2020-21

Government of the People's Republic of Bangladesh
Ministry of Water Resources

Bangladesh Water Development Board

PROJECT COMPLETION REPORT: IMED 04/2003
For

Feasibility Study for Collection of Detail Information of Land Acquisition and Land Availability on "Dhaka Circular Route: Eastern Bypass" Project

August, 2021

Government of the People's Republic of Bangladesh
Ministry of Planning
Implementation Monitoring and Evaluation Division
PROJECT COMPLETION REPORT: IMED 04/2003 (Revised)

A. PROJECT DESCRIPTION:

01.	**Name of the Project**	:	Feasibility Study for Collection of Detail Information of Land Acquisition and Land Availability on "Dhaka Circular Route: Eastern Bypass" Project
02.	**Administrative Ministry/Division**	:	Ministry of Water Resources (MoWR)
03.	**Executing Agency**	:	Bangladesh Water Development Board (BWDB)
04.	**Location of the Project**	:	Dhaka
05.	**Objective of the Project**	:	

The main objective of the study is to update the previous study named "Technical Study of Flood Control and Drainage Development at Dhaka Circular Road (Dhaka Eastern Bypass) Project" for preparation of Development Project Proposal titled "Dhaka Circular Route: Eastern Bypass (BWDB Part)". Others objective of the study is given below:

a) To identify the alignment of drainage canal including ponding area along the alignment of embankment.
b) To collect CS, RS, BS and City Mouza map for analyzing the exact characteristics of the existing project area.
c) To define land use change through analyzing of CS, RS, BS and City Mouza map.
d) To convert all the information's draft, Scanned copies documents into softcopy with proper use of adequate software, conversion of all these computer generated soft images into readable drawing in required software like AutoCAD, Img2cad, adobe acrobat, Microsoft Excel, Microsoft PowerPoint , Total station survey, Digital elevation model, Professional App For Land Acquisition (PALA) etc. converting of all these with GIS maps confirmation of these shape files, Drafts by Geo-referring technicians.
e) To recommend the road alignment through ensuring the participation of Stakeholder.
f) To prepare a Lay out plan of acquired land along with GPS coordinate and Topographic survey data of the proposed alignment imposing on CS, RS, BS and City Mouza map of Dhaka City.
g) To prepare the methodology for Land Acquisition and resettlement action plan as per current ''Land Acquisition and resettlement Act-2017''

06. Estimated Cost :

(In lakh Taka)

	Original	Latest Revised
(a) Total	489.00	489.00
(b) Taka	489.00	489.00
(c) Foreign Currency	-	-

	Original	Latest Revised
(d) Project Aid	-	-
(e) RPA	-	-

07.

Date of Approval :	PCP/PFS	PP
(a) Original :	16/07/2020	-
(b) Latest Revised :	-	-
(c) No cost Time extension :	05/01/2021	-

08. Implementation Period :

	Date of Commencement	Date of Completion
(a) Original	July, 2020	January, 2021
(b) Latest Revised	N/A	N/A
(c) Actual	July, 2020	June, 2021

09. Financing Arrangement (Source-wise) :

9.1 Status of Loan/Grant

a) Foreign Financing :

Source (s)	Currency as per Agreement	Amount in US $ (Million)	Nature (Loan/Grant/ supplier's/ credit)	Date of Agreement	Date of Effective -ness	Date of Closing	
						Original	Revised
1	2	3	4	5	6	7	8
-	-	-	-	-	-	-	-

b) GOB :

(In lakh Taka)

Total amount	Loan	Grant	Cash Foreign Exchange
1	2	3	4
489.00	-	489.00	-

9.2 Utilization of Project Aid : (Source wise)

(In million)

Source (s)	Total Amount		Actual Expenditure		Unutilized Amount	
	In US $	In Local Currency	In US $	In Local Currency	In US $	In Local Currency
1	2	3	4	5	6	7
-	-	-	-	-	-	-

9.3 Re-imbursible Project Aid (RPA):

(In lakh Taka)

R P A Amount		Amount Spent	Amount Claimed	Amount Re-imbursed	Remarks
As per PP	As per Agreement				
1	2	3	4	5	6
-	-	-	-	-	-

B. IMPLEMENTATION POSITION

01. Implementation Period :

Implementation Period as per PP		Actual Implementation period	Time Over-run (% of original implementation period)	Remarks
Original	Latest Revised			
1	2	3	4	5
July, 2020 to January, 2021 (7 months)	July, 2020 to June, 2021 (12 month)	July, 2020 to June, 2021 (12 months)	70.09% (5 months)	-

02. Cost of the Project:

(In lakh Taka)

Description	Estimated Cost		Actual expenditure	Cost over-run (% of original cost)	Remarks
	Original	Latest revised			
1	2	3	4	5	6
TOTAL	489.00	489.00	448.59	-	-
TAKA	489.00	489.00	448.59	-	-
PA	-	-	-	-	-

