land Width : 10.5-18.5m Terrain : Plain Configuration : Existing 3.7m with 0.9m hard shoulder on both sides Cross Drain : 6 Nos Box Culvert : 5 Nos	Length : 11.43 km Configuration : Proposed: 5.5m with 0.9m shoulder on both sides all through U Drain : 6 Nos Box Culvert: 1 no
53	Magura	Salikha	Semakhali GC - Hazrahati R&H Road (UZR) (ID:255852005)	Length : 7.55km Starting Point : Simakhali Ending Point : Hazrahati Major Settlements :Simakhali, Arkandi, Panchkahunia, Harispur, Dayadanga, Baraida, Hazrahati Existing Road Land Width : 15.5-22.0m	Length : 5.02 km Configuration : Proposed: 5.5m with 0.9m shoulder on both sides all through Slab Culvert : 1 No Pipe Culvert : 1 No Box Culvert : 2 Nos

SI No.	District	Upazila	Road and Road ID	Existing Road's Salient Features	Improvement Proposal
				Terrain : Plain Configuration : Existing 5.5m with 0.9m hard shoulder on both sides Cross Drain : 14 Nos Box Cukvert : 3Nos	
54	Magura	Salikha	Hazrahati RHD - Bunagati GC Road. (UZR) (ID:255852013)	Length : 5.64km SStarting Point : Harahati Ending Point : Bunagati Major Settlements : Hazrahati, Sarusuna, Kathalbari, Bunagati Existing Road Land Width : 15.5-22.0m Terrain : Plain Configuration : Existing 3.66m with 0.9m hard shoulder on both sides Box Culvert: 1 Nos U Drain : 15 Nos Suice Gate : 1 Nos	Length : 5.626 km Configuration : Proposed: 5.5m with 0.9m shoulder on both sides all through U Drain : 2 Nos Box Culvert : 2 Nos
55	Chittagong	Mirsharai	ZorargonjUP R& H to -Burburiaghat Bazar road Via Dhum UP, Bangla Bazar &Golokerhat (UZR) (ID:415532002)	Length : 5.100 km Starting Point : At Zorargonj Bazar Ending Point : AtBurburiaGhat Major Settlements : Poragolpur,PaschimPoragolpur,Naherpur,UttorNaherpur,UttorDhum,Bangla Bazar, Goloker Hat Existing Road Land Width : 10.00m – 12.00m Terrain : Plain Configuration : Existing 3.00m with 1.0m soft shoulder on both sides Box Culvert : Existing 8 (Eight) cross drainage structure only one is in good condition	Length :5.100 km Configuration : Proposed: 3.70m with 0.90 m both side soft shoulder all through Box Culvert : Proposed: 2 Nos 3x4.0mx4.0m,1 No 1x3.0mx3.0m, 5Nos1x1.5mx1.5m .
56	Chittagong	Mirsharai	Habilder Basa R&H	Length : 8.65 km	Length : 8.65 km

SI No.	District	Upazila	Road and Road ID	Existing Road's Salient Features	Improvement Proposal
			to Santir Hat GC Road via Azamnagar (Karerhat UP- Santirhat GC) (UZR) (ID:415532013)	Starting Point : At Habildar basha Ending Point : Santir Hat Terrain : Plain Configuration : From Ch. 00-1043 Existing 2.70m with 0.90m soft shoulder on both sides, From Ch. 1043-3780 Existing 2.2m with 0.90m soft shoulder on both sides, From Ch. 6550-6850 Existing 2.2m with 0.90m soft shoulder on both sides, From Ch. 2550-5400 Existing earthen road Box Culvert : 7 Nos Slab Culvert : 1 No RCC Bridge : 2 Nos U Drain: 18 Nos	Configuration : Proposed: 3.7 m with 0.90 m both side soft shoulder all through Box Culvert : Proposed: 17 Nos
57	Chittagong	Rangunia	Santirhat GC- Malirhat - Sahery Bazar GC Road (Baraulia Road) (Rangunia Part) (ID : 415702011)	Length : 5.400 km Starting Point : At Santir Hat GC Ending Point : At Baishzoom Major Settlements : Saplezapara, Rosai Para, Asua Para, Sam Talukder Para, Malir hat, Uttar Pomra Sikder Para, Bar Aulia, Baishzoom Existing Road Land Width : 8.00-15.00m Terrain : Plain Configuration : From Ch. 00-100 Existing 3.70m with 0.90m soft shoulder on both sides, From Ch. 100-600 Existing 2.44m with 0.90m soft shoulder on both sides, From Ch. 600-2550 Existing 3.00m with 0.90m soft shoulder on both sides, From Ch. 2550-5400 Existing earthen road Box Culvert : 13 Nos Pipe Culvert : 11 Nos RCC Bridge : 1 Nos	Length : 5.400 km Configuration : Proposed: 5.50 m with 0.90 m both side soft shoulder all through Box Culvert : Proposed: 19 Nos
58	Chittagong	Lohagora	Adhunagar Khan hat GC to Chunati Hajee Para & RHD (UNR) (ID#415473008)	Length : 3.90km Starting Point : Adhunagar Khan Hat GC and RHD Road Ending Point : Chunati Hazi para and RHD Road	Length : 3.22 km Configuration : Proposed: 3.7m with 1.0m hard shoulder on both sides all through

SI No.	District	Upazila	Road and Road ID	Existing Road's Salient Features	Improvement Proposal
				Major Settlements : Asar Baper Para, Garjania para, Pal Para, Nur Mohammad Sikder para, Lahibar para, Kazir para, Petaner para, J M Sikder para and Hazir para. Existing Road Land Width : 12m – 14m Terrain : Plain Configuration : Existing 2.44m with 0.55m hard shoulder on both sides Box Culvert : 8 Nos Bridge : 1 No	U Drain : 6 Nos Box Culvert : 10 Nos
59	Chittagong	Banshkhali	Arabsha Bazar GC - Ishwar Babur Hat GC Road Via Bashirullah Miazi hatChonua,Gandama ra,Saral, Shadonpur UP (Moulana Ashraf Ali Road) (UZR) (ID:415082009)	Length : 4.1km Starting Point : Pashchim Matabberpara (Khudukkhali) Ending Point :Regulator over Jolkodor khal between Chonua UP & Gondamara UP Major Settlements : Pashchim matabberpara, Paschim Khudukkhali, Mohazer Colony, ! no para Existing Road Land Width : 15.09-21.55m Terrain : Plain Configuration : Existing 1.83 m with 0.55m hard shoulder on both sides Box Culvert : 2 Nos Pipe Culvert : 1 No Slab Culvert : 34 Nos	Length : 4.1 km Configuration : Proposed: 3.7m with 0.9m hard shoulder on both sides all through U Drain : 3 Nos Box Culvert : 4 Nos
60	Chittagong	Chandanish	Dewanhat-Bailtali-Barma Damirhat G.C-Patiya Road (ID : 415182002)	Length : 16.20 km Starting Point : Dewan Hat Bazar Ending Point : Dhamir hat GC. Chamudaria Bridge Patiya Road. Major Settlements :Hasandondi, Mohammed Khali, Satbaria, Bailtali, Basatnagor, Jafarabad, Bainjuri, Broma, Char Broma, Batajuri, Dokkin Harala, Migata, Subondondi, Ralibag, Uttar Kasua, Kanimadari, Kulaldenga, Patandondi Existing Road Land Width : 7.30m – 9.50m	Length : 16.20 km Configuration : Proposed: 5.50m with 0.90m soft shoulder on both sides all through Box Culvert : 1 Nos

SI No.	District	Upazila	Road and Road ID	Existing Road's Salient Features	Improvement Proposal
				Terrain : Plain Configuration : Existing 3.70m with 0.90m hard shoulder on both sides Box Culvert : 41 Nos Bridge : 7 No Cross Drain : 3 no Pipe Culvert : 1 no	
61	Chittagong	Fatikchari	Dantmara U.P.HQ.to Balutila Bazar via Ziltoli bazar Road (ID : 415333002)	Length : 13.013 km Starting Point : Dantmara U.P. Ending Point : Balutila Bazar. Major Settlements : Existing Road Land Width : Terrain : Plain Configuration : Earthen road Bridge : 2 Nos Slab Culvert : 1 nos Pipe Culvert : 1 no	Length : 13.013 km Configuration : Proposed: 5.50m with 0.90m soft shoulder on both sides all through Box Culvert : 11 Nos
62	Chittagong	Hathazari	Mekhol up to Gorduara UP Road (Sarang Road) (ID : 415373004)	Length : 4.97 km Starting Point : Mekhol up Ending Point : Gorduara UP. Major Settlements : Existing Road Land Width : Terrain : Plain Configuration : Existing 3.70m with 0.90m hard shoulder on both sides Box Culvert : 2 Nos Bridge : 2 Nos Pipe Culvert : 2 nos	Length : 4.97 km Configuration : Proposed: 5.50m with 0.90m soft shoulder on both sides all through Box Culvert : 1 Nos
63	Chittagong	Boalkhali	Kalurghat-Charandwip-Bhandaljuri-Saraf Bhata-Gudamghar Road (ID : 415122005)	Length : 6.80 km Starting Point : Kalurghat Ending Point : Gudamghar . Major Settlements : Existing Road Land Width : Terrain : Plain Configuration : Existing 3.70m with 0.90m hard	Length : 6.80 km Configuration : Proposed: 5.50m with 0.90m soft shoulder on both sides all through Box Culvert : 6 Nos

SI No.	District	Upazila	Road and Road ID	Existing Road's Salient Features	Improvement Proposal
				shoulder on both sides Box Culvert : 25 Nos Bridge : 7 Nos Pipe Culvert : 8 nos Slab Culvert : 5 Nos	
64	Chittagong	Anwara	Upazila Health complex-Peskar hat via Chatari UP Office(Chandpur D.C.Road).(UNR) (ID:415043005)	Length : 5.1 km Starting Point : Anowar Health Complex Ending Point : Pesker Hat Major Settlements : Roypur, Autbag, Khoshkandi, Kushiara Bazar, Singula Existing Road Land Width :10.09m – 15.00m Terrain : Plain Configuration : Existing 3.70m with 0.90m hard shoulder on both sides Slab Culvert : 1 Nos U Drain : 2 Nos	Length : 5.1 km Configuration : Proposed: 3.7m with 0.90m soft shoulder on both sides all through Box Culvert : 9 Nos Surface Drain : 880m
65	Chittagong	Anwara	Bairag UPC-CUFL Rd-Parki Bazar via Parki sea Beach Road. (ID:415043005)	Length : 15.8 km Starting Point : Bairag UPC . Ending Point Parki Major Settlements : Rangadia,Barashot, Duhkumra, Parua Para Existing Road Land Width :10.09m – 15.00m Terrain : Plain Configuration : Existing 3.70m with 0.90m hard shoulder on both sides	Length : 15.8 km Configuration : Proposed: 3.7m with 0.90m soft shoulder on both sides all through
66	Chittagong	Raojan	At (RHD)Upazila Hospital & Ramjan Ali hat (UZR) (ID:415043015)	Length : 9.926 km Starting Point : At (RHD)Upazila Hospital & Ramjan Ali hat Ending Point : At Nayahat RHD Road(Re-zonal) Major Settlements : Ramjan Ali hat, Adharmanik Natun Bazar, Nayahat Existing Road Land Width :10.09m – 15.00m Terrain : Plain	Length : 9.926 km Configuration : Proposed: 5.5m with 0.90m soft shoulder on both sides all through Box Culvert : 1 Nos Slab Culvert : 6Nos

SI No.	District	Upazila	Road and Road ID	Existing Road's Salient Features	Improvement Proposal
				Configuration : Existing 3.70m with 0.90m hard shoulder on both sides Slab Culvert : 4 Nos Box Culvert : 2 Nos RCC Bridge : 1 No	
67	Chittagong	Patia	Charlaikhya UP - Dangerchar (Akter Tower House) Road. (ID : 415613007)	Length : 5.25 km Starting Point : At Charlaikhya Board Bazar Road (attest) Charlaikhya UP Office. Ending Point : At Juldha Dangachar Road (Middle Dangachar). Major Settlements : Khailpara, Chatury, Kainpura, Mohator para Existing Road Land Width :5.50m – 9.50m Terrain : Plain Configuration : Existing 3.00m with 1.25m soft shoulder on both sides Slab Culvert : 2 Nos Pipe Culvert : 3 Nos RCC Bridge : 2 No	Length : 5.250 km Configuration : Proposed: 3.70m with 0.90m soft shoulder on both sides all through Box Culvert : 11 Nos
68	Dinajpur	Sadar	Fasiladangha G.C- Mohonpur RHD Road (UZR) (ID#127642007)	Length : 9.5km Starting Point : Faisalabad G.C. Ending Point :Mohonpur RHD Major Settlements : Godagari G.C., Panchkur Bazar, Mohonpur Existing Road Land Width : 15.09m- 21.55m Terrain : Plain Configuration : Existing 3.66m with 0.9m hard shoulder on both sides Box Culvert : 12 Nos Slab Culvert : 1 No Pipe Culvert : 1 No	Length : 9.365 km Configuration : Proposed: 3.66m with 0.9m hard shoulder on both sides all through
69	Dinajpur	Sadar	Chandaganj R&H to Ranigonjhat GC Road.(UZR) (ID#127642001)	Length : 5.49km Starting Point : Ranigonj Mor Bazar Ending Point : Ranigonj GC Major Settlements : Shekhhati, Uttar Bhawanipur,	Length : 5.30 km Configuration : Proposed: 3.66m with 0.9m hard shoulder on both sides all through

SI No.	District	Upazila	Road and Road ID	Existing Road's Salient Features	Improvement Proposal
				Nandoir, Mostofabad, Muzahidpur, Passim Moharazpur, Fazilpur, Uttar Mohepur Existing Road Land Width : 15.09m-21.55m Terrain : Plain Configuration : Existing 3.66 m with 0.9m hard shoulder on both sides Box Culvert : 6 nos Slab Culvert : 2 Nos RCC Girder Bridge : 1 Nos	
70	Dinajpur	Sadar	Fultala-Kamalpur Road. (UZR) (ID#127642003)	Length : 11.10 km, Starting Point : At Fultala Bazar Ending Point : At Kamalapur bazar, Major Settlements : Godagari G.C, Maligram Bazar, Janatar Bazar, Kamalpur UP Bazar Existing road land width : 15.09-21.55m Terrain : Plain Configuration : Existing 3.66m with 1.80m hard shoulder on both sides Box Culvert : 12 Nos Slab Culvert : 3 Nos Pipe Culvert : 2 Nos	Length : 10.40 km Configuration : Proposed: 5.50m with 0.90 m both side soft shoulder all through
71	Dinajpur	Sadar	Pulhat R&H to Fasiladanga GC Road.(UZR) ID#127642002	Length : 6.58 km, Starting Point : At Fultala Bazar Ending Point : At Kamalapur bazar, Major Settlements : Pilhat,Khodmadhobpur, Kismat madhabpur, Karimullahpur, masimpur, Maohotullah Existing road land width : 15.09-21.55m, Terrain : Plain Configuration : Existing 3.66m with 1.80m hard shoulder on both sides Box Culvert : 11 Nos Pipe Culvert : 4 Nos	Length : 6.58 km Configuration : Proposed: 5.50m with 0.90 m both side soft shoulder all through
72	Dinajpur	Sadar	Komalpur-Khanpur Road. (UZR) (ID : 127642006)	Length : 7.5 km, Starting Point : Kamalpur Bazar Ending Point : Khanpur Bazar	Length : 6.58 km Configuration : Proposed: 3.66m with 1.2 m both side soft shoulder all through

SI No.	District	Upazila	Road and Road ID	Existing Road's Salient Features	Improvement Proposal
				Major Settlements : Danuir Bazar, Kutuir Bazar, Kushiara Existing road land width : 15.09-21.55m, Terrain : Plain Configuration : Existing 3.66m with 1.20m hard shoulder on both sides Box Culvert : 15 Nos Slab Culvert : 5 Nos UDrain : 1 No Pipe Culvert : 2 Nos	
73	Dinajpur	Chirirbandar	Binnakuri GC to Debiganj R&H Road (ID#127302017)	Length : 9.482 km Starting Point : At Binnakuri Hat GC Ending Point : At Debiganj R&H Major Settlements : Binnakuri, Sukdepur, Jothramdhanpur, Kuruldangi, Nakhayr, Hasimpur, Mirzapur, Bohbanipur, Dangerhat, Debiganj Existing road land width : 9.500m- 10.500m Terrain : Plain Configuration : Existing 3.66m with 0.45m hard shoulder on both sides Box Culvert : 11 Nos Box Culvert RCC Girder Bridge :: 1 No	Length : 9.482 km Configuration : Proposed: 5.500m with 0.900 m both side soft shoulder all through Box Culvert : 09 Nos
74	Dinajpur	Chirirbandar	Beltoli R&H to Binnakuri GC Road (UZR) (ID#127302001)	Length : 5.88km Starting Point : At Beltoli Bazar Ending Point : At Binakuri Hat Major Settlements : Rasulpur, Nandray, Sukipir Bazar, Mahamudpur, Dakkhin Nagar, Binnakuri Existing road land width : 9.500m- 10.500m Terrain : Plain Configuration : Existing 3.66m with 0.45m hard shoulder on both sides Box Culvert : 10 Nos Box Culvert RCC Girder Bridge :: 1 No	Length : 5.88 km Configuration : Proposed: 4.3m with 1.00 m both side soft shoulder all through Cross Drain : 2 Nos
75	Dinajpur	Chirirbandar	Daulatpur(Ambari hat R&H) to Kutubdanga	Length : 6.370 km Starting Point : At Ambari Hat R&H	Length : 6.370 km Configuration : Proposed: 3.700m with

SI No.	District	Upazila	Road and Road ID	Existing Road's Salient Features	Improvement Proposal
			GC road (ID : 127302014)	Ending Point : At Kutubdanga Hat GC Major Settlements : Ambari hat, Daulathat, Bisenathpur, Dakhin Bisenathpur, Uttar Bisenathpur, Kutubdanga Hat Existing road land width : 7.50m- 10.500m Terrain : Plain Configuration : Existing 3.66m with 0.900m soft shoulder on both sides Box Culvert : 7 Nos Box Culvert Cross Drain : 8 nos RCC Girder Bridge : 1 No	0.90 m both side soft shoulder all through Cross Drain : 8 Nos Box Culvert : 6 Nos
76	Dinajpur	Parbatipur	Ambari GC - Jashai more RHD road (UZR) (ID#127772003)	Length : 14.264 km Starting Point : At Ambari G.C Ending Point : Jashai Mor RHD Major Settlements : Chotto Ramchandrapur, Kutubpur, Mostofapur, Dondopani, Dobolgachi, Modhupur, Chandra, Mominpur, Durgapur, joypur Existing road land width : 10.0m- 15.0m Terrain : Plain Configuration : Existing 3.7m with 0.90m shoulder Box Culvert : 17 Nos Box Culvert Cross Drain : 7 Nos OFC : 3 Nos	Length : 14.264km Configuration : Data Not Found Cross drain : 20 Nos Box Culvert : 15 Nos
77	Dinajpur	Parbatipur	Mominpur UP Office Jashai (Bot tree more) - Pan Bazar road via Jurai hat & faridpur hat. (ID : 127773001)	Length : 9.600 km Starting Point : Jashai (Bot Tre More) Ending Point : Panbazar Major Settlements : Doania, Shalbari, Teroania, Foridpur, Mornai Existing road land width : 8.00m- 12.0m Terrain : Plain Configuration : Existing 3.7m with 0.90m shoulder Box Culvert : 5 Nos Box Culvert Cross Drain : 1 Nos Pipe Culvert : 1 Nos Slab Culvert : 6 Nos	Length : 9.600 km Configuration : 5.50 m with 0.90m shoulder Cross drain : 26 Nos Box Culvert : 05 Nos

SI No.	District	Upazila	Road and Road ID	Existing Road's Salient Features	Improvement Proposal
78	Dinajpur	Birol	Jamtoli hat to Noshipur Bazar (Chehel gazi U.P.) via Vadrabazar (UNR) (ID#127173016)	Length : 5.814 km Starting Point : At Jamtoli Hat Ending Point : At Vadra Bazar Major Settlements : Rajuria, Jhinikuri, hasila, Azimpur Existing road land width : 10.0m- 15.0m Terrain : Plain Configuration : Existing 3.0m with 0.45m earthen shoulder Box Culvert : 8 Nos U Drain : 7 Nos Pipe Culvert : 1 No	Length : 5.814km Configuration : 3.70m carriage way with 0.90m shoulder U drain : 3 Nos Box Culvert : 1 No
79	Dinajpur	Phulbari	Madilahat GC (Chintamon Moor)- Ambarihat GC Road.(UZR) (ID#127382004)	Length : 18.06 km Starting Point : Chintamoon mor Ending Point : Ambarihat GC Major Settlements :Chintamor, Chowrait, Baikantapur, Nirankuri, Dadul, Kazihat, Kalkun, Zhajira, Jayanti, Veram, Rudrani, Jagannathpur, Banahar, Zoar, Panikata, Uttar Shibpur, Eluary Existing road land width : Terrain : Plain Configuration : Existing 3.0m with 0.45m earthen shoulder (Ch. 00 to 8.140km) & Existing 3.0m with 0.45m earthen shoulder (Ch. 8.140 to 18.06km) Box Culvert : 18 Nos Pipe Culvert : 11Nos Cross Drain : 03 Nos Girder Bridge : 1 No Open Foundation Culvert : 1 No Regulator : 1 No	Length : 18.06km Configuration : 5.5m carriage way with 0.90m earthen shoulder Cross drain : 17 Nos Box Culvert : 8 Nos
80	Dinajpur	Phulbari	Phulbari UZHQ- Madilahat GC Road (ID : 127382001)	Length : 10.50 km Starting Point : Fulbari GC Ending Point : Madilahat GC Major Settlements : Suzapur,Krishnopur, Basudevpur Aldipur UP,Chowrait,Chintamon,Enaet pur, Faridabad,Modho mohesh pur,Nandanal pur,Purba	Length : 10.50 km Configuration : 5.5m carriage way with 0.90m earthen shoulder Cross drain : 4 Nos Surface Drain : 153m

SI No.	District	Upazila	Road and Road ID	Existing Road's Salient Features	Improvement Proposal
				chak Mathura,siddisi,Baikanta pur,Mukter pur, Betdhighi UP, Existing road land width : 15.09 - 21.55m Terrain : Plain Configuration : (Ch.00 to 1.00 km) 5.5m and (Ch.1.00 to10.50 km) 3.66 m and 0.90 m earthen Box Culvert : 23 Nos Cross Drain : 01 Nos Girder Bridge : 2 Nos	
81	Dinajpur	Bochagonj	Setabgonj Sugar Mill-Meherpur Hat via Nawavita hat Road. (ID : 127212002)	Length : 12.400 km Starting Point : Setaganj Sugar Mill Ending Point : Maherpur Hat Chowrasta Road Major Settlements : Melagachi, Mushidhat, Hat Rampur, Maladgaon, Khangaon, Shekhorpur, Dhodir, Anorah, Sukdebpur, Maherpur, Existing road land width : 12.00m - 15.50m Terrain : Plain Configuration : Existing 3.70m with 1.50m earthen shoulder (Ch. 00 to 5.040km), hard shoulder (Ch. 5.040 to 12.400km) and 0.60m soft shoulder Box Culvert : 7 Nos Pipe Culvert : 4 Nos U Drain : 04 Nos	Length : 12.40 km Configuration : 5.5m carriage way with 0.90m earthen shoulder Cross drain : 3 Nos (replace) Box Culvert : 2 Nos (replace)
82	Dinajpur	Kaharol	Kaharol Upazila HQ-Boleyahat RHD Road (UZR) (ID:127562005)	Length : 9.265 km Starting Point : Kaharol Bazar Ending Point : Boleya Hat(Birgonj – Bochagonj Road) Major Settlements : Uchitpur, Rasulpur,Khasulpur, Sadur Bazar, Valua, Kushotti, Boleya Existing road land width : 10.00m - 15.0m Terrain : Plain Configuration : Existing 3.70m with 0.9m earthen shoulder Box Culvert : 7 Nos Open Foundation Culvert : 3 Nos Cross Drain : 14 Nos	Length : 9.265 km Configuration : 5.5m carriage way with 0.90m earthen shoulder Cross drain : 14 Nos (Extension) Cross Drain : 5 Nos (New) Box Culvert : 7 Nos Surface Drain : 180m

SI No.	District	Upazila	Road and Road ID	Existing Road's Salient Features	Improvement Proposal
83	Dinajpur	Nawabgonj	Doudpur (Laugari) to Bajitpur R&H(ID:127692005)	Length : 7.2 km Starting Point : Daudpur Ending Point : Bazidpur Major Settlements :Laugary, Polashbari, Takonoti, Dharanda, bazitpur Existing road land width : 10.00 - 12.00 m Terrain : Plain Configuration : Existing 5.50m with 0.9m earthen shoulder RCC Girder bridge : 1 nos	Length : 7.2 km Configuration : 5.5m carriage way with 0.90m earthen shoulder Box Culvert : 5 Nos
84	Dinajpur	Nawabgonj	Doudpur GC- Bhaduria GC via Daria (ID:127692006)	Length : 13.189 km Starting Point : Daudpur Ending Point : Bhaduria Major Settlements : Monirampur, Hayetpur, Tangorgi, Mogorparar, Toperhat, Karimpur, Harinathpur Existing road land width : 5.00- 10.00 m Terrain : Plain Configuration : Existing 5.50m with 0.9m earthen shoulder RCC box Culvert:44 nos	Length : 13.189 km Configuration : 5.5m carriage way with 0.90m earthen shoulder Box Culvert : 3 Nos
85	Dinajpur	Birgonj	Suzalpur UP (Birgonj HQ)-Pakerhat GC via Burirbazar road. (ID : 127122007)	Length : 7.350 km Starting Point : Suzalpur Hafizia Madrasha Ending Point : Jonitiaghat Major Settlements : Sadullapara, Roughunathpara, Khamar Modhubonpur Existing road land width : 10.00 - 12.00 m Terrain : Plain Configuration : Existing 5.50m with 0.9m earthen shoulder Box Culvert : 4 Nos U Drain : 08 Nos RCC Girder bridge : 1 nos	Length : 7.350 km Configuration : 5.5m carriage way with 0.90m earthen shoulder Box Culvert : 8 Nos
86	Dinajpur	Birgonj	Bottoli (NHW)- Goreya GC via Shibrampur UP Rd	Length : 16.04 km Starting Point : Bottoli GC Ending Point : Goyera GC	Length : 16.04 km Configuration : 5.5m carriage way with 0.90m earthen shoulder

SI No.	District	Upazila	Road and Road ID	Existing Road's Salient Features	Improvement Proposal
			(Bir Muktijoddha Shahid Motilal Barman Road) (ID : 127122005)	Major Settlements : Chowpukuria, Shialkheda, Chowpukria, Arazi Shialkheda, Dograi, Singhajani, Gobindopara, Shahadubi, Milonpur, Sitolskora, Aragidangi, Chunggakhata Existing road land width : 10.00 - 15.00 m Terrain : Plain Configuration : Existing 5.50m with 0.9m earthen shoulder Box Culvert : 13 Nos Pipe Culvert: 3 Nos U Drain : 08 Nos RCC Girder bridge : 1 nos	Box Culvert : 10 Nos
87	Dinajpur	Khanshama	Ramkola GC to RHD at Pakerhat Adarsha Gram via Sabuder hat, Pulerhat, Sheltu shah Madrasha. (UZR) (ID:127602016)	Length : 14.3 km Starting Point : Ramkola GC Ending Point : Pakerhat Adorsho Gram Major Settlements : Ramkola, Subornokhuli, Angarpara, Chaitan garth, Pakerhat Existing road land width : 10.00 - 15.00 m Terrain : Plain Configuration : Existing 4.5m crest width (Earthen) Box Culvert : 1 No Slab Culvert: 4 Nos U Drain : 01 No	Length : 14.3 km Configuration : 5.5m carriage way with 0.90m earthen shoulder Box Culvert : 1 No
88	Dinajpur	Khanshama	Khansama G.C.- Bhobanigonj Via Joygonj (UZR) (ID:127602003)	Length : 9.05 km Starting Point : Khanshama Bridge Ending Point : Bhobanigonj Bazar Major Settlements : Basuli, Khanshama, Sushuli, Morium Bazar, Joyganj, Bhobanigonj, Existing road land width : 10.00 - 15.00 m Terrain : Plain Configuration : Existing 3.7m carriageway with 0.9m hard shoulder Box Culvert : 9 Nos Pipe Culvert: 1 Nos Slab Culvert : 1 No	Length : 8.962 km Configuration : 5.5m carriage way with 0.90m earthen shoulder Box Culvert : 9 Nos U Drain : 6 Nos

SI No.	District	Upazila	Road and Road ID	Existing Road's Salient Features	Improvement Proposal
				RCC Girder bridge : 1 nos	
89	Madaripur	Sadar	Trivagdi GC-Mithapur Hat-Habiganj hat-Mollahat-Shekhpur RHD (UZR) (ID#354542005)	Length : 9.663 km Starting Point : At Tribagdi G.C. Ending Point : At Shekhpur RHD Major Settlements : Trivagdi, Rajdoedi, Mithapur, Hobigonj, Sumbug, Shakpur, Tribagdi Existing road land width : Data not found Terrain : Plain Configuration : Existing 5.50m(00-10.00km) and 3.67m(10km-17.025km) with 0.9m hard shoulder RCC Bridge : 2 Nos	Length : 9.663 km Configuration : 5.50m carriage way with 0.90m hard shoulder
90	Madaripur	Sadar	Khagdi R&H-Char Muguria-Sreenadi Hat GC (UZR) (ID#354542001)	Length : 17.250 km Starting Point : At Khagdi R&H Ending Point : At Sreenadi Hat Major Settlements : Khagdi, Bahadurpur, Rajarhat, Sirkhara, Sreenadi Existing road land width : Data not found Terrain : Plain Configuration : Existing 3.67m with 0.9m hard shoulder and 0.3m earthen shoulder RCC Bridge : 10 Nos Box Culvert : 7 Nos	Length : 17.250km Configuration : 5.5m carriage way with 0.90m shoulder
91	Madaripur	Sadar	Madaripur Puran Bazar-Bangla Bazar-Hosnabad Bazar-Kalikapur UP Road.(UNR) (ID#354543005)	Length : 10.05 km Starting Point : At Madaripur Puran Bazar Ending Point : At kalikapur UP Major Settlements : Hosnabad, Kalikapur, Pachkhola, Kazir mor Existing road land width : Data not found Terrain : Plain Configuration : Existing 3.67m with 0.9m hard shoulder	Length : 6.30km Configuration : 3.67m carriage way with 0.90m shoulder
92	Madaripur	Sadar	NHW-Tribhagdi Hat GC. (UZR) (ID#354542003)	Length : 5.100 km Starting Point : At NHW (Gotokchar Bazar) Ending Point : Tribagdi GC	Length : 5.10km Configuration : 5.5m carriage way with 0.9m shoulder

SI No.	District	Upazila	Road and Road ID	Existing Road's Salient Features	Improvement Proposal
				Major Settlements : Gotokchar, Payerpur, H T Aditopur, Tribagdi Existing road land width : Terrain : Plain Configuration : Existing 3.65m with 0.9m soft shoulder RCC Girder Bridge : Steel Bridge : Box Culvert :	
93	Madaripur	Rajoir	Takerhat GC-Sreenadi GC-Charmuguria-Khagdi RHD road (UZR) (ID#354802011)	Length : 10.10km Starting Point : Takerhat Sankardi Ending Point : Shakerpar-Sreenadi Major Settlements : Sankardi, Charmostofapur, Badarpasa, Umerkhali, nayanogor, Lundi, Sreenadi Existing road land width : 10-12m Terrain : Plain Configuration : Existing 3.00m carriage way with 0.3m shoulder RCC Girder Bridge : 3Nos Pipe Culvert : 2 Nos	Length : 10.10km Configuration : 5.5m carriage way with 0.9m shoulder Box Culvert : 9 Nos
94	Madaripur	Rajoir	Paikpara UP-Fultala hat-Dhamarchar Rd. (UNR) (ID#354803006)	Length : Starting Point : Fultala Hat Ending Point : Damerchar Major Settlements : Fultala, Krishnopur, Nararkandi, Sreefaltali, Saristabad, Damerchar Existing road land width : 6-7 m Terrain : Plain Configuration : carriage width 3.00m and earthen shoulder 0.3m on both sides RCC Girder Bridge : 6Nos Pipe Culvert : 2 Nos	Length : 9.29m Configuration : carriage width 4.80m and earthen shoulder 0.9m on both sides
95	Madaripur	Rajoir	Improvement of Rajoir Upazila H/Q - Sreenadi GC (UZR) (ID#354802005)	Length : 9.74km Starting Point : NHW Upazila H/Q Ending Point : Sreenadi GC Major Settlements : Rajoir bazar, Badorpasha, Ishibpur, Sreenadi	Length : 9.74km Configuration : 5.5m carriage way with 0.9m shoulder Box Culvert : 5 Nos

SI No.	District	Upazila	Road and Road ID	Existing Road's Salient Features	Improvement Proposal
				Existing road land width : 12-14m Terrain : Plain Configuration : Existing 3.00m carriage way with 0.3m shoulder RCC Box Culvert: 6 Nos	
96	Madaripur	Rajoir	Improvement of Sagolchira R&H - Paikpara Union Road (ID: 354803011)	Length : 6.28 Km Starting Point : Sagolchira RHD Ending Point : Fultala Hat Major Settlements : Sagolchira, Sreerampur, Uttar Sreerampur, Dakhin Sreerampur, Kathurakandi, Chrakasempur, Nayakanda Kasempur Existing road land width : 15-21m Terrain : Plain Configuration : carriage width 3.00m and earthen shoulder 0.3m on both sides RCC Girder Bridge: 6 Nos Box culvert : 2 Nos	Length : 6.28 km Configuration : 3.70m carriage way with 1.00m soft shoulder Box culvert : 4 Nos
97	Madaripur	Rajoir	Takerhat GC - Kadambari GC (ID : 354802001)	Length : 12.650 Km Starting Point : Takerhat GC Ending Point : Kadambari GC Major Settlements : Takerhat, Khalia, Sendia, Ullabari, Fulbari, Mashaismari, Chikondi, Kadambari purbopara, Kadambari Existing road land width : 10-12m Terrain : Plain Configuration : carriage width 3.00m and earthen shoulder 0.90m on both sides RCC Girder Bridge: 5 Nos	Length : 12.650 km Configuration : 3.70m carriage way with 0.90m soft shoulder Box culvert : 2 Nos
98	Madaripur	Rajoir	Takerhat GC - Kabirajpur GC via Hossainpur UP (ID : 354802002)	Length : 15.22 Km Starting Point : Takerhat GC Ending Point : Kabirajpur GC Major Settlements : Taikandi, Biddanandi, Hossianpur, Sattabarti, Uttar Hossainpur, Chandpatti, Kasim Nagar, Kishordia, Sreekishnodi, Panthapara, Kabirajpur	Length : 15.22 km Configuration : 5.50m carriage way with 0.90m soft shoulder Box culvert : 6 Nos

SI No.	District	Upazila	Road and Road ID	Existing Road's Salient Features	Improvement Proposal
				Existing road land width : 10.00-12.00m Terrain : Plain Configuration : carriage width 4.80m and earthen shoulder 0.450m on both sides RCC Girder Bridge: 9 Nos Slab Culvert : 07 nos	
99	Madaripur	Rajoir	Sanerpar R&H - Amgram GC road (ID : 354802003)	Length : 3.380 Km Starting Point : Sanerpar R&H Ending Point : Amgram GC Major Settlements : Majumderkandit, Bajerkandi, Chandipara, Amgram Existing road land width : 10.00-12.00m Terrain : Plain Configuration : carriage width 3.70m and earthen shoulder 0.900m on both sides RCC Girder Bridge: 1 Nos Slab Culvert : 01 nos	Length : 3.380 km Configuration : 5.50m carriage way with 0.90m soft shoulder Box culvert : 2 Nos
100	Madaripur	Kalkini	Khoajpur Takerhat R & H to Khasherhat GC Road via Laxmipur UP Office & Shurjamoni hat.(UZR) (ID#354402005)	Length : Starting Point : Khoajpur Takerhat Ending Point : Kasherhat GC Major Settlements : Khoajpur Takerhat, Biddyabagis, Jalalpur, Mridakandi, Laxmipur, Dadpur, Surjomoni, Jaigir, Snanghata, Vabanishankar Existing road land width : 15.50-22.5m Terrain : Plain Configuration : carriage width 3.66m and earthen shoulder 0.9m on both sides RCC Girder Bridge: 4 Nos Pipe Culvert: 25 Nos	Length : 16.5km Configuration : 3.66m carriage way with 1.6m hard shoulder Surface Drain : 2 nos (250m & 350m)
101	Madaripur	Kalkini	Kalkini Upazila HQ to Khasherhat GC Road via Shomitirhat Bazar. (ID: 354402002)	Length : 12.51 Km Starting Point : Kalkini bazar at Palordi Bazar Ending Point : Kasherhat GC Major Settlements : Enayetnagar Bashgari, Majertkandi, Moulovi Bazar, Somitirhat,	Length : 10.977km Configuration : 5.5m carriage way with 0.6m soft shoulder Surface Drain : 250m

