

Pre-feasibility Study for Water front Development in Karnataka



FINAL REPORT

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Table of Contents

1. Introduction.....	4
1.1 Waterfront development	4
1.2 Need for waterfront development	6
1.3 General principles for waterfront development	7
1.4 Advantages & benefits of waterfront development.....	8
1.5 Examples of waterfront development	9
2. Approach to the Study.....	21
2.1 Study Objectives	21
2.2 Approach adopted for the Study	21
3. Development of waterfronts in Karnataka.....	23
3.1 River network in Karnataka	23
3.2 Important towns with waterfronts	24
3.3 Prioritization of towns with waterfronts	26
3.4 Ranking of towns with waterfronts for development.....	28
3.5 Shimoga – Illustrative towns for development of waterfront	29
4. Financial Viability Analysis	34
4.1 Land Development	34
4.2 Project Cost	35
4.3 Sources of Finance	36
4.4 Revenue Estimates	36
4.5 Operations and Maintenance Expenses.....	37
4.6 Project Viability – Base Case.....	37
4.7 Scenario Analysis.....	37
5. Indicative Options for Project Implementation	40
5.1 Concession Structure.....	40
5.2 Analysis of Options for Implementation.....	42
5.3 Indicative Bid Process.....	46
6. Acts & Legislations	49
6.1 Central Legislations/ Acts.....	49
6.2 State Legislations/ Acts.....	49
6.3 Initiatives by the Central Government	51
6.4 Initiative of the State Government	62
7. Key Issues	66
7.1 Policy / Regulatory environment	66
7.2 Land Reclamation	66
7.3 Land acquisition & rehabilitation	66
7.4 Replenishing water.....	67
7.5 Infrastructure.....	67
7.6 Surrounding areas	67
7.7 Environmental issues	68
8. Way forward	68

List of Tables

Table 1: Towns in the State with waterfronts	25
Table 2: Ranking of towns based on the prioritization criteria.....	27
Table 3: Ranking of towns	28
Table 4: Top 10 towns identified for waterfront development	29
Table 5: Shimoga population and growth details	31
Table 6: Area assumptions.....	34
Table 7: Land development assumptions.....	34
Table 8: Estimated Project Cost	35
Table 9: Other assumptions.....	36
Table 10: Revenue assumptions.....	36
Table 11: O&M assumptions.....	37
Table 12: Project Viability.....	37
Table 13: Scenario 1- Capital Cost Variation.....	38
Table 14: Scenario 2 – Ground Coverage Variation.....	38
Table 15: Scenario 3 – Entrance Fee.....	39

1. INTRODUCTION

The Infrastructure Development Department (IDD), Government of Karnataka (GoK) has identified various projects in the State for development through Public Private Partnership (PPP) frameworks. One such project identified is the development of waterfronts in the State. As a preliminary step in the project development activities, IDD intends to undertake a pre-feasibility study to ascertain the Project's amenability for development under PPP.

Infrastructure Development Corporation (Karnataka) Limited (iDeCK) has been awarded the mandate for undertaking the pre-feasibility study for the above-mentioned project. The Inception Report for the Study was submitted in March, 2009. The current Draft Pre-feasibility Report Inception Report provides a broad overview of the project concept, the key issues/ challenges in implementation of the Project and the possible locations in Karnataka for implementing the Project. The Report also discusses the various options for implementation of the Project and sets out the next steps in the Study.

1.1 Waterfront development

Waterfronts are settlements, civilizations or commercial developments that come up along water bodies like rivers, coastal regions or lakes, acting as lifelines for development of cities. The economic and historical significance of many a city speaks of the glorious waters flowing through it. The waterfronts have the potential to become the cultural and heritage hubs of these cities that lie on the bank of the rivers and attract people from the city and also tourists to spend time. Thus, waterfronts have emerged as the lively urban core of cities.

There are different types of waterfronts like Riverfront, Lakefront and Seafront based on the source of water in the city. The creation of waterfront is considered as a better

commercial idea for transforming an otherwise underutilized area into a booming centre of tourism, culture, leisure and business.

Riverfront Development

The development of riverfronts typically includes the following activities:

- a. Boat trips
- b. Shopping
- c. Petty shops
- d. Restaurants
- e. Theme parks
- f. Parks
- g. Parking lots
- h. Walk ways
- i. Sitouts



Seafront Development

The development of seafronts typically includes the following activities:

- a. Water sports
- b. Deep sea touring
- c. Commercial complexes
- d. Hotels
- e. Restaurants
- f. Bars
- g. Cinemas
- h. Shops
- i. Ocean aquarium
- j. Scuba diving



- k. Museums
- l. Offices
- m. Residential buildings
- n. Rented houses

Lakefront Development

The development of lakefronts typically includes the following activities:

- a. Boating
- b. Various rides
- c. Restaurants
- d. Walkways



1.2 Need for waterfront development

The increasing pace of urbanization and industrialization has left many towns/ cities with minimum avenues for recreation and open green spaces. A developed waterfront trail would provide residents access to new recreation opportunities and an expanded awareness of the natural aspects of river life. The waterfront would attract a growing legion of morning walkers and after-work runners. Added to this, public access sites connected by linear greenways will tie developments together, eliminating barriers, both real and imagined and animate the waterfront with the light and life of the city.

This form of urban redevelopment can pull the waterfront areas from marginal use and neglect into the mainstream of public activity and private investment. Cities enjoy increased tourism, employment and growth.

This amenity would attract significant new high quality investment, and encourage people once again to approach the water—an instinct lost during a century of industrialization.

Most importantly, a vital and vibrant waterfront serves to unite residents and visitors in a shared experience of the city. It is in that daily exchange of ideas and points of view that a city finds the energy and desire to continually improve and remake itself.

1.3 General principles for waterfront development

Waterfront development planning is often guided by four priorities: balanced land use; respect for limited resources; improved public access; and safeguards for environmental quality.

The general principles for waterfront development are set out below:

- a. Interconnected, linear waterfront development with broad public access
 - Encouraging the use of the riverfront greenway as a daily commuter path and recreational amenity.
 - Demonstrating the connection between access, greenway development and market demand.
 - Creating a coherent, visually pleasing order to the water's edge

- b. Protection and enhancement of the natural riverfront environment
 - Documenting the ecological state of the waterfronts in order to preserve this environmentally diverse natural habitat.
 - Preventing and, where possible, eliminating inappropriate uses and practices from the rivers' edge.
 - Protecting existing natural areas from development.

- c. Reclaim the city's identity as one of the best water cities
 - Raising public expectations of what the city's waterfront offers.
 - Attracting people, investment and the best aspects of urban living to the waterfront.

1.4 Advantages & benefits of waterfront development

The benefits and advantages of developing water front are manifold ranging from economic benefits, environmental benefits to social/ community benefits. These benefits are detailed below.

- a. With the development of waterfront there would be creation of jobs in developing the front, jobs as it gives way to starting up of a host of commercial activities in that region and also indirect job creation associated with the set of activities.
- b. Source of revenue for government – government would be able to earn revenue in terms of taxes from the commercial activities in the region. The commercial activities include shops, restaurants, sport activities, transportation, boating etc which can be leased out or giving to private players to operate.
- c. Development of tourism in the region – with the development of waterfront the tourism in the region can be increased by offering a variety of attractions like water sports, entertainment arenas, parks, shopping areas, etc.
- d. Economic spin-off's – rise in the value of properties in and around the region, acting as a catalyst for redevelopment and renewal of nearby places.
- e. Habitat protection and restoration
 - Conservation of water in the river

- Human/Environmental connections
 - Conservation and development of land
 - Conservation of flora and fauna
- f. Maintenance of river bank.
- g. Water conservation practices - Development of Riverfront projects would ensure a proper design of projects in conserving river and maintenance of rivers flowing through large cities.
- h. Beautification of the waterfront with a natural outlook will provide the general public with an open space for leisure and recreation.
- i. Providing employment opportunities for nearby people and helping in development of region.
- j. Encouraging recreational activities like walking, jogging, biking, sports activities, etc
- k. Improving quality of life of nearby community by revitalizing the neighborhood.