03. Project Personnel :

Sanctioned strength as per PP	Manpower employed during execution	Status of the existing manpower			Manpower Employed	
		Manpower requirement for O&M as per pp	Existing manpower for O & M	Others		
1	2	3	4	5	Male	Female
Officer (s)	11	-	-	-	10	1
Staff(s)	14	-	-	-	8	6
Total :	25	Existing Manpower of Directorate of Planning-1, BWDB			18	7

04. Training of Project Personnel (Foreign/Local) : No provision.

Field of Training /Study tour/workshop/ Seminer etc.	Provision as per PP		Actual		Remarks
	Number of person	Man - months	Number of person	Man - months	
1	2	3	4	5	6
a. Foreign	-	-	-	-	-
b. Local	-	-	-	-	-

05. Component-wise Progress (As per latest approved PP/PFS) :

(In lakh Taka

Items of work (as per PP)	Unit	Target (as per PP/PFS)		Actual Progress		Reasons for deviation (±)
		Financial	Physical (Quantity)	Financial	Physical (Quantity)	
1	2	3	4	5	6	7
Revenue Expenditure						
Feasibility Study (Local professionals 63.00 MM)	MM	482.93	63.00	445.64	63.00	
Other stationery	L/S	1.27	100.00%	1.25	100.00%	
Honorarium	L/S	3.00	100.00%	1.70	56.47%	
Entertainment Expenses	L/S	1.80	100.00%	0.00	20.00%	
Total=		**489.00**	**100.00%**	**448.59**	**99.44%**	

06. Information regarding Project Director (s) :

Name & Designation with pay Scale.	Full time	Part time	Responsible for more than one project	Date of		Remarks
				Joining	Transfer	
1	2	3	4	5	6	7
Dr. Shamal Chandra Das Superintending Engineer Directorate of Planning-1 BWDB, Dhaka	Full time	-	Yes	Charge taken date: 11/11/2018 Appointment date as PD: 13/08/2020	Till date	-

07. Procurement of Transport (in Nos.) : Not applicable

Type of transport	Number as per P.P.	Procured with date	Transferred to Transport Pool with date	Transferred to O & M with date	Condemned/damaged with date	Remarks
1	2	3	4	5	6	7
Car	N/A	N/A	N/A	N/A	N/A	N/A
Jeep	N/A	N/A	N/A	N/A	N/A	N/A
Microbus	N/A	N/A	N/A	N/A	N/A	N/A
Minibus	N/A	N/A	N/A	N/A	N/A	N/A
Bus	N/A	N/A	N/A	N/A	N/A	N/A
Pick-up	N/A	N/A	N/A	N/A	N/A	N/A
Truck	N/A	N/A	N/A	N/A	N/A	N/A
Motor Cycle	N/A	N/A	N/A	N/A	N/A	N/A
By-cycle	N/A	N/A	N/A	N/A	N/A	N/A

Type of transport	Number as per P.P.	Procured with date	Transferred to Transport Pool with date	Transferred to O & M with date	Condemned/damaged with date	Remarks
Speed Boat	N/A	N/A	N/A	N/A	N/A	N/A
Launch	N/A	N/A	N/A	N/A	N/A	N/A
Others with name	N/A	N/A	N/A	N/A	N/A	N/A

08. Procurement of Goods, Works and Consultancy Services:

08.1 Goods & Works of the Project costing above Tk. 200.00 lakh. and Consultancy above Tk. 100.00 lakh :

Description of procurement (goods/works /consultancy) as per bid document	Tender/Bid/Proposal Cost (in lakh Taka)		Tender/Bid/Proposal		Date of completion of works/services and supply of goods	
	As per PP/PFS	Contracted value	Invitation date	Contract signing/ L.C opening date	As per contract	Actual
1	2	3	4	5	6	7
Feasibility study for collection of detail information of land acquisition and land availability on "Dhaka Circular Route: Eastern Bypass" project	482.93	467.27	26/07/2020	23/08/2020	Original: 22/12/2020 Revised: 30/06/2021	30/06/2021

8.2 Use of Project Consultant (s) (Foreign/Local):

Name of the Field	Approved man month		Actual man month utilised	Remarks
	As per PP	As per contract		
1	2	3	4	5
a) Foreign:	-	-	-	-
b) Local: Professional Associates Ltd.	63.00	63.00	63.00	-

09. Construction/Erection/Installation Tools & Equipment : Not applicable

Description of items	Quantity (as per PP)	Quantity procured with date	Transferred to O & M with date	Disposed off as per rule with date	Balance	Remarks
1	2	3	4	5	6	7
N/A	N/A	N/A	N/A	N/A	N/A	N/A

C. FINANCIAL AND PHYSICAL PROGRAMME :

01. (a) Original and revised schedule as per PP :

(In lakh Taka)

Financial Year	Financial provision & physical target as per original PP				Financial provision & physical target as per latest revised PP			
	Total	Taka	P.A.	Physical %	Total	Taka	P.A.	Physical %
1	2	3	4	5	6	7	8	9
2020-21	489.00	489.00	-	100.00	489.00	489.00	-	100.00
Total	489.00	489.00	-	100.00	489.00	489.00	-	100.00

