

# The Circular Waterway: Saving Rivers of Dhaka by Enhancing Recreation and Place-Making Along Specific Routes

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## Abstract

Waterways are vital productive resources for cities, regions and the country. Rivers provide amenities and services to communities that are taken for granted. Drinking water, food, transportation, communication, recreation, wildlife habitat, aesthetic appeal of places along waterways, economic development, etc. are some of the amenities that rivers provide. Dhaka is a tender land-mass - virtually an island framed by rivers which form a 110 km Circular Waterway around the city. Through place-making the city can also meet its recreational needs, as there are limited opportunities for spending leisure time or weekends within the city. The waterways of Dhaka can provide excellent opportunities to enhance all these and this paper intends to highlight them through better plan and design.

*Keywords: Riverside development, place making, recreation, circular waterway, saving rivers.*

## Introduction

Histories of ancient civilizations show the location and development of cities along rivers, because of the immense benefits that rivers provide to the inhabitants. Rivers have been the mainstay of cities and regions for centuries and have dealt with the pressure of urbanization and thus bore its consequences. After the introduction of the railway and road transport the rivers was given less important and thus many felt into disrepair and disuse. Places beside the rivers were disregarded – but, these places could have been developed to enhance socio-economic, psychological, recreational and aesthetic benefits- creating great places along the rivers for the benefit of the residents of the city. Waterways are still vital to the economy of the city and are being used by people for commercial, recreational and other purposes. In order to save the rivers around Dhaka, which are being gradually destroyed by encroachment, filling, disposing off effluents, etc. - steps to create places and projects for recreational purposes will at the same ensure preservation of the rivers. This paper intends to highlight that with proper measures the rivers of Dhaka can be restored to their lost glory with immense benefits accruing to the inhabitants of the city, and, in the process the rivers of Dhaka can be saved from destruction.

Dhaka, in the early 19<sup>th</sup> century, was a stunning sight seen from the River Buriganga. The riverbank was a place for promenade and social gathering. Dhaka was renowned for its abundance of water, lush greenery and tranquillity. The city was surrounded by rivers and their tributaries

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which covered the city like a web making communication by water very natural and easy. Thoughtless development in recent years destroyed most of the water bodies, wetlands, and greenery, which contemporary cities strive to achieve with austere planning measures. The city now suffers from lack of quality spaces as well as inadequate outdoor recreation facilities. Due to phenomenal increase in population and continuous encroachment of open space for profitable land-uses, spaces available for recreation have declined dramatically. Open space in the city was approximately 1266 acres in 2004, a significant decrease from 1916 acres in 1978 (Ahmed and Sohail, 2001). Detail Area Plan (DAP) estimates show only 480 acres open space for 14.8 million people living in an area of 26860 acres, i.e., a ratio of only 0.032 acres of open space per 1000 population. Moreover, open spaces were not provided according to any planning standards. DAP proposed for 0.16 acre per 1,000 populations which is also far below any international standard (RAJUK, Group C Report, 2010).

Dhaka is located in a delta; water in the form of rivers, canals, waterways, ponds and flood plains form the matrix of the city. It is not just an image of a picturesque landscape; it implies communication, drainage, economic life, festivity, and a certain way of being. The city is blessed with so many rivers, such as the Rivers Buriganga, Turag, Sitalakhya, Balu and the Tongi Creek, which encircles the city and forms a 110 km Circular Waterways (CW) around Dhaka (Figure 1). Much of the network formed by these rivers has been dismantled in recent years and severe consequences are being experienced. The Bangladesh Inland Waterways Transport Authority (BIWTA) has taken attempts to upgrade the rivers to solve problems of water logging, flooding, heat build up, pollution; and, also those related to communication, transportation, tourism and recreation. This paper intends to explore the prospects of recreation and place-making along selected routes of the CW and also save the rivers that encircle Dhaka.

A city along a water-route, with the presence of water, creates a powerful aesthetic image for the city (Kolbe, 2009). The Buckland Bundh was created for a similar purpose back in the 19<sup>th</sup> century, and this was a very popular among the inhabitants at that time. Although there were scopes for creating such places all along the perimeter of Dhaka, no such projects were further attempted. The waterways of Dhaka were treated as neglected spaces or backyards of the city, the city always developing inwards, turning its back to the waterways; and thus, depriving inhabitants of benefiting from breathtaking and stunning places along the rivers of Dhaka.