SI No.	District	Upazila	Road and Road ID	Existing Road's Salient Features	Improvement Proposal
				Ramchandropur, Issagura, Bashgari Guccogram, Kalkairchair Existing road land width : 14.60-20.55m Terrain : Plain Configuration : carriage width 3.66m and earthen shoulder 0.9m on both sides RCC Girder Bridge: 7 Nos Pipe Culvert: 4 Nos Box culvert : 1 Nos	
102	Madaripur	Kalkini	Khasherhat GC to Shariatpur R & H Road (Kalkini Part) (ID: 354402007)	Length : 2.100 Km Starting Point : Kasherhat GC Ending Point : UZR - 05 Major Settlements : Khasherhat, Kanurgaon, Vabanishankar Existing road land width : 14.60-20.55m Terrain : Plain Configuration : carriage width 3.66m and earthen shoulder 0.9m on both sides RCC Girder Bridge: 4 Nos Box culvert : 3 Nos	Length : 10.977km Configuration : 5.5m carriage way with 0.9m soft shoulder
103	Madaripur	Shibchar	R&H Bypass road to Kathalbari ferry ghat via Kutubpur growth center & bangla bazar (UZR) (ID#354872005)	Length : 13.18km Starting Point : Shibchar R&H Bridge Ending Point : Kathalbari Bazar Major Settlements : Kutubpur Kadirpur Shibchar Kathalbari Existing road land width : 15.09-21.55m Terrain : Plain Configuration : carriage width 4.88m and earthen shoulder 0.9m on both sides RCC Girder Bridge: 6Nos Pipe Culvert: 2Nos	Length : 8.28km Configuration : 5.5m carriage way with 0.9m soft shoulder Box Culvert : 1No
104	Rajshahi	Puthia	Puthia-Baneswar GC (UZR) (ID#181822007)	Length : 11.47km Starting Point : Puthia Upazila(Kandra GPS) Ending Point : Baneswer GC	Length : 11.470km Configuration : 3.7 m carriage way with 0.9m soft shoulder

SI No.	District	Upazila	Road and Road ID	Existing Road's Salient Features	Improvement Proposal
				Major Settlements : Puthia, Kandra, Shahabajpur, Joromdanga, Bhubonnagar, nawdapara, maria, Palashbari, Sonarpara, Baneswer Existing road land width : 10.00-12.00m Terrain : Plain Configuration : carriage width 3.00m and earthen shoulder 0.9m on both sides Open Foundation Culvert : 11Nos Pipe Culvert : 3Nos Bos Culvert : 2Nos	Box Culvert : 9Nos U Type Culvert : 3 Nos Surface Drain : 345m
105	Rajshahi	Godagari	Godagari to Kakonhat (Starting from Sadurmore) (UZR) (ID#181342001)	Length : 14.00km Starting Point : Shadhur Mor Ending Point : Kakonhat Major Settlements : Ratahari, Nobogram, Keshobpur, Paharpur, Ai-hai, Sailmara, Malkamia, baghdhara, Kundolia, Kolabagan, Sherapara Existing road land width : 10.5-12.60m Terrain : Plain Configuration : carriage width 4.90m and earthen shoulder 1.21 m on both sides RCC Girder Bridge : 1No U Drain : 2No Box Culvert : 9Nos Pipe Culvert : 3 Nos Slab Culvert : 1No	Length : 13.85km Configuration : 4.9 m carriage way with 1.21m soft shoulder Cross Drainage Structure : Nil
106	Rajshahi	Godagari	Godagari UP- Nabinagar Bazar Road (UNR) (ID#181343021)	Length : 5.9km Starting Point : Godagari UP Ending Point : Nabinagar Major Settlements : Shialmara, Delshadpur, Dewanpara, Nalpukur, baligram, Nobinagar Existing road land width : 7.85-8.6m Terrain : Plain Configuration : carriage width 3.7m and earthen	Length : 4.9km Configuration : 3.7 m carriage way with 0.65m soft shoulder U Drain : 20 Nos

SI No.	District	Upazila	Road and Road ID	Existing Road's Salient Features	Improvement Proposal
				shoulder 0.65 m on both sides U Drain : 3Nos Box Culvert : 3Nos Pipe Culvert : 3 Nos Slab Culvert : 3No	
107	Rajshahi	Godagari	Baliaghata Bazar RHD more to Mundumala GC via Jota Bottola, Hatgobindapur (UZR) (ID#181342008)	Length : 22.50km Starting Point : Baliaghat Bazar Ending Point : Mundumala GC Major Settlements : Existing road land width : Terrain : Plain Configuration : carriage width 3.70m and earthen shoulder 1.8 m on both sides Open Foundation Culvert : Pipe Culvert : Bos Culvert :	Length : 22.50km Configuration : 3.7 m carriage way with 0.9m soft shoulder U Drain : 1No
108	Rajshahi	Godagari	Basudebpur Sluice Gate-Dariapur ending at Nawabgonj Border (UNR) (ID#181343006)	Length : 6.76km Starting Point :Basudebpur Ending Point : Nawabgonj Border Major Settlements : Basudevpur, Borodowlotpur, Kapasiapara, Sidna, Nanrapara, Dargapara, Jhikra Kulpara Existing road land width : Terrain : Plain Configuration : carriage width 3.00m and earthen shoulder 1.25 m on both sides RCC Bridge : 1 No	Length : 6.76km Configuration : 5.00 m carriage way with 1.4m soft shoulder Cross drainage structure : Nil
109	Rajshahi	Godagari	Pakri UP-Jotgopal (ID: 181343018)	Length : 3.370 km Starting Point :Pakri UP Ending Point : Jotgopal Major Settlements : Morsa, Gobindopur, Jabonpur, Jotgopal, Hasnapara, Chor Khor Hasnapara	Length : 3.370 km Configuration : 5.00 m carriage way with 1.15 m soft shoulder U Drain : 34 Nos

SI No.	District	Upazila	Road and Road ID	Existing Road's Salient Features	Improvement Proposal
				Existing road land width : 8.50 - 10.50m Terrain : Plain Configuration : carriage width 4.50m and earthen shoulder 1.20 m on both sides Slab Culvert : 1 No Box Culvert : 1 No RCC Bridge : 1 No	
110	Rajshahi	Godagari	Railbazar - Amnura road via Mowlanar gate, Dhuly shanko, Ratahary (Godagari part end at Khaira) (ID: 181342009)	Length : 19.50 km Starting Point : Rail bazar Ending Point : Khoralinepara Major Settlements : Matikata, Shohorragachi, Saguanguntighor, Vaspur, Lohaborai, Khudroshawla, Ratahari, Kolipur, Guntighor, Digram, Jowbonlinepara, Kazipara, Abilanda, Shahapania, Khoralinepara Existing road land width : 10.50 - 12.60m Terrain : Plain Configuration : carriage width 3.70m and earthen shoulder 0.90 m on both sides U Drain : 1 No Slab Culvert : 2 Nos Box Culvert : 3 No RCC Bridge : 2 Nos Pipe culvert: 6 Nos	Length : 3.370 km Configuration : 3.70 m carriage way with 0.90 m soft shoulder U Drain : 10 Nos Box Culvert: 4 Nos
111	Rajshahi	Bagmara	Bhawanigonj-Ahsangonj (ID : 181122001)	Length : 12.700 km Starting Point : At Upazila HQ/ Bagmara Ending Point : Ibrahimpur Bazar near Atrai Upazila Major Settlements : Bhatkhali, Jaytapukur, Baruihati Existing road land width : 12m to 14.00m Terrain : Plain Configuration : carriage width 3.66m and earthen shoulder 0.9m on both sides Pipe Culvert: 2 Nos Box Culvert : 3 Nos U Drain : 8 nos	Length : 4.200 km Configuration : 5.5 m carriage way with 0.9m soft shoulder U Drain : 1 no (replacement) Box Culvert : 1 No Surface Drain : 134m

SI No.	District	Upazila	Road and Road ID	Existing Road's Salient Features	Improvement Proposal
				Slab Culvert : 3 nos RCC Girder Bridge : 1 Nos	
112	Rajshahi	Bagmara	Bhabanigong-Kesorhat (UZR) (ID#181122003)	Length : 13.30km Starting Point : Deowla Moar Ending Point : Mugaipara Major Settlements : Dewla, Chikabari, Dwipnagar, Dowlatpur, Binodpur, Morakuri, Mochmoil, Bokpara, Narayanpur, Mugaipara Existing road land width : Terrain : Plain Configuration : carriage width 3.00m and earthen shoulder 0.9m on both sides Pipe Culvert: 9Nos Box Culvert : 8Nos U Drain : 2Nos (One Damaged) Slab Culvert : 4 Nos RCC Girder Bridge : 1 No	Length : 13.30km Configuration : 5.5 m carriage way with 0.9m soft shoulder U Drain : 1No (Replacement) Box Culvert : 4Nos (Replacement) Slab Culvert : 2 Nos (Replacement)
113	Rajshahi	Bagmara	Bhobanigong-Hatgangopara (from Mathabhanga) (UZR) (ID#181122004)	Length : 9.05 km Starting Point : Mathabhanga Mor Ending Point : Hatgongapara GC Major Settlements : Mathabhanga, Kamnagar, Sainpara, ramnagar, Basantopur, Rampur, Baigacha, Hatgongapara Existing road land width : 12m to 14m Terrain : Plain Configuration : carriage width 3.70m and earthen shoulder 1.30m on both sides Pipe Culvert: 9 Nos Box Culvert : 5 Nos U Drain : 5 Nos	Length : 9.05 km Configuration : 5.5 m carriage way with 0.9m soft shoulder Box Culvert : 4 Nos

SI No.	District	Upazila	Road and Road ID	Existing Road's Salient Features	Improvement Proposal
114	Rajshahi	Charghat	Holidagachi National high way - Rajshahi University via Belghoria. (UZR) (ID#181252010)	Length : 10.085 km Starting Point : Holidagachi Taltola Ending Point : Rajshai University Major Settlements : Holidagachi, Jaoypur, Doulatpur, Baduria, GObindopur, Chak-Kapashiya, Tangon, Nowdapara, Kakaikati, Belghoria, Syampur, Existing road land width : 10-15m Terrain : Plain Configuration : carriage width 3.70m and earthen shoulder 1.65m on both sides Pipe Culvert : 5 Nos Box Culvert : 7 Nos U Drain : 4 Nos Open Foundation Culvert : 6Nos	Length : 8.22 km Configuration : 4.88 m carriage way with 1.16m soft shoulder
115	Rajshahi	Charghat	Charghat (Upazila HQ) - Arani GC (Rustompur) via Paglapara more. (UZR) (ID#181252003)	Length : 11.38 km Starting Point : Charghat Thanamor Ending Point : Arani GC Major Settlements : Charghat, Miapur, Anupampur, Mungli, Foridpur, Laxmipur, Jotroghu, Varotipara, Rustompur Existing road land width : 10-15m Terrain : Plain Configuration : carriage width 4.88m and earthen shoulder 0.9 m on both sides Pipe Culvert : 5 Nos U Drain : 4 Nos Open Foundation Culvert : 6Nos	Length : 9.86 km Configuration : 5.5 m carriage way with 0.9m soft shoulder
116	Rajshahi	Tanore	Mundumala Hat (Start from Ayrarmore) to Hat bakoil (GCM) road ViaUchadanga Narayanpur (Tanore	Length : 13.88 km Starting Point : Mundumala hat Ending Point : Bakoil hat Major Settlements : Ayra, Uchadanga, Narayonpu, Bohorail, Boiddhopur, Kondopur, Bakultala, Chotipur,Bongpur, Billi,	Length : 13.85 km Configuration : 4.88 m carriage way with 1.00m soft shoulder U Drain : 5 Nos Box Culvert : 4 Nos

SI No.	District	Upazila	Road and Road ID	Existing Road's Salient Features	Improvement Proposal
			part).(ID: 181942005)	Existing road land width : 10m to 14m Terrain : Plain Configuration : carriage width 3.0m and earthen shoulder 0.9 m on both sides Pipe Culvert: 6 Nos Box Culvert : 7 Nos U Drain : 34 Nos	
117	Rajshahi	Tanore	Elamdohi Hat to Kalma Hat Via Valukakandor Hat (ID: 181943005)	Length : 2.30 km Starting Point : Malbandha Ending Point : Noytipara Major Settlements : Malbandha, Noytipara, kalma Existing road land width : 10m to 14m Terrain : Plain Configuration : carriage width 3.70m and earthen shoulder 1.10m on both sides Pipe Culvert: 17 Nos Box Culvert : 2 Nos U Drain : 11 Nos Slab culvert : 1 No RCC girder Bridge : 1 No	Length : 2.30 km Configuration : 5.00 m carriage way with 1.16m soft shoulder U Drain : 5 Nos
118	Rajshahi	Tanore	Saranjai Pacca Road More - Mundumala Hat Via Debipur More, Elamdohi hat and Prokash Nagar Hat. (ID : 181942014)	Length : 17.211 km Starting Point : Saranjai Ending Point : Mundumala Hat Major Settlements : Saranjai, Sarkarpara, Manik Kanna, Lalpur, Nayanpur, Elamdohi, Dhobul, Debipur, Prokash nagar Existing road land width : 10m to 15m Terrain : Plain Configuration : carriage width 3.70m and earthen shoulder 0.65m on both sides Pipe Culvert: 17 Nos Box Culvert : 9 Nos U Drain : 16 Nos Slab culvert : 10 No RCC girder Bridge : 1 No	Length : 17.211 km Configuration : 3.70 m carriage way with 1.81m soft shoulder U Drain : 15 Nos Box culvert : 12 nos

SI No.	District	Upazila	Road and Road ID	Existing Road's Salient Features	Improvement Proposal
119	Rajshahi	Tanore	Tanore-Amnura via Mundumala Hat (ID: 181942003)	Length : 16.991 km Starting Point : Tanore Ending Point : Amnura Major Settlements : Tanore. Debipur, Jogisho, Krisnopur, Phatakhata, Panchondor, Mundumala hat, Ayra, Talupara Zumarpara, Jhilim more, Dorgapara, Amnura hat Existing road land width : 10m to 15m Terrain : Plain Configuration : from Ch. 00 to 11.150 km carriage width 5.50m and earthen shoulder 0.90m on both sides, from Ch. 11.150 to 16.991 km, carriage width 3.70m and earthen shoulder 1.150 m on both sides, Pipe Culvert: 2 Nos Box Culvert : 12 Nos U Drain : 2 Nos Slab culvert : 11 No RCC girder Bridge : 1 No	Length : 16.991 km Configuration : from Ch. 00 to 11.150 km carriage width 5.50m and earthen shoulder 0.90m on both sides, from Ch. 11.150 to 16.991 km, carriage width 5.50m and earthen shoulder 0.9 m on both sides, Box culvert : 10 nos
120	Rajshahi	Tanore	Talanda to Keshor Hat (from Hatishail) Tanore Part (ID: 181942011)	Length : 5.440 km Starting Point : Hatishail Ending Point : Kaucha Bazar Major Settlements : Hatishail, Mohadebpur, Kamaranga, Gounghati, Kochua Existing road land width : 10m to 15m Terrain : Plain Configuration : carriage width 3.00m and hard shoulder 0.50m on both sides, Box Culvert : 5 Nos U Drain : 16 Nos Slab culvert : 1 No RCC girder Bridge : 1 No	Length : 16.991 km Configuration : carriage width 3.70m and earthen shoulder 0.60m on both sides, Box culvert : 1 nos U drain : 1 Nos
121	Rajshahi	Tanore	Tanore-Chowbaria road (ID: 181942002)	Length : 3.50 km Starting Point : Tanore Ending Point : Chowbaria Major Settlements :	Length : 3.500 km Configuration : Box culvert : 1 Nos U drain :

SI No.	District	Upazila	Road and Road ID	Existing Road's Salient Features	Improvement Proposal
				Existing road land width : Terrain : Configuration : , Pipe Culvert : 3 Nos Box Culvert : 6 Nos U Drain : 1 Nos Slab culvert : 1 Nos RCC girder Bridge : 2 Nos	
122	Rajshahi	Tanore	Talanda FRB to Nizampur via Dargadanga Hat,Billi Hat Road (ID: 181942007)	Length : 17.00 km Starting Point : Talanda ERB Ending Point : Nizampur Major Settlements : Talanda, Horidev, Deol, Rabyer More, Bonkeshore, Azizpur, Dorgadanga, Kalma, Billi Existing road land width : 10m to 14m Terrain : Plain Configuration : carriage width 3.70m and hard shoulder 1.10m on both sides, Box Culvert : 23 Nos U Drain : 5 Nos Slab culvert : 11 Nos	Length : 17.00 km Configuration : carriage width 5.00m and Hard shoulder 1.16 m on both sides, Box culvert : 9 nos U drain : 6 Nos
123	Rajshahi	Paba	Mollikpur Bipass (Kukhundipur Bazar) - Parila UP Road (ID: 181723024)	Length : 4.40 km Starting Point : Mollikpur Bypass Ending Point : Parilla UP Major Settlements : Boro Mollikpur, Choto Mollikpur, Tebarai, Koipukuria, Dangirpara, Ramchandrapur Existing road land width : 10m to 15m Terrain : Plain Configuration : carriage width 3.00m and earthen shoulder 0.90m on both sides Pipe Culvert: 1 Nos OFC : 2 Nos U Drain : 3 Nos	Length : 4.40 km Configuration : 3.70 m carriage way with 1.00m soft shoulder U Drain : 6 Nos Pipe Culvert : 1 nos
124	Rajshahi	Bagha	Bolihar Eidgah (R&H) - Digha GC via Tetulia hat. (ID:	Length : 7.596km Starting Point : At Tetulia hat Ending Point : At Bridge over LakkhonbariaKhal	Length : 7.596km Configuration : 3.70 m carriage way with 1.150m soft shoulder

SI No.	District	Upazila	Road and Road ID	Existing Road's Salient Features	Improvement Proposal
			181102010)	Major Settlements : Tetulia Bazar, Premtoli hat, Amorpur hat, Digha GC. Existing road land width :12.00m – 20.00m Terrain : Plain Configuration : carriage width 3.00m and earthen shoulder 0.9m on both sides Box Culvert : 5 nos	
125	Rajshahi	Bagha	Chandipur-Arani Rly. station via Bausa UP Office. (ID : 181103001)	Length : 11.898 km Starting Point : Chandipur R&H Ending Point : Arani Rail Station Major Settlements : Chandipur, Chhoyghoti, Dhaka Chandragati, Arifpur, Dhandu, Fotepur Premtoli, Bausha, Bererbari, Nurnagor Existing road land width : 12m to 20m Terrain : Plain Configuration : carriage width 3.00m and earthen shoulder 1.50m on both sides Pipe Culvert : 1 Nos Slab Culvert : 6 nos U Drain : 1 Nos Box Culvert : 9 nos	Length : 4.40 km Configuration : 3.70 m carriage way with 1.150m soft shoulder Box Culvert : 2 Nos
126	Rajshahi	Mohanpur	Bazorpur Trimohini to Dhupaghata hat(UZR) (ID#181532001)	Length : 4.5km Starting Point : Bozorpur R&H Ending Point : Dhopaghat Major Settlements : Bozorpur, Dumuria, Akubari, Bosontopur, Moupara, Vetupara, Krishnopur, Dhopaghata Existing road land width : 11.0m to 11.50m Terrain : Plain Configuration : carriage width 3.7m and earthen shoulder 1.7m on both sides Box culvert : 10 Nos(all in good condition)	Length : 4.5 km Configuration : 5.5 m carriage way with 1.8m soft shoulder Cross drainage structure : Nil
127	Rajshahi	Durgapur	Durgapur-Belghoria. Rd. (UZR)	Length : 8.78km Starting Point : Durgapur Upazila	Length : 8.78 km Configuration : 5.5 m carriage way with

SI No.	District	Upazila	Road and Road ID	Existing Road's Salient Features	Improvement Proposal
			(ID#181312001)	Ending Point : Alipur Bazar Major Settlements : Sukandighi, Dhormopur, Alipur Existing road land width : 13.0m to 18.00m Terrain : Plain Configuration : carriage width 4.88m and earthen shoulder 1.7m on both sides Box culvert : 1 No	0.9m soft shoulder Surface Drain : 200m Box Culvert : 1 No Cross Drain : 2Nos
128	Rajshahi	Durgapur	Amgachhi GC-Katakhali R&H via Kuhar Rd. (UZR) (ID#181312006)	Length : 3.00 km Starting Point : Amgachi Hat Ending Point : Kuhar Major Settlements : Amgachi, Jhaluka, Gourihar, Andua, Kuhari Existing road land width : 11.50m to 16.00m Terrain : Plain Configuration : carriage width 3.70m and earthen shoulder 1.4m on both sides Box culvert : 1 No	Length : 3.00 km Configuration : 5.5 m carriage way with 0.9m soft shoulder Surface Drain : 150m Box Culvert : 2 Nos
129	Rajshahi	Durgapur	Shingahat GC-Amgachi Hat GC (UZR) (ID#181312003)	Length : 6.25 km Starting Point : Singahat Ending Point : Amgachi Hat Major Settlements : Singa, Nandopara, Choupukuria, Amgachi Existing road land width : 10m to 15m Terrain : Plain Configuration : carriage width 3.70m and earthen shoulder 0.6m on both sides Slab culvert : 1 No	Length : 6.25 km Configuration : 5.5 m carriage way with 1.81m soft shoulder Surface Drain : 600m Cross Drain : 4 Nos Box Culvert : 4 Nos
130	Feni	Dagonbhuiyan	Dagonbhuiyan-Chowdhury Hat Road (UZR) (ID#430252004)	Length : 4.02 km Starting Point : Dagonbhuiyan Ending Point : Chowdhury Hat Major Settlements : Existing road land width :	Length : 4.02 km Configuration : 3.7 m carriage way with 0.3m soft shoulder Box Culvert : 6 Nos

SI No.	District	Upazila	Road and Road ID	Existing Road's Salient Features	Improvement Proposal
				Terrain : Plain Configuration : carriage width 3.05m and earthen shoulder 0.6m on both sides Box culvert : 6 Nos	
131	Feni	Sonagazi	Bakter Munshi-Kuthir hat-Fazilerghat-Dagoanbhuyan Road (Dagoanbhuyan-Fazilerghat-Bakthermunshi) Road (From RHD #242). (ID: 430942003)	Length : 10.415 km Starting Point : Bakter Munshi Bazar Ending Point : Fazilerghat Beily Bridge Major Settlements : Mirzapur, Anondipur, Gunok, Vaduria, Bishnupur, Charlaxmipur, Doshni, Uttor Chormojlishpur Existing road land width : 10m to 15m Terrain : Plain Configuration : carriage width 4.3m and earthen shoulder 0.85m on both sides U Drain : 24 Nos Box culvert : 11 Nos Bridge : 1 No	Length : 10.415 km Configuration : 4.3 m carriage way with 0.85m soft shoulder Box Culvert : 11 Nos
132	Feni	Sonagazi	Motigonj UP-Dasherhat-ChardarbeshUP-Karamotiabazar-Kazir hat Rd (ID: 430943002)	Length : 8.870 km Starting Point : Motigonj Bazar Ending Point : Kazirhat Bazar Major Settlements : Motigonj, Satbaria, Voag, Moheshchar, Palgiri, Chadarbesh, Charsahavikari, Raghobpur, Kazirhat, Singula Existing road land width : 12m to 16m Terrain : Plain Configuration : carriage width 3.70m and earthen shoulder 0.90m on both sides U Drain : 19 Nos Pipe Culvert : 1 No Slab Culvert : 1 No Box culvert : 7 Nos RCC Girder Bridge : 1 No	Length : 8.870 km Configuration : 3.70 m carriage way with 0.90m soft shoulder Box Culvert : 19 Nos

SI No.	District	Upazila	Road and Road ID	Existing Road's Salient Features	Improvement Proposal
133	Feni	Porshuram	Parashuram-Kalir bazar-Danikunda bazar-Saldhar bazar-Malipathar-Nilaxi-Fulgazi Road.(Parashuram-Part=ch 00-10.75KM) (ID: 430513008)	Length : 8.800 km Starting Point : Parshuram Ending Point : Malipather - Nilaxi Major Settlements : Anantpur, Poschim Alaka, Purba Alaka, Noapur, Dhanikunda, Uttar Shaldhar, South Shaldhar, Malipather Existing road land width : 12m to 15m Terrain : Plain Configuration : carriage width 2.44m and 3.00m at various chainage and earthen shoulder 0.60m on both sides U Drain : 16 Nos	Length : 8.682 km Configuration : 3.70 m carriage way with 0.90m soft shoulder U-Drain : 5 Nos (9 Nos replacement and 24 Nos New)
134	Noakhali	Begumgonj	Banglabazar-Rajgong Road (ID: 475072004)	Length : 7.245 km Starting Point : Bangla Bazar Ending Point : Rajgonj Bazar Major Settlements : Uttor Jirtoly, Boro Hossianpur, Boro Obhirampur, Dharabpur, Bijoynogor, Ali Hasimpur, Aladinagar Existing road land width : 7.50m to 10.5m Terrain : Plain Configuration : carriage width 3.10m and earthen shoulder 0.60m on both sides U Drain : 4 Nos Box culvert : 5 Nos	Length : 7.245 km Configuration : 3.70 m carriage way with 1.00m soft shoulder Box Culvert : 5 Nos
135	Noakhali	Senbag	SomirmunshirhatG C-Kutuberhat G C Road (UZR) (ID:475802001)	Length : 9.00 km Starting Point : At Somirmunshirhat GC Ending Point : AtKutuberhat GC Major Settlements : Somirmunshirhat, Earpur Bazar, Notun Bazar, Bokshirhat, Kutuberhat Existing road land width : 15.09m – 21.55m Terrain : Plain Configuration : carriage width 5.00m and earthen shoulder 0.60m on both sides U Drain : 4 Nos	Length : 9.00 km Configuration : 5.50 m carriage way with 0.90m soft shoulder Box Culvert : 19 Nos

SI No.	District	Upazila	Road and Road ID	Existing Road's Salient Features	Improvement Proposal
				Pipe Culvert : 1 No Slab Culvert : 1 No Box culvert : 15 Nos RCC Girder Bridge : 2 Nos	
136	Noakhali	Senbag	Somir Munshirhat GC - RHD (Kesharpar UP) via Chilonia bazar Road (UZR) (ID:475802010)	Length : 6.442 km Starting Point : At Somirmunshirhat GC Ending Point : At Kasherpar Raster Matha(Chaterpaya-kankirhat Major Settlements : Dildarmarket, Nazirnagar, Chilonia, Muzartak, Chacua & Kasherpar Existing road land width : 15.09m – 21.55m Terrain : Plain Configuration : carriage width 4.00m and earthen shoulder 0.50m on both sides U Drain : 4 Nos Pipe Culvert : 1 No Slab Culvert : 1 No Box culvert : 11 Nos RCC Girder Bridge : 2 Nos	Length : 6.442 km Configuration : 5.5 m carriage way with 0.90m soft shoulder Surface Drain : 1251m
137	Noakhali	Senbag	Senbag-Arjuntala UP Office (Chilonia Bazar).(UZR) (ID:475803007)	Length : 4.81 km Starting Point : At Senbag Upazila H/Q Ending Point : At Aurjuntala UP Major Settlements : Senbag Upazila, Dorbaserhat, Chilonia Bazar & Aurjuntala UP. Existing road land width : 15.09m – 21.55m Terrain : Plain Configuration : carriage width 3.00m and earthen shoulder 0.60m on both sides U Drain : 1 No Slab Culvert : 1 No Box culvert : 6 Nos RCC Girder Bridge : 1 No	Length : 4.81 km Configuration : 3.70 m carriage way with 0.90m soft shoulder
138	Noakhali	Hatiya	Chowhomoni Bazar RHD - Char Changa	Length : 8.6 km Starting Point : At Chowhomoni Bazar & RHD Road	Length : 8.6 km Configuration : 3.70 m carriage way

SI No.	District	Upazila	Road and Road ID	Existing Road's Salient Features	Improvement Proposal
			GC via Majidi Bazar Road (UZR) (ID:475362005)	Ending Point : At Charchenga bazar Major Settlements : Chowhomoni,Gullakhali,maijchara,Charchenga Existing road land width : 12.10m – 18.17m Terrain : Plain Configuration : carriage width 1.2m and earthen shoulder 0.90m on both sides Suice Gate : 6 Nos	with 0.90m soft shoulder Box Culvert : 1 No
139	Noakhali	Sonaimuri	Kachihata-Thandar hat Road (Paloan pol RHW-Amannullapur UP-Eadgha Amin bazar-Amishapara UP) (UZR) (ID:475882006)	Length : 14.214 km Starting Point : Eadgha Amin Bazar Ending Point : At Thandarhat Major Settlements : Amishapara,Deoti, & Joyag Existing road land width : 13.30m-15.00m Terrain : Plain Configuration : carriage width 5.5m and earthen shoulder 0.9 m on both sides Box culvert ; 12 Nos U Drain : 7 Nos RCC Bridge : 12 Nos	Length : 14.214 km Configuration : 5.5 m carriage way with 0.9m soft shoulder U Drain : 2 Nos Box culvert : 1 Nos(Replacement),3 Nos (New)
140	Noakhali	Sonaimuri	Dirirjan Bazar - Ambarnagar UP Road. (UNR) (ID:475883018)	Length : 5.45 km Starting Point : At Digirjan Bazar Ending Point : Ambornagar Up Office Major Settlements : Digirjan Bazar, Abdullarhat, Washakpur, Ambornagar high School market, Ambornagar . Existing road land width : 12.10m – 18.17m Terrain : Plain Configuration : carriage width 2.9m and earthen shoulder 1.0 m on both sides Box culvert ; 2 Nos U Drain : 3 Nos Slab Culvert : 1 No RCC Bridge : 1 No	Length : 5.45 km Configuration : 3.70 m carriage way with 1.0m soft shoulder U Drain : 2 Nos Box culvert : 4 Nos(Replacement)
141	Chandpur	Hazigonj	Cheangatali GC (Dadasgram up)-	Length : 5.45 km Starting Point : At Kapaikap	Length : 5.45 km Configuration : 3.70 m carriage way

SI No.	District	Upazila	Road and Road ID	Existing Road's Salient Features	Improvement Proposal
			Dhadda-Khalpar bazar Road via Shaheb bazar & Pirojpur Bazar (UNR) (ID:413493015)	Ending Point : Dhadda Khalpar Bazar Major Settlements : Kapaikap, Deodron, Khilpara, Nischintapur, Pirojpur, Makri, Dhadda Existing road land width : 15.09m – 21.55m Terrain : Plain Configuration : carriage width 3.7m and earthen shoulder 1.0 m on both sides Box culvert ; 4 Nos Pipe Culvert : 3 Nos RCC Bridge : 2 No	with 1.0m soft shoulder Box culvert : 4 Nos
142	Chandpur	Kachua	Kachua North UP (Tetuya)-Loskari-Boxagonj bazar road via Duati (UNR) (ID:413583023)	Length : 8.700 km Starting Point : Near Tetuya UP Office Ending Point : Boxagonj bazar & Boxagonj GPS Major Settlements : Tetuya, Jala Tetuya, Loskari, Duati, Dahalia, Bhuyra, Uttor Nayakandi. Existing road land width : 12.00m – 15.00m Terrain : Plain Configuration : Crest width 3.0m (Earthen) Box culvert ; 8 Nos	Length :8.700 km Configuration : 3.70 m carriage way with 1.0m soft shoulder U Drain: 5 Nos
143	Chandpur	Matlab South	Dakshin Nayergaon UP-Ashinpur-Aliara Road (UNR) (ID:413963003)	Length : 6.61 km Starting Point : Nayargaon Bazar Ending Point : At R&H Road towards Aliara Bazar Major Settlements : Nayargaon Bazar, Patan, Ashwinpur, Dakkhin Baraigaon, Kalias, Ghoradhari, Shibpur. Existing road land width : 9.45 m – 12.36m Terrain : Plain Configuration : Crest width 3.0m (Earthen) Box Culvert: 5 Nos RCC Bridge: 4 Nos	Length :6.273 km Configuration : 3.70 m carriage way with 1.0m soft shoulder U Drain: 1 No Box Culver: 1 No
144	Chandpur	Faridganj	Faridganj GC-Rupsha GC Road. (UZR) (ID:413452001)	Length : 5.74 km Starting Point : At Faridganj Upazila HQ Bazar(Pouroshova) Ending Point :At Gangazali Bridge near Rupsha GC	Length :5.74 km Configuration : 3.70 m carriage way with 1.0m soft shoulder Cross Drainage Structure: Nil

SI No.	District	Upazila	Road and Road ID	Existing Road's Salient Features	Improvement Proposal
				of 15 no Uttar Rupsha Union Major Settlements : Naogaon, Paschim Rupsha, Bodiuzzamanpur, Amirabazar. Existing road land width : 12.00 m – 15.00m Terrain : Plain Configuration : Carriage width 3.7m with 0.9m shoulder RCC Bridge: 5 Nos	
145	Chandpur	Faridganj	Pashim subidpur UP to Basara Bazar Road. Via Munshir Hat Bazar (UNR) (ID:413453035)	Length : 5.05km Starting Point : Rupsha GC- Palishara GC Ending Point : CIP Beri Bandh Major Settlements : Fonisair, Uvarampur, Paschim Basara, Modina Bazar, Jakni, Surangachail, Uvarampur, Tora Munshirhat Existing road land width : 7.5 m – 12.00m Terrain : Plain Configuration : Carriage width 3.7m with 0.9m shoulder Box Culvert: 1 No RCC Bridge: 4 Nos	Length : 5.05 km Configuration : 3.70 m carriage way with 0.9m soft shoulder Box Culver: 1 No
146	Chandpur	Shahrasti	Chioshi (E) UP Office-Kharihor Bazar road via Kadra bazar (UNR) (ID:413953010)	Length : 5.922km Starting Point : At Chainage 0+800 m. from Kherihor Bazaar Ending Point : At Tetassoir Govt. Primary School and connect with paved portion. Major Settlements : Chitosee West and Chitosee East; Village: Kharihor, Lepsa, Kornopara, Kadra, Tetoissar and Panchail. Existing road land width : 7.0 m – 8.5m Terrain : Plain Configuration : Carriage width 2.3m with 1.2m shoulder Pipe Culvert: 2 Nos	Length : 5.922 km Configuration : 3.70 m carriage way with 0.9m soft shoulder U Drain: 2 No
147	Chandpur	Haimchar	Gazipur UP Office to Upazilla Head	Length : 4.113 km Starting Point : Noyani Chowrasta	Length : 3.113 km Configuration : 5.5 m carriage way with