01. (b) Revised ADP allocation and progress :

(In lakh Taka)

Financial Year	Revised Allocation & target				Taka release	Expenditure & physical progress			
	Total	Taka	P.A.	Physical %		Total	Taka	P.A.	Physical %
1	2	3	4	5	6	7	8	9	10
2020-21	489.00	489.00	-	100.00	473.34	448.59	448.59	-	99.44
Total	489.00	489.00	-	100.00	473.34	448.59	448.59	-	99.44

D. ACHIEVEMENT OF OBJECTIVES OF THE PROJECT :

Objectives as per PP	Actual achievement	Reasons for shortfall, if any
To identify the alignment of drainage canal including ponding area along the alignment of embankment.	Alignment of drainage canal and three ponding area along the alignment of embankment have been identified	N/A
To collect CS, RS, BS and City Mouza map for analyzing the exact characteristics of the existing project area.	Maps are collected.	N/A
To define land use change through analyzing of CS, RS, BS and City Mouza map.	Changing pattern of land use pattern has been analysed through CS, RS, BS and City Mouza map.	N/A
To convert all the information's draft, Scanned copies documents into softcopy with proper use of adequate software, conversion of all these computer generated soft images into readable drawing in required software like AutoCAD, Img2cad, adobe acrobat, Microsoft Excel, Microsoft PowerPoint , Total station survey, Digital elevation model, Professional App For Land Acquisition (PALA) etc. converting of all these with GIS maps confirmation of these shape files, Drafts by Geo-referring technicians.	Mouza maps have been scanned and converted finally into shape file.	N/A

Objectives as per PP	Actual achievement	Reasons for shortfall, if any
To recommend the road alignment through ensuring the participation of Stakeholder.	Road alignment has been defined by discussion of different stakeholders on a workshop held on 14/06/2021.	N/A
To prepare a Lay out plan of acquired land along with GPS coordinate and Topographic survey data of the proposed alignment imposing on CS, RS, BS and City Mouza map of Dhaka City.	Lay out plan has been prepared with the help of GPS coordinate and trographic surveying.	N/A
To prepare the methodology for Land Acquisition and resettlement action plan as per current "Land Acquisition and resettlement Act-2017"	Land acquisition plan has been prepared in details as per currect rules and act.	N/A

E. BENEFIT ANALYSIS

01. Annual Out-put: Not applicable for the Study Project

Items of out-put	Unit	Estimated quantity expected at full capacity	actual quantity of out-put during the 1st year of operation at full capacity (or during, real production for newly completed project).
N/A	N/A	N/A	N/A

02. Cost / Benefit : Not Applicable for the Study Project

Item	Estimated	Actual
(1) Benefit cost ratio of the project	N/A	N/A
(i) Financial		
(ii) Economic		
(2) Internal Rate of Return		
(i) Financial		
(ii) Economic		

03. Please give reasons for shortfall, if any, between the estimated and actual benefit: N/A

F. MONITORING AND AUDITING

0.1 Monitoring: No monitoring conducted yet.

Name & designation of the inspecting official	Date of Inspection	Identified Problems	Recommendations
1	2	3	4
(a) Ministry / Agency:	-	-	-
(b) IMED:	-	-	-
(c) Others: (Please specify)	-	-	-

0.2. Auditing during and after Implementation:

2.1. Internal Audit: No audit conducted yet.

Period of Audit	Date of submission of Audit Report	Major findings/ objections	Whether objections resolved or not.
1	2	3	4
-	-	-	-

2.2. External Audit: No audit conducted yet.

Audit period	Date of submission of Audit Report	Major findings/ objections	Whether objections resolved or not.
1	2	3	4
-	-	-	-

G. DESCRIPTIVE REPORT

1. General Observations/Remarks of the Project on :

1.1 Background

Government of Bangladesh has decided to implement a project titled "Dhaka Circular Route: Eastern Bypass". BWDB has been bestowed for the responsibility of construction of Embankment for the Project and subsequently BWDB planned to prepare a project proposal titled "Dhaka Circular Route: Eastern Bypass (BWDB Part)". For preparation of this project proposal a technical study was conducted appointing Institute of Water Modeling (IWM) as consulting firm. They submitted the reports along with land acquisition plan (LAP) in September, 2016. BWDB has prepared a Development Project Proposal (DPP) named as "Dhaka Circular Route: Eastern Bypass (BWDB Part)". A inter-ministerial meeting was held on 16th October, 2019 to review the proposal and it was decided to send land acquisition related documents to Deputy Commissioner (DC) Office, Dhaka for certification of land acquisition cost. Land Acquisition officer of Dhaka DC office examined the documents (LAP prepared by IWM) and replied that the exact alignment/ location of the land to be acquired with Mouza Map Marking based City Survey is required for the certification. These data are not available in LAP prepared by IWM because they prepared the land

acquisition plan (LAP) based on RS Mouza map. Moreover, the latest "Land Acquisition and resettlement Act-2017'' approved by the govt. requires details information and accuracy in all the details. Hence drawing based on scanned documents does not result proper accuracy. Road alignment and details are done in software like AutoCAD, Img2cad, adobe acrobat, Arc GIS, Microsoft Excel, Microsoft PowerPoint, Total station survey, Professional App for Land Acquisition (PALA) etc. Special software's are being developed to convert all these hard documents scanned copies into soft. Higher equipment, Draft computer, Geo-referring technicians, GIS operator are required with proper hardware and software and trained work for of large number. Hence a consulting firm with proven capacity to be engaged.