Inland waterways are a living infrastructure which has benefited countries all over the world and which has immense potential to strengthen recreational activities (Ken and Guy, 1991). World over attempts have started to rejuvenate eco-friendly and sustainable waterways to cater to transportation, tourism, place making, etc. (*ITPI Journal*, 2002). Place making is the process of retaining the essence of a place while improving its physical and psychological aspects so that people are attracted to that place (Gunn, 1994). These places attract visitors not only throughout the week and can act as catalyst to rouse people's feeling to revisit them. Waterways also act as a tourism asset and provide a link between existing and new attractions and support the holiday industry through water-based activities (Waterways Ireland Final Report, 2006). Visitors drawn to the waterways contribute to the economy of the waterway corridor through expenditure on local goods and services. In encouraging modern, integrated and sustainable use of waterways, this

paper intends to maximize the opportunities waterways can offer for recreation and act as catalyst for place-making along the CW which has remain neglected and unexplored for centuries. Also structures constructed for these purpose will also protect the rivers from encroachment or filling them up.

### **Historical background of water recreation in Dhaka**

#### **Riverside development in Dhaka**

An intelligent coexistence of man and nature is visible during the initial period of development of Dhaka. During 1864, initiatives were taken by Mr. Buckland to construct a one mile road-cum-embankment or Bundh which later came to be known as the 'Buckland Bundh.' Exquisitely designed wrought iron benches were placed at intervals, parks and gardens were created to augment its beauty. Ghats or landing stations, e.g. 'Shiber Ghat', 'Shyam Bazar Ghat', 'Lal Kuthir Ghat', 'Nawab Barir Ghat' and 'Gohona Ghat,' were diverse in their characteristics as their names. The Nobel laureate Poet Rabindranath Tagore occasionally spent his time in a barge to relish the splendour of the River Buriganga. People came to rejuvenate themselves. Local aristocrats strolled in the morning and evening. On Saturdays and Thursdays the British Colonial soldiers played the band to the merriment of the bystanders. Public receptions were held here for dignitaries who came to visit Dhaka.

The popularity of water based recreation is very clear and significant in its history. During 1800s and until 1940s the "Buckland Bundh" was famous as a place for promenade and leisure spot. Approach to the city from the River Buriganga was given importance and duly developed while other approach routes were never explored; although local people used other routes year round for communication and transportation in their own ways.

Later unwitting schemes led to the ruin of places by the Bundh. In 1963 the government took possession of the Bundh and handed its responsibility to the BIWTA. The BIWTA illegally leased out the place for commercial ventures destroying this grand public place (Ghosh, 2009). Now illegal structures, shops and vendors occupy the whole place throughout the day, and the scope for spending one's leisure time has been wiped out. RAJUK made feeble attempts to develop the area with landscape development schemes. The Urban Area Plan (1995-2000) pointed the need for immediate restoration of the Bundh. But subsequent Detail Area Plan of the area failed to give precise directions of development and the place lost was never regained.