SI No.	District	Upazila	Road and Road ID	Existing Road's Salient Features	Improvement Proposal
			Quarter (UNR) (ID#413473011)	Ending Point : Algi Bazar Major Settlements : Uttar Algi, Choto Laxmipur, Komolapur Existing road land width : Terrain : Plain Configuration : carriage width 3.00m and earthen shoulder 0.90m on both sides Cross Drain : 3 Nos Box culvert : 5 Nos	0.90m soft shoulder Box Culvert : 5 Nos Cross Drain : 3 Nos Surface Drain : 244m
148	Comilla	Titas	Raypur NHW- Batakandi GC road via Masimpur(ID : 419892001)	Length : 10.914 km Starting Point : Batakhandi GC Ending Point : Regulator over Chorer Khal Major Settlements : Batakandi, Kalaigobindopur, Pangashia, Masimpur Gc, Kadamtoli, Asmania, South Naeandia Existing road land width : 15.09 to 21.55m Terrain : Plain Configuration : From Ch. 0+00 - 0+315 m carriage width 5.50m, From Ch. 0+315 to 3+350m carriage way 3.70m and earthen shoulder 0.45m on both sides, From Ch. 3+350 - 10+914 carriage way 3.70m and earthen shoulder 0.45m on both sides, RCC Girder Bridge: 5 Nos	Length : 10.914 km Configuration : 5.50 m carriage way with 0.90m soft shoulder Cross Drain : 2 Nos Surface Drain : 521m
149	Comilla	Titas	Batakandi GC- DaudkandiGC Via Mohanpur Launch Ghat road (Titas Upazila Portion) (ID : 419892002)	Length : 11.50 km Starting Point : Batakandi GC Ending Point : Daudkandi GC Major Settlements : Badderkandi, Puran Batakandi, Barokawmnia, Harinpur, Krisnapur, Satani, Kalairkandi, Mohanpur Existing road land width : 12.50m – 15.30m Terrain : Plain Configuration : Carriage width 3.70m with 0.50m shoulder	Length : 11.50 km Configuration : 5.00 m carriage way with 0.9m soft shoulder U Drain: 2 No Surface Drain : 729m

SI No.	District	Upazila	Road and Road ID	Existing Road's Salient Features	Improvement Proposal
				Box Culvert: 7 Nos Bridge : 5 Nos	
150	Comilla	Daudkandi	Roypur NHW - Batakandi G.C via Masimpur Road (Daudkandi part). (ID : 419362001)	Length : 3.345 km Starting Point : Roypur Bazar Ending Point : Regulator over Chorer Khal Major Settlement : Autbag, Khoshkandi, Kushiara, Singula Existing road land width : 15.09 to 21.55m Terrain : Plain Configuration : carriage way 3.66m and hard shoulder 0.90m on both sides, RCC Girder Bridge: 1 Nos	Length : 3.345 km Configuration : 5.50 m carriage way with 0.90m soft shoulder
151	Comilla	Debidwar	Jafargonj GC to Barashalghar RHD via Yousufpur UPC Road. (ID: 419402006)	Length : 15.815 km Starting Point : Jafargonj GC Ending Point : Barashalghar RHD Major Settlements : Kalikapur, Sultanpur, Fatahabadh, Subil, Shibpur Existing road land width : 5.00m – 15.50m Terrain : Plain Configuration : Carriage width 3.00m with 0.50m shoulder Box Culvert: 13 Nos Pipe Culvert : 1 Nos Bridge : 6 Nos	Length : 15.815 km Configuration : 3.70 m carriage way with 0.9m soft shoulder Box Culvert : 8 No
152	Comilla	Sadar. Dakkhin	Khaish GC-Pipulia RHD Road. (ID : 419912002)	Length : 13.500 km Starting Point : Khaish GC Ending Point : Pipulia RHD Major Settlements : Laxmipur, MAruali, Kanustola, Krisanagar, Subapur, Monipur, Kalir Bazar Dolipur, Bagolpur, Subarnapur Existing road land width : 8.00m – 12.00m Terrain : Plain Configuration : Carriage width 3.70m with 0.90m shoulder Box Culvert: 14 Nos	Length : 13.500 km Configuration : 5.50 m carriage way with 0.9m soft shoulder Box Culvert : 8 No

SI No.	District	Upazila	Road and Road ID	Existing Road's Salient Features	Improvement Proposal
				Slab Culvert : 1 Nos Bridge : 4 Nos	
153	Comilla	Monohorgonj	Laksam H/Q - Natherpetua RHD via Munshirhat GC Road.(Monohorgonj Portion) (ID: 419902009)	Length : 5.342 km Starting Point : Laksham H/Q Ending Point : Natherpetua RHD Major Settlements : Munshirhat, Borolla , Ulupara, Hatimara, Hatimara Pachim, Koiyarpur, Hatimara purbo, Natheretua Existing road land width : 10.00m – 14.50m Terrain : Plain Configuration : Carriage width 3.70m with 0.90m shoulder Box Culvert: 5 Nos U Drain : 1 Nos Bridge : 2 Nos	Length : 5.342 km Configuration : 5.50 m carriage way with 0.9m soft shoulder U Drain : 7 nos Box Culvert : 5 Nos
154	Comilla	Laksham	Laksam Upazilla HQ- Chitoshi RHD(Moulana bazar) via Sreeyang Rd. (ID: 419722005)	Length : 5.00 km Starting Point : Batakhali Daru Sunnat Ahamadia Arabia Nurania Madrasha Ending Point : Sreeyang Bazar Major Settlements : Batakhali, Shingjore, Isapura, Hamirabag, Hazipura, Islampur, Shatgor, Sreeyang Existing road land width : 8.00m – 10.00m Terrain : Plain Configuration : Carriage width 2.40m with 0.60m shoulder Box Culvert: 10 Nos Slab Culvert : 5 Nos U Drain : 3 Nos Bridge : 1 No	Length : 5.00 km Configuration : 3.70 m carriage way with 0.9m soft shoulder U Drain : 1 nos Box Culvert : 2 Nos
155	Comilla	Chandina	Baragabindapur- Etbarpur UPC Road via Moddhamtala, Sitalpur. (ID:419273020)	Length : 9.590 km Starting Point : At Baragubindapur Ending Point : At Edthberpur UPC/Bazar Major Settlements : Baragubindapur, Maddhamtala, Ramchandrapur, Tehonai, Sitalpur, Barkoit, Khirashar, Khirashar Mohanpur, Edthberpur	Length : 9.59km Configuration :Carriage way 3.0 with 0.9m earthen shoulder

SI No.	District	Upazila	Road and Road ID	Existing Road's Salient Features	Improvement Proposal
				Existing road land width : 13.5 m – 18.5 m Terrain : Plain Configuration : Earthen Road	
156	Comilla	Chouddagram	Batisha NHW - Tarashail Bazar(Lal Msq) Road via Batisha Up, Debipur. (ID:419313007)	Length : 5.115 km Starting Point : BatishaBazar Ending Point : Tarashail GC Major Settlements : Batisha, Bashontipur, Debipur, Boshkora, Komardoga, Tarashail Existing road land width : 13.5 m – 18.5 m Terrain : Plain Configuration : Carriage way 2.9 with 0.5m shoulder Cross Drain : 17 Nos	Length : 5.115km Configuration :Carriage way 3.7 with 0.9m earthen shoulder Box Culvert: 3 Nos U Drain : 16 nos
157	Comilla	Chouddagram	Kadoir bazar(Suvapur UPC) -Banggodda GC Road via Unkot, Kayerdhari. (ID:419313022)	Length : 5.086 km Starting Point : Kadoir Bazar Ending Point : Bangodda GC Major Settlements : Kadoir, Hajaripara, Kotpara, Unkot, Kayerdari, Bangodda Existing road land width : 13.5 m – 18.5 m Terrain : Plain Configuration : Carriage way 2.9 with 0.5m shoulder U Drain : 3 Nos RCC Culvert: 2 nos Brick Culvert: 2 Nos Bridge : 1 No	Length : 5.086 km Configuration :Carriage way 3.7 with 0.9m earthen shoulder Box Culvert: 3 Nos U Drain : 4 nos
158	Comilla	Nangalkot	Adra UP-Manikmura Bazar Road via Volainbazar & Ghoramaidan (ID:419873008)	Length : 7.45 km Starting Point : At Adra UP Office Ending Point : At Ghoramaidan meet with RHD Road Major Settlements : Adra, Volain, Chatitala, Ghoramaidan Existing road land width : 08 m – 10 m Terrain : Plain Configuration : Carriage way 2.5 with 0.5m shoulder Cross Drain : 3 Nos	Length : 5.475 km Configuration :Carriage way 3.7 with 0.9m earthen shoulder Box Culvert: 1 No
159	Comilla	Barura	Paranpur Bazar[Length : 8.107 km	Length : 8.107 km

SI No.	District	Upazila	Road and Road ID	Existing Road's Salient Features	Improvement Proposal
			R&HJ-Payelgacha UP office Road(ID:419093004)	Starting Point : At Paranpur Bazar Ending Point : At Poyalgacha Bazar Major Settlements : Paranpur, Padua, Pedda, Para Bagmara, Bishnapur,Dogoi,Kalakhal,Kazkamta & Poyalgacha Existing road land width : 12.5m – 15.00m Terrain : Plain Configuration : Carriage way 3.00 with 0.9m shoulder Cross Drain : 4 Nos	Configuration :Carriage way 3.7 with 0.9m earthen shoulder Box Culvert: 7 Nos
160	Comilla	Barura	Barura GC - Modaforganj RHD Road (ID:419092013)	Length : 14.6 km Starting Point : Barura Bazar Ending Point : Mudaffargonj Major Settlements : Zinshar, Pachpukuria, Somargaon, Hobirgaon, Bakai, Shakpur, Mokgaon, Vayukshar Existing road land width : 12.5m – 15.00m Terrain : Plain Configuration : Carriage way 2.5 with 0.9m shoulder Box Culvert : 1 No	Length : 9.314 km Configuration :Carriage way 5.5 with 0.9m earthen shoulder Box Culvert: 2 Nos Cross Drain : 1 No
161	Laxmipur	Komolnagar	Lawrancekasher hat-Ander char Road (UNR) (ID#451743007)	Length : 5.00 km Starting Point : Lawrence Bazar Ending Point : Fazumiar Hat Major Settlements : Char Jangalia, Charpagla,Killavillage Existing road land width : 7-9.4m Terrain : Plain Configuration : Carriage way 3.66 with 0.9m earthen shoulder U Drain : 1 No	Length : 5.00 km Configuration :Carriage way 3.66 with 0.9m earthen shoulder Cross Drainage Structure : Nil
162	Laxmipur	Ramgati	Torabgonj GC - Shantirhat - Hajiganj - Bander hat - Chowdhurirhat - Ramgati Bazar Raod	Length : 12.00 km Starting Point : Paschim Char Kolkopa Ending Point : Ramgoti Bazar Major Settlements : Cha Badam, Cha Poragacha, Char Algi, Char Ramij	Length : 12.00 km Configuration :Carriage way 5.5 with 0.9m earthen shoulder

SI No.	District	Upazila	Road and Road ID	Existing Road's Salient Features	Improvement Proposal
			(UZR) (ID:451732007)	Existing road land width : 14 – 16m Terrain : Plain Configuration : Carriage way 5.5 with 0.9m shoulder)	
163	Laxmipur	Sadar	Bhobanigon GC- Refuje Market-Megna Bazar-Chakbazar- Munshirhat Road (UZR) (ID:451432006)	Length : 9.00 km Starting Point : At Bhobanigonj Bazar Ending Point : At Chakbazar Major Settlements : Bhobanigonj Bazar, Miar beri Bazar, Meghna Bazar, Chakbazar. Existing road land width : 8.00m – 10.50m Terrain : Plain Configuration : Carriage way 3.0 with 0.9m shoulder) RCC Bridge: 2 Nos	Length : 9.00 km Configuration : Carriage way 5.5 with 0.9m earthen shoulder
164	Laxmipur	Raipur	Raipur-Panpara Road (UZR) (ID:451582002)	Length : 5.92 km Starting Point : At Langra Bazar (Laxmipur-Chandpur RHD) Ending Point : Panpara GC (Laxmipur - Ramgonj RHD.) Major Settlements : Raipur Pourashava, Keroa, Est keroa, Lamchori, Enayetpur. Existing road land width : 8.00m – 10.50m Terrain : Plain Configuration : Carriage way 5.0 with 0.9m shoulder) RCC Bridge: 2 Nos Box Culvert: 4 Nos Pipe Culvert : 1 No	Length : 5.92 km Configuration : Carriage way 5.5 with 0.9m earthen shoulder
165	Laxmipur	Ramgonj	Ramgonj Nagerdighir hat via Harischar Bazar (UZR) (ID:451652011)	Length : 10.0 km Starting Point : At Asa Hotal Ramganj Bazar Ending Point : Changirgoan Village Major Settlements : Ramganj, Chandipur, Changirgon, Paccim Chandipur, Bokul Tala Machimpur. Hazipur Existing road land width : 8.00m – 10.50m Terrain : Plain Configuration : Carriage way 5.5 with 0.9m shoulder) RCC Bridge: 1 No	Length : 10.0 km Configuration : Carriage way 5.5 with 0.9m earthen shoulder

SI No.	District	Upazila	Road and Road ID	Existing Road's Salient Features	Improvement Proposal
				Box Culvert: 1 No	
166	Kushtia	Kushtia Sadar	Bittipara Hat R&H- Jamjami G.C via Jhowdia Hat road. (ID : 250792005)	Length : 17.050 km Starting Point : Bittipara R&H Bazar Ending Point : Jamjami Bazar over Kumer River Major Settlements : Bittipara, Ujangram, Char Bakhail, hatia, Astanangar, Baidyanathpur, Kasnathpur, Jhaudia, Hatibhanga, Asannagor, Sankardia, Radhanagor, Nirshanagur, Fakirpara Existing road land width : 14.05-17.52m Terrain : Plain Configuration : From Ch. 0+00 - 6+685 km Carriage way 5.50 with 0.6m earthen shoulder, From Ch. 6+685 - 17+050 Carriage way 3.66 with 0.9m hard shoulder with 0.3m earthen shoulder U Drain: 7 Nos RCC Girder Bridge : 3 Nos Box Culvert : 6 Nos, Slab Culvert : 1 No Pipe Culvert : 2 Nos	Length : km Configuration : Carriage way 5.50 with 0.9m earthen shoulder Cross Drain : 3 Nos (2 Nos new and 1 No extension) Road side drain : 300m
167	Kushtia	Bheramara	Bheramara- Kuchimora GC- Juniadah GC- Allardarga GC (R&H) Rd. (ID : 250152001)	Length : 14.10 km Starting Point : Bheramara Ending Point : Sonaikundi bazar, Allardarga. Major Settlement: ChalkBheramara, Ramkrishnapur, Damukdia, Golapnagar, Maharajpur, Islampur, Bahadurpur,Kuchiamora,Madhabpur,Arkandi,Raita,Hori pur,Juniadaha, Mirjapur, Noluta, Sonaikundi Terrain : Plain Configuration : Carriage way 5.5 m (Ch.3400m-15600m) & 3.70m (Ch.20500m-22400m) with 0.7m hard shoulder Box Culvert : 8 Nos Cross Drain : 12 Nos RCC Bridge : 3 Nos. Hydraulic Structure : 2 Nos	Length : 14.10 km Configuration : Carriage way 5.50 with 0.9m earthen shoulder
168	Kushtia	Khoksha	Kushtia Rajbaria	Length : 8.41 km	Length : 8.41 km

SI No.	District	Upazila	Road and Road ID	Existing Road's Salient Features	Improvement Proposal
			RHD-Panti GC via Jaduboyra-Shandiara bazar Road (Khoksa Portion) ID : 250632006)	Starting Point : Hijlabot Ending Point : Shandipara. Major Settlement: Hijlabot, Roypur, Romanathpur, Ajoil, Shandiara Terrain : Plain Configuration : Carriage wa 3.70m with 0.90m soft shoulder	Configuration :Carriage way 5.50 with 0.9m earthen shoulder
169	Kushtia	Khoksha	Khoksa Somaspur-Sengram Kalitola GC pansha road (ID : 250632001)	Length : 10.445 km Starting Point : Khoksha Nimtola Bazar via gorai bazar Ending Point : Kalitola Hat Major Settlement: Khoksha, Chorpara, Chuniyapara, Rainathpur, Kadirpur, Somaspur, Chokoripur, MASHulia , joyanathihzara, Radhanagar, Taherpur, Vobigonj, Uthuli Sengram, Kalitola Terrain : Plain Configuration : Carriage wa 3.70m with 0.60m soft shoulder Box Culvert : 16 Nos	Length : 10.445 km Configuration :Carriage way 5.50 with 0.9m earthen shoulder
170	Kushtia	Daulatpur	Taragunia G C-Bairagirchar-Moricha UP-Allardargha GC Road (ID : 250392009)	Length : 13.230 km Starting Point : Taragunia GC Ending Point : Alladarga GC Major Settlement: Taragunia, Farakpur, Bairagir char, Majdiar, Moricha, Balirdiar, Totally Para, Sonaikundi Alladarga Existing road land width : 12.05m – 16.60m Terrain : Plain Configuration : Carriage way 3.000m with 0.300m soft shoulder Box Culvert : 8 Nos	Length : 13.230 km Configuration :Carriage way 4.88 with 0.9m earthen shoulder Box culvert: 8 nos (7 nos replacement) Surface Drain : 700m
171	Kushtia	Kumarkhali	Kushtia-Rajbari RHD(Lahini) to Katlagari GC Via Jaduboyra, Sandiara	Length : 15.60 km Starting Point : Lahini Bottala Bazar (Kumarkhali Part)	Length : 15.60 km Configuration :Carriage way 5.50 with 0.9m earthen shoulder

SI No.	District	Upazila	Road and Road ID	Existing Road's Salient Features	Improvement Proposal
			Bazar Road (ID : 250712007)	Ending Point : Regulator Sandiara Bazar Kumarkhali Part. Major Settlement: Swota, Kanchanpur, baundh Bazar, Chapra, Kaburhat Chandpur, Joduboyra, Gobindrapur Enayetpur, Higla Bazar, Existing road land width : 12.00m – 15.00m Terrain : Plain Configuration : Carriage way 3.70m with 0.90m soft shoulder Hydraulic Structure : 1 Nos	
172	Jhenaidah	Kotchadpur	Kotchandpur GC - Chowgacha GC Road (Kotchandpur Part). (UZR) (ID#244422003)	Length : 4.7 km Starting Point : Kotchandpur College Stand Ending Point : Bagdang Culvert Major Settlements : Kotchandpur, Solemanpur, Panchpatila, Bolabaria Bagdanga Existing road land width : 10.00-15.00 Terrain : Plain Configuration : Carriage way 5.50 with 0.9m earthen shoulder U Drain : 9 Nos Box Culvert : 1 No, Slab Culvert : 2 Nos Pipe Culvert : 1 No	Length : 4.7 km Configuration :Carriage way 5.50 with 0.9m earthen shoulder Pipe Culvert : 2 Nos
173	Jhenaidah	Kaligonj	Baro Bazar GC- Hakimpur GC Road (UZR) (ID#244332001)	Length : 11.44 km Starting Point : At Satgachia Ending Point : At Sotismari Bazar Major Settlements : Sathgachia, Mhotonpur Sako, Chanpara, Borodhopadi, Dhopadi, Jattarapur, Shotiamari, Hakimpur Existing road land width : 14 – 16m Terrain : Plain Configuration : Carriage way 3.7 with 0.9m hard shoulder Box Culvert : 4 Nos	Length : 6.63 km Configuration :Carriage way 5.5 with 0.9m earthen shoulder Box Culvert : 3 Nos U Drain : 1 No

SI No.	District	Upazila	Road and Road ID	Existing Road's Salient Features	Improvement Proposal
174	Jhenaidah	Kaligonj	Kaligonj UZ H/Q-Kola GC (UZR) (ID#244332008)	Length : 9.33 km Starting Point : Kaligong Upazila H/Q Ending Point : Kolar Hat Terrain : Plain Configuration : Carriage way 4.8 with 0.9m hard shoulder Box Culvert : 8 Nos U Drain : 7 Nos Slab Culvert : 1 No RCC Bridge : 1 No. Pipe Culvert : 1 No	Length : 9.33 km Configuration : Carriage way 4.8 with 0.9m earthen shoulder Box Culvert : 8 Nos Cross Drain: 6 Nos
175	Jhenaidah	Sadar	Naldanga UP HQ-Tetultala bazar Road (UNR) (ID#244193038)	Length : 7.50 km Starting Point : Noldanga Bazar Ending Point : Tetultola Bazar Major Settlements : Naldanga, Kharashuni, Tetulbaria Existing road land width : 14 – 16m Terrain : Plain Configuration : Carriage way 3.0 with 0.8m hard shoulder) Box Culvert : 1 No RCC Bridge : 1 No U Drain : 8 Nos	Length : 6.15 km Configuration : Carriage way 3.7 with 0.9m earthen shoulder U Drain: 6 Nos
176	Jhenaidah	Harinakundu	Harinakunda to HQ to Jhaudia GC (Harikunda portion) (UZR) (ID#244142005)	Length : 16 km Starting Point : Laxmipur Mor Ending Point : Jhaudia GC Major Settlements : Laxmipur, Tailtupi Existing road land width : 14 – 16m Terrain : Plain Configuration : Carriage way 3.0 with 0.8m hard shoulder) Box Culvert : 1 No RCC Bridge : 2 No U Drain : 3 Nos Slab Culvert : 7 Nos	Length : 16km Configuration : Carriage way 3.7 with 0.9m earthen shoulder U Drain: 5 Nos

SI No.	District	Upazila	Road and Road ID	Existing Road's Salient Features	Improvement Proposal
				Pipe Culvert : 6 Nos	
177	Jhenaidah	Moheshpur	Basbaria UP Office- Vasanpota bazar via Sreepur (UNR) (ID#244713010)	Length : 4.66 km Starting Point : Bhairaba Bazar Ending Point : At Vasanputa Village Major Settlements : Bhairaba, Balinagar, Sreepur, Vasanpota Existing road land width : 8 – 9m Terrain : Plain Configuration : Carriage way 3.0 with 0.90m earthen shoulder U-Drain : 1 Nos RCC Girder Bridge : 1 No	Length : 4.66 km Configuration : Carriage way 3.7 with 0.9m earthen shoulder Cross Drain: 12 Nos Surface Drain : 278m
178	Jhenaidah	Moheshpur	Natima UP office (Uzzalpur)- Bhabnagar bazar via ShamKur UP office (ID : 244713001)	Length : 5.850 km Starting Point : At Purapara More Ending Point : At Bhabnagar Bazar Major Settlements : Purapara, Gurdah, Bhabnagar Existing road land width : 8 – 9m Terrain : Plain Configuration : Carriage way 3.0 with 0.90m earthen shoulder U-Drain : 27 Nos Pipe Culvert : 8 Nos Slab Culvert : 2 Nos Box Culvert : 5 Nos RCC Girder Bridge : 1 No	Length : 5.850 km Configuration : Carriage way 3.7 with 0.9m earthen shoulder U Drain: 11 Nos
179	Jhenaidah	Moheshpur	Moheshpur- Bagadanga road (ID : 244712007)	Length : 12.255 km Starting Point : At Bhairoba More Ending Point : At Baghadanga Major Settlements : Bhairoba, Garapota, Vashanpota, Baghadanga Existing road land width : 9 – 11m Terrain : Plain Configuration : Carriage way 3.7 with 0.90m earthen shoulder U-Drain : 6 Nos	Length : 12.255 km Configuration : Carriage way 3.7 with 0.9m earthen shoulder U Drain: 2 Nos Box culvert : 6 Nos Surface Drain : 130m

SI No.	District	Upazila	Road and Road ID	Existing Road's Salient Features	Improvement Proposal
				Pipe Culvert : 12 Nos Slab Culvert : 4 Nos Box Culvert : 18 Nos RCC Girder Bridge: 8 No	
180	Jhenaidah	Moheshpur	Moheshpur H/Q-Hashadha GC (Moheshpur Portion) (ID: 244712003)	Length : 5.230 km Starting Point : At Jalilpur bottola More Ending Point : At Kanidanga village Major Settlements : Jalilpur, Nawdagram, Boichitala, Begumpur, Durgapur, Kanidanga Existing road land width : 10 – 15m Terrain : Plain Configuration : Carriage way 3.6 with 0.90m earthen shoulder U-Drain : 11 Nos Box Culvert : 1 No	Length : 5.230 km Configuration : Carriage way 3.7 with 0.9m earthen shoulder U Drain : 2 Nos Surface Drain : 163m
181	Jhenaidah	Moheshpur	S.B.K UP office (Khalispur)-Krischandapur bazar via Purandarpur (ID : 244713015)	Length : 5.90 km Starting Point : At Parandarpara Ghatpara Ending Point : At Krischandrapur Major Settlements : Khaishpur, Paradarpur, Krischandrapur Existing road land width : 15.09 – 21.55m Terrain : Plain Configuration : Carriage way 3.6 with 1.00m earthen shoulder U-Drain : 1 Nos	Length : 5.90 km Configuration : Carriage way 3.7 with 1.10m earthen shoulder U Drain : 18 Nos
182	Joypurhat	Akkelpur	Gopinathpur UP office(Karaitola)-Raikali UP office .(UNR) (ID#138133010)	Length : 8.12 km Starting Point : Gopinathpur Bazar(Karaitoli) Ending Point : At Raikali Bazar Major Settlements : Gopinathpur Hat, Gondimchara, Chapagachihoripur, Lochonpara, Belghoria, Deol, Dekuncha, Dekuncha bazar, Madhaypukur, Maligram, Kalikapur, Raikali Bazar. Existing road land width : 15.09m – 21.55m Terrain : Plain Configuration : Carriage way 3.0 with 0.9m earthen	Length : 8.0 km Configuration : Carriage way 3.66 with 0.9m earthen shoulder Pipe Culvert : 2 Nos Cross Drain : 9 Nos Surface Drain : 276m

SI No.	District	Upazila	Road and Road ID	Existing Road's Salient Features	Improvement Proposal
				shoulder Cross Drain: 17 Nos	
183	Joypurhat	Sadar	Mongalbari hat Rd(Dogachi Up Office)to Durgadaha bazar road (UNR) (ID:138473005)	Length : 6.27 km Starting Point :Dogachi Union parishad Ending Point : Durgadah Growth Center Major Settlement: Pechulia, Zitarpur, Thiot, Doani, Durgadah Existing road land width : 14.00m – 18.00m Terrain : Plain Configuration : Carriage way 3.00m with 0.45m earthen shoulder RCC Bridge : 1 No	Length : 6.27 km Configuration : Carriage way 3.67 with 0.9m earthen shoulder Pipe Culvert : 7 Nos
184	Joypurhat	Kalai	Kalai-Kichok RHD Via Gongadaspur Road (UZR) (ID: 138582014)	Length : 8.787 km Starting Point : At Panchsira Bazar Ending Point : Near At Gangadaspur GPS Major Settlement: Kalimohor, Nandaildighi, Utrail ,Gohara, Moahail ,Shantinagar, Mastor , Burail, Gangadaspur Existing road land width : 6.00m – 8.00m Terrain : Plain Configuration : Carriage way 3.7m with 0.9m earthen shoulder Box Culvert : 12 Nos	Length : 8.787 km Configuration : Carriage way 5.5 with 0.9m earthen shoulder Cross Drain: 10 Nos
185	Joypurhat	Panchbibi	Panchbibi GC - Salaipur RHD Road (ID: 138742001)	Length : 11.107 km Starting Point :At Panchbibi GC Ending Point : At Salaipur RHD Major Settlement: Danejpur, Birnagor, Mohipur, Feskahat, Dhuroil, Hakimpur, Koijury Existing road land width : 16.10m – 22.37m Terrain : Plain Configuration : Carriage way 5.5m with 0.90m earthen shoulder	Length : 11.107 km Configuration : Carriage way 5.5 with 0.9m earthen shoulder Slope Drain : 1 No

SI No.	District	Upazila	Road and Road ID	Existing Road's Salient Features	Improvement Proposal
				Cross Drain: 1 Nos Box Culvert : 14 Nos Slab culvert : 4 Nos	
186	Joypurhat	Kethal	Moushumi Bazar (RHD) - Rukindipur GC via Sannyash Ghat (Khatlal portion) (UZR) (ID:138612008)	Length : 8.22 km Starting Point :At Moushumi bazar Ending Point : At Rukinpur Major Settlements : Mamudpur, Rasulpur, Mohabbatpur, Jamalpur Existing road land width : 10.09m – 15.00m Terrain : Plain Configuration : Carriage way 3.0m with 0.9m earthen shoulder PC Girder Bridge: 1 No RCC Girder Bridge: 1 No Slab Culvert : 1 No Box Culvert : 10 Nos	Length : 8.22 km Configuration : Carriage way 3.7 with 0.9m earthen shoulder U Drain: 1 No Surface Drain : 40m Box Culvert: 1 No
187	Nilphamari	Nilphamari-S	Nilphamari-Saidpur R&H at Textile Mill - Babrijhar GC . (UZR) (ID#173642003)	Length : 5.05 km Starting Point :Nilphamari – Saidpur R&H at Textile Mills. Ending Point : At Babrijhar Growth Center Major Settlements : Textile Darowari Bazar,Mollahpara Sipaitary, Bottola, Charaikhola,Bangmari, Baniapara & Babrijhar. Existing road land width : 10.00m – 15.00m Terrain : Plain Configuration : Carriage way 3.7 with 0.9m earthen shoulder Cross Drain : 1 No Box Culvert : 5 Nos	Length : 4.954 km Configuration : Carriage way 5.5 with 0.9m earthen shoulder Box Culvert : 1 No Cross Drain : 1 No Surface Drain : 350m
188	Nilphamari	Nilphamari-S	Nilphamari (LSD Godown) - Ramgonj G.C (UZR) (ID#173642005)	Length : 7.5 km Starting Point :At Nilphamari LSD Godown Ending Point : At Ramgonj GC. Major Settlements : Manikermore, Shimultila,	Length : 7.5 km Configuration : Carriage way 5.5 with 0.9m earthen shoulder Cross Drain: 1 No

SI No.	District	Upazila	Road and Road ID	Existing Road's Salient Features	Improvement Proposal
				kandurarmore, Porporapara, Tupamari Dogachi, Morolardanga, Tupamari bondorpara, Nitchpara, Sukdan, vatiapar, Ramgonj, Existing road land width : 14.00m – 18.00m Terrain : Plain Configuration : Carriage way 5.5m with 0.35m earthen shoulder Cross Drain: 1 No Box Culvert : 7 Nos	Surface Drain : 210m
189	Nilphamari	Nilphamari-S	Porarhat GC - Nilphamari- Domer R&H road at Hortokilota bazar via Baruahat - Puler hat - Chawra hat - Tarunibari Rail Station .(ID : 173642019)	Length : 8.095 km Starting Point :At Porarhat GC Ending Point : At Nilphamari Domer R&H road Major Settlements : Masterpara, Dhakin chowra, Kanchanpara, Bhanamallir, Bokdultolapara, Masterpara, Boadschoolbazar, Napithpara, Madhakachairapara, Shimultoli, Bhabandando hat Existing road land width : 8.00m – 14.00m Terrain : Plain Configuration : Carriage way 3.70m with 0.75m earthen shoulder Box Culvert : 9 Nos	Length : 8.095 km Configuration : Carriage way 3.70 with 1.80m earthen shoulder Box Culvert : 3 No
190	Nilphamari	Nilphamari-S	Goregram U.P. to Bhabanigonj G.C via Majhpara Madrasha. (ID : 173643008)	Length : 8.140 km Starting Point :At Goregram U.P Ending Point : At Bhabanigonj G.C Major Settlements : Kithoniapara, Baltolihat, Musruth Gorgram, Mazarpara. Shakpara, Bhababanigonj Existing road land width : 8.00m – 14.00m Terrain : Plain Configuration : Carriage way 3.70m with 0.5m earthen shoulder Box Culvert : 3 Nos	Length : 8.140 km Configuration : Carriage way 3.70 with 1.00m earthen shoulder Box Culvert : 6 No
191	Nilphamari	Dimla	Shutibarihat G.C- Kakra Chowpathi R&H Rd (ID : 173122006)	Length : 8.140 km Starting Point : Shutibarihat G.C Ending Point : Kakra Chowpathi R&H Existing road land width : 10.00m – 14.00m	Length : 8.140 km Configuration : Carriage way 5.50 with 0.90m earthen shoulder Surface Drain : 35m

SI No.	District	Upazila	Road and Road ID	Existing Road's Salient Features	Improvement Proposal
				Terrain : Plain Configuration : Carriage way 3.70m with 0.9m earthen shoulder Box Culvert : 30 Nos Bridge : 2 Nos	Cross Drain : 10 nos
192	Nilphamari	Jaldhaka	Jaldhaka domar RHW choupathi-Tangonmari hat G.C. (ID :173362003)	Length : 17.80 km Starting Point : Jaldhaka domar RHW choupathi Ending Point : Tangonmari hat Major Settlements : Golna, Khasemada, Chowrangi. Saltitola, Mirgonj, Patanpara, Dhakin Dashibay Kathali, Khutamara, Tangomari Existing road land width : 10.00m – 15.00m Terrain : Plain Configuration : Carriage way 3.70m with 0.9m earthen shoulder Box Culvert : 3 Nos Pipe Culvert : 2 Nos Box Culvert : 2 Nos Bridge : 3 Nos	Length : 17.80 km Configuration : Carriage way 5.50 with 0.90m earthen shoulder Box Culvert : 1 nos
193	Nilphamari	Sayedpur	Taraganj G.C.- Porarhat G.C. Via Hazarihat G.C (ID : 173852001)	Length : 17.750 km Starting Point : Taraganj G.C Ending Point : Tangonmari hat Existing road land width : 10.00m – 15.00m Terrain : Plain Configuration : Carriage way 3.70m with 0.9m earthen shoulder Box Culvert : 25 Nos Pipe Culvert : 10 Nos U Drain: 2 Nos	Length : 17.750 km Configuration : Carriage way 5.50 with 0.90m earthen shoulder Cross Drain : 7 Nos Box Culvert : 12 nos
194	Nilphamari	Domar	Domar GC to Ambari Alsiar Bazar RHD road GC via Azizarerhat (ID : 173152008)	Length : 13.46 km Starting Point : Domar GC Ending Point : Ambari Alsiar Bazar Existing road land width : 10.00m – 15.00m Terrain : Plain Configuration : Carriage way 3.70m with 0.9m earthen	Length : 13.460 km Configuration : Carriage way 5.50 with 0.90m earthen shoulder Cross Drain : 7 Nos U Drain : 8 nos

SI No.	District	Upazila	Road and Road ID	Existing Road's Salient Features	Improvement Proposal
				shoulder Box Culvert : 14 Nos U Drain: 12 Nos	Surface drain : 140m
195	Nilphamari	Domar	Domar Bazar G.C-Basunia Hat GC.road (ID : 173152003)	Length : 6.7 km Starting Point : Domar Bazar RHD at Senior Madrasha Ending Point : Dabigonj Nilphamair road at Snahar bottloy Major Settlement : Chikonmati, Jalir more, Bosunia para, Khaturia, Bosunia GC, Babigonj, Existing road land width : 12.00m – 16.00m Terrain : Plain Configuration : Carriage way 3.70m with 0.9m earthen shoulder Box Culvert : 8 Nos Slab culvert : 3 Nos U Drain: 1 Nos	Length : 6.70 km Configuration : Carriage way 5.50 with 0.90m earthen shoulder
196	Nilphamari	Domar	Boragarihat at RHD road to Baburhat GC via Motukpur UPC at Sayllar ghat (Domar Part) (ID: 173152009)	Length : 4.25 km Starting Point : Boragarihat more Ending Point : Sayllar ghat Major Settlement : Musarmore, Dangapara, Panga Chowpothi Existing road land width : 12.00m – 16.00m Terrain : Plain Configuration : Carriage way 3.70m with 0.9m earthen shoulder Box Culvert : 3 Nos Pipe culvert : 4 Nos U Drain: 4 Nos	Length : 4.25 km Configuration : Carriage way 5.50 with 0.90m earthen shoulder Box Culvert : 1 Nos
197	Cox's Bazar	Pekua	Pekua to Arabshah Bazar via Rajakhali Sabuj Bazar Road (From RHD #148) (UZR) (ID#422952002)	Length : 5.05 km Starting Point : At Pekua Bazar Ending Point : AtRajakhali Arabshah Bazar Major Settlements : Pekua, Barabakia, Rajakhali. Existing road land width : 12.00m – 15.00m Terrain : Plain Configuration : Carriage way 3.7 with 0.4m earthen	Length : 8.552 km Configuration : Carriage way 3.7 with 1.8m earthen shoulder U Drain : 4 Nos Surface Drain : 104 m