1.2 Justification/Adequacy

Government of Bangladesh has decided to implement a project titled "Dhaka Circular Route: Eastern Bypass". BWDB has been bestowed for the responsibility of construction of Embankment for the Project and subsequently BWDB planned to prepare a project proposal titled "Dhaka Circular Route: Eastern Bypass (BWDB Part)". For preparation of this project proposal a technical study was conducted appointing Institute of Water Modeling (IWM) as consulting firm. They submitted the reports along with land acquisition plan (LAP) in September, 2016. BWDB has prepared a Development Project Proposal (DPP) named as "Dhaka Circular Route: Eastern Bypass (BWDB Part)". A inter-ministerial meeting was held on 16th October to review the proposal and it was decided to send land acquisition related documents to Deputy Commissioner (DC) Office, Dhaka for certification of land acquisition cost. Land Acquisition officer of Dhaka DC office examined the documents (LAP prepared by IWM) and replied that the exact alignment/ location of the land to be acquired with Mouza Map Marking based City Survey is required for the certification. These data are not available in LAP prepared by IWM because they prepared the land acquisition plan (LAP) based on RS Mouza map. For this purpose, a consultant firm is needed to be engaged. Under this circumstance, a comprehensive study is required to get the necessary GPS co-ordinate of layout plan with detailed survey for the preparation of DPP.

Sustainable development cannot be achieved without significantly transforming the way we build and manage our urban spaces. Goal 11 of SDG (Sustainable Development Goal), 2030 is making cities and human settlements inclusive, safe, resilient and sustainable which is connected with the proposed project. The implementation of the project will contribute to fulfill the target under Goal -11 of SDG (Sustainable Development Goal).

Linkage with Bangladesh Delta Plan (BDP) 2100

Bangladesh Delta Plan (BDP) 2100 is a water centric, multi sectorial techno-economic long term adaptive plan. Delta Vision and Goals show a broader scope (water, food, economy) leading to a holistic approach with 19 themes. The first Goal of SDG is directly related to Water resources.

- Goal-1: Ensure safety from floods and climate change related disasters
- The Project will contribute to the implementation of the Bangladesh Delta Plan 2100 from technical aspect.
- The concept of the project is in line with BDP2100. Particularly, the Project contributes to the following Baseline Study:
    - Baseline Study 12: Land Resources Management
    - Baseline Study 13: Urbanization and Settlement

Hotspot Specific Strategies

Main Strategy: Integrated and sustainable use of urban land and water resources, improved urban utility services including water supply, sanitation, waste management, conserve and preserve urban wetlands and ecosystems and promote their wise-use measures

- Appropriate action plan for removing water logging in urban areas
- Improvement of the drainage and water reserve system using natural water bodies

- Strategic establishment of green (forestation) and blue (water bodies) spaces and networks in the urban areas

At these circumstances, a holistic approach is required to complete the study on Eastern bypass so that the goal of Bangladesh Delta Plan can be achieved.

1.3 Objectives

The main objective of the study is to update the previous study named "Technical Study of Flood Control and Drainage Development at Dhaka Circular Road (Dhaka Eastern Bypass) Project" for preparation of Development Project Proposal titled "Dhaka Circular Route: Eastern Bypass (BWDB Part)". Others objective of the study is given below:

a) To identify the alignment of drainage canal including ponding area along the alignment of embankment.
b) To collect CS, RS, BS and City Mouza map for analyzing the exact characteristics of the existing project area.
c) To define land use change through analyzing of CS, RS, BS and City Mouza map.
d) To convert all the information's draft, Scanned copies documents into softcopy with proper use of adequate software, conversion of all these computer generated soft images into readable drawing in required software like AutoCAD, Img2cad, adobe acrobat, Microsoft Excel, Microsoft PowerPoint , Total station survey, Digital elevation model, Professional App For Land Acquisition (PALA) etc. converting of all these with GIS maps confirmation of these shape files, Drafts by Geo-referring technicians.
e) To recommend the road alignment through ensuring the participation of Stakeholder.
f) To prepare a Lay out plan of acquired land along with GPS coordinate and Topographic survey data of the proposed alignment imposing on CS, RS, BS and City Mouza map of Dhaka City.
g) To prepare the methodology for Land Acquisition and resettlement action plan as per current ''Land Acquisition and resettlement Act-2017''

1.4 Project revision with reasons: Not applicable

2. Rationale of the project in respect of Concept, Design, Location and Timing: Not applicable for Feasibility Study Project.