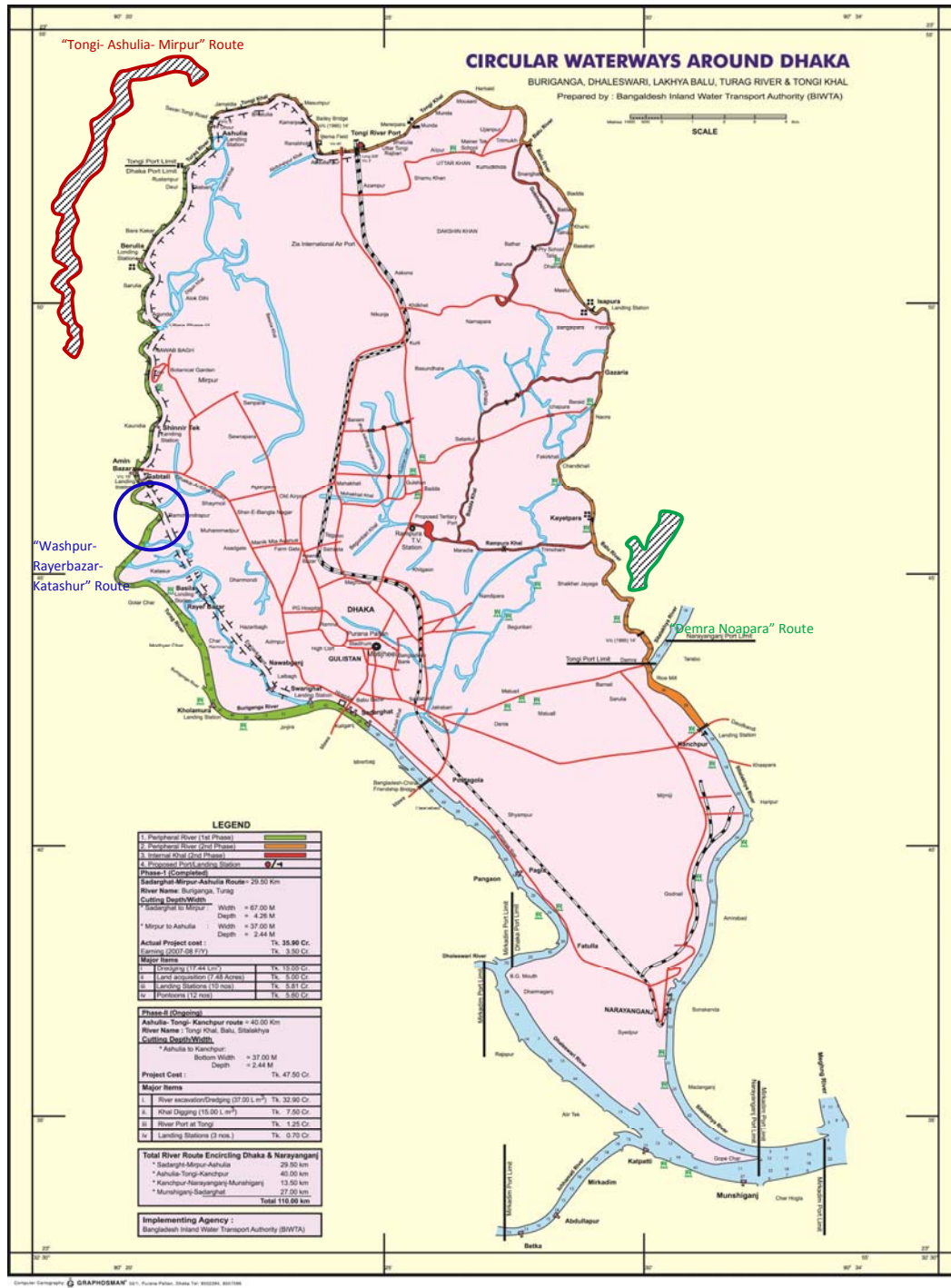


Figure 1: Rivers and canals in and around Dhaka and the study routes.

Source: BITWA, 2001

### **Recent lakeside developments in Dhaka**

People appreciate and enjoy places beside the water. This is recognized as a time-proven experience. A visit to the Dhanmondi Lake proves how popular a waterside recreational area is, and what important functions it serves in the city dweller's life. A part of this lake has been designed as a place for social and cultural gatherings, a place for exercise or strolling or simply to sit idle and take pleasure in the beautiful surroundings of the meandering lake, the lush greenery and gorgeous apartments gracing the lakeside. The lakeside development has given a sense of place and a whole new meaning to Dhanmondi Residential Area. People now yearn to live in Dhanmondi because of the quality of places offered by the residential area and its lakeside development. Lakeside development can thus be a vital part of the city's economy as well as social life. The lake offers the much needed breathing space for the dwellers.

The recently completed Hatirjheel project is a much larger development and attracts hundreds of people daily. The Hatirjheel or the "Lake of Elephants" was literally a place where the royal elephants were taken for their daily bath during the Mughal reign. Comparing both these projects it is seen that the Dhamondi lakeside development is a much more enjoyable place, the Hatirjheel has been developed to ease traffic congestion in Dhaka by bridging this lake at several points. People gather to see the bridges and the illumination at night. Lakeside development in juxtaposition has not been given much thought. These two projects have saved the lakes from being destroyed. But recently, dumping of wastewater and sewage have polluted water of the Hatirjheel giving of putrid stench – thus, ruining the whole environment of the lake. This has to be taken care of immediately by the concerned authority; otherwise, the whole purpose of lakeside developments will be defeated.

### **Present unplanned recreational facilities along the Circular Waterways**

#### **Justification for development of places and recreational spots along the CW**

The CW has huge prospects to meet recreational needs; and, presently even without any planned facilities these routes attracts numerous visitors. These indicate that places along the CW can be developed as outstanding recreational spots. People come to stroll, wander around places, ride boats, make merry and enjoy the scenic beauty of the CW. The attractive view of River Turag and the vast paddy fields of Ashulia, located on the northern part of Dhaka beside River Turag, make it one of the most popular getaways near Dhaka. People love to go there with friends and families to celebrate special days or events. Presently Ashulia meet the demand of recreation with boating and other facilities. The enchanting splendour of the waterways and the changing seasons creates its own appeal to visitors. There are other remarkable spots along the CW which can be developed for similar purposes.

#### **Places and recreation spots along the CW**

Different recreational spots have developed spontaneously along with a few public spots along the western part of CW. Locations like Ashulia, the Mirpur Zoo, and the Mirpur Botanical Garden have created a unique waterfront atmosphere. A botanical park and a zoological park have developed spontaneously; there are restaurants, fair grounds, monuments, etc. increasing prospects for recreation concurrently developing places around them. Experiences are so refreshing that people want to get far away from the madding crowd and hectic life of the city. One can dine in river-lofts restaurants located along the route. Local fairs and Pujas attract numerous devotees and

visitors. Similar places have developed near the Martyred Intellectuals' Mausoleum further down the western part of CW. People also visit places along the eastern part of CW. Properly developed these places will attract more people to the picturesque landscape of the wetlands.