1.5 Examples of waterfront development

Waterfront development initiatives have been undertaken successfully in many places across the world, and are increasingly being attempted in India as well. Some such initiatives which are in the pipeline or have already been implemented are described below:

Sabarmati riverfront development

Ahmedabad, seventh largest populous city of India and the Commercial Capital of Gujarat State has a unique identity recognized by the River Sabarmati. Ahmedabad Municipal

Corporation established the Sabarmati River Front Development Corporation Limited (SRFDCL) in the year 1997 for the development of the riverfront in the city. The SRFDCL was provided with a seed capital of Rs. 1 Crore and charged with the responsibility of developing the Sabarmati riverfront. A detailed plan is being worked out on the development of the project and is in the process of implementation. The proposed development is a mix of commercial, recreational and residential developments along both the banks of the river from Gandhi Bridge to Sardar Bridge. It is proposed to reclaim about 30 hectares of land, of which a part would be sold or leased for commercial development. The proposal showed that the entire development could be self-financing.



The major components of the Project include embankment & reclamation works, construction of roads & installation of infrastructure such as water, sewer network, storm water drainage, etc, resettlement & rehabilitation works, construction of promenades & gardens and maintenance of public spaces.

The estimated cost of the Project is Rs.361 Crore which is inclusive of inflation and interest costs. The revenue expected from sale of reclaimed land is approximately Rs.455 crore. The construction is assumed to be completed in five years. The sale of land is crucial to financing the Project. The sources of funding for the Project are set out below:

- *Equity capital* – AMC has committed to capitalize the SRFDCL. Title to the land, which is to be created as a result of the project would be vested in SRFDCL

- *Loan Funds* – to bridge the gap between the equity capital available and the cash flow requirements of the Project. This could include commercial bank loans, special infrastructure loan funds, direct borrowing from the capital market through a special bond issue
- *Proceeds from land sales* – Would cover full cost of the project including cost of interest paid on construction period loans and repayment of equity investments.

The Project could be implemented by hiring in-house staff, or by entering into a partnership with a real estate development firm or by contracting out the development and O&M of services to a private contractor.

South Delhi Greenway

South Delhi Greenway is a concept inspired by several theme parks abroad. A proposal has been submitted by Oasis Company to the Government - converting the South Delhi drain into a beautiful greenway-cum-recreational corridor that may well be a star tourist attraction in future. The project looks at biologically treating the foul smelling, non-monsoon sewage that flows through nalas and recycle and use the treated waste for landscape irrigation and groundwater recharge. It is proposed that nalas would be beautified with proper landscaping and establishment of ‘Greenway’ – an eco-corridor or a nature trail along the route.

The Greenway is also going to have 5 of its own destinations – Theme Attractions

- a. Fashion Creek at Lodhi Road
- b. Canal Bazar at Andrews Ganj
- c. Bird & Butterfly Aviary at Panchsheel Enclave
- d. Streamwalk at Sheikh Sarai
- e. Aquatic Ecological Park and Underwater World at Satpula



Hussain Sagar Lake Development, Hyderabad:

Hussain Sagar lake in the city of Hyderabad is now a major tourist attraction in the city. The lake was source of water for the twin cities of Hyderabad and Secundrabad but the condition of lake deteriorated and got polluted due to industrialization and immersion of Ganesh idol during Ganesh



Chaturthi. It was the HUDA – Hyderabad Urban Development Authority which came forward for the conservation of the lake and turning it to a tourist attraction. Over a period of time Hussain Sagar lake has got a lot of attractions driving local and tourists to visit the place. The surroundings of lake has aesthetically built Andhra Pradesh Secretariat buildings, NTR Memorial, Lumbini Park, Prasads IMAX, Hyderabad Boat Club, Sri Venkateswara Temple (Birla Mandir), Telugu Thalli Flyover, Secunderabad Sailing Club, Sanjeevaiah park, Hotel Marriott and Hazrat Saidani Ma Saheba. Lumbini Park features a musical fountain and well landscaped garden, NTR Gardens on the Necklace road is a good place to hangout in the evenings for the young as well as the old.

Necklace road has been opened to public which passes round the Hussain Sagar Lake. "Eat Street", a place with several eatery outlets, has been built on the banks of the lake.



Kolkata

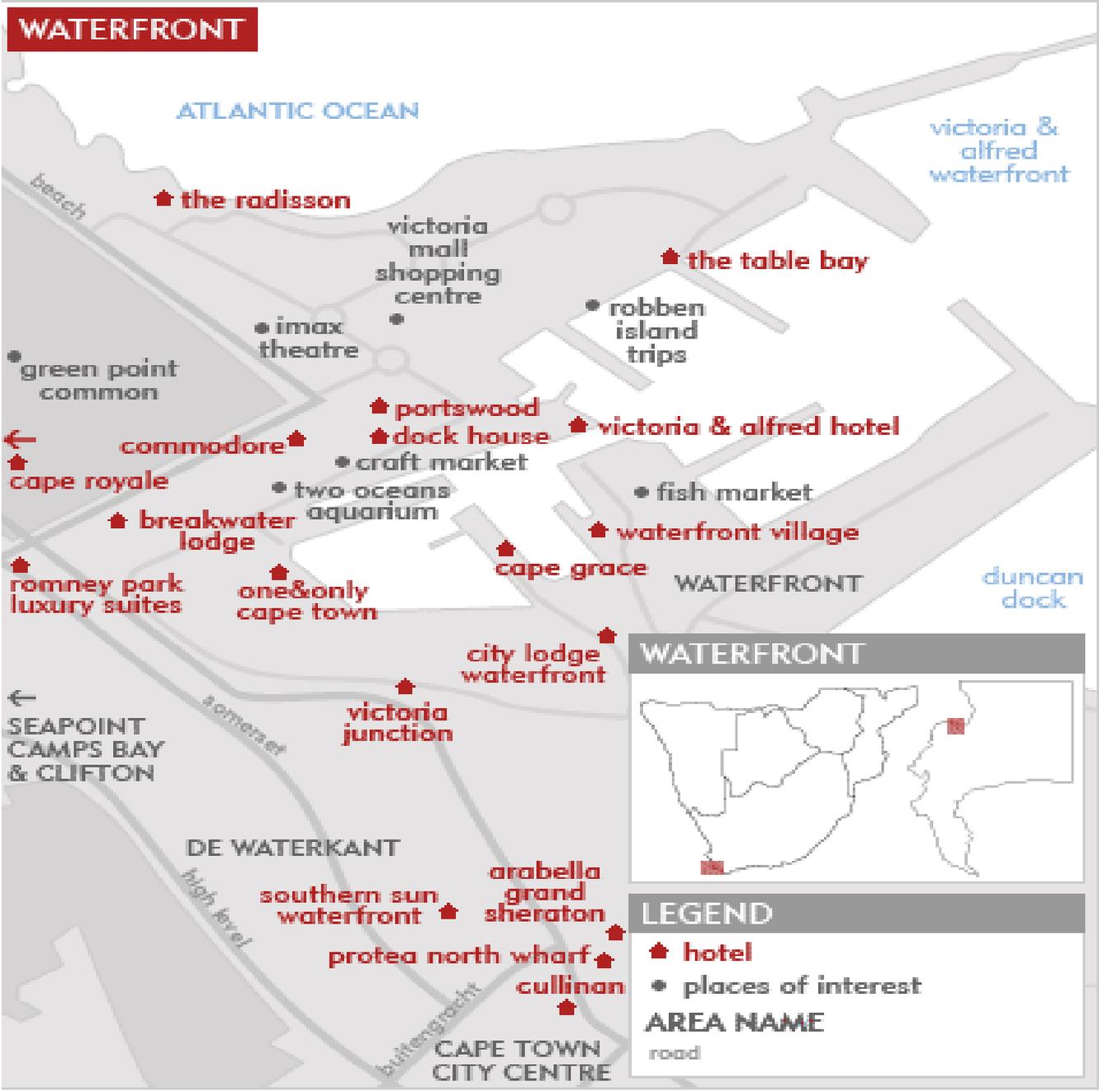
An ambitious riverfront development project has been drawing many visitors in Kolkata. The Millennium Park runs along Strand Road, for a kilometer on the eastern bank of the Hooghly River and has been a successful attempt to bring it back to the forefront of the city's landscape.



Two sections of the park, stretching over 750 m, were opened to the public on January 1, 2000, while the final section, 300 m in length, was made accessible to public on January 1, 2006. Attractions on the riverfront are: Lily pools, herbal and cosmetic gardens, food kiosks, an amphitheatre, a promenade, amusement rides and a children's park. An added attraction is the access to the Silver Jet Jetty and Fairlie Jetty for those who fancy a boat ride. In addition, Kolkata Municipal Development Authority organizes festivals, with musicians and actors performing at the amphitheatre.