3. Brief description on planning and financing of the project and its applicability.

- **Project Identification**

Following 1987 and 1988 floods and its subsequent damages, development partners felt the urgency to support Bangladesh in managing floods on a coordinated way. Flood Action Plan (FAP) comprising regional studies and pilot projects were taken up. Dhaka being the capital city of Bangladesh got the priority; both Japan and Asian Development Bank supported FAP 8A and FAP 8B to design measures for protecting the city from floods. FAP 8B covers areas on the western part of airport and Biswa-road from Tongi to Demra and FAP 8A covers the eastern part encircled by Tongi khal on the North, Balu river on the East, Demra, Jatrabari, Rampura, Biswa-road on the South and West. FAP 8A submitted its recommendations to place embankments from Tongi to Demra along the rivers at 100 years flood level with four pumps to drain out the internal run-off and household wastewater using retention reservoirs at different locations. Other than partial land acquisition by GOB, no further physical progress was seen due to lack of interest from the FAP committed development partners on the Eastern area. Time passed and more studies such as Flood Control and Drainage to Eastern Bypass Area by Halcrow (2006), Drainage Master Plan by DWASA (2006), Detailed Area Plan by RAJUK (2010) Strom Water Drainage Master Plan (2016) by DWASA, Urban Flooding of Greater Dhaka in a Changing Climate by World Bank (2015), Flood Hydrology Study (2016) by RAJUK were conducted.

- **Project Preparation**

For preparation of this project proposal a technical study was conducted appointing Institute of Water Modeling (IWM) as consulting firm. They submitted the reports along with land acquisition plan (LAP) in September, 2016. Land Acquisition officer of Dhaka DC office examined the documents (LAP prepared by IWM) and replied that the exact alignment/ location of the land to be acquired with Mouza Map Marking based City Survey is required for the certification. Also, the latest "Land Acquisition and resettlement Act-2017'' approved by the govt. requires details information and accuracy in all the details. Hence a consulting firm with proven capacity to be engaged.

- **Appraisal:** Apprised on Departmental Projecr Evaluation (DPEC) meeting held on 16/06/2020
- **Credit Negotiation:** Not applicable for Feasibility Study Project
- **Credit Agreement:** Not applicable for Feasibility Study Project
- **Credit Effectiveness:** Not applicable for Feasibility Study Project
- **Loan Disbursement:** Not applicable for Feasibility Study Project
- **Loan Conditionalities:** Not applicable for Feasibility Study Project
- **Project Approval:** Approved by Honorable State Minister, MoWR on 16/07/2020
- **Others (if any).**

4. **<u>Analysis of the Post-Implementation situation and result of the project</u> :**

4.1 Whether the beneficiaries of the project have clear knowledge about the Target/ Objectives of the project.
4.2 Programme for use of created-facilities of the project
4.3 O & M programme of the project.
4.4 Impact of the project -
4.4.1 Direct
4.4.2 Indirect
4.5 Transfer of Technology and Institutional Building through the project
4.6 Employment generation through the project.
4.7 Possibility of Self employment
4.8 Possibility of women-employment opportunity
4.9 Women's participation in development
4.10 Probable Impact on Socio-Economic activity.
4.11 Impact on environment
4.12 Sustainability of the project
4.13 Contribution to poverty alleviation/reduction
4.14 Opinion of the public representatives, local elite, local administration, teachers, religious leaders, women's representatives etc.
4.15 Contribution of Micro-credit programmes and Comments on overlapping with any NGO activities.

It is a feasibility study project. So, Analysis of the Post-Implementation situation and result is not applicable.

5. ***Problems encountered during Implementation (with duration & steps taken to remove those)***

5.1 Project Management
5.2 Project Director
5.3 Land Acquisition
5.12 Project aid disbursement and re-imbursment
5.13 Mission of the development partners.

5.4	**Procurement**	5.14	**Time & Cost Over-run**
5.5	**Consultancy**	5.15	**Project Supervision/Inspection**
5.6	**Contractor**	5.16	**Delay in Decision**
5.7	**Manpower**	5.17	**Transport**
5.8	**law & Order**	5.18	**Training**
5.9	**Natural clamity**	5.19	**Approval**
5.10	**Project financing, allocation and release.**	5.20	**Others.**
5.11	**Design formulation/approval**		

It is a contract base consultancy project. The above problems don't occur

6. Remarks & Recommendations of the Project Director

"Feasibility Study for Collection of Detail Information of Land Acquisition and Land Availability on "Dhaka Circular Route: Eastern Bypass" Project" was sanctioned in administrative approval from Ministry of Water Resources given vide memo no- 42.00.0000.040.014.005.2020-170 dated: 16/07/2020. The original date of completion of the project was 31/01/2021. But due to covid-19 pandemic situation the duration of the study was revised by the Ministry of Water Resources vide memo no- 42.00.0000.040.014.005.2020-12 dated: 05/01/2021. Project has been successfully completed on 30/06/2021.