### Enhancing recreation and place-making along the circular waterway in Dhaka

#### Creating places and recreation spots along the CW

Three areas were selected, the "Tongi- Ashulia- Mirpur" Route (red), "Washpur- Rayerbazar- Katashur" Route (blue) and "Demra- Noapara" Route (green) to show how recreational areas and place-making may be created along the CW (Figure 1).

#### Exploring the "Tongi-Ashulia-Mirpur" Route:

There are three BIWTA constructed landing stations and five privately constructed landing stations along the Tongi-Ashulia-Mirpur" route area. The first three landing stations are at Ashulia, Birulia and Shinnir Tek and other five are at Mugdapara, Rustampur, Sluice gate area, Tamanna complex, and Shinnir Tek. The wetland at Ashulia and its rice fields make it a very popular tourist spot. The vast expanse of water during the monsoon and shimmering green rice fields of winters mesmerize beholders. On special occasions like the Eids, Pujas, New years, Pahela Baishakh (the Bangla New Year), Valentine's Day, etc. thousands of visitors flock to Ashulia. Figure 4 shows the flawless beauty of this route. Also surveys attest to this statement. The Mirpur Zoo and the Botanical Garden are some of the prime attractions of this route. About ten thousands visitors come to see the Zoo and the Garden, and these visitors flow out to other recreational spots along the CW. Colourful country-boats and steamers, carrying the visitors, skim the water of the Turag and its wetlands.

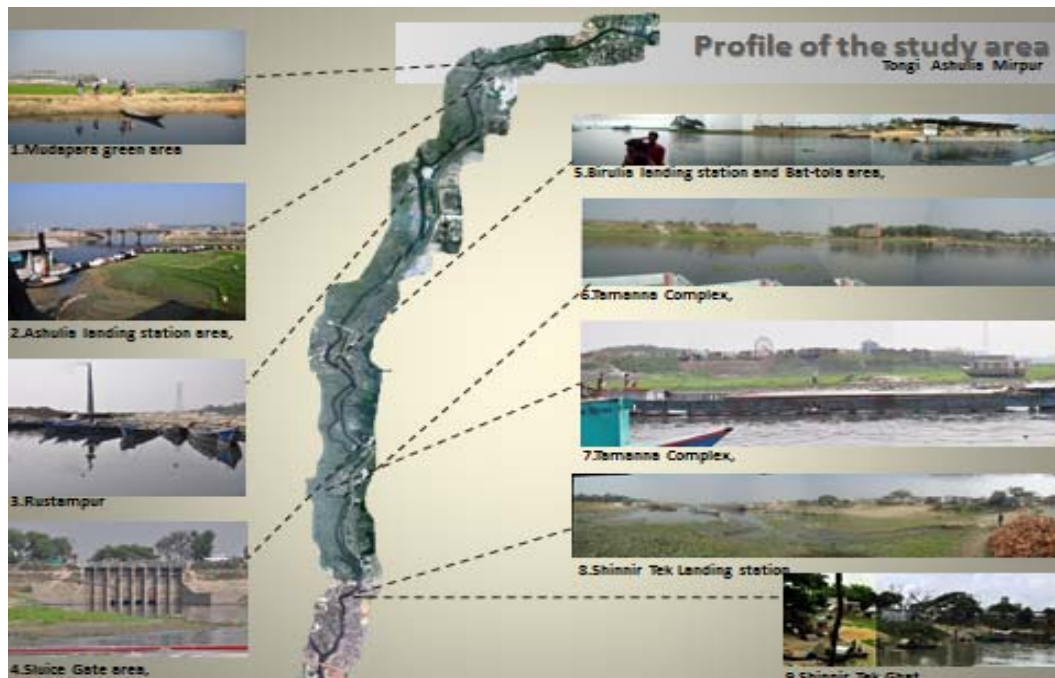


Figure 2: Study Area Profile: Tongi-Ashulia-Mirpur Route; Source: Authors

### Exploring the “Washpur–Rayerbazar-Katashur” Route:

The route is also known as Sarai- Jafarabad Creek, which originates from River Buriganga and branches off near Rayer Bazar, and meets the same river near Madhyer Char. This creek acts as the link with River Buriganga and Rayer Bazar and Mohammadpur areas. The Sarai- Jaffrabad Creek itself is so dynamic by its physical characteristics that with a little touch of development its panoramic view can be further enhanced. Provision of basic recreation facilities can make this place an outstanding riverside recreation area as this route is close to some of the residential areas of western Dhaka. The channel, near Katashur and Rayer Bazar landing stations, although navigable throughout the year can ensure access of larger vessels through widening and dredging.