Cape Town Waterfront

This has become the most visited destination in South Africa, it is considered as home to waterfront walkways. It has refurbished historical buildings and museums which blends the local culture with the world. Boat trips, craft markets, shops, hotels, bars, cinemas, up market craft markets and the Two Oceans Aquarium are the major attractions in the Cape Town Waterfront.



Canary Wharf, London

Canary Wharf is one of the most highly specified urban areas in the world. It is a large business and shopping development in East London, located in the London Borough of Tower Hamlets, centered on the old West India Docks in the London Docklands.



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Tube and Railway Stations

- A- Putney Bridge
- B- Westminster
- C- Waterloo
- D- Charing Cross
- E- Embankment
- F- Temple
- G- Blackfriars
- H- Cannon Street
- I- Monument
- J- London Bridge
- K- Tower Hill

Embarkation and Disembarkation Points

1- Putney Pier	8- Embankment Pier	15- St. Katherine's Pier
2- Chelsea Harbour Pier	9- Temple Pier	16- Canary Wharf Pier
3- Cadogan Pier	10- Blackfriars Pier	17- Hilton Pier
4- Lambeth Pier	11- Bankside Pier	18- Greenland Pier
5- Westminster Pier	12- London Bridge Pier	19- Greenwich Pier
6- Waterloo Pier	13- Tower Pier	20- Barrier Gardens Pier
7- Festival Pier	14- Butlers Wharf Pier	

 A detailed map of London showing boat routes and various landmarks. The map is oriented with Putney in the southwest and Canary Wharf in the east. A blue line represents the boat route, starting at Putney Pier (1) and ending at Barrier Gardens Pier (20). Key landmarks and buildings are illustrated with small icons and labeled, including Cleopatra's Needle, Courtauld Gallery, St. Paul's Cathedral, The Monument, Tower of London, Billingsgate Market, Westminster Abbey, Houses of Parliament, Tate Modern, Shakespear's Globe, Hays Galleria, Design Museum, Millennium Dome, and Canary Wharf. Tube and railway stations are marked with red and blue icons and labeled with letters A through K. The map also shows major bridges like Putney Bridge, Waterloo Bridge, London Bridge, and Tower Bridge.



Canary Wharf is a thriving space and vibrant business district with a wide range of shops, restaurants, pubs and wine bars, as well as healthcare and leisure facilities and an extensive arts and events programme.

It also has a conference and banqueting centre, two Dockland Light Railway stations, a Jubilee Line station, car parks and approximately 20 acres of landscaped open spaces. The estate extends over 97 acres in the financial hub of London. Currently the development comprises over 30 completed buildings and over 200 shops, bars and restaurants within four retail malls. Tenants include major banks, such as Credit Suisse, HSBC and Citigroup, law firms such as Clifford Chance, as well as major news media and service firms, including Thomson Reuters, and the Daily Mirror. At the end of 2006 the official number of people employed on the estate was 90,302, of whom around 25% live in the surrounding five boroughs. Increasingly Canary Wharf is becoming a shopping destination, particularly with the opening of the Jubilee Place shopping centre in 2004, taking the total number of shops

to more than 200 and increasing employment in retail to around 4,500. About 500,000 people each week shop at Canary Wharf.

Hong Kong

Hong Kong's harbor is core to Hong Kong's heritage, a global icon and the source of Hong Kong's competitive advantage in the Pearl River Delta. The harbor is at the heart of the city; is considered as an environmental lung, and is one of the busiest ports in the world.



With an estimated 8.3 million residents and 70 million tourists by 2030, Hong Kong's harbour is considered to be a showcase for

Hong Kong with a high degree of social, economic and environmental vibrancy. The quality of the environment surrounding the harbour is fundamental to the realisation of such an objective. An attractive, activated and accessible harbour will add to the well being and quality of life of Hong Kong; increase Hong Kong's attractiveness to tourists, and act as a magnet for foreign business and the world class human resources necessary for Hong Kong's sustained economic growth.

Stockholm, Sweden

As a city of islands, the waterfront here really is the heart of town and has quietly adapted over time as Stockholm evolves, providing many new and different ways for people to use it. With few traffic-heavy roads along the water, walking and



bicycling become great pleasures, enabling people to discover an array of attractions all along the city's shoreline. What really sets Stockholm apart are the promenades and esplanades that naturally draw people to public destinations on the water, such as the outstanding City Hall (where the Nobel Prizes are awarded) or the wonderful Kungstradgarden (King's Garden).

San Sebastian, Spain

Though it lacks the media buzz of its Basque country neighbor, Bilbao, San Sebastián offers, in fact, the superior waterfront. Hugging the rim of the Bay of Biscay, its beautiful promenade follows the arcing coast from one end of the city to the other. Dotted with lively public spaces that connect to an ancient street layout well-suited to pedestrian use, this waterfront feels like the center of the city.



Sydney, Australia

One of the most visually stunning bays in the world, Sydney Harbor is also an amazing place to stroll, take a boat ride or just sit a spell. Locations like Circular Quay, The Rocks, and the Botanical Garden fit well with the harbor itself to create a unique waterfront atmosphere. As in Stockholm, Sydney's



waterfront destinations are best accessed by ferry. When people can get around via the water, they are apt to stay around much longer and do more things on the waterfront.

Copenhagen, Denmark

These two spaces have a symbiotic relationship, with the large, oval-shaped Kongens Nytorv Square serving as the gateway to Nyhavn, Copenhagen's top waterfront district. Nyhavn makes a compelling promenade, packed with restaurants overlooking a small canal that harbors classic old ships, that naturally leads you right into



the heart of the city. The square has recently been improved with more active management; and now hosts public events and programs that draw people to the area. Both places also exemplify the octopus effect, with many streets emanating out toward other destinations in the city.

2. APPROACH TO THE STUDY

The process for planning waterfront developments in the State would need to essentially integrate with the overall development of the city while ensuring a balance between the needs of the City with those of the local community. This Chapter discusses the Objectives of the Study and the approach adopted for undertaking the Study.