The prime objective of the study is to update the previous study named "Technical Study of Flood Control and Drainage Development at Dhaka Circular Road (Dhaka Eastern Bypass) Project" for preparation of Development Project Proposal titled "Dhaka Circular Route: Eastern Bypass (BWDB Part)".

The study area is currently undergoing rapid change in land use from rural to urban landscapes inter-laced with wetlands and open channels (khals). According to proposed land use plan of RAJUK's Detailed Area Plan (DAP), most of the area will become urban residential and commercial in nature. DAP has also delineated retention areas following suggestions of Halcrow 2006 (reduced retention area is seen at RDP of Rajuk). However, some of these areas have already been encroached by private land developers, which can be detrimental to the future drainage system of the study area. Thus, an urgency is felt for immediate implementation of flood control and drainage improvement in an integrated way else the unplanned urbanization would bring havoc to the area making it extremely difficult to overcome the future complexity in improving drainage including part of the already protected in the Western Dhaka.

The main target is to update the Land Acquisition Plan (LAP) according to City Survey Mouza Map. Other outputs are- Detail alignment and mapping of Eastern Bypass route, landscape Plan., compensation plan of land acquisition for local people, implementation plan, environmental management plan etc.

The Economic IRR is 23.54%, Economic NPV is BDT 19640.06 crore and Economic BCR is 1.84. As, Economic BCR is greater than 1, thus considering it the project is economically feasible to implement.

All the major activities have been accomplished under the project. The cost estimate and ESIA have been prepared through this study based on which the DPP of the investment project would be finalized.

29.08.2021

Date:.....

Signature and seal of the Project Director
(Dr. Shamal Chandra Das)
Superintending Engineer (Civil)
Directorate of Planning-1
BWDB, Dhaka.

7. Remarks/Comments of Agency Head

BWDB is planning to take an implementation project title "Dhaka Circular Route: Eastern Bypass (BWDB Part)" for land acquisition and cost estimation. Alignment of emabankment as well as rail and road are proposed. With the concent from MoWR, BWDB will soon take necessary steps to approve the DPP of the implementation project according to Land Acqusition Plan (LAP), Environmental Management Plan (EMP), Compensastion Plan provided by the consultant. The drainage condition of eastern part of the Dhaka city will significantly improve if the "Dhaka Circular Route: Eastern Bypass (BWDB Part)" project will be implemented properly.

02/02/2023

(FAZLUR RASHID)
Director General
BWDB, Dhaka.

Date:.....

Signature and seal

8. Remarks/Comments of the officer in- charge of the Ministry/Division

Date:.....

Signature and seal

Government of the People's Republic of Bangladesh

Ministry of Water Resources

Bangladesh Water Development Board

APPROVED

30.6.2021

(A K M Wahed Uddin Chowdhury)
Director General
BWDB, Dhaka.

Feasibility Study for Collection of Detail Information of Land Acquisition and Land Availability on "Dhaka Circular Route: Eastern Bypass Project"

Final Report

FINAL REPORT APPROVED BY DG, BWDB
Memo No. ৮২৭৭ DG
Date 30/6/2021

June 2021

Professional Associates Ltd.

Architects, Engineers & Interior Designers

Executive Summary

Bangladesh Water Development Board (BWDB) had been bestowed for the responsibility of construction of Embankment for the Project and subsequently, BWDB planned to prepare a project proposal titled "Dhaka Circular Route: Eastern Bypass (BWDB Part)". DC office examined the land acquisition related documents and replied that, the exact alignment/location of the land to be acquired with Mouza Map marking based City Survey was required for the certification. These data were not available in LAP prepared by the previous consultant because, they had prepared the land acquisition plan (LAP) based on RS Mouza map. Hence, drawing based on scanned documents didn't result proper accuracy. Road alignment and details was to be done in software like AutoCAD, Adobe acrobat. ArcGIS, Microsoft Excel, Microsoft PowerPoint, Total station survey, Professional App for Land Acquisition (PALA) etc. Special software's was needed to be developed to convert all these hard documents scanned copies into soft. For this reason, Professional Associates Limited (PAL) had been appointed as potential consulting firm to perform the assignment.