SI No.	District	Upazila	Road and Road ID	Existing Road's Salient Features	Improvement Proposal
				shoulder Pipe Culvert : 8 Nos RCC Bridge : 2 Nos Box Culvert : 11 Nos Sluice Gate : 2 Nos	
198	Cox's Bazar	Chakaria	Harbung Baraitali Road. (ID : 422163001)	Length : 6.15 km Starting Point : Harbung Ending Point : Baraitali UP office Major Settlements : Habang, Charpara, Nonacori, Kakhanpara, Baura para, Goccagram, Boritoli, Sikder para, Fokarpara, Cararprobokul, Pochim kul, Banglapara, Uparapara, .Molarer Baparpara, Kutubdiaopara, Hindipara, Kayratipara, Mohazaerpara Existing road land width : 8.00m – 9.75m Terrain : Plain Configuration : Carriage Way 3.00m with 0.9m shoulder Box Culvert : 2 Nos Slab Culvert : 2 Nos Pipe culvert: 1 Nos U drain : 1 No	Length : 6.15 km Configuration : Carriage way 3.7 with 0.9m earthen shoulder Box Culvert : 8 Nos
199	Cox's Bazar	Ramu	Chainda - Rajarkul Road. (ID : 422663004)	Length : 7.830 km Starting Point : Kathir Mataha Ending Point : Ramu Marichaia RHD Major Settlements : Kathir Mataha, Umkhali Bazar, Hafer para, Pal Para, Naya para, Arakan road Existing road land width : 5.00m – 7.00m Terrain : Plain Configuration : Carriage Way 3.00m with 0.9m shoulder Box Culvert : 8 Nos Slab Culvert : 3 Nos Bridge : 2 Nos	Length : 7.830 km Configuration : Carriage way 3.7 with 0.9m earthen shoulder Box Culvert : 1 Nos Cross Drain : 2 Nos
200	Cox's Bazar	Ramu	Garjania UP Office - Thimchari (Baisari)	Length : 8.250 km Starting Point : Garjania UP Office	Length : 8.250 km Configuration : Carriage way 3.7 with

SI No.	District	Upazila	Road and Road ID	Existing Road's Salient Features	Improvement Proposal
			Road. (ID : 422663002)	Ending Point : Baisari GC Major Settlements : Baltali, Sikder para, Jouspara, Majerkata, Jumchari, Thoungarkata, Thimchat, Baisari GPS Existing road land width : 5.00m – 7.00m Terrain : Plain Configuration : Carriage Way 3.00m with 0.9m shoulder Box Culvert : 11 Nos Slab Culvert : 8 Nos Pipe Culvert : 3 Nos Bridge : 2 Nos	0.9m earthen shoulder Box Culvert : 1 Nos Cross Drain : 7 Nos
201	Cox's Bazar	Moheshkhali	Matarbari-Dhalghat Road Via Mogdail Bazar (ID : 422493002)	Length : 4.600 km Starting Point : Nashir Mohammad Dail, Ending Point : Suturier Dail Major Settlements : Nashir Mohammad Dail, Mudhurighona Bazar, Bonjamaairghona, Suturier Dail Existing road land width : 6.00m – 8.00m Terrain : Plain Configuration : Earthen Road Box Culvert : 14 Nos Slab Culvert : 1 Nos U Drain : 1 Nos	Length : 4.600 km Configuration : Carriage way 3.7 with 0.9m earthen shoulder Box culvert : 7 Nos (replacement)
202	Cox's Bazar	Moheshkhali	Gorakghata-Ghatibanga Sonadia road. (ID : 422493003)	Length : 4.500 km Starting Point : Ghatibanga Ending Point : Sonadia Major Settlements : Garakghata Bazar, Hindupara, Taziakata, Ghatibhanga, Sonadia Existing road land width : 5.00m – 7.00m Terrain : Plain Configuration : Earthen Road Box Culvert : 6 Nos Slab Culvert : 3 Nos U Drain : 2 Nos Bridge : 3 Nos	Length : 4.500 km Configuration : Carriage way 3.7 with 0.9m earthen shoulder

SI No.	District	Upazila	Road and Road ID	Existing Road's Salient Features	Improvement Proposal
203	Chuadanga	Jibonnagar	Jibannagar R&H- Changkhali Border Road. (ID : 218552011)	Length : 6.865 km Starting Point : At Jibonnagar Traffic More Ending Point : At Chankhali Border Major Settlements : Jibonnagar, Narainpur, Islampur, Shakaria, Pitchmore, Goalpara, Madenipur Existing road land width : 14.00m – 17.00m Terrain : Plain Configuration : From Ch. 00+00 to 1+165 Carriage way 6.00 with 1.0m earthen shoulder, From Ch. 1+165 to 3+990, Carriage way 3.66 with 2.20m earthen shoulder, from Ch. 3+990 to 5+990 Carriage way 3.00 with 2.50m earthen shoulder, From Ch. 5+990 to Ch. 6+718 Carriage way 5.50 with 1.25m earthen shoulder, from Ch. 6+718 to 6+865 Carriage way earthen portion Pipe Culvert : 1 No Box Culvert : 5 Nos	Length : 6.865 km Configuration : From Ch. 0+00 to 1+165 Carriage way 6.00 with 1.0m earthen shoulder, From Ch. 1+165 to 6+865 Carriage way 5.50 with 1.25m earthen shoulder Box Culvert : 2 Nos
204	Chuadanga	Jibannagar	Uthali R&H-Hizalgari GC. (UZR) (ID:218552004)	Length :2.18 Starting Point : Uthali R&H mor Ending Point : Hizalgari GC Major Settlements Uthali, Mirgomary, Shenerhuda, Begumpur, Jodupur Existing road land width : 10.00m – 17.00m Terrain : Plain Configuration : Carriage Way 3.70m with 0.9m shoulder Box Culvert :2 Nos	Length : 2.18 km Configuration : Carriage way 3.7 with 0.9m earthen shoulder U Drain: 2 Nos Box Culvert : 2 Nos

SI No.	District	Upazila	Road and Road ID	Existing Road's Salient Features	Improvement Proposal
205	Chuadanga	Jibannagar	Andulbaria UP-Grishnagar Bazar Road(Jibonnagar Part) (UNR) (ID:218553010)	Length : 3.18 km Starting Point :Andulbaria Bazar mor Ending Point : At Grishnagar Bazar Major Settlements : Andulbaria, Nishchintapur, Dehati, Hardha, Dumuria Existing road land width : 10.00m – 17.00m Terrain : Plain Configuration : Carriage Way 3.40m with 0.3m shoulder Box Culvert :2 Nos	Length : 2.90 km Configuration : Carriage way 4.9 with 0.9m earthen shoulder U Drain: 1 No Box Culvert : 2 Nos Surface Drain : 150m
206	Chuadanga	Jibannagar	Daulatgonj GC-Akundabaria R&H.(ID : 218552005)	Length : 12.450 km Starting Point :At Daulatgonj Bazar Ending Point : At Akhondabarai RHD Major Settlement: Jibannagar, Gopalnagar, Kala, Dhopakali, Madhokhali, Chotanga, Rajapur, MANikpur, Rotirampur, Singanagar, Ranigirapota, Akhundabaria Existing road land width : 10.00-17.00m Terrain : Plain Configuration : Carriage way 3.70m with 0.90m earthen shoulder RCC Girder Bridge : 2 Nos Box Culvert : 14 nos Pipe Culvert : 8 No Slab Culvert : 4 Nos U drain : 18 Nos	Length : 12.45 km Configuration : Carriage way 3.70 with 0.9m earthen shoulder U-Drain : 4 nos Box culvert : 2 Nos Surface Drain : 115m
207	Chuadanga	Jibannagar	Sontospur R&H - Andulbaria GC - Hashada R&H (ID : 218552001)	Length : 19.104 km Starting Point :At Sontospur R&H Ending Point : At Hashada R&H Major Settlement: Sontospur, Dehati, Andulbaria, Anantapur, Biddaharpur, Corchadanga, Nidhikondo, Barandi, Balihuda, Madhoppur, Katapol, Hasadha	Length : 19.104 km Configuration : Carriage way 3.70 with 0.9m earthen shoulder U-Drain : 3 nos Box culvert : 6 Nos Surface Drain : 532m

SI No.	District	Upazila	Road and Road ID	Existing Road's Salient Features	Improvement Proposal
				<p>Existing road land width : 10.50-12.50m</p> <p>Terrain : Plain</p> <p>Configuration : From Ch. 00-7140 Km Carriage way 5.35m with 0.30m earthen shoulder, From Ch. 7140-8300 Km Carriage way 4.76m with 0.30m earthen shoulder, From Ch. 8300-10942 Km Carriage way 3.66m with 0.30m earthen shoulder, From Ch. 10942-12914 Km Carriage way 4.76m with 0.30m earthen shoulder, From Ch. 12914-19104 Km Carriage way 3.66m with 0.30m earthen shoulder</p> <p>RCC Girder Bridge : 2 Nos</p> <p>Box Culvert : 09 nos</p> <p>Pipe Culvert : 17 No</p> <p>Slab Culvert : 11 Nos</p> <p>U drain : 09 Nos</p>	
208	Chuadanga	Sadar	Sarajgonj G.C- Hizolgari G.C (UZR) (ID:218232001)	<p>Length : 13.77 km</p> <p>Starting Point :Chuadanga – Dhaka regional Highway road at Sarajgonj GC</p> <p>Ending Point : At Hizolgari GC</p> <p>Major Settlements : Bahalgachi, Kirongachi, Kalupool, kharaguda, Garaitupi, Baro Shalua, Baldia, Hizolgari.</p> <p>Existing road land width : 14.00m – 17.00m</p> <p>Terrain : Plain</p> <p>Configuration : Ch 0.00-5000(4.700m),Ch 5000-13770m(3.50m) with 0.60m Ch 0.00-5000 Earthen hard Shoulder, 0.60m Ch 5000-13770m(3.50m) Hard Shoulder</p> <p>Cross Drain: 3 No</p> <p>pipe Culvert : 2 Nos</p> <p>Slab Culvert : 12 Nos</p>	<p>Length : 7.5 km</p> <p>Configuration : Carriage way 5.5 with 0.9m earthen shoulder</p> <p>Cross Drain: 1 No</p>

SI No.	District	Upazila	Road and Road ID	Existing Road's Salient Features	Improvement Proposal
				Box Culvert : 4 Nos	
209	Chuadanga	Sadar	Hizolgari G.C-Uthali R&H (Sadar Portion) (UZR) (ID: 218232007)	Length : 7.95 km Starting Point :At Hizolgari GC Ending Point : At Utoli R&H. Major Settlements : Choto Shoulua, Boulia, Hizolgari Existing road land width : 13.00m – 16.00m Terrain : Plain Configuration : Carriage way 3.66m with 0.6m earthen shoulder U Drain: 7 No Box Culvert : 2 Nos Pipe Culvert : 3 Nos Slab Culvert : 1 No	Length : 7.95 km Configuration : Carriage way 5.50 with 0.9m earthen shoulder U Drain: 2 Nos
210	Chuadanga	Damurhuda	Memnagar RHD-Karpashdanga G.C via Buichitala (ID : 218312006)	Length : 24.650 km Starting Point :At Memnagar RHD Ending Point : At Karpashdanga GC Major Settlement: Memnagar, Paschim Ramnagar, Parkishnapur, Sultanpur, Chaighoria, Jhajhaddanga, Nastipur, Kamarpara Baradi, Hoibatpur, Sotoboldia, Boroboldia, Buichitola, Fulbari, Chakulia, Thakurpur, Aramdanga, Karpashdanga, Existing road land width : 10.00-14.00m Terrain : Plain Configuration : Carriage way 3.66m with 0.60m earthen shoulder Slab culvert : 7 Nos RCC Girder Bridge : 4 Nos Box Culvert : 10 nos Pipe Culvert : 9 Nos Hydraulic Structure : 1 Nos	Length : 13.106 km Configuration : Carriage way 5.50 with 0.9m earthen shoulder U-Drain : 29 nos Box Culvert : 2 Nos Surface Drain : 1009 m

SI No.	District	Upazila	Road and Road ID	Existing Road's Salient Features	Improvement Proposal
				U drain : 32 Nos	
211	Chuadanga	Damurhuda	Damurhuda G.C- Bhogiratur G.C (ID : 218312005)	Length : 11.375 km Starting Point :At Chitla More Ending Point : At Bhogiratur GC Major Settlement: Chitla, Juranpur, Holgoldanga, hemayetpur, Berbari, Notipota, Bhogiratur, Existing road land width : 11.00-14.00m Terrain : Plain Configuration : Carriage way 3.66m with 0.60m earthen shoulder Slab culvert : 2 Nos RCC Girder Bridge :1 Nos Box Culvert : 5 nos Pipe Culvert : 1 No Hydraulic Structure : 1 Nos U drain : 12 Nos	Length : 11.375 km Configuration : Carriage way 5.50 with 0.9m earthen shoulder U-Drain : 1 nos Surface Drain : 435 m
212	Chuadanga	Alamdanga	Alamdanga- Sorajong G.C (Alamdanga Portion) [Alamdanga] (ID : 218072002)	Length : 18.00 km Starting Point :At Alamdanga Ending Point : At Sorajgonj GC Major Settlement: Aushpur, Belgachi, Khejurtola, Badamari, Jahapur, Chilabalki, Raisa, Parlokipur, Railokhipur, Ramdeyal, Khakorbazar, Ashanondopur Existing road land width : 10.00-12.00m Terrain : Plain Configuration : Carriage way 3.66m with 0.90m earthen shoulder Bridge : 2 Nos Box Culvert : 10 nos Pipe Culvert : 1 No Hydraulic Structure : 2 Nos U drain : 17 Nos	Length : 18.00 km Configuration : Carriage way 5.50 with 0.9m earthen shoulder U-Drain : 6 nos Box culvert : 1 Nos

SI No.	District	Upazila	Road and Road ID	Existing Road's Salient Features	Improvement Proposal
213	Thakurgaon	Thakurgaon-S	Thakurgaon-Farabari GC Road. (ID#194942005)	Length : 8.50 km Starting Point : Senua Graveyard Ending Point : At Farabari Bazar Major Settlements : Borunagaon Borunagaon Eaqubpur, Bagpur, Chawrangi , Kalukhetro, Dhakhin, Botina, Farabari Existing road land width : 10.00m – 15.00m Terrain : Plain Configuration : Carriage way 3.70m with 0.90m earthen shoulder Cross Drain: 1 No Bridge : 2 Nos Box Culvert : 4 Nos	Length : 8.50 km Configuration : Carriage way 5.5 with 0.9m earthen shoulder Box Culvert : 3 Nos
214	Thakurgaon	Thakurgaon-S	Bhawlar hat GC-Bhelazan RHD Road. (ID : 194942011)	Length : 7.450 km Starting Point : At Bhawlar hat Ending Point : At Bhelazan RHD Major Settlements : Podompur, Shali kosha, Kachna, Horinda, Mahapur, Dehon , Pochim shhipur, Existing road land width : 10.00 - 12.00m Terrain : Plain Configuration : Carriage way 3.05m with 0.30m earthen shoulder Box Culvert : 4 Nos Cross Drain : 7 Nos	Length : 7.450 km Configuration : Carriage way 3.70 with 0.9m earthen shoulder U Drain: 2 Nos Box Culvert : 11 Nos
215	Thakurgaon	Haripur	Jadurani GC-Dangipara UP Office Road. (ID : 194513004)	Length : 4.280 km Starting Point : At Jadurani (Shillar) Ending Point : At Shehipur (Sautalpara) Major Settlements : Shiallar, Faldangi, Ranahatta (Chaurangi) Bazar, Shehipur Existing road land width : 10.00 - 12.00m Terrain : Plain Configuration : Earthen Road Box Culvert : 2 Nos Slab Culvert : 3 Nos Pipe Culvert : 5 Nos	Length : 4.280 km Configuration : Carriage way 3.70 with 1.00m earthen shoulder U Drain: 9 Nos Box Culvert : 1 Nos

SI No.	District	Upazila	Road and Road ID	Existing Road's Salient Features	Improvement Proposal
				Cross Drain : 8 Nos	
216	Thakurgaon	Ranisankail	Baliadangi GC - Dhirganj (Horipur) via Dharmogarh Check Post Road. (ID: 194862007)	Length : 5.803 km Starting Point : At Puler hat Ending Point : At Dhumpukur Major Settlements : Pulhat Bazar , Jagdal Dholpukur ,Jorpukur, Koloni, Bakhradangi, Check post Bazar, Razadighi, Chikni, Sukani, Dhumpukur. Existing road land width : 10.00 - 12.00m Terrain : Plain Configuration : Carriage way 3.70 with 0.90m earthen shoulder Box Culvert : 4 Nos Slab Culvert : 2 Nos RCC Girder Bridge : 1 Nos Cross Drain : 1 Nos	Length : 5.803 km Configuration : Carriage way 5.50 with 0.90m earthen shoulder U Drain : 4 Nos Box Culvert : 4 Nos
217	Thakurgaon	Pirganj	Pirganj-Nasibganj G.C Road (ID: 194822001)	Length : 7.280 km Starting Point :At Pirganj West Chowrasta Ending Point : At Nasibganj Hat GC Major Settlements : Priganj, Daulatpur, Sengaon. Existing road land width : 9.01 - 14.55m Terrain : Plain Configuration : Carriage way 3.70 with 0.90m earthen shoulder Box Culvert : 4 Nos Cross Drain : 1 Nos	Length : 7.280 km Configuration : Carriage way 5.50 with 0.90m earthen shoulder Box Culvert : 1 Nos
218	Thakurgaon	Baliadangi	Charol UP Office(Lahiri GC)- Dogachi hat via Patilabhasha Road (ID : 194083011)	Length : 8.30 km Starting Point :At Lahiri GC Ending Point : At Dogachi hat Major Settlements : Choto Singia, Votepara, Khalipur, Dogachi, Existing road land width : 13.00 - 17.00m Terrain : Plain	Length : 8.30 km Configuration : Carriage way 3.70 with 1.00m earthen shoulder Box Culvert : 6 Nos

SI No.	District	Upazila	Road and Road ID	Existing Road's Salient Features	Improvement Proposal
				Configuration : Earthen road Box Culvert : 5 Nos Cross Drain : 2 Nos Slab Culvert : 4 Nos	
219	Thakurgaon	Baliadangi	Baliadangi-Lahiri G.C. Road (ID: 194082001)	Length : 7.063 km Starting Point : At Baliadangi Chowrasta Ending Point : At Lahiri GC Major Settlements : Barabari, Dangi, Goalkari, Jaunia, Choto Singia Existing road land width : 15.00 - 20.00m Terrain : Plain Configuration : Carriage way 4.88 with 0.40m earthen shoulder Box Culvert : 2 Nos Cross Drain : 2 Nos Slab Culvert : 2 Nos Bridge : 2 Nos	Length : 7.063 km Configuration : Carriage way 5.50 with 0.90m earthen shoulder Box Culvert : 1 Nos Slope Drain : 16 Nos Surface drain : 200m
220	Thakurgaon	Baliadangi	Barabari UP Office (Dangi)-Noyar hat via Jorkali Madhupur Road (ID : 194083004)	Length : 7.50 km Starting Point : At Barabari UP Office Ending Point : At Dogachi Modhupur Khairapukur Major Settlement : Balidangi . Modhupur, Dogachi Existing road land width : 13.00 - 17.00m Terrain : Plain Configuration : Earthen road Box Culvert : 6 Nos Cross Drain : 2 Nos Slab Culvert : 8 Nos Pipe Culvert: : 1 Nos	Length : 7.50 km Configuration : Carriage way 3.70 with 1.00m earthen shoulder Box Culvert : 13 Nos
221	Thakurgaon	Baliadangi	Baliadangi-Dhirgonj G.C .via Badambarihat Road (ID : 194082006)	Length : 14.775 km Starting Point : At Baliadangi Chowrasta Ending Point : At Phulhat Bridge Major Settlement : Balidangi, Sorbomongola, Parua,	Length : 14.775 km Configuration : Carriage way 5.50 with 0.90m earthen shoulder Box Culvert : 17 Nos

SI No.	District	Upazila	Road and Road ID	Existing Road's Salient Features	Improvement Proposal
				<p>Jhira, Sopra, Dakhin Duari, Barapolashbari, Kasuakhademganj</p> <p>Existing road land width : 15.00 - 20.00m</p> <p>Terrain : Plain</p> <p>Configuration : From Ch. 00-10500 & 13075 - 14775, carriage way 3.05m with 0.80 soft shoulder and rest portion is earthen</p> <p>Box Culvert : 5 Nos</p> <p>Cross Drain : 9 Nos</p> <p>Slab Culvert : 6 Nos</p> <p>Pipe Culvert: : 2 Nos</p> <p>Bridge : 5 Nos</p>	Slope Drain : 8 Nos
222	Thakurgaon	Baliadangi	Lahiri G.C-Fakirganj. G C. Road (ID : 194082007)	<p>Length : 6.530 km</p> <p>Starting Point :At Lahiri G.C-</p> <p>Ending Point : At Ixmir Than</p> <p>Major Settlement : Thumunia, Dhukurjhari, Banagaon, Chautaki</p> <p>Existing road land width : 15.00 - 20.00m</p> <p>Terrain : Plain</p> <p>Configuration : Carriage way 3.70m with 0.65 soft shoulder</p> <p>Box Culvert : 2 Nos</p> <p>Cross Drain : 2 Nos</p> <p>Slab Culvert : 2 Nos</p> <p>Pipe Culvert: : 2 Nos</p>	<p>Length : 6.530 km</p> <p>Configuration : Carriage way 5.50 with 0.90m earthen shoulder</p> <p>Box Culvert : 16 Nos</p>
223	Chapai Nawabgonj	Gomostapur	Akkelpur GC - Shibpur GC via Digha Road. (ID : 170372001)	<p>Length : 9.02 km</p> <p>Starting Point : At Akkelpur GC</p> <p>Ending Point : At Shibpur Mouja End</p> <p>Major Settlements : Akkelpur, Shidhigram, Anura, Bijoy Sonjura, Kasroil, Malpur, Digha</p> <p>Existing road land width : 11.5m – 17.09m</p> <p>Terrain : Plain</p> <p>Configuration : From Ch. 00+00 to 6+445 Carriage way 3.70 with 0.90 m earthen shoulder, From Ch. 6+552 to 7+527, Carriage way 3.70 with 1.20m earthen</p>	<p>Length : 9.02 km</p> <p>Configuration : Carriage way 5.50 with 0.9m earthen shoulder</p> <p>Box Culvert : 3 Nos</p>

SI No.	District	Upazila	Road and Road ID	Existing Road's Salient Features	Improvement Proposal
				shoulder, from Ch. 7+537 to 9.020 Carriage way earthen portion U drain : 1 No Box Culvert : 7 Nos Slab Culvert : 3 Nos	
224	C.Nawabganj	Nachole	Sonaichandi-Rohanpur GC (Nachole Portion) (ID : 170562007)	Length : 3.70 km Starting Point : Sonaichandi Ending Point : Satkandi GC Major Settlement: Sonaichandi, Sonamasna, Satkandi GC Existing road land width : 15.09m – 21.55m Terrain : Plain Configuration : Carriage way 3.70m with 0.90m soft shoulder U Drain : 5 Nos Slab Culvert : 1 Nos Pipe Culvert : 1 Nos	Length : 3.70 km Configuration :Carriage way 5.50 with 0.9m earthen shoulder Box Culvert : 3 No
225	C.Nawabganj	Nachole	Sonaichandi-Dhansura More (ID: 170562005)	Length : 2.758 km Starting Point : Sonaichandi Ending Point : Dhansura More Major Settlement: Sonaichandi, Sonamasna, Satkandi GC Existing road land width : 15.09m – 21.55m Terrain : Plain Configuration : Carriage way 3.70m with 0.90m soft shoulder U Drain : 2 Nos Slab Culvert : 1 Nos Box Culvert: 1 Nos	Length : 2.758 km Configuration :Carriage way 5.50 with 0.9m earthen shoulder Box Culvert : 3 No
226	C.Nawabganj	Sadar	Islampur UP Office to Shahajanpur UP office Road. (ID: 170663025)	Length : 2.090 km Starting Point : khaxchapara More Ending Point : Shahajnpur UP Office.	Length : 2.09 km Configuration :Carriage way 3.70 with 1.0m earthen shoulder

SI No.	District	Upazila	Road and Road ID	Existing Road's Salient Features	Improvement Proposal
				Major Settlement: Terosiya, Suknapara, Modhopara, Narandropur. Existing road land width : 6.00m – 15.00m Terrain : Plain Configuration : Earthen road	Box Culvert : 5 Nos Cross Drain : 5 nos
227	Meherpur	Mujibnagar	Bollovepur RHD - Anandabash GC Road (ID : 257882003)	Length : 3.731 km Starting Point : At Bollovepur RHD Ending Point : At Anandobas GC Major Settlements : Bolloevpur, Bagaon, Sipaitary Existing road land width : 7.00m – 12.00m Terrain : Plain Configuration : Carriage way 3.70 with 0.30 - 1.2 m earthen shoulder U drain : 1 No Box Culvert : 1 Nos Pipe Culvert : 1 Nos	Length : 3.731 km Configuration : Carriage way 3.70 with 1.5m earthen shoulder
228	Meherpur	Sadar	Baradi GC - Gangni Head Quarter Road (Sadar Part) (UZR) (ID:257872005)	Length : 2.900 km Starting Point : Meherpur - Chuadanga RHD at Baradi GC. Ending Point : Digholkandi towards Gangni Upazila Head Quater. Major Settlements : Baradi, Hasnabad, Borahi baria Meherpur & Digholkandhi Gangni.) Existing road land width : 14.00m – 17.00m Terrain : Plain Configuration : carriage way 3.66m with 0.90m earthen shoulder Box Culvert : 1 No Pipe Culvert : 3 Nos U Drain : 5 nos	Length : 2.900 km Configuration : Carriage way 5.50 with 0.9m earthen shoulder Box Culvert : 5 Nos Pipe Culvert : 2 Nos U Drain : 1 No
229	Meherpur	Gangni	Bamonudi GC- Karomdi GC Road (UZR) (ID:257472003)	Length : 6.45 km Starting Point : At Bamundi Bazar. Ending Point : Karamdi GC. Major Settlements : Bamundi,	Length : 6.45 km Configuration : Carriage way 5.50 with 0.9m earthen shoulder Box Culvert : 3 Nos

SI No.	District	Upazila	Road and Road ID	Existing Road's Salient Features	Improvement Proposal
				<p>Nisipur, Debipur, Jhoraghat, Karamdi, Tentulbaria,)</p> <p>Existing road land width : 14.00m – 17.00m</p> <p>Terrain : Plain</p> <p>Configuration : Ch.0.00-5953 (3.66m), Ch.5953-6450m (3.00m) with 0.90m earthen shoulder</p> <p>Box Culvert : 2 Nos</p> <p>Slab Culvert : 1 No</p>	
230	Naogaon	Atrai	Ahashanganj GC- Bandaikhara GC. (ID : 164032008)	<p>Length : 14.55 km</p> <p>Starting Point : At Gondogohali mauza</p> <p>Ending Point : At Bandaikhara GC</p> <p>Major Settlements : Gondogohali, Lalua, Sholia, Baghmara, Kochua, Nandonali, Bandaikhara</p> <p>Existing road land width : 7.00m – 12.00m</p> <p>Terrain : Plain</p> <p>Configuration : Carriage way 3.70 with 0.90 - m earthen shoulder</p> <p>Regulator : 2 Nos</p>	<p>Length : 5.975 km</p> <p>Configuration : Carriage way 4.90 with 2.40m earthen shoulder</p>
231	Naogaon	Atrai	Kashiabari GC - Kaliganj GC (ID: 164032006)	<p>Length : 11.882 km</p> <p>Starting Point : Kashiabari GC</p> <p>Ending Point : Muskipur</p> <p>Major Settlement: Bhonpara, Balaramchak, Chak Banka, Banka, Palsha, Naouduli, Dighirpir, Birsimlla, Maniari, Muskipur,</p> <p>Existing road land width : 20.00m – 22.00m</p> <p>Terrain : Plain</p> <p>Configuration : Carriage way 4.90 with 0.65m soft shoulder from Ch. 0+00 to Ch, 11+634 and Carriage way 3.70 with 0.65m soft shoulder from Ch. 11+634 to Ch, 11+882</p> <p>Box Culvert : 4 Nos</p> <p>RCC Girder Bridge : 5 Nos</p> <p>Slab Culvert : 3 Nos</p> <p>Hydraulic Structure : 2 Nos</p>	<p>Length : 11.882 km</p> <p>Configuration : Carriage way 4.95 with 1.21m soft shoulder</p>

SI No.	District	Upazila	Road and Road ID	Existing Road's Salient Features	Improvement Proposal
232	Naogaon	Atrai	Kashiabari GC - Smaspara GC Via Islamgati hat (ID: 164032010)	Length : 9.655 km Starting Point : Gurnai Mauza Ending Point : Samspara GC Major Settlement: Gurnai, Islamgati, Raninagar, Sridhorgunai, Yejnandi, Chakradhar, Samspara Existing road land width : 18.00m – 20.00m Terrain : Plain Configuration : Carriage way 4.90 with 0.65m soft shoulder Hydraulic Structure : 1 Nos	Length : 9.655 km Configuration : Carriage way 5.5 with 0.90m soft shoulder
233	Naogaon	Patnitola	Modhuil GC- Shibpur GC Rd. (ID : 164752003)	Length : 8.530 km Starting Point : Modhuil GC Ending Point : Shibpur GC. Major Settlement: Modhuil, Rutara, Goalgram, Sharoil, Sankarpur, Madhainagar, Meherul Moshepur, Dakhin Rampur, Shibpur Existing road land width : 12.15m – 14.35m Terrain : Plain Configuration : Carriage way 4.95m with 0.575m soft shoulder Box Culvert : 5 Nos Pipe Culvert : 4 Nos Slab Culvert : 3 Nos	Length : 8.530 km Configuration : Carriage way 4.950m with 0.90m hard shoulder and 0.250m soft shoulder Box Culvert : 1 Nos
234	Naogaon	Mohadevpur	Chatra -Mohadebpur (Konjobon) (ID : 164502002)	Length : 13.532 km Starting Point : Chatra GC Ending Point : Mahadevpur GC Major Settlement: Jontoil, Pantipur, Pagha hat, Kanchan, Chandash, Bagdob, Dimjaun, Gopinathpur, Shajadpur, Kunjabon Existing road land width : 15.09m – 21.55m Terrain : Plain Configuration : Carriage way 4.90m with 0.90m	Length : 13.532 km Configuration : Carriage way 5.50m with 0.90m soft shoulder Box Culvert : 1 Nos Cross Drain : 7 Nos

SI No.	District	Upazila	Road and Road ID	Existing Road's Salient Features	Improvement Proposal
				soft shoulder Box Culvert : 5 Nos U Drain : 8 Nos Girder bridge : 3 Nos	
235	Naogaon	Mohadevpur	Mohadevpur-Matazeehat GCM.(ID : 164502001)	Length : 3.000 km Starting Point : Natshal Govt Primary School Ending Point : Jouenti Gram Bazar More Major Settlement: Natshal, Joanpur, Moglishpur, Sarta Existing road land width : 15.09m – 21.55m Terrain : Plain Configuration : Carriage way 4.90m with 1.00m soft shoulder Box Culvert : 6 Nos Slab Culvert : 7 Nos U Drain : 2 Nos Girder bridge : 10 Nos	Length : 3.000 km Configuration :Carriage way 5.50m with 0.90m soft shoulder Box Culvert : 7 Nos
236	Naogaon	Mohadevpur	Moshibathan GC - Sultanpur Bazar-Patnitola GC (Part Mohadevpur) (ID : 164502018)	Length : 7.360 km Starting Point : Moahibathan GC Ending Point : Patnitola GC Major Settlement: Hatur, Mahish Bathan, bilsikari, Dewanpur, Salampur, Sultanpur, Shympur, Gohadi, Chakchakir, Katabari Existing road land width : 15.09m – 21.55m Terrain : Plain Configuration : Carriage way 3.70m with 0.90m soft shoulder Pipe Culvert : 3 Nos Hydraulic Structure : 1 No	Length : 7.360 km Configuration :Carriage way 5.50m with 0.90m soft shoulder Box Culvert : 1 Nos U Drain : 4 Nos Surface Drain : 360m
237	Naogaon	Manda	Nurullabad GPS R&H - Jothbazar - Bandaikhara GC	Length : 9.405 km Starting Point : RHD Road & Nurullabad GPS More	Length : 9.405 km Configuration :Carriage way 3.70m with 0.90m soft shoulder

SI No.	District	Upazila	Road and Road ID	Existing Road's Salient Features	Improvement Proposal
			Road. (ID: 164472012)	Ending Point : At Mitapur Ghat More (Bandaikhara GC) Major Settlement: Par Nurullabad, Bonkura, Chalk balu, vorotto shibnagar, Chak Harinarayanpur, Daspara, Chakrampur, Koylabari, Kornabhag, Shorbari, khordobandaikhara Existing road land width : 17m – 24m Terrain : Plain Configuration : Carriage way 3.00m with 0.50m soft shoulder from Ch. 0+00 to Ch. 1+000 and Carriage way 3.70m with 0.60m soft shoulder from Ch. 1+000 to Ch. 10+500 RCC girder Bridge: 1 No	
238	Naogaon	Manda	Chowbaria GC - R&H Santa bridge More (ID : 164472015)	Length : 19.00 km Starting Point : Chowbaria GC Ending Point : R&H Santa bridge More Major Settlement: Chokdah, Shimpladah, Balaketra, Srekola, Sursurinia, sugunia, rajenrobati, kochra, nolgor, poranpur, holudgor, chokkesob Existing road land width : 17m – 24m Terrain : Plain Configuration : Earthen road Hydraulic Structure : 6 Nos	Length : 19.00 km Configuration : Carriage way 3.70m with 0.90m soft shoulder
239	Naogaon	Niamatpur.	Chhatra GC - Shibpur GC. (ID : 164692004)	Length : 12.300 km Starting Point : End point of Mohadebpur GC – Chatra GC Ending Point : Shibpur More R&H road Major Settlement: Chatra Ghatpara, Charagipara, Notipukur, Begunbari, Bamoin Deripara, Bamoin School para, Damapara, Chilla Dighirpar, Kuntiol,	Length : 12.300 km Configuration : Carriage way 5.50m with 0.90m soft shoulder

SI No.	District	Upazila	Road and Road ID	Existing Road's Salient Features	Improvement Proposal
				Belin More, Kapastia, Hazinagar, Shibpur Existing road land width : 17m – 24m Terrain : Plain Configuration : Carriage way 3.70m with 0.90m soft shoulder Box culvert : 22 Nos Slab Culvert : 1 Nos U Drain : 1 Nos	
240	Gopalganj	Gopalganj Sadar	Gohala Hat (RHD)- Nizamkandi UPC Road (Sadar Portion) (ID: 335323017)	Length : 2.750 km Starting Point :At Gohala RHD Ending Point : At Nazimkandi Nichintopur. Major Settlements : Gohala, Nizamkandi, Nichintopur, Gopinathpur, Suktail, Chandradigholia Existing road land width : 10.00 - 11.00m Terrain : Plain Configuration : Carriage way 3.70m with 0.90m earthen shoulder Box Culvert : 1 Nos RCC Girder Bridge : 1 Nos	Length : 2.590 km Configuration : Carriage way 3.70 with 0.9m earthen shoulder U Drain : 3 Nos Box Culvert : 1 Nos
241	Gopalganj	Gopalganj Sadar	Kajulia UPC - Domrasur Hat Road. (ID : 335323007)	Length : 9.800 km Starting Point :At Kajulia UPC Ending Point : At Domrasur Bazar. Major Settlements : South Kajulia, Uttar Kajulia, Kajulia Ansari para, Domrasur, Sawra Bari, Existing road land width : 15.00 - 18.00m Terrain : Plain Configuration : Carriage way 3.70m with 0.90m earthen shoulder Box Culvert : 6 Nos RCC Girder Bridge : 3 Nos	Length : 9.800 km Configuration : Carriage way 3.70 with 0.9m earthen shoulder Box Culvert : 1 Nos
242	Gopalganj	Gopalganj Sadar	Boultali GC - Nizra UPC Road (ID : 335323011)	Length : 6.380 km Starting Point :At Boutoli GC Ending Point : At Nizra UPC Major Settlement : Kolpur, Jadupur, Shikipara,	Length : 6.152 km Configuration : Carriage way 3.70 with 0.9m earthen shoulder U Drain : 2 Nos