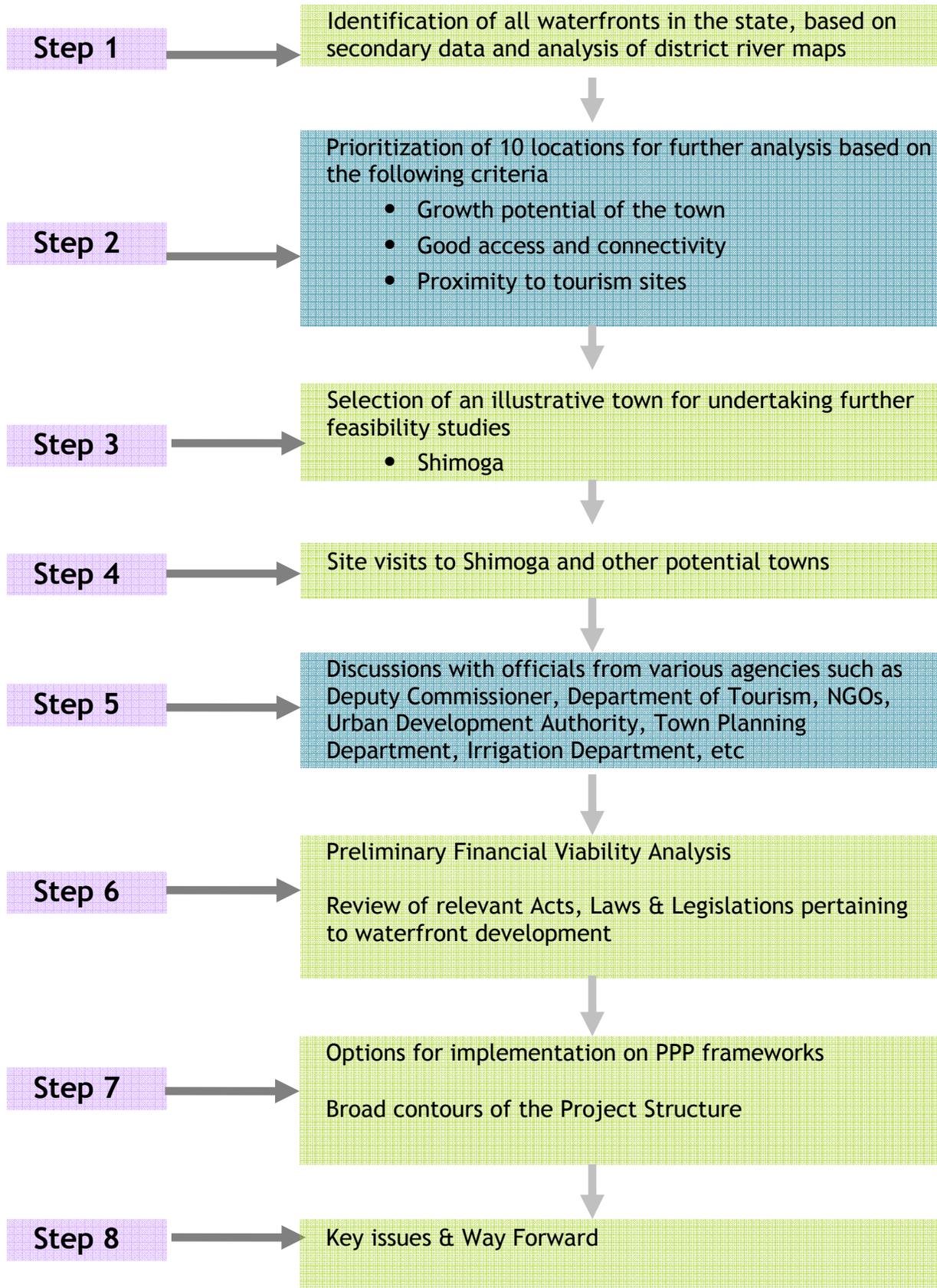
2.1 Study Objectives

The Study area for the development of waterfronts covers the entire state of Karnataka. The Study would need to address the following key objectives:

- Identification of towns with available waterfronts
- Prioritization of towns for waterfront development, based on certain key criteria
- Selection of a pilot town for implementation of the Project
- Preliminary project viability analysis for the pilot town
- Review of Acts, laws and legislations governing the waterfront development
- Identify options for implementation of the Project with private sector participation

2.2 Approach adopted for the Study

Based on the Study objectives listed above, the process adopted for undertaking the Study is set out below.



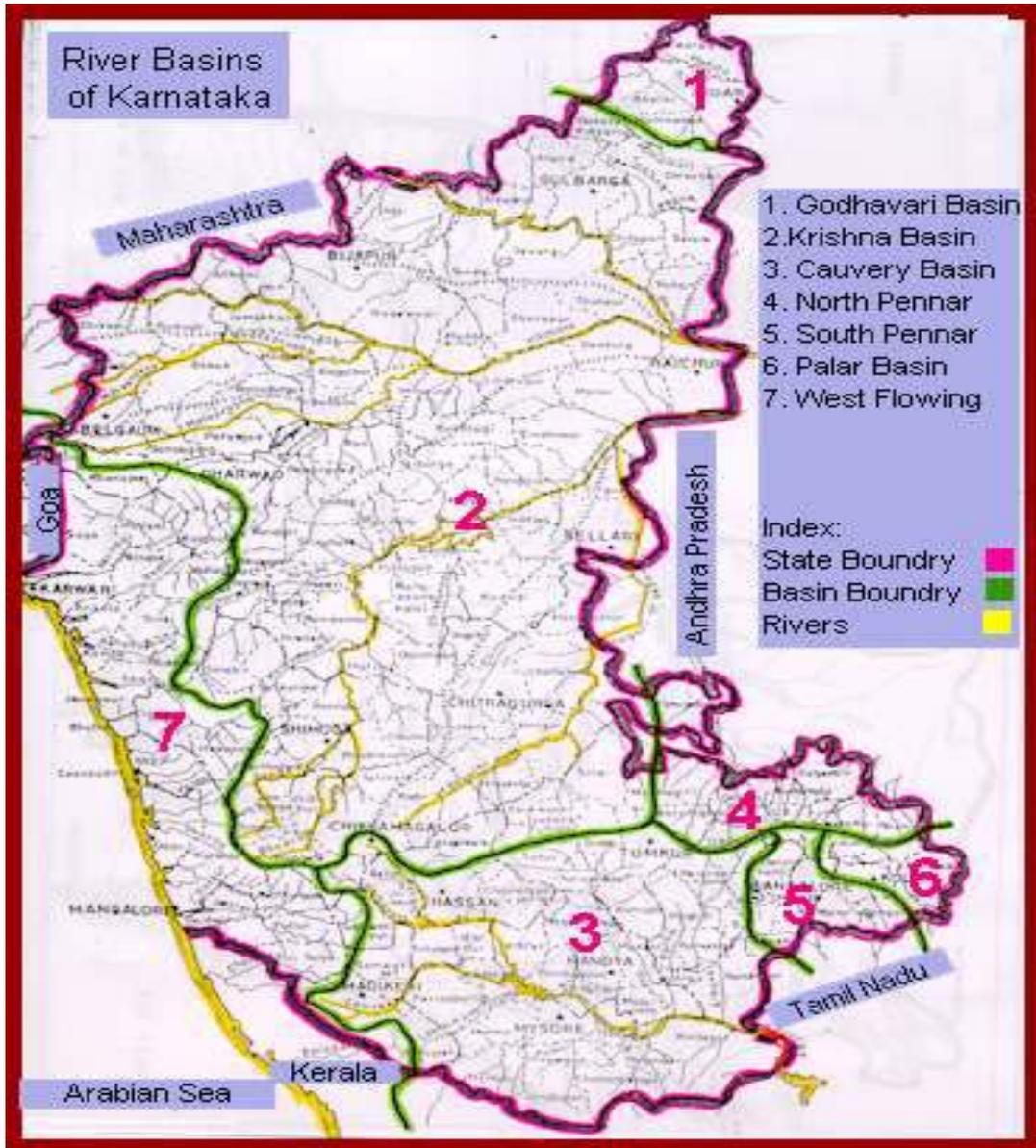
3. DEVELOPMENT OF WATERFRONTS IN KARNATAKA

Waterfronts are much more than natural mirrors: as an element of the public realm, they are places of recreation and social interaction that can make the city a beautiful and welcoming place for both its inhabitants and visitors. A people-friendly waterfront invites investment as well, improving the lot of all city residents. Karnataka is blessed to have multiple rivers flowing across various important cities in the state.

3.1 River network in Karnataka

The major river flowing in Karnataka is the Krishna. The Kalinadi, Gangavathi Bedti, Tadri, and the Sharavati are the prominent rivers flowing in North Karnataka. Sharavati is the shortest river and is famous for the mighty Jog Falls. All these rivers are west flowing and some of them are torrential streams, which are in full flow during the monsoon. Most of the major rivers of the state have their origin in the Ghats and flow eastwards towards the Bay of Bengal, through Andhra Pradesh or Tamil Nadu. Krishna with its tributaries like the Bhima, Ghataprabha and Tungabhadra is among these mighty rivers. The Cauvery river in the southern part of the state, which has its origin on Brahma Giri in Coorg, with its tributaries like the Shimsha, Hemavati, Kapila and others enters Tamil Nadu and is a major source of irrigation both in Karnataka and Tamil Nadu. The rivers Polar and Pennar in the eastern parts of the state are among the other important rivers.

The map shows the flow of rivers across various cities in Karnataka



3.2 Important towns with waterfronts

The major and minor towns in the State which either lie on the coast or have a river source have been identified. These towns are set out in the table below.