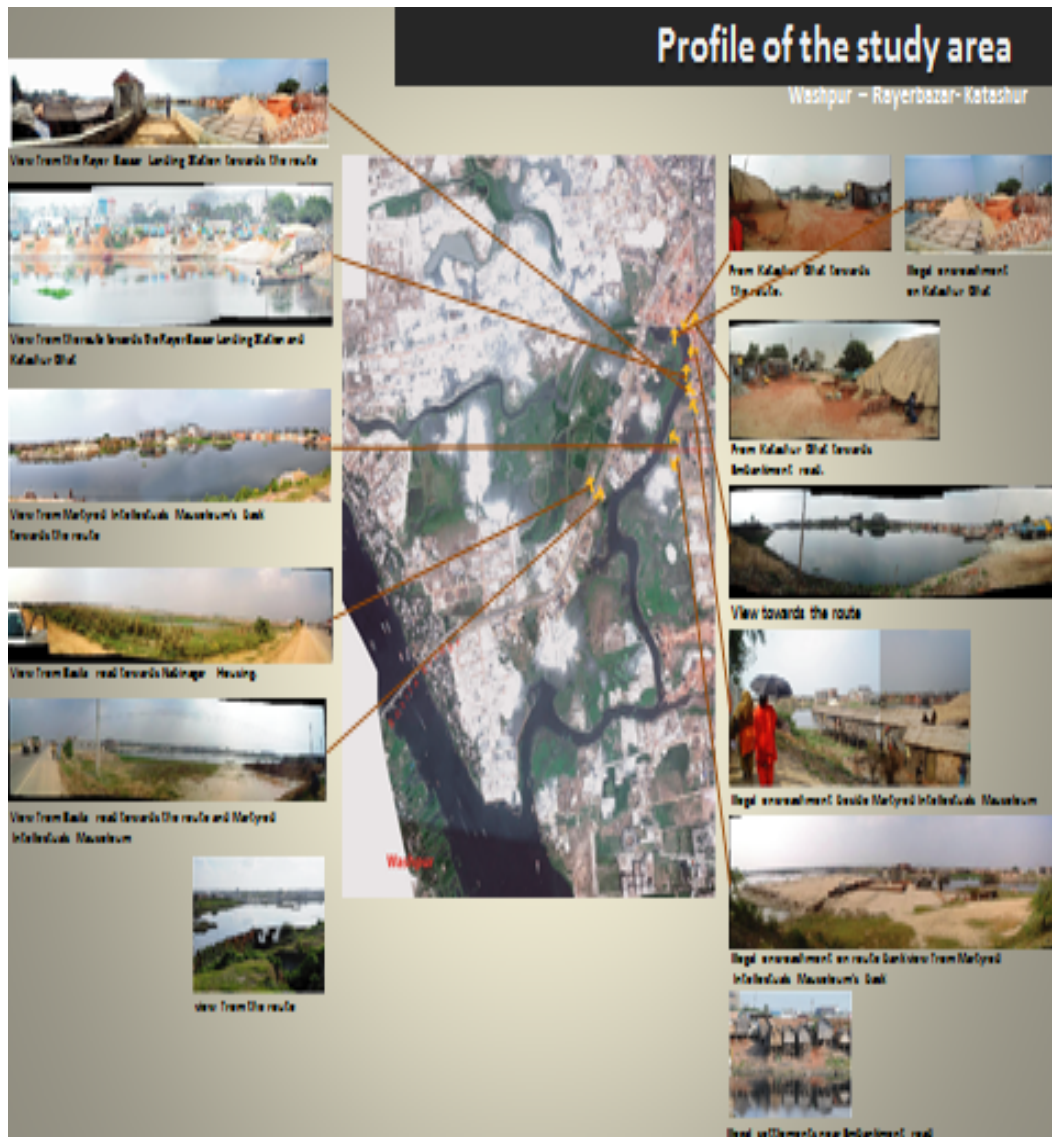


Figure 3: Study Area Profile: “Washpur- Rayerbazar- Katashur” Route; Source: Authors