SI No.	District	Upazila	Road and Road ID	Existing Road's Salient Features	Improvement Proposal
				<p>Sunaipara, Duniapara, Rahuthkuamar, Ulpur</p> <p>Existing road land width : 15.00-18.00m</p> <p>Terrain : Plain</p> <p>Configuration : Carriage way 3.70m with 0.90m earthen shoulder</p> <p>Box culvert : 3 Nos</p> <p>RCC Girder Bridge : 7 Nos</p> <p>U drain : 1 Nos</p> <p>Hydraulic Structure : 1 Nos</p>	Box Culvert : 2 nos
243	Gopalganj	Muksudpur	Bonogram GC-Bhamondanga Bazar-Dignagar R&H (ID : 335582009)	<p>Length : 12.210 km</p> <p>Starting Point :At Bonogram RHD road</p> <p>Ending Point : At Dignagar</p> <p>Major Settlements : Aikdia, Paikdia, Chowgacha, Baghadia, Naora, Bamunia, Khas-Baghadia, Boroihati, Baghail, Baghat</p> <p>Existing road land width : 11.08 - 13.50m</p> <p>Terrain : Plain</p> <p>Configuration : Carriage way 3.70m with 0.36m earthen shoulder</p> <p>Box Culvert : 2 Nos</p> <p>RCC Girder Bridge :10 Nos</p> <p>Hydraulic Structure : 1 Nos</p>	<p>Length : 11.268 km</p> <p>Configuration : Carriage way 3.70 with 0.9m earthen shoulder</p>
244	Gopalganj	Muksudpur	Muksudpur(NHW)-Kalinagar GC via Pashargati UP Office (ID : 335582014)	<p>Length : 4.925 km</p> <p>Starting Point :At Puran Muksudpur RHD</p> <p>Ending Point : At Pachuria Bazar</p> <p>Major Settlements : Muksudpur, Kulakuna, Pasergati, Bahirbag, Pachuria</p> <p>Existing road land width : 12.00 - 16.00m</p> <p>Terrain : Plain</p> <p>Configuration : Carriage way 4.20m with 0.6m earthen shoulder</p> <p>Box Culvert : 4 Nos</p> <p>RCC Girder Bridge :1 Nos</p> <p>Slab Culvert : 1 No</p> <p>U Drain : 1 No</p>	<p>Length : 4.899 km</p> <p>Configuration : Carriage way 3.70 with 0.9m earthen shoulder</p> <p>Box Culvert : 4 Nos</p>

SI No.	District	Upazila	Road and Road ID	Existing Road's Salient Features	Improvement Proposal
245	Gopalganj	Muksudpur	Tengrakhola-Jalirpar G.C Road (ID : 335582001)	Length : 19.58 km Starting Point : At Tengrakhola RHD road at Muksudpur Upazila H/Q Ending Point : At Jalirpar GC Major Settlements : Uzani, Khalkula, Nischintopur, Daria, Kashalia, Nanikkhir, Moshistoli, Goalgaram, kaligram, Jalirpar Existing road land width : 11.08 - 15.25m Terrain : Plain Configuration : Carriage way 3.7m with 0.6m earthen shoulder Box Culvert : 3 Nos RCC Bridge :14 Nos	Length : 9.00 km Configuration : Carriage way 3.70 with 0.6m earthen shoulder
246	Gopalganj	Muksudpur	Gohala UP office (Monirkandi)-Jalirpar GC Road (ID : 335583010)	Length : 5.50 km Starting Point : At Gohala UP Office Ending Point : At Jalirpar GC Major Settlement: Gohala, Munirkhandi, Aruakandi, Acharpara,Jalirpar Existing road land width : 12.00 - 16.00m Terrain : Plain Configuration : Carriage way 3.7m with 0.6m earthen shoulder Box Culvert : 4 Nos RCC Bridge :4 Nos	Length : 5.221 km Configuration : Carriage way 3.70 with 0.6m earthen shoulder U drain : 4 Nos Box Culvert : 1 nos
247	Gopalganj	Kotalipara	Kadambari-Kaligonj-Gandiasur GC Road (ID: 335512007)	Length : 6.256 km Starting Point : At Kodombari Bazar Ending Point : At Kotalipara - Gopalganj border, Major Settlement: Kodombari, Baura, Kaligonj Bazar, Nolua, Chalkpukuria, Rutherfordpur Existing road land width : 15.00 - 21.00m Terrain : Plain Configuration : Carriage way 5.00m with 1.00m earthen shoulder	Length : 6.256 km Configuration : Carriage way 3.70 with 0.6m earthen shoulder Box Culvert : 1 nos
248	Gopalganj	Tungipara	Bashabaria GC-Jhanjhania-Ghagor	Length : 6.380 km Starting Point : At Bashbaria Bazar	Length : 6.152 km Configuration : Carriage way 3.70 with

SI No.	District	Upazila	Road and Road ID	Existing Road's Salient Features	Improvement Proposal
			GC Road.(ID : 335912004)	Ending Point : At Char Gopalpur Major Settlement: Jhanjhania, Pakurtia, Uttar Pakurtia, Choto Bumuria, Boro Bumuria, Voyrobnogor, Shalukha, Kathgram, Tarial, Char Gopalpur Existing road land width : 15.00-18.00m Terrain : Plain Configuration : Carriage way 3.70m with 0.90m earthen shoulder RCC Girder Bridge :1 Nos Hydraulic Structure : 1 nos Pipe Culvert : 12 Nos	0.9m earthen shoulder
249	Gopalganj	Kashiani	Tilchara-Orakandi Road (ID : 335432014)	Length : 3.650 km Starting Point :At Tilchara Bazar Ending Point : At Aruakandi Bazar Major Settlement: Tilchara, Kamarul, Khagrabaria, Aruakandi, Arkandi Existing road land width : 10.00-15.00m Terrain : Plain Configuration : Carriage way 3.00m with 0.90m earthen shoulder RCC Girder Bridge :1 Nos Box Culvert : 1 nos U drain : 1 Nos	Length : 3.00 km Configuration : Carriage way 3.00 with 0.9m earthen shoulder U-Drain : 4 nos
250	Gopalganj	Kashiani	Puisar UP (SitarampurR&H) to Singa U.P Road. (ID: 335433003)	Length : 7.5 km Starting Point :At Puisar UP Ending Point : At Singra UP Existing road land width : 10.00-15.00m Terrain : Plain Configuration : Carriage way 3.00m with 0.90m earthen shoulder Cross Drain : 7 Nos	Length : 7.5 km Configuration : Carriage way 3.70 with 0.9m earthen shoulder U-Drain : 8 nos
251	Gopalganj	Kashiani	Nizam kandi-Gohala Road (ID:335433011)	Length : 3.055 km Starting Point :At Nizam kandi Ending Point : At Gohala UP Terrain : Plain	Length : 3.055 km Configuration : Carriage way 3.70 with 0.9m earthen shoulder

SI No.	District	Upazila	Road and Road ID	Existing Road's Salient Features	Improvement Proposal
				Configuration : Carriage way 3.00m with 0.90m earthen shoulder Cross Drainage Structure : 4 Nos	
252	Rajbari	Pangsha	Pangsa HQ-Mrigi G.C. Road(UZR) (ID: 382732002)	Length : 10.9 km Starting Point : At Pangsha H/Q (Pangsha Bazar Rail Gate). Ending Point : At Laribari Bazar Bridge. Major Settlement: TBisnopur, Malonchi, Bagduli, Puijor & Asurhat. Existing road land width : 10.00-16.00m Terrain : Plain Configuration : Carriage way 5.5m(Ch. 0-950), 3.60m(ch. 950-5770),5.5m (ch. 5770-7749 3.66m(ch. 7749-10006m) with 0.60m hard shoulder(ch 0-7749) 0.4m (7749-10006m) RCC Girder Bridge : 6 Nos	Length : 10.9 km Configuration : Carriage way 5.5 with 0.9m earthen shoulder Cross Drainage Work : Nil
253	Rajbari	Pangsha	Jasai UP-Joygram-Machpara UP. Road(UNR) (ID: 382733015)	Length : 8.57 km Starting Point : At Jasai Bazar More Ending Point : At Char Gopinathpur Major Settlement: Jasai West para, Shamaspur, Monirampur, Sadbari, Shagdaha & Char Gopinathpur Existing road land width : 9.00m - 12.00m Terrain : Plain Configuration : Carriage way 3.70m with 0.90m earthen shoulder RCC Girder Bridge : 1 Nos Box Culvert : 1 nos	Length : 4.279 km Configuration : Carriage way 3.70 with 0.9m earthen shoulder Cross Drainage Work : Nil
254	Rajbari	Kalukhali	Mrigi G.C-Sonapur G.C. Road (UZR) (ID: 382772007)	Length : 7.6 km Starting Point : At Near Bothundia Bazar Ending Point : At Sonapur (G.C) Bazar Major Settlement: Bothundia, Betbaria, Sonapur (G.C) Bazar, Existing road land width : 9.00m - 12.00m Terrain : Plain Configuration : Carriage way 3.40m with 0.90m	Length : 6.688 km Configuration : Carriage way 4.9m with 1.0m earthen shoulder Surface Drain : 158m

SI No.	District	Upazila	Road and Road ID	Existing Road's Salient Features	Improvement Proposal
				earthen shoulder RCC Girder Bridge :3 Nos Pipe Culvert : 1 nos	
255	Rajbari	Kalukhali	Belgachi G.C.- Sonapur G.C. Road (UZR) (ID : 382772009)	Length : 10.46 km Starting Point :At Damukdia Ending Point : At Modapur Bazar Major Settlement: Damukdia, Gandhimara, Gopalpur, Modapur Bazar, Existing road land width : 14.00m – 16.00m Terrain : Plain Configuration : Carriage way 3.70m with 0.60m earthen shoulder RCC Girder Bridge :4 Nos	Length : 3.505 km Configuration : Carriage way 4.9 with 1.0m earthen shoulder Surface Drain : 194m
256	Rajbari	Rajbari Sadar	Alipur UP-Bagmara Hat via Matipara (ID : 382763021)	Length : 7.645 km Starting Point :At Aladipur Bazar Ending Point : At Bagmara Hat Major Settlement: Aladipur, Indronaraonpur, Bartha, Matipara, Bethulia, Bagmara Existing road land width : 10.00-14.00m Terrain : Plain Configuration : Carriage way 3.66m with 0.90m earthen shoulder RCC Girder Bridge : 3 Nos Pipe Culvert : 2 Nos	Length : 7.645 km Configuration : Carriage way 3.00 with 0.9m earthen shoulder
257	Rajbari	Rajbari Sadar	Kamaldia R&H- Panchuria UP via Alipur hat (ID : 382763010)	Length : 5.251 km Starting Point :At Kamaldia Bus Stand Ending Point : At Panchuria UP Major Settlement: Indrananarayanpur, Alipur, Konail, Vandaria Existing road land width : 10.00-14.00m Terrain : Plain Configuration : Carriage way 3.00m with 0.65m earthen shoulder RCC Girder Bridge : 1 Nos U Drain : 5 Nos	Length : 5.251 km Configuration : Carriage way 3.00 with 0.9m earthen shoulder

SI No.	District	Upazila	Road and Road ID	Existing Road's Salient Features	Improvement Proposal
				Box Culvert : 6 Nos	
258	Rajbari	Rajbari Sadar	Felur Dokan R&H-Kutirhat GC (ID : 382762006)	Length : 3.883 km Starting Point :At Felur Dokan Ending Point : At Mulghar Major Settlement: Darpanaranyanpur, Ruppur, Parshadipur Existing road land width : 7.00-10.00m Terrain : Plain Configuration : Carriage way 3.00m with 0.65m earthen shoulder RCC Girder Bridge : 2 Nos Slab Culvert : 2 Nos	Length : 3.883 km Configuration : Carriage way 4.90 with 1.21 m earthen shoulder Box Culvert : 3 Nos
259	Rajbari	Rajbari Sadar	Kolahat GC-Jamalpur GC (ID: 382762003)	Length : 3.315 km Starting Point :At Kolahat Bazar Ending Point : At MASHalia Bazar Major Settlement: Kola, Udaypur, Bejkola Existing road land width : 12.00-15.00m Terrain : Plain Configuration : Carriage way 4.90m with 1.21m earthen shoulder Pipe Culvert : 2 Nos Box Culvert : 1 Nos	Length : 3.315 km Configuration : Carriage way 4.90 with 1.21 m earthen shoulder Box Culvert : 1 Nos
260	Rajbari	Rajbari Sadar	Khankhanapur GC-Falur Dokan R&H via Grils School (ID: 382762010)	Length : 3.152 km Starting Point :At Khankhanapur GC Ending Point : At Felur Dokan R&H Major Settlement: Khankhanapur Miapara, Rasulpur Existing road land width : 7.00-10.00m Terrain : Plain Configuration : Carriage way 2.75m with 0.50m earthen shoulder at Ch. 00-372 & Ch. 2746-3152, Carriage way 3.00m with 0.50m earthen shoulder at Ch. 375-948 & Ch. 2600-2746, Carriage way 3.70m with 0.50m earthen shoulder at Ch. 948-2600, Pipe Culvert : 1 Nos Box Culvert : 2 Nos	Length : 3.152 km Configuration : Carriage way 3.70 with 0.90m earthen shoulder U –Drain : 1 Nos Box Culvert : 3 Nos (2 Nos repair)

SI No.	District	Upazila	Road and Road ID	Existing Road's Salient Features	Improvement Proposal
261	Rajbari	Rajbari Sadar	Belgachi G.C- Gandimara R&H Road (ID : 382762001)	Length : 1.222 km Starting Point :At Belgachi GC Ending Point : At Gandhimara Major Settlement: Belgachi, Basudevpur Existing road land width : 7.00-13.50m Terrain : Plain Configuration : Carriage way 3.70m with 0.90m earthen RCC Girder Bridge : 1 Nos	Length : 1.222 km Configuration : Carriage way 3.70 with 0.90m earthen shoulder U –Drain : 3 Nos
262	Rajbari	Goalanda	Uttar Ujanchar at NHW-Khalil mondoler Hat G.C via Ujanchar G.C.(ID : 382292003)	Length : 7.960 km Starting Point : At Uttar Ujanchar Ending Point : At Khalil mondoler Hat G.C Major Settlement: Uttar Ujanchar, Dakhin Ujanchar, Purbo Ujanchar Existing road land width : 14.00-17.00m Terrain : Plain Configuration : Carriage way 3.70m with 0.60m earthen RCC Girder Bridge : 2 Nos Box Culvert : 1 Nos Pipe Culvert : 1 Nos	Length : 7.960 km Configuration : Carriage way 3.70 with 0.90m earthen shoulder Box Culvert : 1 Nos
263	Rajbari	Baliakandi	Baliakandi-Mrigi GC. Rd. Via Narua GC. (UZR) (ID : 382072002)	Length : 12.3 km Starting Point :At Baliakandi GC Ending Point : At Kakukhali Upazila Border Major Settlement: Baliakandi, Bockchor, Nischintopur, Shalmara, Garakola, Narua, Bil Taka Para, Shalki, Patkiabari, Choto Ghee-Komla, Baro Ghee Kamla Existing road land width : 10.00-14.00m Terrain : Plain Configuration : Carriage way 3.66m with 0.90m hard shoulder RCC Girder Bridge : 2 No Box Culvert : 4 Nos Sluice Gate : 2 Nos	Length : 12.30 km Configuration : Carriage way 5.5 with 0.9m earthen shoulder Surface Drain : 210m

SI No.	District	Upazila	Road and Road ID	Existing Road's Salient Features	Improvement Proposal
264	Rajbari	Baliakandi	Baliakanndi GC-Modhukhali RHW. via Maghchami. Road (UZR) (ID : 382072003)	Length : 4.57 km Starting Point :At Baliakandi GC Ending Point : At Modhukhali Upazila Border Major Settlement: Baliakandi, Moukuri, Bhimnagar, Khordo Megchami. Existing road land width : 10.19m – 14.70m Terrain : Plain Configuration : Carriage way 3.30m with 1.1m earthen shoulder RCC Girder Bridge : 2 Nos Pipe Culvert : 2 Nos Slab Culvert ; 4 Nos	Length : 4.570 km Configuration : Carriage way 3.30 with 0.9m earthen shoulder Box Culvert : 2 Nos
265	Lalmonirhat	Kaligonj	ZR at Baninagar-Durakuti GC. (UZR) (ID:152392001)	Length : 15.61 km Starting Point : Higher Road At Baninagar Ending Point : Bamoner Basha In Gorol UP Major Settlement: Baninagar, Sundrahobi, Dologram, DK. Botrish Hazari, Chaperhat, Tepurbazar, Nithok, Chakla Gorol, Ochintola, Bamonerbasha Existing road land width : 8.0-10.0m Terrain : Plain Configuration : Carriage way 5.00m with 0.58m earthen shoulder (Ch. 00-3650m) Carriage way 3.66m with 0.65m hard shoulder (Ch. 3650-15610m) Box Culvert : 22 nos	Length : 15.61 km Configuration : Carriage way 5.00m with 1.16m earthen shoulder (Ch. 00-3650m) Carriage way 5.50m with 0.9m earthen shoulder (Ch. 3650-15610m) U-Drain : 2 nos(New) Box Culvert : 1 No(Replacement)
266	Lalmonirhat	Kaligonj	ZR at Baninagar to DaiKhowa GC. (UZR) (ID:152392003)	Length : 4.5 km Starting Point :Dalogram (Kalabagan) Ending Point : Burirhat Major Settlement: Dakhin Dalogram, Kalvairab Bazar, Utter Dalogram Existing road land width : 10.30m – 12.50m Terrain : Plain Configuration : Carriage way 5.00m with 0.65m earthen shoulder Box Culvert : 5 nos	Length : 4.5 km Configuration : Carriage way 5.00 with 1.16m earthen shoulder Box Culvert : 4 nos

SI No.	District	Upazila	Road and Road ID	Existing Road's Salient Features	Improvement Proposal
267	Lalmonirhat	Aditmari	Burirhat GC-Bhelabari GC Road (ID : 152022003)	Length : 4.390 km Starting Point : Burir Hat near Rail Station Ending Point : Bhelabari GC Major Settlement: Kamlabari, Kumrirhat, Mogulhat, Sakowa, Bhadai UP, Bani Bazar, Shaptibari Existing road land width : 11.00m – 12.00m Terrain : Plain Configuration : Carriage way 3.70m with 0.75m earthen shoulder Box Culvert : 4 nos Pipe Culvert : 6 Nos Slab Culvert : 1 No RCC girder Bridge : 1 No U Drain : 1 Nos	Length : 4.390 km Configuration : Carriage way 5.00 with 1.16m earthen shoulder Box Culvert : 5 nos Cross Drain : 1 No
268	Lalmonirhat	Hatibandha	Hatibandha-Daikhowa Hat (ID : 152332002)	Length : 9.963 km Starting Point : Hatibandha Bazar Ending Point : Doikhowa Hat Major Settlement: Paschim Bezgram, Purbo Bezgram, Paschim Nowdabsa, Purbo Nowdabas, Doikhowa Existing road land width : 14.00 m – 16.00 m Terrain : Plain Configuration : Carriage way 4.70m with 0.60m earthen shoulder Box Culvert : 4 nos Pipe Culvert : 2 Nos Slab Culvert : 1 No	Length : 9.963 km Configuration : Carriage way 5.00 with 1.16m earthen shoulder Box Culvert : 5 nos
269	Brahmanbaria	Kasba	Sayedabad-Kasba-Nayonpur-Mondabagh Road (UZR) (ID:412632001)	Length : 18.28 km Starting Point : At Sayedabad R&H Ending Point : At Mondabagh bazar Bridge Major Settlement: Sayedabad, Hazipur, Anontopur, Taltola, Araibari, Aksina, Noagaon, Paniarup, Laximpur, Kamalpur, Moinpur, Kayempur, Bayek, Nayonpur, Charua, Mondabagh Existing road land width : 14.00m – 20.00m	Length : 18.28 km Configuration : Carriage way 5.50 with 0.9m earthen shoulder Box Culvert : 1 Nos

SI No.	District	Upazila	Road and Road ID	Existing Road's Salient Features	Improvement Proposal
				Terrain : Plain Configuration : Carriage way 5.50m (ch 00-15055), 3.00m (ch 15055-17535), 3.70m (ch 17535-18280m) with 0.40m earthen shoulder RCC Girder Bridge :1 Nos Box Culvert : 12 nos	
270	Brahmanbaria	Bancharampur	Bancharampur GC-Jibonganj GC Road via Sonarampur Bazar(UZR) (ID:412042001)	Length : 22.403 km Starting Point :At Jagonnathpur (infront of pollibiddut office) Ending Point : At Jibongonj G.C Major Settlement: Jagonnathpur, Doshdona, Sonarampur, Kadamtoli, Pahariakandi, Akanagar, Bisnorampur, Tezkhali, Hasonnagar. Existing road land width : 8.50-10.90m Terrain : Plain Configuration : Carriage way Carriage way 3.70m (ch 00-5500), 3.00m (ch 5500-11948), 2.5m (ch 11948-14606m),3.7m (ch 16536-18012m), 3.7m (ch 18012-18510m),3.0m (ch 18510-22403m)with 0.90m earthen shoulder Box Culvert : 14 nos	Length : 22.403 km Configuration : Carriage way 5.5 with 0.9m earthen shoulder Cross Drain : 4 Nos
271	Brahmanbaria	Bijoynagar	Nurpur GC-Singerbeel hat Road (ID : 412152002)	Length : 7.36 km Starting Point :At Nurpur GC Ending Point : At Singerbeel hat Major Settlement: Laxmipur, Adampur, Jagganathpur, Shreepur, Khiratula, Kanchanpur, Muradnagar, Singerbeel Existing road land width : 8.50-10.90m Terrain : Plain Configuration : Carriage way 3.00m with 0.90m earthen shoulder RCC Girder Bridge :1 Nos Box Culvert : 4 nos	Length : 7.36 km Configuration : Carriage way 3.00 with 0.9m earthen shoulder

SI No.	District	Upazila	Road and Road ID	Existing Road's Salient Features	Improvement Proposal
				U drain : 3 Nos	
272	Brahmanbaria	Bijoynagar	Chandura R&H- Nurpur GC Road (ID : 412152001)	Length : 10.160 km Starting Point : At Chandura R&H Ending Point : At Nurpur GC Major Settlement: Ibrahimpur, Kalisima, Amtali Bazar,Kalir Bazar,Sattirpara, Petuiajuri & Fathepur Existing road land width : 11.05m – 18.60m Terrain : Plain Configuration : Carriage way 3.00m with 0.90m earthen shoulder RCC Girder Bridge :1 Nos Box Culvert : 6 nos Slab Culvert : 6 Nos U drain : 4 Nos	Length : 10.160 km Configuration : Carriage way 3.00 with 0.9m earthen shoulder Box Culvert : 1 Nos
273	Brahmanbaria	Nabinagar	Bitghar Hat to B.Baria R&H road via Kurighar Hat (UZR) (ID:412852006)	Length : 16.355 km Starting Point : Bitghar Hat Ending Point : B.Baria R&H Major Settlement: Bitghar, Golakata, Atiara, Shantipur, Shibpur, Shaharper, Biddakut, Rasulpur Existing road land width : 11.05m – 18.60m Terrain : Plain Configuration : Carriage way 3.00m with 0.90m earthen shoulder RCC Girder Bridge :10 Nos Box Culvert : 6 nos	Length : 12.25 km Configuration : Carriage way 5.50 with 0.9m earthen shoulder Box Culvert : 1 Nos
274	Bogra	Shariakandi	Kamalpur U.P office-Goshaibari hat (UNR) (ID:110813004)	Length : 5.245 km Starting Point : Kamalpur Ending Point : Goshaibari-Shawabari River Ghat Major Settlement: Bitghar, Golakata, Atiara, Shantipur, Shibpur, Shaharper, Biddakut, Rasulpur Existing road land width : 11.05m – 18.60m Terrain : Plain	Length : 5.245 km Configuration : Carriage way 3.66 with 0.9m earthen shoulder Box Culvert : 1 Nos

SI No.	District	Upazila	Road and Road ID	Existing Road's Salient Features	Improvement Proposal
				Configuration : Crest width 6.00m (Earthen) RCC Girder Bridge :10 Nos Box Culvert : 6 nos	
275	Bogra	Dhunot	Shimabari-Mothurapur-Khatiamari (Ekdhala) Road (Dhunot) (UZR) (ID:110272002)	Length : 9.180 km Starting Point : At Vadal hata school. Dhunot. Ending Point : Ekdala Bazar at RHD (Dhunot part). Major Settlement: Mathurapur Bazar, Kashiahata bazar, Khatiamari bazar. Villages of Vadal hata, Char khaduli, Pir Hati, Mathurapur, Kashia hata, Khatiamari, Gonje bari, and Ekdala. Existing road land width : 15.09m – 21.55m Terrain : Plain Configuration : Carriage way 3.00m with 0.90m earthen shoulder RCC Girder Bridge :03 Nos Box Culvert : 14 nos Open Foundation Culvert : 2 Nos	Length : 9.180 km Configuration : Carriage way 3.66 with 0.9m earthen shoulder
276	Bogra	Dhunot	Dhunot (Khantonagar)-Amrul U.P. Office Road (Dhunot) (UZR) (ID: 110272014)	Length :5.200 km Starting Point : At Kantonagar Bazar Ending Point :At Kharmar kandi village Eidgah math (Dhunot part) Major Settlement: Kantonagar, Sunamohat, Bill Chapri Ghat, Ramnagar, Hasukhali, Isharghat. Existing road land width : 15.09m – 21.55m Terrain : Plain Configuration : Carriage way 3.70m with 0.20m earthen shoulder Box Culvert : 8 Nos Bridge : 2 Nos U Drain : 1 No	Length : 5.200 km Configuration : Carriage way 3.7 with 0.9m earthen shoulder U Drain : 1 No

SI No.	District	Upazila	Road and Road ID	Existing Road's Salient Features	Improvement Proposal
277	Bogra	Kahaloo	Dupchachia-Namoja via Tindighi GC Road (Kahaloo) (UZR) (ID:110542005)	Length :11.750 km Starting Point :Bogra-Naogaon NHW at Baromile Bazar Ending Point :Namoja math (Dhunot part) Major Settlement: 1.Kumarpara, 2.Birkedar Kharchak, 3. Chak Mahmudpur, 4.Kalai Kumarpara,5.Kalai Khamarpara6.Kunnipara,7.Naodapara 8.Choto Vadahar 9.Kaora Existing road land width : 15.09m – 21.55m Terrain : Plain Configuration : Carriage way 5.50m with 1.18m earthen shoulder Box Culvert : 15 Nos Pipe Culvert : 7 Nos	Length : 11.750 km Configuration : Carriage way 5.5m with 1.18m earthen shoulder RCC Culvert : 1 No
278	Bogra	Kahaloo	Ranirhat-Durgapur Road. (UZR) (ID: 110542001)	Length :10.675km Starting Point :Ranirhat Ending Point :Durgapur Major Settlement Dehor, boro Chapor, Eruil, Dumorgram, Matihis, Moharaja, Sabanpur, Haturpura, Durgapur Existing road land width : 08m-24m Terrain : Plain Configuration : Carriage way 5.50m(0+00-2+257) 3.7m(2+257-3+900) 4.9m(3+900-10+050) 7.0m(10+050-10+670) with 1.18m earthen shoulder Box Culvert : 15 Nos Pipe Culvert : 3 Nos	Length : 10.675 km Configuration : Carriage way 5.5m with 1.18m earthen shoulder RCC Culvert : 1 No
279	Bogra	Adamdighi	Nasratpur-Murail-Raykali-Beragram (Tilokpur) Road (UZR)	Length : 6.70km Starting Point :At Nasratpur Bazar Ending Point :At Binahali Major Settlement: Nasaratpur, Binshara, Khariakandi,	Length : 6.70km Configuration : Carriage way 5.5m with 1.18m earthen shoulder U Drain : 9 No

SI No.	District	Upazila	Road and Road ID	Existing Road's Salient Features	Improvement Proposal
			(ID:110062006)	Tholpara, Muroil, Pushinda, Aurjungari, Dhamail, Delunja and Binahali Existing road land width : 9.50m – 13.50m Terrain : Plain Configuration : Carriage way 3.6m with 0.6m earthen shoulder Box Culvert : 5 Nos	
280	Bogra	Sonatola	Horikhali GC- Hatsharpar GC via Charpara hat (Sonatola) (UZR) (ID:110952006)	Length : 10.010 km Starting Point :At Horikhali GC Ending Point :At Porapaikor (Salur Ghat) towards Hatsherpur Major Settlement: Horikhali, Pakulla, Huakua , Charpara Bazar, Porapaikor Existing road land width : 9.50m – 13.50m Terrain : Plain Configuration :Existing Carriage way 3.0m(00- 4620m)(7070-7220) 3.60 with 0.6m(4200-7070) (7220-9700) earthen shoulder 0.9m(00-4620m)(7070-7220) 0.6m(4200-7070) (7220-9700) Box Culvert : 9 Nos RCC Bridge : 3 Nos	Length :10.010 km Configuration : Carriage way 5.5m with 0.9m earthen shoulder U Drain : 2 Nos
281	Bogra	Shahajanpur	Sonahata GC(Dhunot) - Tangramagur RHD via Amrul UP - Naimile (UZR) (ID: 110962006)	Length :8.870 km Starting Point : At Gujar Khal Eidgah-math Ending Point : Naimile. Major Settlement: Aria, Maria,Amrul, Boronagar, Rajarampur, Polipolash, Narchi Existing road land width :7.0m – 9.0m Terrain : Plain Configuration : Carriage way 3.00m with 0.90m earthen shoulder Cross Drain : 19 Nos	Length : 8.870 km Configuration : Carriage way 3.7 with 0.9m earthen shoulder
282	Bogra	Sherpur	Ranirhat-Shimabari (Chandaikona)- Mothurapur Road	Length :15.200 km Starting Point : At Ranirhat GC Ending Point : At Shimabari GC (National High Way	Length : 15.200 km Configuration : Carriage way 5.5 with 0.9m earthen shoulder

SI No.	District	Upazila	Road and Road ID	Existing Road's Salient Features	Improvement Proposal
			(From RHD #334) (UZR) (ID:110882002)	Road Major Settlement: Ranirhat, Jaysing, Dalil, Bhabanipur, Belgari, Parirvita, Shimabari Existing road land width : 7.0m – 9.0m Terrain : Plain Configuration : Carriage way 5.50m with 0.90m earthen shoulder RCC Bridge : 19 Nos Box Culvert : 33Nos	
283	Bogra	Sherpur	Bhaira Bazar - Bishilpur Road (ID: 110883031)	Length :11.750 km Starting Point :At Bhaira Ending Point :Bishalpur Major Settlement: Bhaira, Palasion, Shamnanagar, Bishalpur Existing road land width : 15.09m – 21.55m Terrain : Plain Configuration : Carriage way 5.50 m with 1.18m earthen shoulder U Drain : 2 Nos Slab Culvert : 2 Nos Pipe Culvert : 6 Nos	Length : 11.750 km Configuration : Carriage way 3.7m with 0.9m earthen shoulder U Drain : 8 Nos
284	Bogra	Sherpur	Garidaha UP (Baily Bridge) - Jhanjor Hat Road. via Ramashorpur. (UNR) (ID: 110883013)	Length :10.000 km Starting Point :At Graidaha Steel Bridge Ending Point :At Jhanjor hat Major Settlement: Bhaira, Palasion, Shamnanagar, Bishalpur Existing road land width : 15.09m – 21.55m Terrain : Plain Configuration : Crest width 5.5 m earthen U Drain : 3 Nos Box Culvert : 21 Nos	Length : 10.000 km Configuration : Carriage way 3.7m with 0.9m earthen shoulder U Drain : 16Nos Box Culvert: 8 Nos

SI No.	District	Upazila	Road and Road ID	Existing Road's Salient Features	Improvement Proposal
285	Bogra	Sherpur	Salfa Bazar(Subli NHW)-Mirjapur U.P Office (UNR) (ID : 110883020)	Length :5.650 km Starting Point :At Subli NHW Ending Point :At Mirzapur Major Settlement: Bhaira, Palasion, Shamnanagar, Bishalpur Existing road land width : 15.09m – 21.55m Terrain : Plain Configuration : Earthen road U Drain : 3 Nos Box Culvert : 21 Nos	Length : 5.650 km Configuration : Carriage way 3.7m with 0.9m earthen shoulder U Drain : 25Nos Box Culvert: 5 Nos
286	Bogra	Sadar	Matidali NHW-Peergacha GCM (From RHD) (UNR) (ID : 110202001)	Length :9.1 km Starting Point :Matidali Bazar Ending Point :Pirgacha GCM Major Settlement: Mohastan, Gabtoli, Sonatola, Sakunpukur Rail Station Existing road land width : 15.09m – 21.55m Terrain : Plain Configuration : Carriage way width 3.7m with 0.5m Shoulder Box Culvert :4 Nos	Length : 9.1 km Configuration : Carriage way 5.5m with 1.8m earthen shoulder Box Culvert: 1 Nos
287	Norail	Narail-S	Singasolpur-Chakoi via Rukhali Road (UNR) (ID: 265763007)	Length :4.742km Starting Point : Singasolpur Bazar Ending Point : Mirzaor Bazar Major Settlement: Singsalupur Bazar, Mirzapur Terrain : Plain Configuration : Carriage way 3.0m with 0.9m earthen shoulder	Length : 4.742 km Configuration : Carriage way 3.7m with 0.9m earthen shoulder
288	Norail	Narail-S	Sahabad UP (Alukdia)-Malidanga Minabazar Road (UNR) (ID: 265763011)	Length :2.330 km Starting Point : Shahbaz UP Ending Point : Jurulia Village Major Settlement: Shahaabad, Maliadanga Terrain : Plain Configuration : Carriage way 3.0m with 0.9m earthen shoulder	Length : 2.330 km Configuration : Carriage way 3.7m with 0.9m earthen shoulder U Drain : 5 Nos

SI No.	District	Upazila	Road and Road ID	Existing Road's Salient Features	Improvement Proposal
289	Narail	Sadar	Tularampur-Shaikhati Road (ID: 265762003)	Length : 9.892km Starting Point : At Tularampur Bazar Ending Point : At Sheakhati Fakirbari More Major Settlement: Tularampur Malihat Hateria Guwakhowa and Sheakhati Bazar. Terrain : Plain Configuration : Carriage way 3.7m with 0.9m earthen shoulder	Length : 9.892km Configuration : Carriage way 3.7m with 0.9m earthen shoulder
290	Narail	Lohagara	Lohagara-Radhanagar Via Itna (ID: 265522003)	Length : 10.07km Starting Point : Lohagara R&H Ending Point : Radhanagar Bazar Major Settlement: Kundoshi, Mongolhata, Mollikpur, Korfa, Atoshpara Terrain : Plain Configuration : Carriage way 3.7m with 0.9m earthen shoulder Box Culvert: 2 Nos	Length : 10.07km Configuration : Carriage way 5.5m with 0.9m earthen shoulder
291	Narail	Lohagara	Naldi UP-Lahuria Rd. (ID: 265523006)	Length : 4.745 km Starting Point : Noldi Ending Point : Talukder Major Settlement: Kamer Gram, Dohorparaa, Lahuria Existing road land width : 15.09m – 21.55m Terrain : Plain Configuration : Carriage way width 3.7m with 0.5m Shoulder Box Culvert : 1Nos Pipe Culvert : 1 No Bridge ; 1 No	Length : 4.745 km Configuration : Carriage way 5.5m with 1.8m earthen shoulder
292	Narail	Kalia	Kalia Public Library-Boradia College More Road (ID: 265523006)	Length : 11.22 km Starting Point : At Kalia Bazar Ending Point : At Bordia GC Bazar.	Length : 11.22 km Configuration : Carriage way 5.5m with 1.8m earthen shoulder

SI No.	District	Upazila	Road and Road ID	Existing Road's Salient Features	Improvement Proposal
			265282002)	Major Settlement: kalia Ramngar , Haridanga, Baka, Naldanga, Patna, Shibanandapur, Dumuria Talbaria, Surigati, & Bordia. Existing road land width : 15.09m – 21.55m Terrain : Plain Configuration : Carriage way width 3.64m with 1.1m Shoulder Box Culvert :6 Nos	U Drain: 2 Nos
293	Narail	Kalia	Kalia Baroipara RHD - Mazirgati GC Road (ID: 265282012)	Length : 7.5 km Starting Point : Baroipara Feri ghat Ending Point : Gazirhat Major Settlement: Punchkjanina, Kulshir Babupur, Madhabpasha, Bisnupur, Vombug , Ramannandapur Existing road land width : 15.09m – 21.55m Terrain : Plain Configuration : Carriage way width 3.66m with 1.1m Shoulder Box Culvert :3 Nos	Length : 7.5 km Configuration : Carriage way 4.88m with 0.9m earthen shoulder UDrain: 4 Nos
294	Faridpur	Sadar	Kanaipur R&H to chandpur GC vai koshagopalpur road. (sadar part) (ID: 329472003)	Length : 2.25 km Starting Point : Kanaipur Ending Point : Boroghata Bazar Major Settlement: Boroghata, Chandpur, Koshagopalpur Existing road land width : 15.09m – 21.55m Terrain : Plain Configuration : Carriage way width 3.2m with 1.1m Shoulder	Length : 2.25 km Configuration : Carriage way 4.88m with 0.9m earthen shoulder
295	Faridpur	Sadar	Bakunda R&H to Kanaipur GC via Tambulkhana Road. (ID: 329472014)	Length : 9.025 km Starting Point : Bakhunda Ending Point : Kanaipur Major Settlement: Bakunda, boughata, Sachia, Kanaipur Existing road land width : 8-10m Terrain : Plain Configuration : Carriage way width 3.0m with 0.2m	Length :9.025 km Configuration : Carriage way 3.7m with 0.9m earthen shoulder