Table 1: Towns in the State with waterfronts

Sl No.	District	Town	River / Sea
MAJOR TOWNS			
1.	Bagalkot	Bagalkot	Ghataprabha
2.	Bangalore Rural	Kanakpura	Shimsha
3.		Ramnagaram	Shimsha
4.	Belgaum	Belgaum	Ghataprabha
5.	Bellary	Hospet	Tungabhadra
6.	Chamarajnar	Chamarajnar	Cauvery
7.	Dakshina Kannada	Mangalore	Arabian Sea
8.	Uttar Kannada	Karwar	Arabian Sea
9.	Mandya	Srirangapatna	Cauvery
10.	Mysore	Nanjangud	Cauvery
11.	Raichur	Sindhur	Krishna
12.	Shimoga	Shimoga	Tunga
13.		Bhadravathi	Bhadra
14.	Udupi	St. Mary's Island	Arabian Sea
15.		Udupi	Arabian Sea
16.		Kundapur	Arabian Sea
17.	Uttar Kannada	Supa	Kalinadi
18.		Gokarna	Arabian Sea
19.		Honnavar	Arabian Sea
20.	Davanagere	Harihar	Tungabhadra
MINOR TOWNS			
21.	Shimoga	Hosanagara	Linganamakki Dam
22.		Sagar	Linganamakki Dam
23.	Udupi	Hangarkatta	Arabian Sea
24.		Aluru	Kollur
25.		Koteswar	Arabian Sea
26.		Tonse	Arabian Sea
27.		Ambaglu	Arabian Sea
28.	Uttara Kannada	Bhatkal	Arabian Sea
29.		Ankola	Arabian Sea
30.		Kumta	Arabian Sea
31.	Raichur	Yedlapur	Krishna
32.		Gontagola	Krishna
33.		Mavinmadu	Tungabhadra
34.	Mysore	Hunsur	KRS Dam
35.	Mandya	Malavalli	Cauvery
36.	Gulbarga	Sedam	Kogna
37.		Chincholi	Mullamdri
38.	Dharwad	Navalgund	Benni
39.	Dakshin Kannada	Bantwal	Arabian Sea
40.	Chamarajnar	Shivasamudram	Cauvery

41.		Kollegal	Cauvery
42.	Bellary	Sandur	Tungabhadra
43.	Belgaum	Hungund	Malprabha

3.3 Prioritization of towns with waterfronts

The minor towns of the State with waterfronts (Sl No. 21 – 43) are all small towns with low growth potential and hence, are not viable for waterfront development on a PPP basis.

There are 20 major towns of the state with available waterfronts. A scorecard has been prepared for scoring these towns based on the following criteria.

- Accessibility by road/ rail
- Growth Potential of town
- Proximity to tourist locations

Table 2: Ranking of towns based on the prioritization criteria

Sl No.	Town	River	Prioritization Criteria			Scoring
			Access (10 points)	Growth potential (10 points)	Tourism potential (10 points)	
1.	Bagalkot	Ghataprabha	10	10	10	30
2.	Kanakpura	Shimsha	10	6	2	18
3.	Ramnagaram	Shimsha	10	6	2	18
4.	Belgaum	Ghataprabha	10	10	2	22
5.	Hospet	Tungabhadra	10	8	6	24
6.	Chamarajnagar	Cauvery	10	4	2	16
7.	Mangalore	Arabian Sea	10	10	10	30
8.	Karwar	Arabian Sea	10	4	8	22
9.	Srirangapatna	Cauvery	10	4	6	20
10.	Nanjangud	Cauvery	10	6	2	18
11.	Sindhur	Krishna	8	4	2	12
12.	Shimoga	Tunga	10	10	10	30
13.	Bhadravathi	Bhadra	10	5	8	23
14.	St. Mary's Island	Arabian Sea	10	0	10	20
15.	Udupi	Arabian Sea	10	4	10	24
16.	Kundapur	Arabian Sea	10	4	8	22
17.	Supa	Kalinadi	8	2	2	12
18.	Gokarna	Arabian Sea	10	4	10	24
19.	Honnavar	Arabian Sea	10	4	2	16
20.	Harihar	Tungabhadra	10	2	2	14

 Score: 20 - 30

 Score: 11 - 20

 Score: 1 - 10

3.4 Ranking of towns with waterfronts for development

Based on the scorecard for the major towns, the towns have been further ranked in the order of the highest score obtained. The towns in the order of scores obtained are set out in the table below:

Table 3: Ranking of towns

Sl No.	Town	Name of River
1.	Mangalore	Arabian Sea
2.	Shimoga	Tunga
3.	Bagalkot	Ghataprabha
4.	Hospet	Tungabhadra
5.	Udupi	Arabian Sea
6.	Gokarna	Arabian Sea
7.	Bhadravathi	Bhadra
8.	Belgaum	Ghataprabha
9.	Karwar	Arabian Sea
10.	Kundapur	Arabian Sea
11.	Srirangapatna	Cauvery
12.	St. Mary's Island	Arabian Sea
13.	Kanakpura	Shimsha
14.	Ramnagaram	Shimsha
15.	Chamarajnagar	Cauvery
16.	Nanjangud	Cauvery
17.	Honnavar	Arabian Sea
18.	Harihar	Tungabhadra
19.	Sindhur	Krishna
20.	Supa	Kalinadi

Though Mangalore has emerged as the No.1 town for waterfront development in the State, the same is excluded from the Study as waterfront development activities are already being planned in the town.

The top 10 towns emerged in the ranking process (excluding Mangalore) are set out below.

Table 4: Top 10 towns identified for waterfront development

Sl No.	Town
1.	Shimoga
2.	Bagalkot
3.	Hospet
4.	Udupi
5.	Gokarna
6.	Bhadravathi
7.	Belgaum
8.	Karwar
9.	Kundapur
10.	Srirangapatna

3.5 Shimoga – Illustrative towns for development of waterfront

From the top 10 towns identified for waterfront development in the State, Shimoga has been selected as an illustrative town for project implementation.

Profile of Shimoga

Shimoga is a colorful district with attractive landscape, waterfalls, lush green forests, river valleys and beautiful fields. The district, popularly called the bread basket of Karnataka, is a true picture of nature's bounty. The landscape of the district is dotted with waterfalls, swaying palms and lush paddy fields. Shimoga, almost central on the Karnataka map is the rice bowl of the State.

The world-famous Jog Falls and the Sacred Heart Cathedral Church (the second tallest church in India) are located in Shimoga. The district is considered as the heartland of Kannada language and culture. It has contributed some of the greatest Kannada scholars of modern times. Shimoga also boasts of several temples of ancient style and architecture. The major tourist spots in the town are the Shimoga Fort, Shivappa Nayaka Palace and museum and the Government Museum. For entrepreneurs in the amusement and leisure industry, the district's cultural and natural backdrop presents irresistible business opportunities.

Shimoga town has a population of about 2,75,000.

Table 5: Shimoga population and growth details

Population 2001			Decadal growth rate	
Persons	Males	Females	1981-1991	1991-2001
274,105	139794	134311	27.17%	42.1%



The important rivers that flow through the Shimoga district are the Tunga, Bhadra, Tungabhadra, Sharavathi, Kumudvati and Varada. The Tunga and the Bhadra unite to form the Tunga-bhadra at Kudali in Shimoga taluk, 14 km from Shimoga. The Kumudvati and the Varada are tributaries of the Tungabhadra. The Sahyadri ranges, part of the Western

Ghats, feed the rivers round the year, and inundate the fertile alluvial soil. The Sharavathi Hydel Project and Varahi Project provide a substantial portion of the state's power needs.

A preliminary assessment of the town, available length of waterfront and other key features has been undertaken. The same is presented in the map below.



From the preliminary assessment, it is found that a riverfront of approximately 8 km length is available in the town. The National Highway 206 passes through the Tunga riverfront. As can be seen from the map, one side of the river is predominantly agricultural land.

Discussions with Stakeholders

A site visit was undertaken to Shimoga and the following stakeholders were consulted on the potential for riverfront development:

- Deputy Commissioner of Shimoga District - Mr. Pankaj Pandey
- Shimoga Urban Development Authority - Mr. Ghatge (AEE)
- Town Planning Department, Shimoga - Mr. Raghavendra
- Department of Tourism, Shimoga - Mr. Deshpande
- Member of Civil Society - Mr. Gopinath

Components of a waterfront

The key components considered for waterfront development are set out below:

- Recreational amenities / Entertainment
- Park area
- Commercial complex
- Landscaping
- Hardscaping
 - Paths
 - Seating facilities
 - Pergolas and shelters
- River conservation

4. FINANCIAL VIABILITY ANALYSIS

A preliminary financial viability analysis has been carried out for development of waterfront in Shimoga town.

4.1 Land Development

The area assumptions and assumptions for land development alongside the waterfront in Shimoga are set out below:

Area Assumptions

Of the total area to be developed, 30% has been assumed for commercial construction activity.

Table 6: Area assumptions

Sl. No.	Item	Assumptions
1.	Entertainment / Open / Park area	70% of Development Area
2.	Commercial Construction Area	30% of Development Area
3.	Floor Space Index (FSI)	2
4.	Cost of Development for Commercial Space	1010 per sq. ft.

Land development Assumptions

Based on the area assumptions mentioned above, the details of the development area are set out in the table below.