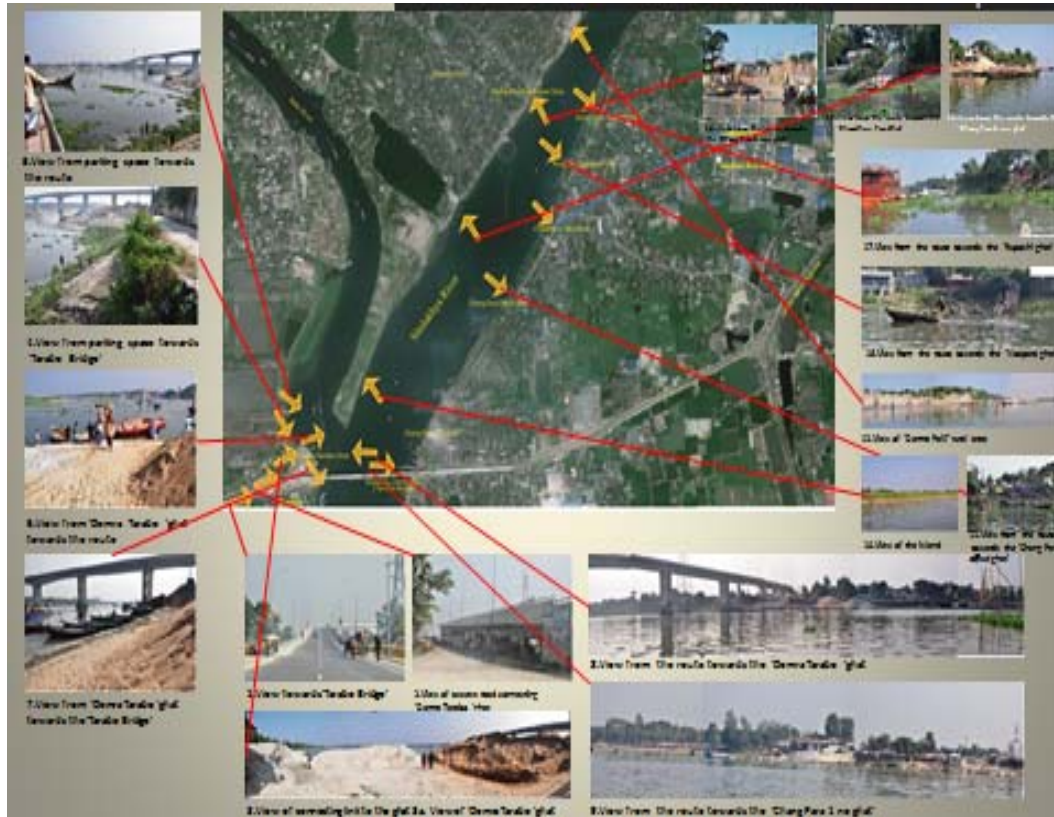


Figure 4: Study Area Profile: “Demra- Noapara” Route; Source: Authors

### Exploring the “Demra- Noapara” Route:

Demra, Rupganj, Sonargaon and Siddhirganj, located beside the River Sitalakhya, are famous for the world-renowned Muslin and exquisitely designed Jamdani saris. Visitors can see skilled weavers producing intricate designs in Muslin or Jamdani in the handloom factories located in more than 200 villages in these urban centres. Weekly markets attracts wholesalers and as well as connoisseur of the world-renowned heritage fabrics. Water scooters, speed boats, take visitors on river cruises. The Zaminder palace at Murapara is a top favourite for visitors.

### Limitations of the Selected Areas:

#### Physical Problems:

- No fixed boundary for the river banks, which encourages encroachments,
- Poor location, accessibility and maintenance,
- Routes and distribution of passenger trips not planned,
- Poor quality vessels used for transporting passengers and cargo,
- Unauthorized land uses around all landing stations,



- Water pollution due to oil spill and waste disposed from vessels and surrounding factories,
- Lack of facilities, e.g. safe water supply, sanitation, drainage, seating, eating-dining, etc. impede duration and frequency of visit,
- Lack of information of events, like, local fairs, Pujas or markets (Haat), time-schedule and information on the availability of bus, boats, etc.

**Social Problems:**

- Snatch-theft, eve-teasing, harassment by local goons, etc. are common due to laxity in vigilance and policing,
- Vagabonds, beggars, drug-addicts, eunuch scare away visitors,
- Vendors and unwanted visitors litter the area,
- Women and children cannot come un-chaperoned
- Lack of public initiatives to popularize these areas.

**Assessing importance and level of satisfaction of respondents**

**Survey Design:**

To explore users’ satisfaction, a survey was designed with a number of items under a few domains to measure ‘level of importance’ and ‘level of performance’. After a successful pre-test 33 items were fixed under six different domains to explain overall satisfaction level of visitors. Environment, Transport, Recreation Facilities, Service, Information and Recreation Experience were the six different domains. Respondents were asked to rate both importance and their satisfaction level regarding the stated attributes using a five point Likert scale and response categories were rated as Highly satisfied (HS), Satisfied(S), Neutral(N), Unsatisfied(U), Highly Unsatisfied(HU) and very Important(VI), Important (I), Neutral(N), Unimportant (UI), Highly Unimportant (HUI). Responses were coded as: HS = 5, S = 4, N = 3, U = 2, HU = 1 and VI = 5, I = 4, N = 3, UI = 2, HUI = 1. Descriptive statistics was used to summarize the Likert scale data and to measure gap between visitors' expectation and reality with ‘Gap Analysis’ method was used. Chi-square technique established hypothesis of the study.