SI No.	District	Upazila	Road and Road ID	Existing Road's Salient Features	Improvement Proposal
				Shoulder	
296	Faridpur	Bhanga	Maligram (R&H) - Kalamirdha GC Road (ID: 329102001)	Length : 9.670 km Starting Point : At Maligram Bazar Ending Point :At Kalamirdha GC Major Settlement: Maligram, Azimnagar, Raynagar, Dewara, Sonamukir Char, Kalamirdha Existing road land width :10.00m – 15.00m Terrain : Plain Configuration : Carriage way width 3.7m with 0.9m Shoulder Bridge : 9 Nos	Length :9.670 km Configuration : Carriage way 5.5m with 0.9m earthen shoulder Pipe Culvert : 1 No
297	Faridpur	Sadarpur	Krishnapur GC- Sadarpur HQ- Piazkhal GC- Dhewkhali-Baliahati GC-Kawlibera-Tarail road(Sadarpur part) (ID:329842002)	Length :26.25 km Starting Point : At Sadarpur HQ Ending Point :At Balihati GC. Major Settlement: Sadarpur,Baburchar,Pijkhali,Mollah Gram, Chandrapara,Balihati. Existing road land width :13.9 – 15.00M Terrain : Plain Configuration : Carriage way width 3.7m with 0.9m Shoulder Bridge : 4 Nos Box Culvert: 2 Nos	Length :13.770 km Configuration : Carriage way 5.5m with 0.9m earthen shoulder Box Culvert : 3 Nos U Drain : 4 Nos Surface Drain : 1340m
298	Faridpur	Boalmari	Boalmari GC - Nagarkanda GC via GC via Moyendia bazar (ID:329182001)	Length : 8.76 km Starting Point : Boalmari Bazar Ending Point : Moyendia Bazar Major Settlement: Solna, kolapur, Biswaspur, Hasimdia Existing road land width : 10.00m – 15.00m Terrain : Plain Configuration : Carriage way width 3.2m with 1.1m Shoulder RCC Bridge : 5 Nos	Length : 8.76 km Configuration : Carriage way 3.7m with 0.9m earthen shoulder

SI No.	District	Upazila	Road and Road ID	Existing Road's Salient Features	Improvement Proposal
299	Faridpur	Boalmari	Chandpur GC- Kalinagar GC Road via Chittar Bazar & Datpur UP., Moyendia Bazar UP to Vatia Para- Maoua R&H. (Boalmari Portion) (UZR) (ID:329182002)	Length : 8.76 km Starting Point : At Datpur Eid Goan Ending Point :At Moyendia Bazar Major Settlement: SChandpur, Vatdi, Chitter Bazar, Moindia, Rupapath Bazar Existing road land width : 7.00m – 10.00m Terrain : Plain Configuration : Carriage way width 3.7m with 0.9m Shoulder RCC Bridge : 6 Nos	Length : 8.76 km Configuration : Carriage way 3.7m with 0.9m earthen shoulder Surface Drain; 450m
300	Faridpur	Madhukhali	Madhukhali RHD - Nimtola GC Road Starting from Madhu. Bus Stand. (UZR) (ID:329562002)	Length : 8.10 km Starting Point : At Madhukhali Bus Stand. Ending Point :At Belesware Sluice Gate Major Settlement: Purbo Garakhola, Pochim Garakhola, Vatikandi Mothurapur, Sreepur, Char Laxmipur, Gazna & Belesware Existing road land width : 7.31m –10.00m Terrain : Plain Configuration : Ch.1132m – 2137m (5.50 m) ch.0.00- 1132m & 2137-8100m(3.70) 0.90m either side soft shoulder	Length : 8.10 km Configuration : Carriage way 5.5m with 0.9m earthen shoulder Surface Drain;295m Box Culvert : 1 No
301	Shariatpur	Sadar	Angaria GC - Chandrapur GC via Binodpur UP Road. (ID: 386692001)	Length :10.100 km Starting Point :At Angaria GC Ending Point :At Chandrapur GC Major Settlement: Kasipur, Upargaon, Kacharikandi, Goyatala, Pachim Binodpur, Januallah Madbar Kandi, Chandpur Existing road land width : 26m – 27m Terrain : Plain Configuration : Carriage way 3.6 m with earthen soft shoulder 0.90m Pipe Culvert : 2 Nos RCC Girder Bridge : 13 Nos Box Culvert : 2 Nos	Length : 10.100 km Configuration : Carriage way 5.5m with 0.9m earthen shoulder Box Culvert: 4 Nos
302	Shariatpur	Sadar	Balar bazar	Length : 5.290 km	Length : 5.290 km

SI No.	District	Upazila	Road and Road ID	Existing Road's Salient Features	Improvement Proposal
			(Rudrakar)- Subhochani- Moderhat-Negerpara rd. (ID: 386692005)	Starting Point : Balar bazar Ending Point : Pachim Char sondi Major Settlement: Rudrokor, Boro Sonamukhi, Char Laxmi Narayon, Purbo Char sondi, Poshchim char sondi Existing road land width : 26m – 27m Terrain : Plain Configuration : Carriage way 3.6 m with earthen soft shoulder 0.90m U Drain : 1 Nos RCC Girder Bridge : 4 Nos Box Culvert : 2 Nos	Configuration : Carriage way 5.5m with 0.9m earthen shoulder Box Culvert: 4 Nos
303	Shariatpur	Sadar	Chandrapur GC - Kazirtek R&H Road. (ID: 386692004)	Length : 4.366 km Starting Point : Chandrapur GC Ending Point : Mredhaer Bari More Major Settlement: Chandrapur, Ronokhola, Santoshpur, Mredhaer Bari More Existing road land width : 26m – 27m Terrain : Plain Configuration : Carriage way 3.6 m with earthen soft shoulder 0.90m Pipe Culvert : 3 Nos RCC Girder Bridge : 2 Nos Box Culvert : 1 Nos	Length : 4.366 km Configuration : Carriage way 5.5m with 0.9m earthen shoulder Box Culvert: 1 Nos
304	Shariatpur	Bhedarganj	Charbhaga UP- Gowranga bazar road. : 386143016)	Length : 4.650 km Starting Point : Chapbanga UP Ending Point: Gouranga Bazar Major Settlement: Pedakandi, Asgor Howladar Kandi, Bakul kandi ,Gouranga Bazar Existing road land width : 9m – 12m Terrain : Plain Configuration : Carriage way 4.90 m with earthen soft shoulder 1.220m Bridge : 8 nos	Length : 4.650 km Configuration : Carriage way 5.5m with 0.9m earthen shoulder Box Culvert: 2 Nos U drain : 1 Nos

SI No.	District	Upazila	Road and Road ID	Existing Road's Salient Features	Improvement Proposal
305	Shariatpur	Bhedarganj	Shakhipur UP- Gowranga Bazar (Dularchar) (ID: 386143006)	Length : 4.820 km Starting Point : Shakhipur UP Ending Point: Gowranga Bazar Major Settlement: Sokhipur, Bapari Kandi, Madbarkandi, Gouranga bazarkuir char, kalamirdha Existing road land width : 9m – 12m Terrain : Plain Configuration : Carriage way 4.90 m with earthen soft shoulder 1.220m Bridge : 2 nos Box Culvert : 6 Nos Slab Culvert : 1 Nos	Length : 4.820 km Configuration : Carriage way 5.5m with 0.9m earthen shoulder
306	Shariatpur	Bhedarganj	Shakhi GC - Mredhakandi RHD Road.(ID : 386142007)	Length : 4.600 km Starting Point : Shakhipur GC Ending Point: Mredhakandir Major Settlement: Shakhipur, Rashid Baperi Kandi, Mohidzar Char, Hazikandi, Mridhakandi Existing road land width : 9m – 12m Terrain : Plain Configuration : Carriage way 4.90 m with earthen soft shoulder 1.220m Bridge : 2 nos Pipe Culvert : 2 Nos Slab Culvert : 1 Nos	Length : 4.600 km Configuration : Carriage way 5.5m with 0.9m earthen shoulder U Drain : 1 Nos
307	Shariatpur	Goshairhat	Kalikhola Bazar RHD-Rudrokar RHD via Nagerpara GC, Munshirhat Road. (ID: 386362001)	Length : 8.223 km Starting Point : Kalikhola Bazar Ending Point: Mushirhat Major Settlement: Kalikhola, Juhirgaon, Holypotty, Nagarpara, Daptary Bari, Mushirhat Existing road land width : 10m – 15m Terrain : Plain Configuration : Carriage way 3.66 m with earthen soft shoulder 0.60m Bridge : 10 nos Box Culvert : 05 Nos	Length : 8.223 km Configuration : Carriage way 5.5m with 0.9m earthen shoulder Surface Drain : 20m

SI No.	District	Upazila	Road and Road ID	Existing Road's Salient Features	Improvement Proposal
				Pipe Culvert : 1 Nos	
308	Shariatpur	Damuddya	Subachani-Nagerpara Road (ID : 386252003)	Length : 5.695 km Starting Point : Subachani Ending Point: Nagerpara Major Settlement: Subachani , Chaderhat, Akalbarish, Baherchar, Nagerpara, Existing road land width : 10m – 15m Terrain : Plain Configuration : Carriage way 3.66 m with earthen soft shoulder 0.60m Bridge : 6 nos Box Culvert : 01 Nos U-Drain: 1 Nos	Length : 5.695 km Configuration : Carriage way 5.5m with 0.9m earthen shoulder Box Culvert ; 2 Nos
309	Nator	Bagatipara	Bagatipara Upazila H/Q-Tebaria GC Road (Bagatipara part) (UZR) (ID:169092003)	Length : 5.6 km Starting Point : At Bagatipara Upazila Head Quater Ending Point : At Kalarai Culvert Major Settlement: Bagatpara, Biharkol, Tomaltola GC, Jigori.Kakfu, Existing road land width : 13.09m – 18.55m Terrain : Plain Configuration : Carriage way 3.00 m with 1.5m either side soft shoulder RCC Box Culvert : 7 Nos	Length : 5.6 km Configuration : Carriage way 5.5m with 0.9m earthen shoulder
310	Nator	Bagatipara	Jamnagor UP HQ-Jhalmolia Bazar viaVhitorbhag (Bagatipara part) (ID:169093018)	Length 2.564 km Starting Point : Jamnagor UP H/Q Ending Point : At Jhalmolia Major Settlement: Jamnagar, Dobila, Vitorvag, Paikpara Existing road land width : 26m – 27m Terrain : Plain Configuration : Carriage way 4.0 m with earthen soft shoulder 0.90m Pipe Culvert : 2 Nos Box Culvert : 2 Nos	Length : 2.564 km Configuration : Carriage way 5.5m with 0.9m earthen shoulder U Draint: 3 Nos
311	Nator	Bagatipara	Madhabbari Hat-	Length 2.564 km	Length : 2.564 km

SI No.	District	Upazila	Road and Road ID	Existing Road's Salient Features	Improvement Proposal
			Soilkona UP (ID:169093013)	Starting Point :At Khejurtola RHD Ending Point :At Trimohony Ghat Major Settlement: Jamnagar, Dobila, Vitorvag, Paikpara Existing road land width : 8.00m – 12.00m Terrain : Plain Configuration : Carriage way 3.30 m with earthen soft shoulder 0.90m Box Culvert : 2 Nos	Configuration : Carriage way 5.5m with 0.9m earthen shoulder Box Culvert: 1 Nos
312	Nator	Singra	Khajurtola RHD-Shamaspara GC Road via Dakmondop hat (169912013)	Length 4.300 km Starting Point :At Singra RHD Ending Point :Madhob Baria Notun Hat Major Settlement: Jamnagar, Dobila, Vitorvag, Paikpara Existing road land width : 26m – 27m Terrain : Plain Configuration : Carriage way 3.3 m with earthen soft shoulder 1.0m	Length : 4.300 km Configuration : Carriage way 5.5m with 0.9m earthen shoulder
313	Nator	Singra	Singra-Baruhash-Tarash (Singra part). (ID:169912010)	Length 4.300 km Starting Point :At Singra RHD Ending Point :At Baruhash Major Settlement: Baluabashua, Sathpukuria, Dahia, Biash Existing road land width : 8.00m – 16.00m Terrain : Plain Configuration : Carriage way 5.5 m with earthen soft shoulder 1.2m RCC Bridge : 10 Nos	Length : 4.300 km Configuration : Carriage way 5.5m with 1.2m earthen shoulder
314	Natore	Lalpur	Bagatipara-Dayarampur-Abdulpur-Lalpur Road (Lalpur Part) (ID : 169442001)	Length 16.46 km Starting Point :Dhupail Ending Point :Madhobpur Major Settlement: Dhupail, Abdulpur Rail Station, Salampur, Kachua, Lalpur Existing road land width : 8.00m – 16.00m Terrain : Plain	Length : 16.46 km Configuration : Carriage way 5.5m with 0.9m earthen shoulder

SI No.	District	Upazila	Road and Road ID	Existing Road's Salient Features	Improvement Proposal
				Configuration : Carriage way 3.7 m with earthen soft shoulder 1.2m RCC Bridge : 10 Nos	
315	Natore	Lalpur	Lalpur-Bilmaria-Durduria Road (ID:169442006)	Length 11.00 km Starting Point :Lalpur RHD Road Ending Point Bilmaria Bazar Major Settlement: Ramkrishnapur, Baknai, Mominpur, Mohorkoia Existing road land width : 13.09m – 18.55m Terrain : Plain Configuration : Carriage way 3.7 m with earthen soft shoulder 1.2m U Drain : 1 No	Length : 11.00 km Configuration : Carriage way 5.5m with 0.9m earthen shoulder
316	Natore	Baraigram	Rajapur GC - Zonail GC Road (ID : 169152002)	Length 18.18 km Starting Point :At Rajapur Bazar Ending Point :At Jonail bazaar Bridge Major Settlement: Rajapur Purbo para ,Akbar more, Dashgreem, Chandai, Kushmile,Garfa Bazar, Existing road land width : 15.09m – 19.75m Terrain : Plain Configuration : Carriage way 3.7 m with earthen soft shoulder 1.2m RCC Bridge : 10 Nos	Length : 18.18 km Configuration : Carriage way 5.5m with 0.9m earthen shoulder
317	Natore	Gurudaspur	Nazirpur GC - Moukra GC Road (ID:169412003)	Length 9.00 km Starting Point :At Nazirpur Bazar Ending Point :At moukra bazar Major Settlement: Nazirpur, brikasow, Rashidpur, Chakantopur, Roypur, Khamarputhia, Noapar, Moukara Bazar Existing road land width : 15.09m – 19.75m Terrain : Plain Configuration : Carriage way 3.66 m with earthen soft shoulder 1.2m	Length : 9.00km Configuration : Carriage way 5.5m with 0.9m earthen shoulder

Appendix C. ENVIRONMENTAL MANAGEMENT PLAN AND MONITORING FORMS FOR RURAL ROAD*

Project Activities	MITIGATION MEASURES	Location	Time Frame	Cost	Responsible for Implementation	Responsible for Monitoring
A. Pre-Construction Phase						
Finalization of alignment	<ul style="list-style-type: none"> • Consult with local people to finalize the alignment especially to avoid landslide area, to decide location for culverts and other drainage structures. • Avoid excessive cut and fill and road should be aligned to follow natural topography. • In case of hilly/mountainous area, alignment selection should follow provisions of Environment Friendly Road Construction ("LGED's Road Design Standard 2005- Rural Road") and should refer to geological survey data to identify landslide prone area, and settlement/loose rock areas. • In flood prone region/areas, refer to hydrological data to finalize provision for culvert drainage structures especially for alignment that intersects/crosses ground and surface water flow. 	All through the alignment of proposed rural road	Prior to commencing any construction works	Part of Project Cost	PD, RCIP	MoLG&RDC

Project Activities	MITIGATION MEASURES	Location	Time Frame	Cost	Responsible for Implementation	Responsible for Monitoring
	<ul style="list-style-type: none"> • Avoid the requirement of forestland for road construction. In case unavoidable, minimise it to extent possible by exploring alternative options. • In case, requirement of forestland is unavoidable, determine the legal status of forestland and initiate actions to seek permits for diversion of forestland for non forest uses (road construction). • Forest clearance is to be obtained in accordance with the provisions of Department of Forest (DOF) under the Ministry of Forest and Environment (MoFE) and all conditions related with the clearance has to be implemented. • In case alignment has trees, which are known to be nesting/breeding places for migratory birds, contact the Department of National Park and Wildlife Conservation for seeking permits and details about non-breeding seasons. In any case, no tree shall be cut in such stretches and construction works are to be strictly scheduled for non-breeding/nesting season and all permit conditions are to be complied. • Avoid or minimize tree felling, acquisition of agricultural land, shifting of shrines/temples, disturbance to community ponds, community resources, burial grounds, etc. to the extent possible through evolving alternate alignment options. 					

*This is a Standard Environmental Management Plan for the construction of rural road projects under the RCIP, Bangladesh. This standard EMP and the Environmental Checklist will be included among contract documents. The contractor must be aware of his responsibilities indicated in this EMP and must ensure that the necessary budget for applicable and appropriate mitigating measures is incorporated in the contractor's cost. The contractor should show also the indicative costs, if possible.

Project Activities	MITIGATION MEASURES	Location	Time Frame	Cost	Responsible for Implementation	Responsible for Monitoring
Land Transfer	<ul style="list-style-type: none"> Land acquisition, resettlement and rehabilitation, poverty alleviation programs for affected people and all other related issues are addressed in Social Impacts and Resettlement & Rehabilitation report. 	All through the alignment of proposed rural road (as applicable)	Pre construction Phase	Encumbrance-free land to be made available by the State Government	LGED and PD	MoLG&RDC
B. Construction Phase						
Land clearing operations	<ul style="list-style-type: none"> The road land width requiring clearing shall be clearly demarcated on ground. During land clearing operations, topsoil shall be collected, preserved, and reused as a base for turfing of embankment slopes or development of barren areas along roadside. Trees falling within roadway width and other vegetative cover are to be removed. Small temples, shrines if any is within the road land width, the same may be shifted to adjacent areas in consultation with local community leaders. 	All through the alignment of proposed Rural road (as applicable)	Pre construction Phase	<p>Encumbrance-free land to be made available by the contractor</p> <p>Relocation of utilities are to be undertaken by respective departments and costs are to be reimbursed</p>	All facilities are to be planned and implemented by PMU and/or contractor as per the conditions of civil works under approval by the DSMC	Project Director, RCIP

Project Activities	MITIGATION MEASURES	Location	Time Frame	Cost	Responsible for Implementation	Responsible for Monitoring
	<ul style="list-style-type: none"> During clearing operations, any treasure trove, slabs with epigraphically evidence or edicts, sculptural or any material found and appear to have historical importance, it should be brought to the notice of Department of Archaeology (DOA), Bangladesh, and instructions of this Department, if any, must be followed. All public utilities like power transmission cables, telephone cables, water/sewerage lines, drains, tube wells etc falling within road land width shall be inventoried, and arrange for relocation /shifting to adjacent areas in consultation with the respective agencies/authorities. Establish and maintain interaction with local community to ensure that no social resentment sets in due to operations. Contractors shall comply with the National Cultural Policy 2006 and Laws of Archeology -2015 (draft) and also Guidelines for Protecting Physical Cultural Properties 					
Establishment of temporary office and storage area	<ul style="list-style-type: none"> The temporary office and storage area for construction works shall be located away from human settlement areas (minimum 500 m) and forest areas (minimum 1 km). The office and storage areas shall preferably be located on barren/waste lands and conversion of agricultural/cultivable lands for office and storage areas shall not be allowed under any circumstances. 	As determined by contractor under approval of PMU	Pre construction and Construction Phase	To be included in contractor's cost	All facilities are to be planned and implemented by contractor	Project Director, RCIP

Project Activities	MITIGATION MEASURES	Location	Time Frame	Cost	Responsible for Implementation	Responsible for Monitoring
	<ul style="list-style-type: none"> • All fuel oil/lubricants loading/unloading and storage areas shall be paved (impermeable), and have separate storm water collection system with facility for separation of oil/lubricants prior to discharge. • The temporary office and storage area shall be provided with adequate water supply, sanitation, septic tank/soak pit of adequate capacity so that it functions properly for the entire duration of its use. • After completion of construction works, the site shall be restored to its previous state by undertaking clean up operations. 					
Construction CampSites	<ul style="list-style-type: none"> • The Contractor shall comply with the Factories Act (1965) and amendment thereof • The construction campsites shall be located away from any local human settlement areas and preferably located on lands, which are barren/waste lands. • The camps shall be located, at a minimum, 5 km from forest areas to deter trespassing of construction labour. • The campsites shall be provided with adequate water supply, sanitation and all requisite infrastructure facilities. This would minimize dependence on outside resources, presently being used by local populace and minimize undesirable social friction thereof. 	As determined by contractor under approval of PMU	Pre construction and Construction Phase	To be included in contractor's cost	All facilities are to be planned and implemented by contractor	Project Director, RCIP

Project Activities	MITIGATION MEASURES	Location	Time Frame	Cost	Responsible for Implementation	Responsible for Monitoring
	<ul style="list-style-type: none"> The camps shall have septic tank/soak pit of adequate capacity so that it can function properly for the entire duration of its use. Construction camps shall be provided with kerosene/LPG to avoid dependence on firewood for cooking to the extent possible. After completion of construction works, location of campsites shall be restored to its previous state by undertaking cleanup operations. 					
Mobilization of construction materials - Stone aggregates, earth and construction water	<ul style="list-style-type: none"> Stone aggregates shall be sourced only from licensed existing quarries. A list of such existing quarries is available from responsible department/ authority for mining related works in each state. In case new quarries are to be opened, quarry license/permits are to be obtained from this department/authority. In case, only stone crushing plants are to be installed near work sites, required permits are to be obtained and all conditions of permits are to be complied. Ensure stone quarries and crushing units have pollution control system; occupational safety procedures/practices in place and regular inspection shall be carried to ensure compliance. This shall be a pre-condition for sourcing of materials from quarries/crushing plants. 	As determined by contractor	Pre construction and Construction Phase	To be included in contractor's cost	All facilities are to be planned and implemented by contractor	PMU

Project Activities	MITIGATION MEASURES	Location	Time Frame	Cost	Responsible for Implementation	Responsible for Monitoring
	<ul style="list-style-type: none"> • Earth borrow areas identified during DPR stage shall be revisited to assess its environmental sensitivity and ensure it is not an ecologically sensitive areas. Permits are to be obtained from authorities and all permit conditions are complied. • The borrow areas are to be demarcated with signboards and operational areas are to be access controlled. • Topsoil from borrow areas (first 30cm) are to be preserved and used for redevelopment of borrow areas or as a base for turfing along embankment slopes. • The borrow areas as an option may be converted into ponds wherever possible, which can be used for storage of rainwater. • Conversion of agricultural lands for borrowing earth is to be discouraged to the use possible unless warranted by local conditions. In such cases, written consent shall be obtained from the landowners. • All borrow area shall comply with the Environmental Assessment Guidelines for LGED Projects-2008. 					
Mobilization of construction materials -	<ul style="list-style-type: none"> • Water for construction works shall NOT be drawn from sources, which serve routine needs of local people. 					

Project Activities	MITIGATION MEASURES	Location	Time Frame	Cost	Responsible for Implementation	Responsible for Monitoring
Stone aggregates, earth and construction water <i>(contd.....)</i>	<ul style="list-style-type: none"> • In case water is sourced from existing private tube wells, well owner shall be informed about the quantity and duration for which water drawls will be carried out and possible implications. Written consent for use of groundwater shall be obtained. • In case new tube wells are to be constructed, required concurrence from the PIU • In any case, care shall be taken not to source all requirements from one single source and no two sources (in case of tube wells) shall be less than 500 m from each other. 					
Transportation of construction materials	<ul style="list-style-type: none"> • Existing tracks/roads are to be used for hauling of materials to extent possible. • The alignment of haul roads (in case of new ones) shall be finalized to avoid agricultural lands to the extent possible. In unavoidable circumstances, suitable compensation shall be paid to people, whose land will be temporarily acquired for the duration of operations. The compensation shall cover for loss of income for the duration of acquisition and land restoration. • Prior to alignment of new haul roads, topsoil shall be preserved or at least shall be used for any other useful purposes like using in turfing of embankment rather than allowing its loss by construction activities. 	As determined by contractor	Pre construction and Construction Phase	To be included in contractor's cost	All facilities are to be planned and implemented by contractor	LGED Field offices

Project Activities	MITIGATION MEASURES	Location	Time Frame	Cost	Responsible for Implementation	Responsible for Monitoring
	<ul style="list-style-type: none"> Dust suppression along transportation links is to be ensured by deploying water tankers with sprinkling system are to be deployed along haul roads. The vehicles deployed for material transportation shall be spillage proof to avoid or minimize the spillage of the material during transportation. Transportation links are to be inspected daily to clear accidental spillage, if any. Precaution shall be taken to avoid inconvenience to the local community due to movement of materials. 					
Diversion of traffic	<ul style="list-style-type: none"> Frame appropriate traffic diversion schemes (in specific stretches as per progress of construction work) and implemented to avoid inconvenience due to construction works to present road users. The traffic diversion signs should be bold and clearly visible particularly at night. Diversion schemes are required to ensure smooth traffic flow, minimize accidents to road users during construction works. 	All through the alignment of proposed rural road	Construction Phase	To be included in contractor's cost	Diversion schemes shall be prepared by Contractor and approved	LGED Field offices

Project Activities	MITIGATION MEASURES	Location	Time Frame	Cost	Responsible for Implementation	Responsible for Monitoring
Cut and fill	<ul style="list-style-type: none"> Finalisation of alignment plan and profile shall consider options to minimize excessive cuts or fills. The design shall as per the relevant Road Design Standard 2005 (Rural Road) and Environmental Assessment Guidelines for LGED Projects-2008. The cut and fill quantities required for profile correction shall be balanced to the extent possible, to avoid dependence on earth from borrow areas. In both cases of cut and fill, top soil shall be preserved and reused for turfing of embankment slopes or redevelopment of borrow areas or any other areas in the vicinity of roads. Under no circumstances, topsoil shall be allowed to be used as a fill material in road construction activities. 	All through the alignment of proposed rural road	Construction Phase	To be included in contractor's cost	The alignment plan and profile is to be reviewed by contractor, , if any changes are to be effected after approval PMU	Project Director, RCIP
Preparation of embankment and road base	<ul style="list-style-type: none"> The road construction works will raise, extend and enlarge existing roadway/tracks all along the alignment. Therefore, mitigation measures to contain erosion and drainage problems are essential. 	All through the alignment of proposed rural road	Construction Phase	To be included in contractor's cost	The alignment plan and profile is to be reviewed by contractor, , if	Project Director, RCIP

Project Activities	MITIGATION MEASURES	Location	Time Frame	Cost	Responsible for Implementation	Responsible for Monitoring
	<ul style="list-style-type: none"> The engineering measures for countering soil erosion, slope protection, drainage wherever required shall be considered and implemented as per relevant Road Design Standard 2005 (Rural Road) and Environmental Assessment Guidelines for LGED Projects-2008. Measures like selection of less erodable material for embankment construction, compaction, adequate embankment slopes and turfing shall be considered as per provisions and Technical Specifications for construction of Rural Roads, LGED. 				any changes are to be effected after approval PMU	
Cross Drainage Structures	<ul style="list-style-type: none"> The road construction will also require construction of several cross drainage structures, across streams/river flowing across the road. Refer to hydrological studies to ensure that construction of drainage structures is not likely to alter drainage pattern, and discharge capacities of drainage structures are designed to facilitate smooth passage of water and heading up or flooding is avoided even in flood season. Schedule the construction works to dry season so that impacts on water quality of stream/river is minimize or avoided. Precaution shall be exercised to prevent oil/lubricant/ hydrocarbon contamination of channel bed during construction works. Spillage, if any, shall be immediately cleared with utmost caution to leave no traces. 	All through the alignment of proposed rural road	Construction Phase	To be included in contractor's cost	The alignment plan and profile is to be reviewed by contractor, , if any changes are to be effected after approval PMU	Project Director, RCIP

Project Activities	MITIGATION MEASURES	Location	Time Frame	Cost	Responsible for Implementation	Responsible for Monitoring
	<ul style="list-style-type: none"> • Ensure all construction wastes are removed from work site and stream /river beds are to be cleaned up (at least 50 m on both upstream and downstream sides of water courses) after completion of construction but prior to onset of monsoon. 					
Tree Planting	<ul style="list-style-type: none"> • Tree planting operations shall be commenced immediately after completion of embankment compaction. • Tree plantation along the road shall be undertaken as per permit conditions issued by the Ministry of Forests, prior to tree felling. • The species shall be suitable for local climate and available. The concerned District Forest Officer can be consulted for selection of species and technical guidance, if required. 	All through the alignment of proposed rural road (in stretches wherever applicable)	Construction Phase	To be included in contractor's cost	The tree plantation work can be entrusted to District LGED Office under the supervision of PMU	PMU

Project Activities	MITIGATION MEASURES	Location	Time Frame	Cost	Responsible for Implementation	Responsible for Monitoring
	<ul style="list-style-type: none"> Proper care shall be taken to increase survival rate of saplings like regular watering, pruning, provision of tree guards, manure for better nourishment, etc. including timely replacement of perished saplings. 					
Hot Mix Plants and Laying of bitumen	<ul style="list-style-type: none"> Hot mix plants shall be at least 500 m away from human settlements and preferably located on leeward side of most dominant wind direction. Consent/permits to establish and operate are to be obtained from State Pollution Control Board and all permit conditions are to be implemented/complied. The hot mix plants shall be set up on barren/waste lands and conversion of agricultural/cultivable lands for this purpose shall not be allowed under any circumstances. All operational areas like storage, handling, loading, unloading areas shall be paved, and have separate storm water collection system with facility for separation of oil/lubricants prior to discharge. The storm water from storage area shall not be directly discharged into any, near by water courses/drains. The hot mix plants shall be provided with adequate water supply, sanitation, septic tank/soak pit of adequate capacity so that it functions properly for the entire duration of its use. After completion of construction works, the site shall be restored to its previous state by undertaking clean up operations. Hot mix plants shall have required measures for control of dust, air, and noise pollution as per regulatory limits of Ministry of Population and Environment measures. 	As determined by contractor under approval of PIU	Construction Phase	To be included in contractor's cost	All facilities are to be planned and implemented by contractor	Project Director, RCIP

Project Activities	MITIGATION MEASURES	Location	Time Frame	Cost	Responsible for Implementation	Responsible for Monitoring
	<ul style="list-style-type: none"> Appropriate traffic diversion schemes shall be implemented during bitumen paving is under progress and all works shall be planned and swiftly completed to avoid inconvenience to road users. 					
Clean up of construction work Sites and Disposal of waste	<ul style="list-style-type: none"> All operational areas under road construction works like work sites, office/storage area, work force camps, and borrow areas, shall be cleaned up and restored to its previous state soon after operations are complete. All construction waste shall be disposed in approved areas. Local district authorities shall be consulted to determine disposal site and implement any conditions imposed while issuing permits. Contractors shall comply with the Spoil Mass Disposal Management Guideline including the preparation of Disposal Plan of DOE. 	Along all the alignment	Prior claiming the final payment	To be included in contractor's cost	Contractor as per approve plan.	Project Director, RCIP

Equipment/ vehicles deployed for Construction works	<ul style="list-style-type: none"> All diesel run equipment/vehicles/ deployed for construction activities shall be regularly maintained for smooth operation, a measure contributing to air quality and noise. Vehicles/equipment shall be periodically subjected for emission tests and shall have valid Department of Transport and Management NO POLLUTION CERTIFICATE. Revalidation of certificates shall be done annually. 	As determined by contractor	Construction Phase	To be included in contractor's cost	All facilities are to planned and implemented by contractor	Project Director, RCIP
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Project Activities	MITIGATION MEASURES	Location	Time Frame	Cost	Responsible for Implementation	Responsible for Monitoring
	<ul style="list-style-type: none"> All vehicles deployed for material movement shall be spill proof to the extent possible. In any case, all material movement routes shall be inspected daily twice to clear off any accidental spills. 					
Occupational Safety and Health Hazards at Work and camp sites	<ul style="list-style-type: none"> All Contractors shall comply with the Bangladesh National Building Code (BNBC)/ World Bank's Occupational Health and Safety Guidelines All personnel at work sites shall be provided with protective gears like helmets, boots, etc. so that injuries to personnel are avoided or minimized. Children (less than 16 years) and pregnant women shall not be allowed to work under any circumstances. No personnel shall be allowed to work at site for more than 10 hours per day (8-hour makes one work shift). Workforce, likely to be exposed to noise levels beyond regulatory stipulated limits, shall be provided with protective gears like hear plugs etc and regularly rotated. Dust suppression measures like sprinkling of water shall be ensured at all operations areas. The construction camps shall have health care facilities for adults, pregnant women and children. All construction personnel shall be subjected to routine vaccinations and other preventive/healthcare measures. The work and campsites shall have suitable facilities for handling any emergency situation like fire, explosion, etc. All areas intended for storage of hazardous materials shall be quarantined and provided with adequate facilities to combat emergency situations. All 	As determined by contractor	Construction Phase	To be included in contractor's cost	All facilities are to planned and implemented by contractor	Project Director, RCIP

Project Activities	MITIGATION MEASURES	Location	Time Frame	Cost	Responsible for Implementation	Responsible for Monitoring
	<p>required permits for storage of inflammable/hazardous materials are to be obtained.</p> <ul style="list-style-type: none"> • The personnel in charge of such areas shall be properly trained, licensed and with sufficient experience. • The operational areas shall be access controlled and entry shall be allowed only under authorization. • The construction camps shall have in-house community/common entertainment facilities. Dependence of local entertainment outlets by construction camps should be discouraged/ prohibited to the extent possible. 					



Rural Connectivity Improvement Project (RCIP)

Local Government Engineering Department (LGED)



**Table IX.1: Environmental Monitoring Plan (EMoP)**

Environmental Monitoring During Design and Pre-Construction Stage

Monitoring Responsibility: CONTRACTOR with Support from DES

Monitoring Frequency: Once prior to start of construction

Road Name /District Name:

Road Length:

Report No.:

SL. NO.	Environmental Attributes	Mitigation Measures	Location	Additional Monitoring Indicator if applicable	Compliance status	Corrective action proposed in case of delay
1.	Finalization of alignment	<ul style="list-style-type: none">• Ensure Road-Specific Environmental Checklist and Community Participation Framework Documents are prepared.• Ensure the IEE report has been approved by the DOE.• In case, requirement of forestland is unavoidable, determine the legal status of forestland and ensure the process of seeking Forest Clearance has been initiated by the PCU.• Forest clearance is to be obtained in accordance with the provisions of DOF conditions related with the clearance has to be implemented• Consult with local people to finalize the alignment specially to avoid landslide area, to decide location for culverts and other drainage structures.	All through the alignment of each rural road	Approval of IEE Report Compliance to Conditions of Forest Clearance if applicable		



SL. NO.	Environmental Attributes	Mitigation Measures	Location	Additional Monitoring Indicator if applicable	Compliance status	Corrective action proposed in case of delay
		<ul style="list-style-type: none">• In case of hills and hillocks in Chittagong and Cox's Bazar districts, alignment selection should follow provisions of Environmental Conservation Act, 1995 and should refer to geological survey data to identify landslide prone area.• Avoid excessive cut and fill and road should be aligned to follow natural topography.• In case alignment has trees, which are known to be nesting/breeding places for migratory birds, contact Forest Department for seeking permits and details about non-breeding seasons. In any case, no tree shall be cut in such stretches and construction works are to be strictly scheduled for non-breeding/nesting season and all permit conditions are to be complied.• Avoid or minimize tree felling, acquisition of agricultural land, shifting of shrines/temples, disturbance to community ponds, community resources, burial grounds, etc. to the extent possible through evolving alternate alignment options. <p>175 Project shall not disturb any cultural heritage designated by the government or by the international agencies, such as UNESCO, and shall avoid any monuments of cultural or historical importance.</p> <ul style="list-style-type: none">• Project will not pass through any designated wild life sanctuaries, national park, notified eco-sensitive areas or area of international significance such as protective areas designated under ECA 1995.				