Table 7: Land development assumptions

Particulars	Units	Dam Area
Length Utilized	M	500
Width Utilized	M	100

Development Area	Sq ft	538196
Development Area	Acres	12.36
Entertainment / Open / Park area	Acres	8.65
Commercial Construction Area	Acres	3.71

4.2 Project Cost

The estimated cost of the Project is Rs.46.40 Crores. The details of the Project Cost estimation are set out in the table below.

Table 8: Estimated Project Cost

Sl. No.	Item	Unit	Total
1	Commercial Complex	Rs. Crore	32.61
2.	Landscaping Cost	Rs. Crore	3.77
3.	Civil Cost	Rs. Crore	36.38
4.	Entertainment facilities	Rs. Crore	4.44
5.	River Conservation	Rs. Crore	1.11
Total Hard Cost		Rs. Crore	41.93
6.	Contingency Cost (5%)	Rs. Crore	2.10
7.	Financing Charges (1%)	Rs. Crore	0.42
8.	Interest During Construction(IDC)	Rs. Crore	1.95
Total Project Cost		Rs. Crore	46.40

The construction period for the project is assumed to be 12 months. A 60% Debt at an interest rate of 14% has been assumed.

4.3 Sources of Finance

The Project has been assumed to be financed through the following means:

- Debt
- Equity

Table 9: Other assumptions

Parameter	Value
Debt : Equity ratio	1.5:1
Cost of debt	14 % per annum
Moratorium for debt	2 years
Repayment period for debt	9 years

4.4 Revenue Estimates

The revenue driver for the project would be rentals and service charges accruing from proposed facilities. The revenue assumptions are set out in the table below.

Table 10: Revenue assumptions

Sl. No.	Particulars	Assumptions
1	Total Commercial Complex Rental space (sq.ft)	322917.3
2.	Commercial Complex Rental rate (Rs./ sq.ft / year)	420
3.	Commercial Complex Rental rate increase (%)	5%
4.	Advertisement Space (% of 1)	5%
5.	Advertisement Rental rate (Rs./ sq.ft / year)	30
6.	Advertisement Rental rate increase (%)	5%
7.	Entry Fee	50
8	Annual increase in Entry Fee	5%

4.5 Operations and Maintenance Expenses

The operation and maintenance costs assumed for the financial analysis are set out below.

Table 11: O&M assumptions

Sl. No.	Particulars	Assumptions
1.	Maintenance (as % of Project cost)	3%
2.	Salaries (as % of total revenue)	5%
3.	Administrative Expenses (as % of total revenue)	3%
4.	River Conservation (as % of total revenue)	1%
5.	Utilities (as % of total revenue)	5%
6.	Other (as % of total revenue)	5%

4.6 Project Viability – Base Case

Based on the assumptions presented above, the Project IRR for a 30 year concession period is 15 %.

Table 12: Project Viability

Year	Project		Equity	
	NPV	IRR	NPV	IRR
10	(21.7)	-2%	2.8	18%
15	(11.3)	9%	13.3	25%
20	(3.7)	12%	20.8	27%
25	1.3	14%	25.9	27%
30	4.7	15%	29.3	28%

4.7 SCENARIO ANALYSIS

Three scenarios have been considered for analysis. The Project IRR and Equity IRR in different scenarios is set out below.

Capex Variation

Since the study is for a preliminary estimate, the estimate is subject to change on detailing the activities. Hence a scenario analysis is carried out to understand the viability of the project on variation in Capital cost.

The variation due to the change in Capital Cost variation is enumerated in the table below.

Table 13: Scenario 1- Capital Cost Variation

Capex Variation	Project		Equity	
	NPV	IRR	NPV	IRR
0 %	4.7	15%	29.3	28%
10 %	(1.6)	13%	25.4	24%
-10 %	11.1	16%	33.1	32%

For every 10% change in Capital cost estimation, the NPV varies more than Rs. 6 crore.

Ground Coverage Ratio

Since the project a balanced mix of commercial complex and other entertainment facilities, a scenario analysis is carried out to understand the extent of ground coverage that can be given to the developer to make the project viable.

The variation in the viability due to the change in Ground Coverage Ratio is enumerated in the table below.

Table 14: Scenario 2 - Ground Coverage Variation

Ground Coverage Ratio	Project		Equity	
	NPV	IRR	NPV	IRR
0 %	4.7	15%	29.3	28%
10 %	2.6	14%	23.6	27%

-10 %	6.9	15%	34.9	28%
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Entrance Fee

Since the willingness to pay survey is difficult to obtain, due to lack of similar facilities available in the city; a study to understand the impact in variation in Entrance Fee is determined.

The variation in the viability due to the change in Entrance Fee is enumerated in the table below.

Table 15: Scenario 3 – Entrance Fee

Entrance Fee	Project		Equity	
	NPV	IRR	NPV	IRR
Rs. 50	4.7	15%	29.3	28 %
Rs. 25	4.3	15%	28.9	27 %
Rs. 0	4.0	14%	28.5	27 %

The Profit and Loss Statement for the Project is enclosed in Annexure 1.

5. INDICATIVE OPTIONS FOR PROJECT IMPLEMENTATION

The Project could comprise of two components – Mandatory Facilities and Optional Facilities. The indicative Options for Project Implementation are discussed in this Chapter.

The Project could be implemented under the following frame work:

5.1 Concession Structure

Under this structure the ownership of the land would always vest with the Concessing Authority and only the development rights would be given to the private partner (Concessionaire). The two options that could be discussed under the Concession Structure are as follows:

Option 1: Development (design, construction, O & M) by private partner having Concession Payment as Bid Parameter

Option 2: Development (design, construction, O & M) by private partner having Concession Period as Bid Parameter

The indicative roles and responsibilities of both the Concessing Authority and Concessionaire would broadly remain the same in both the above options mentioned. The bid parameters in terms of payment terms and concession period would vary.

Roles and responsibilities of the Concessing Authority

The roles and responsibilities of the Concessions Authority are set out below.

- Handover Project Site free from all encumbrances to the Concessionaire as specified in the Concession Agreement
- Shifting of any infrastructure utility lines such as electric lines, water lines, drainage line, etc (if any)
- Provide all the common infrastructure facilities such as water, electricity, sewerage, roads, subways, etc that would be required by the Concessionaire for efficient implementation of the Project Facilities.
- Clearly spell out the design and construction requirements of the Mandatory Project Facilities
- Clearly specify the Project completion period along with mile stones and payment terms
- Assist the Concessionaire in obtaining all required clearance for setting up of the Project Facilities

Roles and responsibilities of the Concessionaire

The roles and responsibilities of the Concessionaire are set out below.

- Mobilization of funds required for the development of the Project
- Design, construct, implement, operate and maintain the Project Facilities and required support facilities like the service road, public conveniences, etc as specified by the Concessions Authority
- Operation and Maintenance the Project Facilities as per the standards specified by the Concessions Authority
- Promotion of the Project as a destination
- Completion of the Project in a timely manner
- Obtain all necessary clearances from the Government for the commissioning of the Project.

- Make payments to the Concessioneing Authority on time as specified in the agreement.
- Handover the Project site along with Project Facilities to the Concessioneing Authority on completion of the concession period.
- Concessionaire shall have right to collect revenues from the Project Facilities

5.2 Analysis of Options for Implementation

Salient features of the various concession structures available are as set out below:

Option 1: Development (design, construction, O & M) by private partner having Concession Payment as Bid Parameter

1	Structure	Build – Operate – Transfer (BOT)
2	Typical Tenure	30 years
3	Bidding Parameter	Highest concession payment (semi annual or annual)
4	Concession Payment Mechanism ¹	The structure could be revenue share payment (% share of annual revenues accruing to the Project) or

¹ In terms of the payment mechanism under this structure various option could be adopted which could suite the project of this nature. The various payment mechanisms are as set out as follows:

- Option 1: Fixed upfront payment and variable concession payment (this could be either paid annually, every 6 months, every month, etc). in this case the variable payment would be the Bid Parameter.
- Option 2: Fixed annual payment and variable payment could be percentage of revenue sharing from the operations of the Project Facilities (this would include revenues from both direct and indirect sources). In this case the Bid Parameter would be the percentage of revenue sharing. Since the revenue itself is a variable number, a minimum percentage could be fixed as a base for the bidders to quote. The financial proposal could be evaluated based on this base figure
- Option 3: Fixed percentage of revenue from operations and variable annual payment. In this case the annual payment would be the bid parameter.