Figure 5: Overall Performance level analysis of different domains; Source: Authors

Respondents were asked to rate their satisfaction level, priorities and state gaps between expectations and reality.

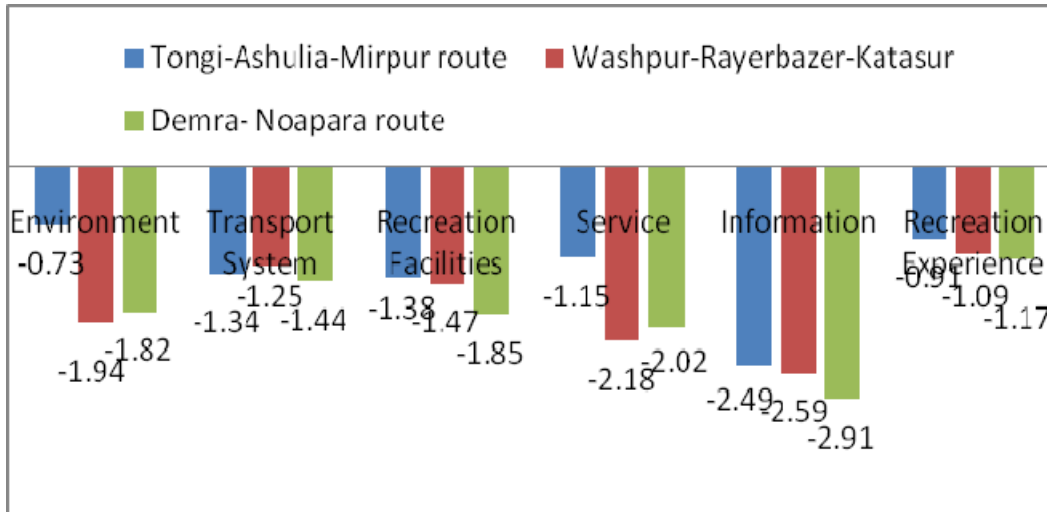


Figure 6: Overall Gap analysis of different domains

#### Design concepts for enhancing recreational activities and places along the CW:

##### Main Considerations:

- Maintaining existing river width as far as possible.
- Use the waterfront as an amphitheatre with the water as a natural stage.
- Facilitating and encouraging passive recreation where possible, i.e., trails and walkways, jogging track, exercise space, cycling track, paddle boating, fishing etc.
- Minimum permanent structures.
- Facilitate some income generation opportunities to support maintenance costs as well earn revenue for the state exchequer.

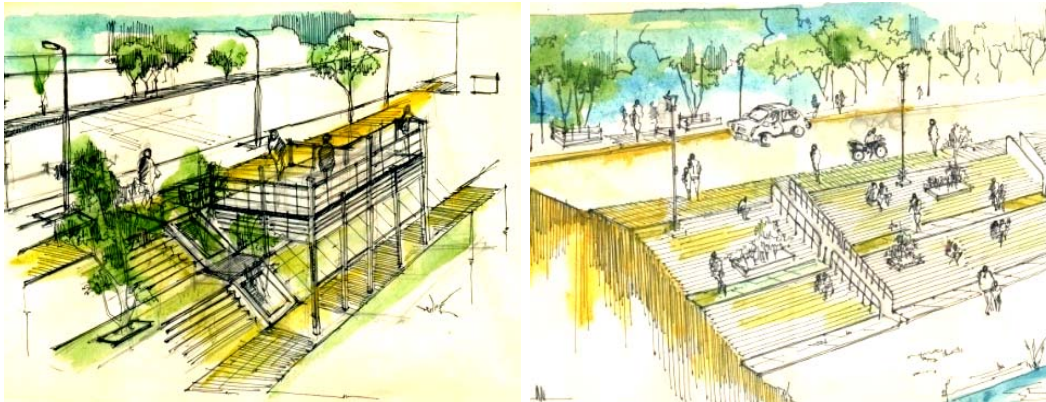
##### Design Considerations

- Bring people closer to the water to celebrate water
- Convert the neglected embankment area to a popular meeting place
- Create physical and visual connectivity
- A 50m wide green belt along the route to halt encroachment
- Continuous and connected walk plus bike trails on both sides of the CW with resting pockets and required facilities
- Small island dotting the rivers be developed as parks and gardens
- Islands be connected by suspended bridge and provide public plaza for community gathering.
- Set-up places for restaurants, eatery, souvenir kiosks, pottery stalls, paddle-boat club, police box, etc.