SL. NO.	Environmental Attributes	Mitigation Measures	Location	Additional Monitoring Indicator if applicable	Compliance status	Corrective action proposed in case of delay
		<ul style="list-style-type: none">• Alignment finalization considering availability of right of way and in consultation with local people.• ROW may be reduced in built up area or constricted areas to minimize land acquisition as per LGED Guidelines.• Adjust alignment to the extent feasible to avoid tree cutting, shifting of utilities or community structure.• The road shall follow natural topography to avoid excessive cut and fill.				
2.	Land Transfer	Confirm if the Land acquisition, resettlement and rehabilitation, poverty alleviation programs for affected people and all other related issues are addressed in Social Impacts and Resettlement & Rehabilitation report.	All through the alignment of each rural road	Confirm the status of land transfer (% of total)		
3.	Biological Environment – Tree Planting	<ul style="list-style-type: none">• All efforts shall be taken to avoid tree cutting wherever possible.• Requisite permission from Forest Department shall be obtained for cutting of roadside trees.• Provision of Compensatory Afforestation shall be made on 1:3 ratio basis.• Permission shall be taken for diversion of any forest land if involved.• Provision shall be made for additional compensatory tree plantation.	Throughout the project section of the road	Confirm issuance of Forest Clearance		
4.	Planning for Land Clearing	<ul style="list-style-type: none">• The road land width shall be clearly demarcated on the ground.• The utility and community structure shifting shall be planned in consultations and concurrence of the community.• Tree felling shall be limited to those, which could not be saved even by design measures. The	All through the Rural roads excepting in stretches of habitations	Tree cutting permission from Forests Department Concurrence from		



SL. NO.	Environmental Attributes	Mitigation Measures	Location	Additional Monitoring Indicator if applicable	Compliance status	Corrective action proposed in case of delay
		<p>tree shall be cut with a prior permission of Forest department.</p> <ul style="list-style-type: none"> The vegetation cover shall be removed and disposed in consultation with community. All public utilities shifting shall be planned with prior concurrence of respective agencies/authority and to the adjacent location approved by them. 		community for utility, community structure, and vegetation cover removal		
5.	Shifting on Common Properties Resources	<ul style="list-style-type: none"> All efforts are made to minimize shifting of common utilities and community structures. The community structures/utilities, which can not be saved, will be shifted to adjacent area with the concurrence and in consultation with community. 	As determined by contractor under approval of PIU and CSC	Assess compliance based on LGED's Guidelines		
6.	Cut and Fill, and Embankment Construction Design and Planning	<ul style="list-style-type: none"> The alignment design shall consider options to minimize excessive cuts and fills. The cut and fill quantities shall be used for embankment to minimize borrow earth requirement. The design shall be as per relevant LGED Guideline provisions for cut and fill, slope protection and drainage. Adequate provision shall be made for cross drainage structure for maintaining natural drainage pattern in the Project area and preventing soil erosion. Side drain for channelizing water to nearby natural drain in water stagnation /logging prone area. The top soil of the cut and fill area shall be used for embankment slope protection. Embankment will be designed above High Flood Level wherever, area is prone to flood. 	All through the alignment of each rural road			



SL. NO.	Environmental Attributes	Mitigation Measures	Location	Additional Monitoring Indicator if applicable	Compliance status	Corrective action proposed in case of delay
7.	Hydrology and Drainage	<ul style="list-style-type: none">• Provision of adequate cross drainage (CD) structure shall be made to ensure smooth passage of water and maintaining natural drainage pattern of the area. The discharge capacity of the CD structure shall be designed accordingly.• Provision of adequate side drainage shall be made in water stagnant/logging areas.• The construction work near water body shall be planned preferably in dry season so that water quality of the water channel is not affected due to siltation and rain water runoff.• Elaborate drainage system shall be provided to drain the storm water from the roadway and embankment to ensure minimum disturbance to natural drainage of surface and subsurface water of the area.• Provision of additional cross drainage structure shall be made in the areas where nearby land is sloping towards road alignment on both the sides.• Provision of concrete road construction in habitat area with drainage of both side of the road shall be made as per the design provision and with adequate slope to prevent any water logging.• Road level shall be fixed above HFL. Embankment slope stabilization measures shall be planned. Stabilization measures may include vegetative treatment, stone pitching, retaining wall where feasible, and bioengineering.	Near all drainage crossing, canals and river crossings etc.			
8.	Establishment of Construction Camp,	<ul style="list-style-type: none">• Construction camp sites shall be located away from any local human settlements (minimum 0.5	As determined by contractor	Location of Construction		



SL. NO.	Environmental Attributes	Mitigation Measures	Location	Additional Monitoring Indicator if applicable	Compliance status	Corrective action proposed in case of delay
	Temporary Office and Storage area	<p>km away) and preferably located on lands, which are not productive (barren/waste lands) presently.</p> <ul style="list-style-type: none"> • Similarly, temporary office and storage areas shall be located away from human settlement areas (minimum 500 m). • The construction camps, office and storage areas shall have provision of adequate water supply, sanitation and all requisite infrastructure facilities. • The construction camps shall be located at a minimum 0.5 km from forest land/areas to deter the construction labour in trespassing. Similarly, temporary office and storage areas shall be located at a minimum 0.5 km from forest land/areas. • The construction camps, office and storage areas shall have provision of septic tank/soak pit of adequate capacity so that it can function properly for the entire duration of its use. • All construction camps shall have provision for kerosene/LPG so that dependence on firewood for cooking is avoided completely to the extent possible. • The construction camps, office and storage areas shall have provision of health care facilities for adults, pregnant women and children. • Personal Protective Equipment (PPEs) like helmet, boots, earplugs for workers, first aid and fire fighting equipment shall be available at construction sites before start of construction. An emergency plan shall be prepared to fight with any emergency like fire. 	under approval of PIC/PIU	<p>camp with planning of requisite facilities and making provision of such facilities prior to start of construction.</p> <p>Compliance to LGED's Guidelines for Water Management for Labor Camp.</p>		



SL. NO.	Environmental Attributes	Mitigation Measures	Location	Additional Monitoring Indicator if applicable	Compliance status	Corrective action proposed in case of delay
		<ul style="list-style-type: none">• Provision shall be made for domestic solid waste disposal in a control manner. The recyclable waste shall be sold off and non-saleable and biodegradable waste shall be disposed through secured land filling.• Provision of paved area for unloading and storage of fuel oil, lubricant oil away from storm water drainage.				
9.	Traffic Movement	<ul style="list-style-type: none">• The contractor will prepare appropriate traffic diversion scheme approved by respective PIU. This shall be implemented prior to start of construction to avoid any inconvenience to the present road users. This shall be implemented in other stretches of the road as per the progress of the construction work.• The diversion plan should ensure smooth flow of traffic, minimize accidents to road users during construction works.• Adequate signboards shall be placed much ahead of diversion site to caution the road users. The road signs should be bold and retro reflective in nature for good visibility in day and night both.	As proposed under DPR and determined by contractor and approved by PIU/CSC			
10.	Occupational Health and Safety	<ul style="list-style-type: none">• Speed breakers (Rumble strips) shall be provided at sharp curves design and bends where the curve design speed is less than 40 km per hour in plain and rolling terrain.• Speed breakers shall also be provided at regular intervals (150-200 m) through habitation area.• The speed breakers shall be provided and directional sign boards installed at sites where	Throughout the project section at the location determined by contractor and approved by CSC			



SL. NO.	Environmental Attributes	Mitigation Measures	Location	Additional Monitoring Indicator if applicable	Compliance status	Corrective action proposed in case of delay
		<p>reverse horizontal curves are closely spaced and speed reduction is required.</p> <ul style="list-style-type: none">• Provision shall be made for Hazard markers at each end of all box culverts, river crossing causeways and similar CD structures.• Shoulder side slopes shall not be steeper than 2H:1V unless stone pitching of the slopes is provided.• Cement concrete pavement and V-shaped drain shall be constructed to the full width of the available roadway within densely populated habitation and as per feasibility.• Provision shall be made for Directional sight board shall be installed on all sharp curves and bends.• At the main road, intersection or crossing "STOP" sign and 'T-intersection' warning sign shall be installed on the village road.• It is proposed to approach railways for adequate safety at unmanned railway crossing where applicable. Adequate clearly visible sign shall be provided on both side of the railway crossing.				
11.	Grievance Redress	Obtaining information from village level grievance redress committee, PIU as applicable	Each Sample road once.			

NOTE: Each report must enclose Photograph to the maximum possible action points, even if work is in progress.

**Environmental Monitoring During Construction Stage**

Monitoring Responsibility: PIU with Support from CSC (also serves as self-monitoring report of the Contractor)

Monitoring Frequency: (First Report after third month of start of construction or 25% construction. Second report after ninth month of construction or 75% construction).

Project Details:

Road Stretch Name:

Monitoring Report Quarter No.

SL. NO.	Environmental Attributes	Mitigation Measures	Location	Additional Monitoring Indicator if applicable	Compliance status	Corrective action proposed in case of delay
1.	Sourcing and Transportation of Construction Material (Aggregates, Earth)	Borrow Earth: <ul style="list-style-type: none">• The borrow earth shall be obtained from identified locations and with prior permission for landowner and clear understanding for its rehabilitation. LGED guideline should be used for selection of borrow pits and amount that can be borrowed.• No earth shall be borrowed from agricultural land and already low-lying areas.• A 15 cm topsoil will be stripped off from the borrow pit and this will be stored in stockpiles in a designated area for height not exceeding 2m and side slopes not steeper than 1:2 (Vertical: Horizontal).• Borrowing of earth will not be done continuously through out the stretch.• Ridges of not less than 8m widths will be left at intervals not exceeding 300m.• Small drains will be cut through the ridges, if necessary, to facilitate drainage.	At Borrow sites and quarries (if required) location	Compliance to LGED guidelines and stated criteria, Permission from land owners, Rehabilitation of borrow areas Availability of valid consent of quarries		



SL. NO.	Environmental Attributes	Mitigation Measures	Location	Additional Monitoring Indicator if applicable	Compliance status	Corrective action proposed in case of delay
		<ul style="list-style-type: none"> The slope of the edges will be maintained not steeper than 1:4 (vertical: Horizontal). The depth of borrow pits will not be more than 30 cm after stripping the 15 cm topsoil aside. The borrow area shall be rehabilitated as per the understanding arrived with the land-owner. The re-habilitation plan may include the following: <ul style="list-style-type: none"> I. Borrow pits shall be backfilled with rejected construction wastes and will be given a vegetative cover. If this is not possible, then excavation sloped will be smoothed and depression will be filled in such a way that it looks more or less like the original ground surface. II. Borrow areas might be used for aquaculture in case landowner wants such development. <p>Aggregate:</p> <ul style="list-style-type: none"> The stone aggregate shall be sourced from existing licensed quarries and the later should follow the LGED Guidelines for Quarry Area Management Copies of consent/ approval / rehabilitation plan for use of existing source will be submitted to PIU. Topsoil to be stockpiled and protected for use at the rehabilitation stage <p>Transportation of Construction Material:</p> <ul style="list-style-type: none"> Existing tracks / roads are to be used for hauling of materials to the extent possible. Prior to construction of roads, topsoil shall be preserved or at least shall be used for any 				



SL. NO.	Environmental Attributes	Mitigation Measures	Location	Additional Monitoring Indicator if applicable	Compliance status	Corrective action proposed in case of delay
		<p>other useful purposes like using in turfing of embankment rather than allowing its loss by construction activities.</p> <ul style="list-style-type: none">• The vehicles deployed for material transportation shall be spillage proof to avoid or minimize the spillage of the material during transportation. In any case, the transportation links/roads are to be inspected at least twice daily to clear accidental spillage, if any.				
2.	Loss of Productive Soil, Erosion and Land Use Change	<ul style="list-style-type: none">• It shall be ensured that the land taken on lease for access road, construction camp and temporary office of the storage facilities is restored back to its original land use before handing it over back to landowner.• The top soil from the productive land (borrow areas, road widening areas etc.) shall be preserved and reused for plantation purposes.• It shall also be used as top cover of embankment slope for growing vegetation to protect soil erosion.• Cut and fill shall be planned as per LGED guidelines.• All steep cuts shall be flattened and benched.• Shrubs shall be planted in loose soil area.• Recommended practice for treatment of embankment slopes for erosion control shall be taken into consideration as instructed by the CSC.• Soil erosion shall be visually checked on slopes and embankment areas. In case soil erosion is found, suitable measures shall be taken to control the soil erosion	Throughout the road section			



SL. NO.	Environmental Attributes	Mitigation Measures	Location	Additional Monitoring Indicator if applicable	Compliance status	Corrective action proposed in case of delay
3.	Compaction and Contamination of Soil	<ul style="list-style-type: none">• To prevent soil compaction in the adjoining productive lands beyond the ROW, the movement of construction vehicles, machinery and equipment shall be restricted to the designated haulage route.• The productive land shall be reclaimed after construction activity.• Septic tank or mobile toilets fitted with anaerobic treatment facility shall be provided at construction camp/temporary office/storage areas.• Domestic solid waste at construction camp shall be segregated into biodegradable and non-biodegradable waste.• The non-biodegradable and recyclable waste shall be sold off.• Fuel and lubricants shall be stored at the predefined storage location. The storage area shall be paved with gentle slope to a corner and connected with a chamber to collect any spills of the oil.• All efforts shall be made to minimise the waste generation. Unavoidable waste shall be stored at the designated place prior to disposal.• To avoid soil contamination at the wash-down and re-fuelling areas, "oil interceptors" shall be provided. Oil and grease spill and oil soaked materials are to be collected and stored in labelled containers (Labelled: WASTE OIL; and hazardous sign be displayed) and sold off to authorized re-refiners.	Throughout the project section of the road			



SL. NO.	Environmental Attributes	Mitigation Measures	Location	Additional Monitoring Indicator if applicable	Compliance status	Corrective action proposed in case of delay
4.	Construction Debris and Waste	<ul style="list-style-type: none">• All excavated materials from roadway, shoulders, verges, drains, cross drainage will be used for backfilling embankments, filling pits, and landscaping.• Unusable debris material should be suitably disposed off at predesignated disposal locations, with approval of the concerned authority.• The bituminous wastes shall be disposed in secure manner at designated landfill sites only in an environmentally accepted manner.• For removal of debris, wastes and its disposal guidelines provided by the CSC should be followed.• Unproductive/wastelands shall be selected with the consent of the land owner and local authority. The dumping site should be of adequate capacity. It should be located at least 500 m away from the residential areas.• Dumping sites should be away from water bodies to prevent any contamination of these water bodies.	Throughout the project section of the road			
5.	Air and Noise Quality	<ul style="list-style-type: none">• Vehicles delivering loose and fine materials like sand and aggregates shall be covered.• Dust suppression measures like water sprinkling, shall be applied in all dust prone locations such as unpaved haulage roads, earthworks, stockpiles and asphalt mixing areas.• Mixing plants and asphalt (hot mix) plants shall be located at least 500 m away and in downwind direction of the human settlements.	Throughout the project section of the road			



SL. NO.	Environmental Attributes	Mitigation Measures	Location	Additional Monitoring Indicator if applicable	Compliance status	Corrective action proposed in case of delay
		<ul style="list-style-type: none"> Material storage areas shall also be located downwind of the habitation area. Hot mix plant shall be fitted with stack of adequate height (30m) or as may be prescribed by local authority to ensure enough dispersion of exit gases. Consent to establish and operate shall be obtained from local authority and comply with all consent conditions. Diesel Generator (DG) sets shall also be fitted with stack of adequate height. Low sulphur diesel shall be used in DG sets and other construction machineries. Construction vehicles and machineries shall be periodically maintained. The requisite PPE (helmet, mask, boot, hand gloves, earplugs) shall be provided to the construction workers. Workers' exposure to noise will be restricted to less than 8 hours a day. Workers duty shall be regulated accordingly. Contractor shall comply with the GoB and World Bank OH&S Guidelines. 				
6.	Groundwater and Surface Water Quality and Availability	<ul style="list-style-type: none"> The contractor shall arrange for water required during construction in such a way that the water availability and supply to nearby communities remains unaffected. Water intensive activities shall not be undertaken during summer period to the extent feasible. Provision shall be made to road side drains with the nearby ponds for facilitating water harvesting if feasible, where ponds are not 	Throughout the project section of the road specially near all drainage crossing, canals and river crossings etc.			



SL. NO.	Environmental Attributes	Mitigation Measures	Location	Additional Monitoring Indicator if applicable	Compliance status	Corrective action proposed in case of delay
		available, the water harvesting pits shall be constructed as per the requirement and rainfall intensity. <ul style="list-style-type: none">• Preventive measures like slope stabilisation, etc. shall be taken for prevention of siltation in water bodies.				
7.	Occupational Health and Safety	<ul style="list-style-type: none">• Verification of implementation of provision made at planning stage.• Each worker is provided with requisite PPE• Directional sight board shall be installed on all sharp curves and bends• At a main road, intersection or crossing "STOP" sign and 'Tintersection'warning sign shall be installed on the village road.	Throughout the project section at the location determined by contractor and approved by PIU			
8.	Grievance Redress	Obtaining information from Village level Grievance redress committee, PIU as applicable	Each sample roads once			

NOTE: Each report must enclose Photograph to the maximum possible action points, even if work is in progress.



Environmental Monitoring During Operation Stage

Monitoring Responsibility: PIU with Support from PCU

Monitoring Frequency: (On completion of construction and after one month of first and second year of maintenance period)

Project Details:

Road Stretch Name:

Monitoring Report No.:

SL. NO.	Environmental Attributes	Mitigation Measures	Location	Additional Monitoring Indicator if applicable	Compliance status	Corrective action proposed in case of delay
1.	Air and Noise Quality	<ul style="list-style-type: none">Awareness sign board shall be provided for slow driving near the habitat areas to minimize dust generation due vehicle movement.Speed limitation and honking restrictions may be enforced near sensitive locations.	Throughout the project section at the location determined by contractor and approved by PIU			
2.	Site Restoration	<ul style="list-style-type: none">All construction camp/temporary office/material storage areas are to be restored to its original conditions.The borrow areas rehabilitation will be ensured as per the agreed plan with the landowner.Obtained clearance from PIU and CSC before handling over the site to LGED.	Throughout the road stretch	Survivability report, land owner concurrence of land reversal		
3.	Hydrology and Drainage	<ul style="list-style-type: none">Regular removal/cleaning of deposited silt shall be done from drainage channels and outlet points before the monsoon season.Rejuvenation of the drainage system by removing encroachments/ congestions shall be regularly conducted	Throughout the project section at the location determined by contractor and			



SL. NO.	Environmental Attributes	Mitigation Measures	Location	Additional Monitoring Indicator if applicable	Compliance status	Corrective action proposed in case of delay
			approved by PIU and CSC			
4.	Occupational Health and Safety	<ul style="list-style-type: none">Directional sight board shall be installed on all sharp curves and bendsAt a main road, intersection or crossing "STOP" sign and T-intersection' warning sign shall be installed on the village road.	Throughout the project section at the location determined by contractor and approved by PIU and CSC			
5.	Grievance Redress	Obtaining information from village level grievance redress committee, PIU as applicable	Each sample roads once			

NOTE: Each report must enclose Photograph to the maximum possible action points, even if work is in progress.

**Environmental Monitoring During Operation Stage**

Monitoring Responsibility: PIU with Support from PCU

Monitoring Frequency: (On completion of construction and after one month of first and second year of maintenance period)

Project Details:

Road Stretch Name:

Monitoring Report No.:

SL. NO.	Environmental Attributes	Mitigation Measures	Location	Additional Monitoring Indicator if applicable	Compliance status	Corrective action proposed in case of delay
1.	Air and Noise Quality	<ul style="list-style-type: none">Awareness sign board shall be provided for slow driving near the habitat areas to minimize dust generation due vehicle movement.Speed limitation and honking restrictions may be enforced near sensitive locations.	Throughout the project section at the location determined by contractor and approved by PIU			
2.	Site Restoration	<ul style="list-style-type: none">All construction camp/temporary office/material storage areas are to be restored to its original conditions.The borrow areas rehabilitation will be ensured as per the agreed plan with the landowner.Obtained clearance from PIU and CSC before handling over the site to LGED.	Throughout the road stretch	Survivability report, land owner concurrence of land reversal		
3.	Hydrology and Drainage	<ul style="list-style-type: none">Regular removal/cleaning of deposited silt shall be done from drainage channels and outlet points before the monsoon season.Rejuvenation of the drainage system by removing encroachments/ congestions shall be regularly conducted	Throughout the project section at the location determined by contractor and			



SL. NO.	Environmental Attributes	Mitigation Measures	Location	Additional Monitoring Indicator if applicable	Compliance status	Corrective action proposed in case of delay
			approved by PIU and CSC			
4.	Occupational Health and Safety	<ul style="list-style-type: none">Directional sight board shall be installed on all sharp curves and bendsAt a main road, intersection or crossing "STOP" sign and T-intersection' warning sign shall be installed on the village road.	Throughout the project section at the location determined by contractor and approved by PIU and CSC			
5.	Grievance Redress	Obtaining information from village level grievance redress committee, PIU as applicable	Each sample roads once			

NOTE: Each report must enclose Photograph to the maximum possible action points, even if work is in progress.

**Appendix D. Details of the Transect Walk Participants**

Sl. No.	District	Upazila	Name of Schemes	Length (Km)	Name of Union along the road	Number of Union	No. of Participants in Transect Walk	
							Total	Women
1	Gopalganj	Maksudpur	Tengrakhola-Jalirpar G.C Road	9.000	Kashalia, Nanikhir, Bonogram & Jalirpar	4	8	2
2	Gopalganj	Maksudpur	Muksudpur(NHW)-Kalinagar GC via Pashargati UP Office	4.899	Pasergati	1	11	4
3	Gopalganj	Kasiani	Tilchara-Orakandi Road	3.000	Orakandi	1	20	8
4	Gopalganj	Sadar	Boultali GC - Nizra UPC Road	6.153	Boultoli, Ulpur & Nizra	3	7	3
5	Gopalganj	Tungipara	Bashabaria GC-Jhanjhan-Ghagor GC Road.	9.935	Dumuria	1	33	16
6	Gopalganj	Kotalipara	Kadambari-Kaligonj-Gandiasur GC Road	6.256	Kalabari	1	12	4
7	Gopalganj	Gopalganj-S	Kajulia UPC - Domrasur Hat Road.	9.800	Uzani, Kajulia, Shahapur, Kalabari, Boultali, Satpar & Hiron	7	55	18
8	Gopalganj	Gopalganj-S	Gohala Hat (RHD)- Nizamkandi UPC Road (Sadar Portion)	2.590	Boultoli, Ulpur & Nizra	3	20	6
9	Gopalganj	Kasiani	Puisar UP (SitarampurR&H) to Singa U.P Road.	7.314	Puisur & Singa	2	31	7
10	Gopalganj	Kasiani	Nizam kandi-Gohala Road	2.969	Nizamkandi	1	25	6
11	Gopalganj	Muksudpur	Bonogram GC-Bhamondanga Bazar-Dignagar R&H	11.268	Moharajpur, Mochna & Dignagar	3	72	15
12	Gopalganj	Muksudpur	Gohala UP office (Monirkandi)-Jalirpar GC Road	5.221	Munirkandi, Aruakandi, Acrapara, Jalirpar	4	31	10
Sub Total				78.405		31	325	99
13	Faridpur	Boalmari	Chandpur GC- KalinagarG C Road via chittar bazar& Dadpur UP. , Moyendia Bazar up to Vatiapara-Maoua R& H . (Boalmari portion)	9.868	Chandpur, Dadpur & Parameshwari	3	12	3
14	Faridpur	Sadar	Kanaipur R&H to chandpur GC vai koshagopalpur road. (sadar part)	2.250	Kanaipur	1	25	7
15	Faridpur	Bhanga	Maligram (R&H) - Kalamirdha GC Road	9.538	Azimnagar & Kalamirdha	2	15	0
16	Faridpur	Sadarpur	Krishnapur GC-Sadarpur HQ-Piazkhali GC-Dhewkhali-Baliahati GC-Kawlibera-Tarail road(Sadarpur part)	13.770	Sadarpur & Dhewkhali	2	22	7
17	Faridpur	Boalmari	Boalmari GC - Nagarkanda GC via GC via Moyendia bazar	6.970	Chandpur, Dadpur & Parameshwari	3	12	3
18	Faridpur	Faridpur-S	Bakunda R&H to Kanaipur GC via Tambulkhana Road.	9.025	Kanaipur	1	35	4
19	Faridpur	Madhukhali	Madhukhali RHD -Nimtola GC Road Starting from Madhu. Bus Stand.	8.100	Gazna	1	6	2
Sub Total				59.521		13	127	26
20	Madaripur	Sadar	Madaripur Puran Bazar-Bangla Bazar-Hosnabad Bazar-Kalikapur UP Road.	6.12	Kalikapur & Bahadurpur	2	67	21



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21	Madaripur	Shibchar	R&H Bypass road to Kathalbari ferry ghat via Kutubpur growth center & bangla bazar	8.280	Dityakhonda	1	30	9
22	Madaripur	Madaripur-S	Khagdi R&H-Char Muguria-Sreenadi Hat GC	17.250	Dhutkhali & Kalikapur	2	67	21
23	Madaripur	Madaripur-S	Trivagdi GC-Mithapur Hat-Habiganj hat-Mollahat-Shekhpur RHD	8.617	Dhurail & Kalikapur	2	67	21
24	Madaripur	Madaripur-S	NHW-Tribhagdi Hat GC.	5.07	Bahadurpur	1	15	6
25	Madaripur	Kalkini	Kalkini Upazila HQ to Khasherhat GC Road via Shomitirhat Bazar.	10.977	Enayetpur, Purbo Enayetpur & Bashgari	3	115	34
26	Madaripur	Kalkini	Khoajpur Takerhat R & H to Khasherhat GC Road via Laxmipur UP Office & Shurjamoni hat.	16.02	puisur, Singa	2	27	9
27	Madaripur	Rajoir	Paikpara UP-Fultala hat-Dhamarchar Rd.	9.29	Paikpara	1	28	5
28	Madaripur	Rajoir	Takerhat GC-Sreenadi GC-Char muguria-Khagdi RHD road	8.136	Badarpasa & Isabpur	2	58	21
29	Madaripur	Rajoir	Improvement of Rajoir Upazila H/Q - Sreenadi GC	9.290	Badapasha	1	10	4
30	Madaripur	Rajoir	Improvement of Sagolchira R&H - Paikpara Union Road	6.280	Sagalsira	1	11	3
31	Madaripur	Kalkini	Khasherhat GC to Shariatpur R & H Road (Kalkini Part)	2.092	Bashgari	1	12	4
32	Madaripur	Rajoir	Takerhat GC - Kadambari GC	12.650	Khalia	1	32	14
33	Madaripur	Rajoir	Takerhat GC - Kabirajpur GC via Hossainpur UP	15.220	Hossainpur	1	32	8
34	Madaripur	Rajoir	Sanerpar R&H - Amgram GC road	3.380	Amgram	1	32	14
Sub Total				138.672		19	507	158
35	Shariatpur	Sadar	Angaria GC - Chandrapur GC via Binodpur UP Road.	10.100	Chandpur, Sariatpur sadar	2	58	21
36	Shariatpur	Sadar	Chandrapur GC - Kazirtek R&H Road.	4.400	Chandpur, Sariatpur sadar	2	58	21
37	Shariatpur	Bhedarganj	Shakhipur UP-Gowranga Bazar (Dularchar)	4.820	Shakhipur, Charbhaga	2	23	7
38	Shariatpur	Goshairhat	Kalikhola Bazar RHD-Rudrokar RHD via Nagerpara GC, Munshirhat Road.	8.400	Delpur, Nagerpara	2	58	21
39	Shariatpur	Damuddya	Subachani-Nagerpara Raod.	5.695	Dhanokati	1	5	10
40	Shariatpur	Bhedarganj	Charbhaga UP-Gowranga bazar road.	4.650	Charbhaga	1	11	3
41	Shariatpur	Bhedarganj	Shakhi GC - Mredhakandi RHD Road.	4.600	Shokhipur, Arshinagar	2	24	8
42	Shariatpur	Shariatpur-S	Balar bazar (Rudrakar)-Subhochani-Moderhat-Negerpara rd.	5.290	Rudrakor, Shariatpur Sadar	2	58	21
Sub Total				47.955		14	295	112
43	Rajbari	Baliakandi	Baliakandi-Mrigi GC. Rd. Via Narua GC.	12.300	Narua & Baliakandi	2	93	20
44	Rajbari	Kalukhali	Mrigi G.C-Sonapur G.C. Road	2.875	Mrigi & Majbari	2	74	10
45	Rajbari	Kalukhali	Belgachi G.C.-Sonapur G.C. Road	3.355	Modapur	1	54	11
46	Rajbari	Rajbari-S	Belgachi G.C-Gandimara R&H Road	1.220	Khanganj	1	17	6
47	Rajbari	Rajbari-S	Khankhanapur GC-Falur Dokan R&H via Grils School	3.152	Khankhanapur	1	53	13
48	Rajbari	Pangsha	Jasai UP-Joygram-Machpara UP. Road	4.279	Murat, Patta	2	14	5
49	Rajbari	Rajbari-S	Alipur UP-Bagmara Hat via Matipara	7.645	Ramkantapur & Mizanpur	2	48	19
50	Rajbari	Rajbari-S	Felur Dokan R&H-Kutirhat GC	3.883	Shahid Wahabbpur & Mulghar	2	98	43
51	Rajbari	Rajbari-S	Kolahat GC-Jamalpur GC	3.315	Basantapur	1	53	13



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52	Rajbari	Rajbari-S	Kamaldia R&H-Panchuria UP via Alipur hat	5.251	Alipur & Mulghar	2	103	43
53	Rajbari	Goalanda	Uttar Ujanchar at NHW-Khalil mondoler Hat G.C via Ujanchar G.C.	7.960	Ujanchar	1	22	7
54	Rajbari	Baliakandi	Baliakanndi GC-Modhukhali RHW. via Maghchami. Road	4.535	Narua & Baliakandi	2	93	31
55	Rajbari	Pangsha	Pangsa HQ-Mrigi G.C. Road	10.900	Murat & Patta	2	58	21
Sub Total				70.670		21	780	242
56	Comilla	Daudkandi	Roypur NHW - Batakandi G.C via Masimpur Road (Daudkandi part).	3.345	Eliatganj North	1	9	3
57	Comilla	Debidwar	Jafargonj GC to Barashalghar RHD via Yousufpur UPC Road.	15.815	Fatebad, Subil, Yusufpur & Barosalghor	4	55	18
58	Comilla	Titas	Raypur NHW-Batakandi GC road via Masimpur	10.914	Kalakandi & Narandia	2	48	19
59	Comilla	Titas	Batakandi GC-DaudkandiGC Via Mohanpur Launch Ghat road (Titas Upazila Portion)	11.500	Satani, Majidpur & Jagatpur	3	58	18
60	Comilla	Chouddagram	Kadoir bazar (Suvapur UPC) -Banggodda GC Road via Unkot, Kayerdhari.	5.086	Sovapur	1	9	3
61	Comilla	Chouddagram	Batisha NHW - Tarashail Bazar (Lal Msq) Road via Batisha Up,Debipur.	5.080	Batisha & Konkapur	2	17	6
63	Comilla	Chandina	Baragabindapur-Etbarpur UPC Rd. via Moddhatala, Sitalpur	1.030	Barkoit & Edthberpur	2	11	4
64	Comilla	Barura	Barura GC -Modaforanj RHD Road	9.314	Shakpur & Voukshar	2	19	6
65	Comilla	Barura	Paranpur Bazar R&H-Payalgacha UP office Road	7.687	Payalgacha & Vaukshar	2	9	3
66	Comilla	Monohorgonj	Laksam H/Q - Natherpetua RHD via Munshirhat GC Road.(Monohargonj Portion)	5.342	Uttar Howla & Natherpetua	2	30	10
67	Comilla	Sadar. Dakkhin	Khaish GC-Pipulia RHD Road.	8.725	Goliara & West Jorkanon	2	30	9
68	Comilla	Nangalkot	Adra UP-Manikmura Bazar Road via Volainbazar & Ghoramaidan	5.475	Adra	1	30	10
69	Comilla	Laksham	Laksam Upazilla HQ-Chitoshi RHD(Moulana bazar) via Sreeyang Rd.	5.000	Chitoshi	1	9	3
Sub Total				94.313		25	334	112
70	Chandpur	Faridganj	Faridganj GC-Rupsha GC Road.	5.74	Uttar Faridganj & Dakhin Rupsha	2	29	11
71	Chandpur	Haimchor	Gazipur UP Office to Upazilla Head Quarter	3.383	Algi Durgapur North	1	12	3
72	Chandpur	Faridganj	Pashim subidpur UP to Basara Bazar Road. Via Munshir Hat Bazar	4.601	Purbo Shubidpur & Paschim Shubidpur	2	35	12
73	Chandpur	Hazigonj	Cheangatali GC (Dadasgram up)-Dhadda-Khalpar bazar Road via Shaheb bazar & Pirojpur Bazar	7.62	Kalcho	1	9	3
74	Chandpur	Kachua	Kachua North UP (Tetuya)-Loskari-Boxagonj bazar road via Duati	6.6	Kachua Uttar & Purba Sohadebpur	2	37	14
75	Chandpur	Matlab South	Matlab-Bohori Arong-Karbanda Road	6.273	Nayargaon	1	11	5



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76	Chandpur	Shahrasti	Chioshi (E) UP Office-Kharihor Bazar road via Kadra bazar	5.922	Chitosee West & Chotosee East	2	5	1
Sub Total				40.139		11	138	49
77	B. Baria	Kasba	Sayedabad-Kasba-Nayonpur-Mondabagh Road	18.280	Binauti, Kasba Paschim, Keyampur & Bayek	4	18	7
78	B. Baria	Bancharampur	Bancharampur GC-Jibonganj GC Road via Sonarampur Bazar	22.403	Dosdona, Sonarampur	2	25	8
79	B. Baria	Bijoynagar	Chandura R&H-Nurpur GC Road	10.160	Bijoynagar	1	9	3
80	B. Baria	Bijoynagar	Nurpur GC-Singerbeel hat Road	7.360	Pattan & Singerbeel	2	11	3
81	B. Baria	Nabinagar	Bitghar Hat to B.Baria R&H road via Kurighar Hat	12.250	Nabianagar	1	12	4
Sub Total				70.453		10	75	25
82	Chittagong	Boalkhali	Kalurghat-Charandwip-Bhandaljuri-Saraf Bhata-Gudamghar Road (From RHD #126)	6.800	Kadurkhil & Charandwip	2	28	5
83	Chittagong	Mirsharai	Zorargonj UP R & H to -Burburia ghat Bazar road Via Dhum UP, Bangla Bazar & Golokerhat	5.100	Zorargong	1	12	4
84	Chittagong	Raojan	Ramjan Ali Hat GC - Nayahat RHD via Andermanik Natun Bazar Road.	9.926	Raijan	1	44	13
85	Chittagong	Anwara	Upazila Health complex-Peskar hat via Chatari UP Office (Chandpur D.C.Road).	5.000	Chatori	1	35	11
86	Chittagong	Anwara	Bairag UPC-CUFL Rd-Parki Bazar via Parki sea Beach Road.	5.500	Anowara	1	10	4
87	Chittagong	Fatikchari	Dantmara U.P.HQ.to Balutla Bazar via Ziltoli bazar Road	13.160	Dantmara	1	40	12
88	Chittagong	Hathazari	Mekhol up to Gorduara UP Road (Sarang Road)	2.770	Mekhol	1	18	7
89	Chittagong	Lohagara	Adhunagar Khan hat GC to Chunati Hajee Para & RHD	3.220	09 No. Adhunagar	1	12	4
90	Chittagong	Mirsharai	Habilder Basa R&H to Santir Hat GC Road via Azamnagar (Karerhat UP- Santirhat GC)	8.650	Karerhat & Hinguli	2	35	14
91	Chittagong	Banskhali	Arabsha Bazar GC - Ishwar Babur Hat GC Road Via Bashirullah Miazi hatChonua,Gandamara,Saral, Shadonpur UP (Moulana Ashraf Ali Road)	4.100	Chauna & Shadonpur	9	9	3
92	Chittagong	Chandanish	Dewanhat-Bailtali-Barma Damirhat G.C-Patiya Road.	16.200	Satbaria, Bailtali & Borama	3	99	32
93	Chittagong	Rangunia	Santirhat GC- Malirhat - Sahery Bazar GC Road (Baraulia Road) (Rangunia Part)	5.400	Pomra	1	25	8
94	Chittagong	Patia	Charlaikhya UP - Dangerchar (Akter Tower House) Road.	5.250	Charlaikhya	1	18	7
Sub Total				91.076		25	385	124
95	Cox's Bazar	Pekua	Pekua to Arabshah Bazar via Rajakhali Sabuj Bazar Road (From RHD #148)	8.552	Rajakhali & Barbaria	2	14	2
96	Cox's Bazar	Moheskhali	Matarbari-Dhalghat Road Via Mogdail Bazar	4.600	Dhalghata	1	31	12
97	Cox's Bazar	Moheskhali	Gorakghata-Ghatibanga Sonadia road.	4.500	Kutubjom	1	23	8
98	Cox's Bazar	Chakaria	Harbung-Baraitali Road.	6.150	Harbung & Baroitati	2	20	7