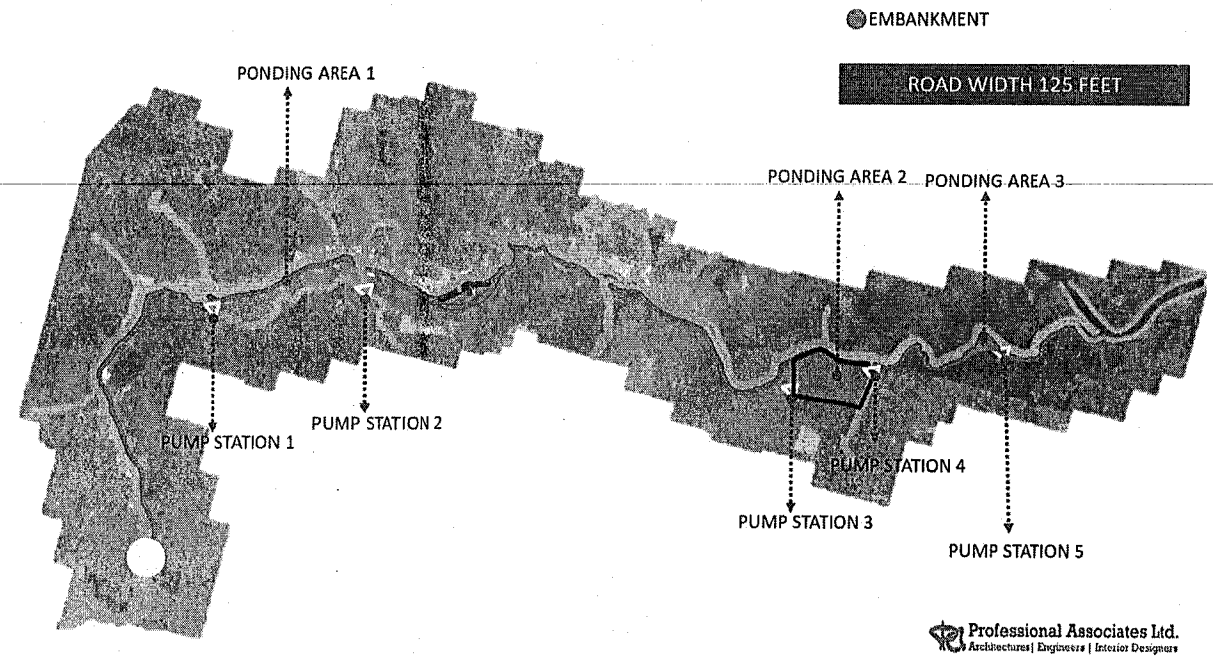


Figure: Eastern Bypass Area

Objectives

The main objective of the study was to update the previous study named "Technical Study of Flood Control and Drainage Development at Dhaka Circular Road (Dhaka Eastern Bypass) Project" for preparation of Development Project Proposal titled "Dhaka Circular Route: Eastern Bypass (BWDB Part)". Other objectives of the study are given below.

- To identify the alignment of drainage canal including ponding area along the alignment of embankment.
- To collect CS, RS, BS and City Mouza map for analyzing the exact characteristics of the existing project area.
- To define land use change through analyzing of CS, RS, BS and City Mouza map.
- To convert all the information's draft, scanned copies documents into softcopy with proper use of adequate software, conversion of all these computer-generated soft images into readable drawing in required software like AutoCAD, Img2cad, adobe acrobat, Microsoft Excel, Microsoft PowerPoint, Total station survey, Digital Elevation Model, Professional App for Land Acquisition (PALA) etc. Converting of all these with GIS maps confirmation of these shape files, drafts by Geo-referring technicians.
- To recommend the road alignment through ensuring the participation of Stakeholder.
- To prepare a layout plan of acquired land along with GPS coordinate and Topographic survey data of the proposed alignment imposing on CS, RS, BS and City Mouza map of Dhaka City.
- To prepare the methodology for Land Acquisition Plan (LAP) as per current "Acquisition and Requisition of Immovable Property Act, 2017".

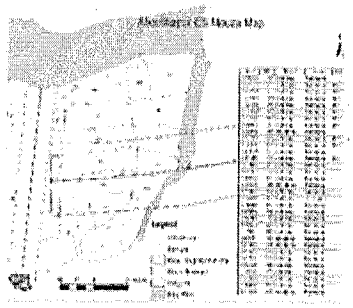
Data Collection

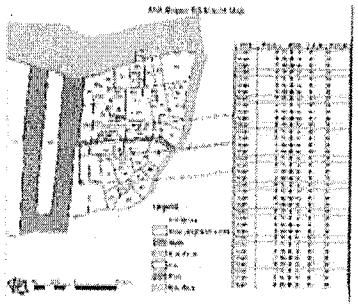
Related secondary documents, data, and information were collected and reviewed in detail in order to perform the analysis of past studies, design of bank protection, water & flood control structure and to proceed for the assignment. A team comprising of senior urban planner, environmentalist, sociologist, economists, civil engineer and surveyor has made a reconnaissance field visit with a view to assess the primary data requirement and understand the physical, hydro-morphological, socio-economic condition and biodiversity of the project site. All necessary information and data were obtained from the reconnaissance field visit. Primary data was attained from the face-to-face interview/survey. After collecting primary data, secondary data were collected from numerous valid sources. Secondary data that were collected to perform the study were,

- Image of each Mouza sheet for Mahanagar Map (BS), Cadastral Survey (CS) Map, Revisional Survey (RS) Map
- Plot index
- Plot no
- Plot type
- Land classification
- Location of approach and divisional channel
- Location of embankment etc.