- Using the open space as a park and set up temporary structures to hold nightly events.
- Bridges to give identity to places with multi-level traffic solution
- Environmental sustainability be given prime importance

### Designs enhancing routes of the CW

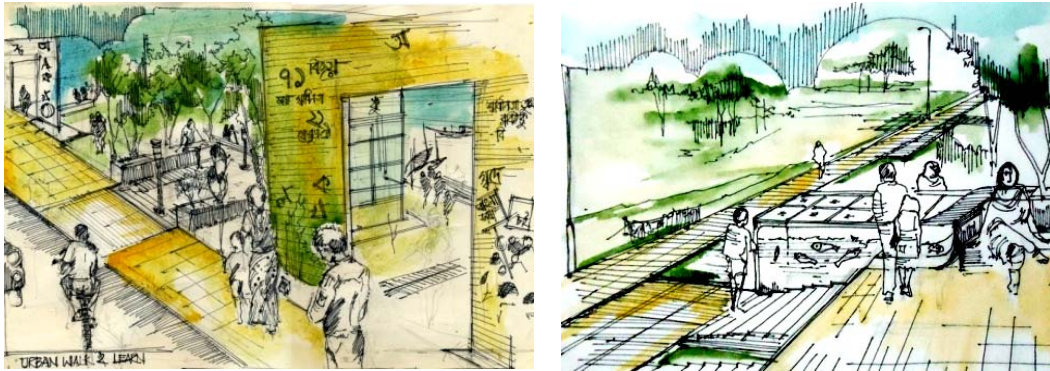
With the above considerations, following sketches show that Dhaka can provide the required recreation opportunities to its citizen and create great places besides. The beauty of Dhaka is waiting to be discovered and rediscovered.



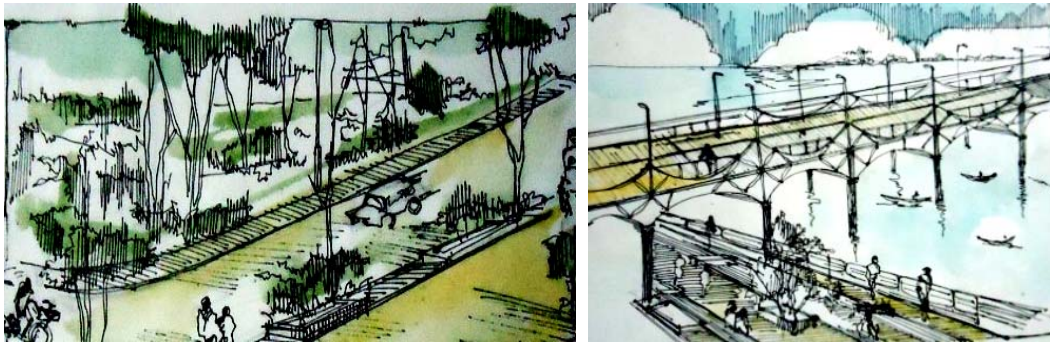
Figures 7-8: Redesign of the road-cum-embankment on the western part of Dhaka to provide levels of walkways with stairs, lookout platforms and sensitive illumination to bring people close to water and encourage them to have fun. Bridges with vertical and horizontal clearance can enhance connectivity, accessibility and aesthetics of the routes.



Figures 9-10: Proper landscaping and greening with resting pockets designed with required facilities can enhance continuous walkways and bike trails



Figures 11-12: Spaces along the CW designed with respect to local and national history and culture and to cater to people of different ages



Figures 13-14: The 50m green belt designed with attractive walking-trails and multi-level traffic solutions to halt encroachment of the riversides of CW



Figures 15-16: Riverbanks can be stabilized with permanent stairways and landing stations to provide adequate spaces for landing and anchorage

### Conclusion

The CW show immense potentials to enhance recreation and place-making along its entire route; additionally, it can act as an alternative to mitigate road traffic congestion and environmental degradation and this consequently can act as a catalyst for better development of Dhaka. Riverfront development can be a catalyst for economic and social rejuvenation for the entire city. The CW can be developed as one continuous landscaped promenade linking other open and green spaces, parks and gardens, historic sites and places along the entire route creating a clear and legible pedestrian network and one unique entity. This will relate the whole city to its inhabitants and through its continuity and water sensitive urban design improve places and offer a range of scenic places to the residents. These proposals are starting points as to how and where the transformations can occur. The proposed concepts for development of the CW to enhance recreation and place-making offer choices to people to take pride in these places and encourage them to visit these places again and again. If the whole route of the CW is planned and designed in proper manner and structures constructed for aforesaid ideas, such attempts will also save the rivers around Dhaka from further destruction.

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