Many options in terms of concession payment mechanism could be evolved on a case to case basis.

		periodic payments from Concessionaire as part of concession arrangement
5	Control of Concessioneing Authority in Project	Concessionaire has the flexibility to design, finance, construct, operate and manage facilities role of Concessioneing Authority. However, development of the facilities would be as per the requirements set out by the Concessioneing Authority during the bid process.

The merits and demerits of this Project structuring options are setout below:

Merits	Demerits
<ul style="list-style-type: none"> • Ownership of land and Project Facilities would remain with Concessioneing Authority • All risks such as construction risk, O&M risk, Financing risk and Market/ Revenue risk is transferred to private partner. • Land and the facilities developed are transferred back to Concessioneing Authority at the end of concession period. • Private partner would have the flexibility of developing the Project Facilities under the broader framework of specifications specified by Concessioneing Authority. • Risk of time bound completion or 	<ul style="list-style-type: none"> • Technical proposals need to be checked for conformance with minimum specifications

<p>implementation of the Project is borne by the private partner</p> <ul style="list-style-type: none"> • Continuous revenue stream for Concessioning Authority 	
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(ii) Option 2: Development (design, construction, O & M) by private partner having Concession Period as Bid Parameter

1	Structure	Build – Operate – Transfer (BOT)
2	Typical Tenure	Based on successful bid by private partner
3	Bidding Parameter	Lowest concession period
4	Concession Payment Mechanism	This would be pre-defined (could be Nil/Nominal)
5	Control of Concessioning Authority in Project	Concessionaire has the flexibility to design, finance, construct, operate and manage facilities with limited role of Concessioning Authority. However, development of the facilities would be as per the requirements set out by the Concessioning Authority during the bid process.

The merits and demerits of this Project structuring options are set out below:

Merits	Demerits
<ul style="list-style-type: none"> • Ownership of land and Project Facilities would remain with Concessioning Authority • All risks such as construction risk, O&M risk, Financing risk and Market/ Revenue risk is transferred to 	<ul style="list-style-type: none"> • Since concession period is the bid parameter, the private partner would expect to recover the investments made as well as make some revenues in a shorter period of time.

<p>private partner.</p> <ul style="list-style-type: none">• Land and the facilities developed are transferred back to Concessions Authority at the end of concession period.• Private partner would have the flexibility of developing the Project Facilities under the broader framework of specifications specified by Concessions Authority.• Risk of time bound completion or implementation of the Project is borne by the private partner	<ul style="list-style-type: none">• The payments to Concessions Authority made by the private partner would be minimal or nil.
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5.3 Indicative Bid Process

The indicative bid process for the Project is set out below.

- A competitive two stage or single stage bid process could be followed for the selection of the private partner (the “Bidder”)
- A two stage bid process comprising of qualification stage and proposal stage. The proposals from interested bidders are sought at two stages. However the bidder who qualifies the qualification stage would only be qualified to proposal stage.
 - (i) Qualification Stage – Request for Qualification document would be issued to interested bidders
 - (ii) Bidders who qualify in RFQ stage would be issued Request for Proposal document (RFP) along with Concession Agreement.
- Whereas in single stage – the bidders would be issued a Bid Document which would comprise of qualification stage as well as proposal stage
- A Single Stage bid process is preferred for this Project as two stage bid process takes more time and it becomes difficult to sustain the interest of the bidders for a longer time.
- A single stage bid process with three cover system is recommended for submission of bids which would include:
 - Submission of documents for satisfying the responsiveness of the bids and meeting the qualification criterion
 - Submission of technical bid
 - Submission of financial bid
- Concession Period could be for a period of 30 years.

Bid Document

- Bidders both Single Business Entity and Consortium of Business Entities would be eligible for this Project.
- For the Project, Business Entity shall mean - A Company registered in India under the provisions of the Companies Act, 1956, or under the equivalent law in the case of a foreign Company. Copy of such Registration Certificate should be submitted along with the Bid.
- Number of consortium members shall be limited to (3) three
 - Option 1: Lead Financial, Lead Technical member & Other Member (or)
 - Option 2: Lead Member and other member (s)
- Single Entity Bidder can bid along with one Group Entity² to meet the financial criteria for the Project.
- Members of the Consortium would have to enter into MoU.

Eligibility Criteria

Experience

The bidder must satisfy any one of the following experiences³:

1. Category 1: Development⁴ of Tourism Infrastructure Projects
2. Category 2: Operation & Maintenance of Tourism Infrastructure⁵ Projects
3. Category 3: Development of Core Infrastructure⁶ Projects
4. Category 4: Operation & Maintenance of Core Infrastructure Projects

² For the purpose of this project a Business Entity, which directly holds not less than 26% of paid up capital in the Bidder; or A Business Entity in which the Bidder directly holds not less than 26% of paid-up capital of such Business Entity.

³ Bidder either as Single Entity or as a Consortium would be eligible to quote experience only in respect of a particular Eligible Project under any one categories as mentioned above.

⁴ For the purpose of this project Development shall mean design, finance, construct, operate and maintain a facility

⁵ For the purpose of this project - Tourism Infrastructure Projects shall mean projects such as entertainment complex/hotels/resorts/amusement parks/golf course/heritage or theme parks/ropeway and convention centres.

⁶ For the purpose of this project - Core Infrastructure Projects shall mean projects in real estate development, power, telecom, ports, railways, industrial parks, petroleum and natural gas, petrochemicals, steel, cement, fertilisers, mining, pipelines, irrigation, water supply and sewerage.

Financial

The bidder must satisfy any two of the following financial criteria

1. Net worth as at the end of the recent/latest financial year.
2. Aggregate Net Cash Accruals for the last three financial years.
3. The average annual turn over of the Bidder for the last three financial years

6. ACTS & LEGISLATIONS

Various state and central legislations/ acts governing the development of waterfronts in the country would need to be reviewed as a part of establishing the feasibility of the locations identified for the waterfront development. A list of such legislations/ acts is set out below.

6.1 Central Legislations/ Acts

The Legislations/ Acts pertaining to waterfront development, formulated by the Centre are as follows:

- a. Inter-State Water Dispute Act, 1956
- b. Environment (Protection) Act, 1986
- c. Water Resources Planning Act, 1992
- d. Water (Preservation & Control of Pollution) Act, 1974
- e. River Boards Act, 1956
- f. Water Act, 1974
- g. Central Ground Water Board Act, 1997
- h. Central Board for the Prevention and Control of Water Pollution (procedure for transaction of business) Rules, 1975
- i. Water Rules, 1975

6.2 State Legislations/ Acts

The State formulated legislations/ Acts pertaining to waterfront development are as follows:

- a. Karnataka Cauvery Basin Irrigation Protection Act, 1991
- b. Karnataka Irrigation Act, 1965

- c. Karnataka General Clauses Act, 1899
- d. Karnataka Irrigation and Certain Other Law (Amendment) Act, 2000

6.3 Initiatives by the Central Government

Constitution of National Coastal Zone Management Authority

The Central Government constituted an authority known as the National Coastal Zone Management Authority (hereinafter referred to as the Authority) for protecting and improving the quality of the coastal environment and preventing, abating and controlling environmental pollution in coastal areas, namely:-

- A. To co-ordinate of action by the State Coastal Zone Management Authorities and the Union Territory Coastal Zone Management Authorities
- B. To examine the proposal for changes and modifications in classification of Coastal Regulation Zone.
- C. To Reviews the cases involving violations of the provision of the said Act or rules made hereunder
- D. The Authority shall provide technical assistance and guidance to the concerned State Government, Union Territory Governments/Administrations,
- E. The authority shall examine and accord its approval to area specific management plans
- F. The Authority may advise the Central Government on policy, planning, research and development

- G. The Authority shall deal with all environmental issues relating to Coastal Regulation Zone which may be referred to it by the Central Government.
- H. The Authority shall furnish report of its activities and the activities of the State Coastal Zone Management Authorities and Union Territory Coastal Zone Management Authorities at least once in six months to the Central Government.
- I. The foregoing powers and functions of the Authority shall be subject to the supervision and control of the Central Government. .

Karnataka State Coastal Zone Management Authority

The Central government has constituted an authority to be known as the Karnataka State Coastal Zone Management Authority (hereinafter referred to as the Authority) for protecting and improving the quality of the coastal environment and preventing, abating and controlling environmental pollution in the coastal areas of the State of Karnataka namely:-

- A. The Authority has the power to examine the proposals for changes or modifications in classification of Coastal Regulation Zone areas and making specific recommendations to the National Coastal Zone Management Authority.
- B. The Authority has the power to inquire into cases of alleged violations of the provisions of the said Act
- C. The Authority shall deal with environmental issues relating to Coastal Regulation Zone.