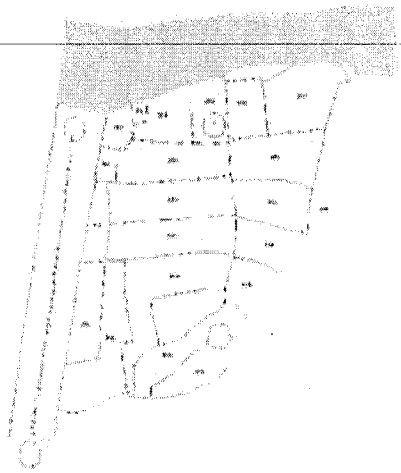
Data Processing: Each Mouza sheet was digitized by AutoCAD software that is collected from the secondary sources. The digitized file was then geo-referenced with ArcGIS software. A full database was prepared, allocating all the necessary information to the ArcGIS software in the attribute table. The process of mapping came after all of these are being organized and then final map was exported.

TRANSFER SCAN COPY
TO CAD BY SOFTWARE





FINAL OUTPUT



AFTER THAT TRANSFER
CAD TO GIS
SOFTWARE

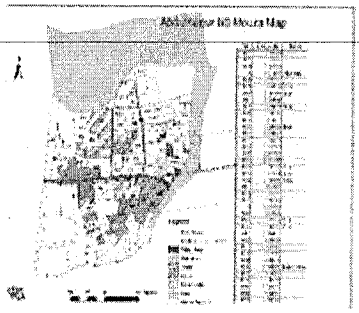


Figure: Data Processing

Land Acquisition

The land requirement according to MS in greater details for proposed embankment has been presented at below figure. The limits of the required land acquisition were extended at both sides of central line by 62.5 feet for future development and stop encroachment. The base width is 125 feet. The total land to be acquired for the embankment cum road is estimated approximately 277 acres. A mouza wise breakdown of the land to be acquired along the alignment of embankment is presented in below table.

Table: MS Mouza wise Breakdown of Land Acquisition Requirement for Embankment

Mouza Name	**Area to be Acquired (Acres)**
Abdullahpur	2.25
Baludheetpur	15.71
Bhaturia	0.54
Bara Beraid	29.01
Demra	4.31
Dhelna	4.40
Faydabad	7.24
Gajaria	25.99
Ghop Dakshin	3.70
Gobindpur	0.02
Kamar Ghop	6.14
Mastul	5.39
Mendipur	1.07
Mousaid	20.91
Nayakhola	3.46
Nigur Aplaid	4.46
Nirnichak	4.54
Noraibag	7.64
Patira	19.86
Purbo Harardia	8.37
Kahet Para	17.58
Paschim Harardia	1.95

Snanghata	20.96
Talia	3.55
Talna	17.73
Thulthulia	5.18
Uttar Khan	20.69
Yesuf Ganj	4.53
Ujanpur	10.17
Total Area to be Acquired	**277.36**

Land Acquisition for Ponding Area: Land acquisition map for ponding area has also been prepared. To get the details of mouza wise breakdown of acquisition map follow the below link and use the account has been given.

Table: Ponding Area

Ponding area	**Area has to be acquired (acres)**
Ponding Area 1	330
Ponding Area 2	277
Ponding Area 3	10
Total	617

Land Acquisition for others area: Land acquisition calculation has also been prepared for others areas including canal, drainage, resettlement, loop and jetty.

Table: Others Area

Others Area	**Area to be Acquired (Acre)**
Canal	24.11
Drainage	175.35
Resettlement	59.71
Loop	5.6
Jetty	9
Total	**273.77**

Total Cost Estimation

The Project had been performed considering optimum land requirement for acquisition in meeting the flood control and drainage objective covering embankment, ponding area etc. Total 1168 acre of land including 5071 plots need to be acquired for embankment, ponding area and others area. Total estimated cost of the project is 18882.8 crore where land for embankment alone cost 16902.8 crore.

Table: Total Cost

Component to be acquired	**Type**	**Area (Acre)**	**Price (Crore) (Tk)**
Main Land	Embankment	277	16902.8889
	Ponding	670	
	Canal	24.11	
	Drainage	175.35	
Structure	-	-	831.2515869
Others Land	Resettlement	59.71	1148.696485
	Loop	5.6	
	Jetty	9	
Total Price (Crore)			**18882.83697**

Recommendations and Conclusions

Feasibility Study for collection of detail information of land acquisition and land availability on Dhaka Circular Route: Eastern Bypass Project has been performed considering optimum land requirement for acquisition in meeting the flood control and drainage objective covering embankment, ponding area etc. Necessary documents were reviewed and analyzed by the consultant. Proper data and information (e.g., BS map, CS map, RS map) were collected and different survey (e.g., reconnaissance, topographic) and site visit were conducted to prepare the expected output of the assignment. From the previous alignment it is evident that, a large number of settlements remained outside of the previous alignment of the embankment. Thereby, considering these issues the consultant (Professional Associates Ltd.) proposed new alignment with proper justification which has been presented in different meetings before higher officials of BWDB, Honorable Senior Secretary of Ministry of Water Resources, and Prime Minister's Office.

Thereby, upon finalization of the alignment of the embankment, cost estimation for final land acquisition, Environmental Management Plan (EMP) and other remaining activities stated in the scope of services will be performed and final report will be submitted accordingly.