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99	Cox's Bazar	Ramu	Chainda - Rajarkul Road.	7.850	Dakhin Mithachari & Rajarkul	2	25	6
100	Cox's Bazar	Ramu	Chakmarkul - Montergoda Road. (PM Khali) Road.	6.302	Joarianala	0	15	5
				37.954		8	128	40
101	Noakhali	Senbag	Somirmunshirhat G C- Kutuberhat G C Road	9.000	Kabilpur, Bijbag, Nobipur	3	8	3
102	Noakhali	Senbag	Somir Munshirhat GC - RHD (Kesharpar UP) via Chilonia bazar Road	6.442	Arjuntala, Kesharpara	2	14	5
103	Noakhali	Sonaimuri	Kachihata-Thanan hat Road (Paloan pol RHW- Amannullapur UP-Eadgha Amin bazar-Amishapara UP)	14.214	Amishapara, Deoti, Loyag	3	9	4
104	Noakhali	Sonaimuri	Dirirjan Bazar -Ambarnogar UP Road.	5.450	Nateshwer, Ambonagor	2	16	8
105	Noakhali	Senbag	Senbag-Arjuntala UP Office (Chilonia Bazar).	4.810	Arjuntala	1	7	3
106	Noakhali	Hatiya	Chowhomoni Bazar RHD - Char Changa GC via Majidi Bazar Road	8.600	Burirchar, Sonadia	2	8	2
107	Noakhali	Begumgonj	Banglabazar-Rajgong Road	7.245	3no Jirtoli, 6no Rajganj	2	35	8
Sub Total				55.761		15	97	33
108	Laxmipur	Ramgonj	Ramgonj Nagerdighir hat via Harischar Bazar	5.676	Chandipur	1	19	7
109	Laxmipur	Sadar	Bhobanigon GC- Refuje Market-Megna Bazar-Chakbazar-Munshirhat Road	9.000	Bhabanigonj	1	20	10
110	Laxmipur	Raipur	Raipur-Panpara Road	5.889	Keroa	1	22	3
111	Laxmipur	Komol Nagar	Lawrancekasher hat-Ander char Road	5.000	Hazirhat	1	6	2
Sub Total				25.565		4	67	22
112	Feni	Parshuram	Parashuram-Kalir bazar-Danikunda bazar-Saldhar bazar-Malipathar-Nilaxi-Fulgazi Road.(Parashuram-Part=ch 00-10.75KM).	8.682	Chitholia	1	5	2
113	Feni	Sonagazi	Bakter Munshi-Kuthir hat-Fazilerghat-Dagoanbhuyan Road (Dagoanbhuyan-Fazilerghat-Bakthermunshi) Road (From RHD #242).	10.415	Kuthirhat	0	11	3
114	Feni	Sonagazi	Motigonj UP-Dasherhat-ChardarbeshtUP-Karamotiabazar-Kazir hat Rd	8.815	Motiganj	0	9	2
115	Feni	Dagonbhuiyan	Dagonbhuiyan-Chowdhury Hat Road	4.020	Dagonbhuiyan	0	12	3
				31.932		1	37	10
116	Jessore	Sadar	Jessore-Potengali-Kayemkhola GC Road (Jessore-Sadar)	14.380	Arabpur & Deara	2	17	7
117	Jessore	Jhikorgacha	Bangdah GC- Kayemkhola GC via Chutipur Bazar, Mohammadpur Bazar.	12.400	Gongadharpur & Magura	2	40	15
118	Jessore	Keshobpur	Chuknagar-Katakhal Road	7.200	Gourighona & Sufalakathi	2	25	9
119	Jessore	Jhikorgacha	Bakra GC- Baganchara GC via Sankarpur UPC	10.858	Hazirbag, Bakra & Sankarpur	3	28	8
120	Jessore	Chowgacha	Chowgacha (Damodar Battala)-Bidhadharpur Road.	8.760	Narayanpur	1	7	3
121	Jessore	Chowgacha	Purapara GC-Moheshpur Pucca road-Bidhadharpur bazar Road.	7.530	Narayanpur	1	7	2



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122	Jessore	Chowgacha	Narayanpur UP Office - Bondelitola Bazar Road.	4.400	Narayanpur	1	7	3
123	Jessore	Monirampur	Monirampur-Nehalpur-Kapalia road	20.063	Monirampur, Nehalpur, Kapalia	3	37	11
124	Jessore	Monirampur	Nehalpur GC-Payria GC via Takerghat Road	3.727	Nehalpur	1	24	15
125	Jessore	Monirampur	Monirampur-Mukterpur road	18.445	Monirampur, Khedapara & Hariharnagar	3	26	8
126	Jessore	Monirampur	Monirampur GC - Bakra GC via Rajgonj GC Road	8.691	Jhampa & Hariharnagar	2	10	2
127	Jessore	Monirampur	Lawri (Madrasha) RHD-Khedapara GC Road	14.850	Shyamkur & Khedapara	2	41	18
128	Jessore	Abhoynagar	Nowapara Upazila H/Q-Monirampur via Moshiahati, Nehalpur Road.	7.300	Sundali	1	7	3
129	Jessore	Abhoynagar	Jessore Khulna RHD Bhangagate (Badamtala) - Amtala GC via Moricha, Nawly Bazar Road	20.909	Sreedharpur, Bagutia, Suvorara & Siddipasha	4	41	13
130	Jessore	Abhoynagar	Nowapara Upazila H/Q (Shankarpasha Bazar Ghat) - Narail-Fultala RHD at Sukpara more Road.	4.790	Bagutia & Shuvarara	2	12	4
131	Jessore	Sarsha	Benapole - Baganchra GC via Goga UP H/Q Road	9.141	Benapole, Putkhali & Goga	3	12	5
132	Jessore	Bagherpara	Jessore-Narail RHD at Dhalgrammore to Narikelbaria via Dhalgram Bazar	19.550	Narikelbaria & Dhalgram	2	27	6
133	Jessore	Bagherpara	Khajura-Chaturbaria road.	8.275	Bandobila & Johurpur	2	56	18
Sub Total				201.269		37	424	150
134	Kushtia	Kushtia-S	Bittipara Hat R&H-Jamjami G.C via Jhowdia Hat road.	17.050	Ujangram, Jhawdia, Monordia & Goshwami Durgapur	5	12	6
135	Kushtia	Bheramara	Bheramara-Kuchimora GC-Juniadah GC-Allardarga GC (R&H) Rd.	24.400	Bahirchar, Mukarimpur & Bahadurpur	3	10	2
136	Kushtia	Daulatpur	Taragunia G C-Bairagirchar-Moricha UP-Allardargha GC Road	13.230	Taragunia & Allargarga	0	22	7
137	Kushtia	Kumarkhali	Kushtia-Rajbari RHD(Lahini) to Katlagari GC Via Jaduboyra, Sandiara Bazar Road	15.600	Chapra & Jaduboyra	2	8	2
138	Kushtia	Khoksha	Kushtia Rajbaria RHD-Panti GC via Jaduboyra-Shandiara bazar Road (Khoksa Portion)	8.410	Osmanpur	1	9	3
139	Kushtia	Khoksha	Khoksa Somaspur-Sengram Kalitola GC pansha road	10.445	Somospur, Jointypur & Ambaria	3	30	9
Sub Total				78.835		14	91	29
140	Jhenaidah	Kotchandpur	Kotchandpur GC - Chowgacha GC Road (Kotchandpur Part).	4.700	Alangi	1	7	2
141	Jhenaidah	Moheshpur	Moheshpur-Bagadanga road	12.255	Bashabaria & Nipa	2	51	18
142	Jhenaidah	Kaliganj	Kaligonj UZ H/Q-Kola GC	9.300		1		
143	Jhenaidah	Kaligonj	Baro Bazar GC-Hakimpur GC Road	6.630	Kastovanga & Rakhalpur	2	20	8
144	Jhenaidah	Jhenaidah-S	Naldanga UP HQ-Tetultala bazar Road	6.150	Noldanga	1	35	5
145	Jhenaidah	Moheshpur	Moheshpur H/Q-Hashadha GC (Moheshpur Portion)	5.230	Fotepur	1	12	4



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146	Jhenaidah	Moheshpur	Natima UP office (Uzzalpur)-Bhabnagor bazar via Shamkur UP office	5.850	Bashabaria & Nipa	2	51	18
147	Jhenaidah	Moheshpur	Basbaria UP Office-Vasanpota bazar via Sreepur	4.660	Bashabaria	1	20	7
148	Jhenaidah	Moheshpur	S.B.K UP office (Khalispur)-Krischandapur bazar via Purandarpur	5.900	Fotepur	1	28	9
149	Jhenaidah	Harinakunda	Harinakunda to HQ to Jhaudia GC (Harikunda portion)	4.400		2		
				65.075		21	145	45
150	Chuadanga	Alamdanga	Alamdanga-Sorajgong G.C (Alamdanga Portion) [Alamdanga]	18.000	Nagdha, Belgachi, khaskorara	3	50	15
151	Chuadanga	Damurhuda	Memnagar RHD-Karpashdanga G.C via Buichitala	13.106	Parkrishnapur, Manda, Kurulgachi, Karpashdanga	4	15	5
152	Chuadanga	Damurhuda	Damurhuda G.C-Bhogiratpur G.C	11.375	Damurhuda, Juranpur, Notipota	3	15	5
153	Chuadanga	Sadar	Sarajgonj G.C-Hizolgari G.C	13.770	Sankarchandra, Titudha, Bagumpur	3	43	15
154	Chuadanga	Sadar	Hizolgari G.C-Uthali R&H (Sadar Portion)	7.950	Bagumpur	1	16	4
155	Chuadanga	Jibannagar	Uthali R&H-Hizalgari GC.	2.180	Uthali	1	24	0
156	Chuadanga	Jibannagar	Andulbaria UP-Grishnagar Bazar Road(Jibonnagar Part)	2.900	Andulbaria	1	8	0
157	Chuadanga	Jibannagar	Sontospur R&H - Andulbaria GC - Hashada R&H	19.104	Andulbaria	1	24	6
158	Chuadanga	Jibannagar	Jibannagar R&H- Changkhali Border Road.	6.865	Simanto	1	8	0
159	Chuadanga	Jibannagar	Daulatgonj GC-Akundabaria R&H.	12.450	Monohorpur	1	10	4
Sub Total				107.700		19	213	54
160	Magura	Salikha	Singra-Semakhali road.	11.430	Talkhari, Dhaneshargati	2	18	6
161	Magura	Mohammadpur	Dohail - Nohata Road	11.200	8no Nohata	1	32	6
162	Magura	Mohammadpur	Bethulia Bazar (Kalukhandi More) to Babukahli UP via Dumurshia Bazar Rd.	5.020	1no Babukhali	1	25	7
163	Magura	Magura-S	Berail Polita Gc- Bunagati GC via Nalia Ghat	5.600	Barulipalita, Kuchiamora	2	42	15
164	Magura	Magura-S	Bogia U.P - Ramnagar bazar via Pukuria, Boro bazar Rd.	7.462	Bogia , Kosundi	2	6	2
165	Magura	Salikha	Semakhali GC - Hazrahati R&H Road	7.500	Salikha, Sotokhali	2	18	6
166	Magura	Salikha	Hazrahati RHD - Bunagati GC Road.	5.626	Bunagati, Salikha	2	18	6
Sub Total				53.838		12	159	48
167	Meherpur	Gangni	Bamonudi GC- Karomdi GC Road	6.450	Bamundi, Tentulbaria	2	9	3
168	Meherpur	Sadar	Baradi GC-Gangni HQ Road(Sadar part)	2.900	Pirojpur,	1	28	10
169	Meherpur	Mujibnagar	Bollovepur RHD -Anandabash GC Road	3.731	Bagoan	1	9	3
Sub Total				13.081		4	46	16
170	Narail	Kalia	Kalia Public Library-Boradia College More Road	11.220	Salamabad	1	16	3
171	Narail	Kalia	Kalia Baroipara RHD - Mazirgati GC Road	7.500	Kalia & Mazirgati	2	15	5
172	Narail	Narail-S	Tularampur-Shaikhati Road	9.892	Tularampur & Shekhathi	2	10	3
173	Narail	Narail-S	Singasolpur-Chakoi via Rukhali Road	4.742	Singasolpur	1	12	4



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174	Narail	Narail-S	Sahabad UP (Alukdia)-Malidanga Minabazar Road	2.330	Shahabad	1	9	3
175	Narail	Lohagara	Lohagara-Radhanagar Via Itna	10.070	Mallikpur & Itna	2	31	7
176	Narail	Lohagara	Naldi UP-Lahuria Rd.	4.745	Lahuria	1	19	3
Sub Total				50.499		10	112	28
177	Rajshahi	Tanore	Tanore-Chowbaria road	10.140	Talonda & Kamarga	2	9	
178	Rajshahi	Bagmara	Bhawanigonj-Ahsangonj	4.200	Maria & Jugipara	2	25	10
179	Rajshahi	Bagmara	Bhabanigong-Kesorhat	13.300	Basupara, Shuvadanga & Achpara	3	35	10
180	Rajshahi	Bagmara	Bhobanigong-Hatgangopara (from Mathabhanga)	4.970	Basupara, Shuvadanga & Achpara	3	5	2
181	Rajshahi	Tanore	Tanore-Amnura via Mundumala Hat	16.991	Talonda, Pachondar & Badhair	3	10	3
182	Rajshahi	Tanore	Talanda FRB to Nizampur via Dargadanga Hat,Billi Hat Road	17.000	Talono, Pachandor & Kalma	3	8	3
183	Rajshahi	Tanore	Talanda to Keshor Hat (from Hatishail)Tanore Part	5.440	Kamarga	1	10	4
184	Rajshahi	Tanore	Mundumala Hat (Start from Ayrarmore) to Hat bakoil (GCM) road ViaUchadanga Narayanpur (Tanore part).	13.850	Badhair & Kalma	2	8	4
185	Rajshahi	Tanore	Saranjai Pacca Road More - Mundumala Hat Via DebipurMore,Elamdohi hat and Prokash Nagar Hat.	17.211	Soranjal, & Talondo	2	8	2
186	Rajshahi	Tanore	Elamdohi Hat to Kalma Hat Via Valukakandor	2.300	Kalma	1	8	3
187	Rajshahi	Durgapur	Amgachhi GC-Katakhal R&H via Kuhar Rd.	3.000	Jhaluka	1	24	0
188	Rajshahi	Durgapur	Durgapur-Belghoria.	8.780	Durgapur	1	52	0
189	Rajshahi	Durgapur	Shingahat GC-Amgachi Hat GC	6.250	Amgachi	1	53	0
190	Rajshahi	Charghat	Holidagachi National high way - Rajshahi University via Belghoria.	8.220	Yusufpur	1	8	4
191	Rajshahi	Charghat	Charghat (Upazila HQ) - Arani GC (Rustompur) via Paglapara more.	9.860	Charghat & Bhayalaxmipur	2	69	15
192	Rajshahi	Puthia	Puthia-Baneswar GC	11.470	Puthia & Baneshwar	2	5	2
193	Rajshahi	Bagha	Bolihar Eidgah (R&H) - Digha GC via Tetulia hat.	7.596	Bazubagha, Bausha & Arani	3	20	3
194	Rajshahi	Bagha	Chandipur-Arani Rly. Station via Bausa UP Office.	11.898	Bajubagha, Bausha & Arani	4	20	3
195	Rajshahi	Godagari	Godagari to Kakonhat (Starting from Sadurmore)	13.850	Godagari	1	9	3
196	Rajshahi	Godagari	Baliaghata Bazar RHD more to Mundumala GC via Jota Bottola, Hatgobindapur (258m over lapping with RHD)	20.500	Godagari	1	9	3
197	Rajshahi	Godagari	Railbazar - Amnura road via Mowlanar gate, Dhuly shanko, Ratahary (Godagari part end at Khaira)	19.500	Matikata, Godagari & Mohanpur	3	9	3
198	Rajshahi	Godagari	Basudebpur Sluice Gate-Dariapur ending at Nawabgonj Border	6.760	Godagari, Basudevpur & Mohanpur	3	9	3
199	Rajshahi	Godagari	Pakri UP-Jotgopal	3.370	Pakri	1	11	3
200	Rajshahi	Godagari	Godagari UP-Nabinagar Bazar Road	5.900	Godagari & Pakri	2	9	3
201	Rajshahi	Mohonpur	Bazorpur Trimohini to Dhupaghata hat	4.500	Mougasi & Bagsomouil	2	21	5



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202	Rajshahi	Paba	Mollikpur Bypass (Kukhundipur Bazar) - Parila UP Road	4.400	Horian, Parila	2	21	6
Sub Total				251.256		52	475	97
203	Naogaon	Atrai	Ahashanganj GC-Bandaikhara GC.	8.575	Ahashanganj, Kalikapur, Hattalupur, Shabola, Bhounpara, Moniari, Pachupara, Bisha	8	65	25
204	Naogaon	Manda	Nurullabad GPS R&H - Jothbazar - Bandaikhara GC Road.	9.405	Nurullabad, Kosob & Bishnopur	3	29	9
205	Naogaon	Mohadevpur	Mohadevpur-Matazeehat GCM.	3.000	Mohadevpur	1	75	25
206	Naogaon	Niamatpur	Chhatra GC - Shibpur GC.	12.260	Chandan Nagar & Hazi Nagar	2	52	11
207	Naogaon	Patnitala	Modhuil GC- Shibpur GC Rd.	8.530	Akbarpur, Matindropur	2	27	8
208	Naogaon	Mohadevpur	Chatra -Mohadebpur (Konjobon).	13.532	Mohadevpur	1	125	45
209	Naogaon	Atrai	Kashiabari GC - Smaspara GC Via Islamgati hat	9.655	Panchupur & Bisha	2	37	12
210	Naogaon	Atrai	Kashiabari GC - Kaliganj GC	11.882	Bonpara & Maniary	2	60	12
211	Naogaon	Manda	Chowbaria GC - R&H Santa bridge More.	19.000	Manda, Versho, Poranpur	3	31	11
212	Naogaon	Mohadevpur	Moshibathan GC - Sultanpur Bazar-Patnitola GC (Part Mohadevpur)	7.360	Hatur	1	66	24
Sub Total				103.199		25	567	182
213	C.Nawabganj	Gomostapur	Akkelpur GC - Shibpur GC via Digha Road.	9.020	Radhanagar, Parbotipur	2	20	6
214	C.Nawabganj	Nachole	Sonaichandi-Rohanpur GC (Nachole Portion)	3.700	Kashba	1	10	3
215	C.Nawabganj	Nachole	Sonaichandi-Dhansura More	2.758	Kashba	1	10	3
216	C.Nawabganj	Sadar	Islampur UP Office to Shahajanpur UP office Road.	2.090	Shajahanpur	1	18	4
Sub Total				17.568		5	58	16
217	Natore	Bagatipara	Bagatipara Upazila H/Q-Tebaria GC Road (Bagatipara part)	5.600	Bagatipara	1	13	4
218	Natore	Baraigram	Rajapur GC - Zonail GC Road	18.18	Gopalpur, Chandai & Jonail	3	50	15
219	Natore	Gurudaspur	Nazirpur GC - Moukra GC Road	9.000	Nazirpur, Chapila	2	25	8
220	Natore	Bagatipara	Jamnagar UP HQ-Jhalmolia Bazar viaVhitorbhag (Bagatipara part)	2.565	Baghatiupara	1	14	5
221	Natore	Bagatipara	Madhabbari Hat-Soilkona UP	3.765	Baghatiupara	1	33	5
222	Natore	Lalpur	Bagatipara-Dayarampur-Abdulpur-Lalpur Road (Lalpur Part)	16.460	Walia & Chongdhupail	2	13	3
223	Natore	Lalpur	Lalpur-Bilmaria-Durduria Road	3.640	Lalpur, Bilmaria & Durduria	3	27	7
224	Natore	Singra	Khajurtola RHD- Shamaspara GC Road via Dakmondop hat	4.300	Lalon	1	11	3
225	Natore	Singra	Singra-Baruhash-Tarash (Singra part).	14.950	Itali, Dahia	2	22	8
Sub Total				78.460		16	208	58
226	Bogra	Shajahanpur	Sonahata GC(Dhunot) - Tangramagur RHD via Amrul UP - Naimile	8.870	Amrul, Aria	2	49	10



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227	Bogra	Dhunot	Dhunot (Khantonagar)-Amrul U.P. Office Road (Dhunot)	5.200	Kalerpara, Elangi	2	25	11
228	Bogra	Kahaloo	Dupchachia-Namoja via Tindighi GC Road (Kahaloo)	11.750	Kalai	1	40	15
229	Bogra	Sonatola	Horikhali GC-Hatsharpur GC via Charpara hat (Sonatola)	10.010	Madhupur, Pakulla, Jorgacha	3	8	3
230	Bogra	Dhunot	Shimabari-Mothurapur-Khatiamari (Ekdhala) Road (Dhunot)	9.180	Mothurapur, Gopalnagar	2	25	11
231	Bogra	Sherpur	Ranirhat-Shimabari (Chandaikona)-Mothurapur Road (From RHD #334)	14.174	Bhabanipur	1	15	5
232	Bogra	Sherpur	Garidaha UP (Baily Bridge) - Jhanjor Hat Road. via Ramashorpur.	10.000	Garidha, Khamarkandi	2	16	6
233	Bogra	Sherpur	Salfa Bazar(Subli NHW)-Mirjapur U.P Office	5.650	Khanpur	1	5	0
234	Bogra	Bogra Sadar	Matidali NHW-Peergacha GCM (From RHD #331)	9.100	Shakharia, shekheskala, Lahiripara	3	27	9
235	Bogra	Shariakandi	Kamalpur U.P office-Goshaibari hat	5.245	Kamalpur, Goshaibari	2	32	0
236	Bogra	Adamdighi	Nasratpur-Murail-Raykali-Beragram (Tilokpur) Road	6.610	Nasratpur	1	9	3
237	Bogra	Kahaloo	Ranirhat-Durgapur Road.	9.675	Durgapur, Malancho	2	22	7
238	Bogra	Sherpur	Bhaira Bazar-Bishilpur Road	3.575	Bishalpur	1	15	5
Sub Total				109.039		23	288	85
239	Joypurhat	Panchbibi	Panchbibi GC - Salaipur RHD Road	10.107	Balighata, Kushmba	2	6	0
240	Joypurhat	Akkelpur	Gopinathpur UP office (Karaitola)-Raikali UP office.	8.000	Raikali & Gopinathpur	2	23	7
241	Joypurhat	Joypurhat-S	Mongalbari hat Rd(Dogachi Up Office)to Durgadaha bazar road	6.270	Dhogachi	1	9	0
242	Joypurhat	Khetlal	Moushumi Bazar (RHD) - Rukindipur GC via Sannyash Ghat (Khatlal portion)	5.570	Mamudpur	1	9	0
243	Joypurhat	Kalai	Kalai-Kichok RHD Via Gongadaspur Road	4.255	Punot & Udoypur	2	8	0
Sub Total				34.202		8	55	7
244	Lalmonirhat	Hatibandha	Hatibandha-Daikhowa Hat	9.963	Tanvanga, Nowdabas, Gotamari	3	8	0
245	Lalmonirhat	Kaligonj	ZR at Baninagar to DaiKhowa GC.	3.638	Dalogram	1	7	2
246	Lalmonirhat	Kaligonj	ZR at Baninagar-Durakuti GC.	15.471	Tushbhandar, Dalogram, Chandrapur	3	7	3
247	Lalmonirhat	Aditmari	Burirhat GC-Bhelabari GC Road	4.390	Aditmari	1	10	3
Sub Total				33.462		8	32	8
248	Kurigram	Rajarhat	Najimkhan GC-Khadabagh R&H Via Rajarhat	7.570	Chinai & Rajarhat	2	39	8
249	Kurigram	Kurigram-S	Pateswari RHD-Jatrapur GC Road.	10.320	Bhogdanga, Ghogadah, Jatrapur	3	19	7
250	Kurigram	Rowmari	Dantbhanga-Rowmari Via Baitkamari Bazar Road	13.632	Banbober & Rowmari	2	10	2
251	Kurigram	Fulbari	Karibari GC-Khochabari Via Bhangamor U.P	8.551	Bhangamore	1	8	3
252	Kurigram	Bhurungamari	Bangosonahat-Shahi Bazar GC Road.	3.920	Baldia	1	7	4
253	Kurigram	Nageswari	Hasnabad UP Office - Newashi GC.	1.390	Hasnabad	1	36	12



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Sub Total				45.383		10	119	36
254	Gaibandha	Gobindaganj	Kamdia GC (UZR)-Birat GC Road.	9.970	Kamdia, Shakahar & Rajahar	3	15	5
255	Gaibandha	Sadullapur	Madargonj GC-Laxmipur G.C Road via Kantanagar.	10.443	Rasulpur	1	15	4
256	Gaibandha	Palashbari	Dublagari NHW-Dholbanga GC Road via Amlagachi GC	7.288	Dublagari & Amlagachi	2	15	5
257	Gaibandha	Sundarganj	Sundargonj-Materhat G.C (FRA)	12.778	Dohobandh, Shantirum & Chaporhati	3	7	2
258	Gaibandha	Sadar	Dariapur-Laxmipur	7.254	Laxmipur & Ghaghhoa	2	9	3
259	Gaibandha	Gobindaganj	Bogra-Rangpur City Road to Nakai Hat via Talukkanupur UP road	9.271	Talukkanupur	2	7	2
260	Gaibandha	Saghata	Bonarpara GC-Katucha hat R&H Rd.	6.421	Bonarpara & Muktinagar	2	10	2
261	Gaibandha	Saghata	Dakbangla hat-Jumaerbari UP Road.	4.975	Ghuridha & Jhumarbai	2	10	3
262	Gaibandha	Gobindaganj	Shakahar U.P-Fulpukuria Bazar	5.280	Shakhahar	1	8	3
263	Gaibandha	Palashbari	Betkapa UP office-Haritala hat via Muraripur Road	3.150	Dholbhanga & Pabnapur	2	10	6
264	Gaibandha	Palashbari	Dholbanga Bazar at Zillbandha-Pabnapur UP office Road	5.490	Dholbhanga & Pabnapur	2	10	6
265	Gaibandha	Sadullapur	Kunjo Mohipur Uttarpara - Pollasbari Border via Idulpur U.P office	5.370	Idilpur	1	50	17
Sub Total				87.690		23	166	58
266	Rangpur	Mithapukur	Lalbag G C (Vimergar) to Bhendabari GC via Runipukur GC & Shukurerhat GC(Mithpukur Part)	19.164	Ranipukur, Khuragach, Latibpur, Changmary, Moyeanpur & Gopalpur	6	210	66
267	Rangpur	Pirganj	Dhaperhat GC-Chatra GC Road	3.950	Kabilpur & Chatra	2	18	7
268	Rangpur	Badarganj	Nagerhat GC-Padagonj hat via Arunnesha ghat	8.720	Kutubpur	1	25	9
269	Rangpur	Gangachara	Gangachara UZHQ-Saraibazar via Gajaghanta GC Road	13.200	Mornia	1	18	6
270	Rangpur	Pirgacha	Chowdhurani GC-Shatibari RHD Road (Pirgacha portion)	5.795	Koikuri	1	20	8
271	Rangpur	Pirganj	Tukuria hat-Tukuria UP office via Dudiya Bari Road	3.300	Tukuria		10	5
Sub Total				54.129		11	301	101
272	Dinajpur	Birgonj	Bottoli (NHW)-Goreya GC via Shibrampur UP Rd (Bir Muktijoddha Shahid Motilal Barman Road)	16.040	Sator & Shibrampur	2	35	14
273	Dinajpur	Birgonj	Suzalpur UP (Birgonj HQ)-Pakerhat GC via Burirbazar road.	7.350	Paltapur	1	38	10
274	Dinajpur	Kaharol	Kaharol Upazila HQ-Boleyahat RHD Road	9.265	Rasulpur & Mukandapur	2	52	11
275	Dinajpur	Birol	Jamtoli hat to Noshipur Bazar (Chehel gazi U.P.) via Vadrabazar	5.814	Azimpur & Rajarampur	2	23	7
276	Dinajpur	Bochagonj	Setabgonj Sugar Mill-Meherpur Hat via Nawavita hat Road.	12.400	Mushidhat, Chatail, & Rongaon	3	33	6
277	Dinajpur	Dinaipur-S	Pulhat R&H to Fasiladanga GC Road.	6.580	Aulipur & Shasara	2	31	12



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278	Dinajpur	Dinajpur-S	Chandaganj R&H to Ranigonjhat GC Road.	5.300	Chehelgazi & Fazilpur	2	40	11
279	Dinajpur	Chirirbandar	Beltoli R&H to Binnakuri GC Road	5.880	Abdulpur	1	15	6
280	Dinajpur	Chirirbandar	Binnakuri GC to Debiganj R&H Road	9.482	Fatejanpur & Binaykuri	2	37	13
281	Dinajpur	Khanshama	Khansama G.C.-Bhobanigonj Via Joygonj	8.962	Alokhari	1	18	6
282	Dinajpur	Khanshama	Ramkola GC to RHD at Pakerhat Adarsha Gram via Sabuder hat, Pulerhat, Sheltu shah Madrasha.	14.314	Angarpara	1	34	13
283	Dinajpur	Chirirbandar	Daulatpur(Ambari hat R&H) to Kutubdanga GC road	6.370	Abdulpur	1	3	1
284	Dinajpur	Dinajpur-S	Fultala-Kamalpur Road.	11.100	Auliapur, Shasara, Uthrail & Kamalpur	4	60	13
285	Dinajpur	Dinajpur-S	Komalpur-Khanpur Road.	3.345	Ashkarpur	1	29	10
286	Dinajpur	Dinajpur-S	Fasiladanga G.C-Mohonpur RHD Rd.	9.365	Sashara, Uthrail & Shankarpur	3	18	7
287	Dinajpur	Phulbari	Phulbari UZHQ-Madilahat GC Road.	10.500	Aladipur & Betdighi	2	30	12
288	Dinajpur	Phulbari	Madilahat GC (Chintamon Moor)-Ambarihat GC Road.	18.060	Eluayri & Betdighi	2	43	15
289	Dinajpur	Nawabgonj	Doudpur (Laugari) to Bajitpur R&H	7.200	Daudpur	1	12	6
290	Dinajpur	Nawabgonj	Doudpur GC-Bhaduria GC via Daria	13.190	Bhaduria	1	12	5
291	Dinajpur	Parpatipur	Ambari GC - Jashai more RHD road	14.264	Mostafapur & Mominpur	2	36	12
292	Dinajpur	Parpatipur	Mominpur UP Office Jashai (Bot tree more) - Pan Bazar road via Jurai hat & faridpur hat.	8.960	Mostafapur & Mominpur	2	45	5
Sub Total				203.741		38	644	195
293	Thakurgaon	Thakurgaon-S	Bhawlar hat GC-Bhelazan RHD Road.	7.450	Raypur	1	9	3
294	Thakurgaon	Baliadangi	Baliadangi-Lahiri G.C. Road	7.063	Barobari, Paria & Charol	3	34	9
295	Thakurgaon	Pirganj	Pirganj-Nasibganj G.C Road	7.180	Daulatpur, Sengoan	2	12	5
296	Thakurgaon	Ranisankail	Baliadangi GC - Dhirganj (Horipur) via Dharmogharh Check Post Road.	5.803	Dharmogharh & Kasipur	2	20	7
297	Thakurgaon	Thakurgaon-S	Thakurgaon-Farabari GC Road.	8.500	Saladar & Akcha	2	9	4
298	Thakurgaon	Baliadangi	Lahiri G.C-Fakirganj. G C. Road	6.530	Dhantola	1	9	3
299	Thakurgaon	Baliadangi	Barabari UP Office (Dangi)-Noyar hat via Jorkali Madhupur Road	7.500	Barobari & Charol	2	9	4
300	Thakurgaon	Baliadangi	Charol UP Office(Lahiri GC)-Dogachi hat via Patilabhasha Road	8.300	Charol	1	9	4
301	Thakurgaon	Baliadangi	Baliadangi-Dhirgonj G.C .via Badambarihat Road	14.775	Barobari & Baropolashbari	2	9	4
302	Thakurgaon	Haripur	Jadurani GC-Dangipara UP Office Road.	4.280	Amgaon	1	13	7
Sub Total				77.381		17	133	50
303	Panchagarh	Atwari	Fakirgonj hat GC - Shathkhamar R&H Road	16.136	Radhanagar & Balorampur	2	7	3
304	Panchagarh	Debiganj	Fulbari GC - Panchpir GC	9.130	Sundardighi, Chandra Rai, Changtihazradanga	3	27	10
305	Panchagarh	Tetulia	Tetulia Gobra Bridge - Shalbahan GC Road	9.500	Tetulia, & Salbahan	2	6	2



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							Total	Women
306	Panchagarh	Debiganj	Debiganj R&H Road (Bat Tree More) - Jharbari GC	17.250	Debidoba, Dondol, Sundordigi & Changti Hazaradanga	4	9	3
307	Panchagarh	Panchagarh-S	Panchagarh - Harivasha Road.	10.550	Panchogarh, Hafizabad & Harivasha	3	100	29
Sub Total				62.566		14	149	47
308	Nilphamari	Nilphamari-S	Nilphamari-Saidpur R&H at Textile Mill - Babrijhar GC.	8.095	Charaikhola	1	27	10
309	Nilphamari	Nilphamari-S	Nilphamari (LSD Godown) - Ramgonj G.C	7.452	Tupamari, Itakhola	2	22	8
310	Nilphamari	Nilphamari-S	Porarhat GC - Nilphamari- Domar R&H road at Hortokilota bazar via Baruahat - Puler hat - Chawra hat - Tarunibari Rail Station.	4.954	Tupamari & Ltakhola	2	8	3
311	Nilphamari	Domar	Domar Bazar G.C-Basunia Hat GC.road	6.700	Ambari and Boragari	2	19	6
312	Nilphamari	Domar	Domar GC to Ambari Alsiar Bazar RHD road GC via Azizarerhat	13.460	Boragari, Jorabari.	2	9	3
313	Nilphamari	Domar	Boragarihat at RHD road to Baburhat GC via Motukpur UPC at Sayllar ghat (Domar Part)	4.250	Domar and Ambari	2	15	6
314	Nilphamari	Sayedpur	Taraganj G.C.-Porarhat G.C. Via Hazarihat G.C	17.750	Taragonj, Porarhat	2	29	10
315	Nilphamari	Jaldhaka	Jaldhaka domar RHW choupathi-Tangonmari hat G.C.	17.800	Mirgonj	1	5	2
316	Nilphamari	Dimla	ShutibarihatG.C-Kakra Chowpathi R&H Rd.	12.879	Kalisha Chapani, Goyabari & Junagach Chapani	3	12	4
317	Nilphamari	Nilphamari-S	Goregram U.P. to Bhabanigonj G.C via Majhpara Madrasha.	8.140	Tupamari & Ltakhola	2	9	4
Sub Total				101.480		19	155	56
Total Number of Union along side the Roads under RCIP, LGED				2672.269		583	7835	2418