- D. The Authority shall identify ecologically sensitive areas in the Coastal Regulation Zone and formulate area-specific management plans for such identified areas.
- E. The Authority shall identify economically important stretches in Coastal Regulation Zone and prepare Integrated Coastal Zone Management Plans for the same.
- F. The Authority shall examine all projects proposed in Coastal Regulation Zone areas and give their recommendations.
- G. The Authority shall ensure compliance of all specific conditions that are stipulated and laid down in the approved Coastal Zone Management Plan of Karnataka.
- H. The foregoing powers and functions of the Authority shall be subject to the supervision and control of the Central Government.

Coastal Management Zone Notification, 2008- Draft Notification

The main objective of this notification is, an effective implementation of the sustainable development of the coastal regions as well as conservation of the coastal resources. The Central Government proposed to bring into force a new framework for managing and regulating activities in the coastal and marine areas for conserving and protecting the coastal resources and coastal environment; and for ensuring protection of coastal population and structures from risk of inundation due to natural hazards; and for ensuring that the livelihoods of coastal populations are strengthened; by superseding the Coastal Regulation Zone, Notification, 1991;

In accordance with the above decision, the Central Government proposes to issue a notification to be known as the Coastal Management Zone (CMZ) Notification, 2008.

- A. The Objective of this Notification is protection and sustainable development of the coastal stretches and marine environment through sustainable coastal zone management practices based on sound scientific principles taking into account the vulnerability of the coast to natural hazards, sustainable livelihood security for local communities, and conservation of ecologically and culturally significant coastal resources.
- B. Categorization of the Coastal Zone.- For the purposes of management and regulation, the coastal zone shall be divided into four categories, namely:-
- Coastal Management Zone - I (CMZ -I) shall consist of areas designated as Ecologically Sensitive Areas (ESA)
 - Coastal Management Zone - II (CMZ - II) shall consist of areas, other than CMZ - I and coastal waters, identified as "Areas of Particular Concern (APC)" such as economically important areas,
 - Coastal Management Zone -III (CMZ - III) shall consist of all other open areas including coastal waters and tidal influenced inland water bodies, that is, all areas excluding those classified as CMZ -I, II and IV.
 - Coastal Management Zone -IV (CMZ - IV) shall consist of island territories of Andaman and Nicobar, Lakshadweep, and other offshore islands.
- C. National Board for Sustainable Coastal Zone Management.-
- D. This Board shall have the mandate to provide policy advice to the Central Government on matters relating to coastal zone management, but shall not undertake regulatory functions.

- E. National and State or UT Coastal Zone Management Authorities set up under the Environment (Protection) Act, 1986, shall be the Coastal Zone Management Authorities.

River front

The National River Conservation Directorate (NRCD) which functions under the Ministry of Environment and Forest (MoEF) provides assistance to various State Governments for implementing the River Action Plans under the National River Conservation Plan (NRCP). The objective of NRCP is to improve the water quality of these rivers, which are the major fresh water sources in the country, through the implementation of pollution abatement schemes. The major work of NRCP includes river front development.

Protection of environment and improvement were explicitly incorporated into the Constitution by the Constitution (Forty-Second Amendment) Act of 1976. Article 48A of the directive principles of state policy declares: “the State shall endeavour to protect and improve the environment and to safeguard the forests and wild life of the country”. ‘Fundamental Duties’ as envisaged in Article 51A(g), imposes a similar responsibility on every citizen ‘to protect and improve the natural environment including forests, lakes, rivers and wild life and to have compassion for living creatures.

With an intention to develop river front and water front in the State of Karnataka the following legislations were analyzed.

The Karnataka Municipal Corporations Act, 1976

The Act provides for creation of Municipal Authority in the State of Karnataka. It confers certain powers on Mayor and the deputy Mayor. It specifies the obligatory and specific functions of the corporations. It also provides for strengthening the administrative machinery of the corporations.

Planning and Development:

The Municipal Corporation (Authority) is the 3rd Tier of Government for the City. The Authority has certain obligatory functions which includes water supply, drainage, MSW and property related functions. It shall also exercise certain discretionary functions.

Revenue and Taxation

The Act empowers the authority to collect tax, levy cess, duties etc. and the authority also has the licensing powers.

Land Acquisition

The Authority can acquire, any land designated in a Master Plan for specified purpose or for any public purpose either by agreement with the land owners or under the provisions of the Land Acquisition Act, 1894.

The Karnataka Town and Country Planning Act, 1961

Main objective of this Act is to provide for the regulation of planned growth of land use and development and for the making and execution of town planning schemes in the state of Karnataka.

This Act provides for various circumstances under which change of land use could be permitted. It also provides for making and execution of town planning schemes in the State of Karnataka.

Planning and Development

The Planning Authority constituted under the Karnataka Town and country Planning Act, 1961(hereinafter referred to as the “**Planning Authority**”) formulates a Master Plan, regulates development and improvement of entire planning area and is empowered with making of town planning schemes.

Revenue and Taxation

The Act provides for levy and collection of cess, surcharges. The Planning authority is entitled to recover fees in case permission of change in land use is sought for by the land owners.

Land Acquisition

By virtue of Section 69 of the Act the Planning Authority may acquire any land designated in the Master Plan for any public purpose specified in the Act. Further section 70, provides that land needed for the purpose of a scheme of development shall be deemed to be needed for public purpose.

Section 71 confers power on the State Government to acquire land included in a town planning Scheme for public purpose.

The Karnataka Municipalities Act, 1964

Main objective of this Act is to consolidates and amends the law relating to the management of municipal affair in towns and cities other than the cities for which municipal corporation are established in the State of Karnataka.

Planning and Development

The Municipal Council constituted under the Karnataka Municipalities Act, 1964 (hereinafter referred to as Municipal Council) carries out same functions as a Municipal Corporation in respect of Smaller Urban areas.

Revenue and Taxation

Section 103 of the Act empowers the Municipal Council to impose tax and to levy cess.

Land Acquisition

By virtue of Section 81 of the Act, the Municipal Council can acquire and hold property situated within or without the limits of municipal area. The property so vested with the municipal council may be utilized for any purpose or for achieving any of the obligations of the municipality. This provision thus enables the municipality to acquire and hold land for the implementation of important schemes.

Further under Section 72(1) of the Act, municipal council has competency to lease, sell or otherwise transfer the property belonging to it for the purpose of implementing any provision of the Act. Further the same section also empowers the municipal council to enter into any kind of contracts which it considers necessary, to carry out any of its obligation under the Act. As such under this section, the municipal council can transfer interest in the land belonging to it in favour of any private sector for implementing any of the obligation of municipal council.

Power to undertake works and incur expenditure for improvements

Municipal council may draw improvement scheme and expansion scheme for the areas with in its jurisdiction and can undertake any works and incur any expenditure in respect thereof.

The Karnataka Urban Development Authority Act, 1987

An Act provides for the establishment of urban development Authorities for the planned development of major and important urban areas in the state and the area adjacent.

Planning and Development

Under Section 15 of the Act, the urban development authority constituted under the Karnataka Urban Development Authority, 1987 (hereinafter referred to as the Authority) has the power to undertake works and incur expenditure for development and in execution of that power; the Authority has the power to draw up detailed Schemes for the development of the urban area and also for the framing and execution of development schemes.

The Authority may also take up any new or additional development schemes.

Revenue and Taxation

Section 20 of the Act empowers the Authority to levy betterment tax.

Land Acquisition

Section 35 of the Act empowers the Authority to enter into agreement with owner of any land or any interest therein, situated within the urban area for the purchase of such land. Further land may also be acquired under the provision of the Land Acquisition Act, 1894.

Lake front development

National Lake Conservation Plan

Ministry of Environment and Forests has been implementing the National Lake Conservation Plan (NLCP) since 2001 for conservation and management of polluted and degraded lakes in urban and semi-urban areas. The major objectives of NLCP include encouraging and assisting State Governments for sustainable management and conservation of lakes. Lakes being major sources of accessible fresh water require well planned, sustainable and scientific efforts to prevent their degradation and ultimate death. The main objectives of the National Lake Conservation Plan are:

- Prevention of pollution from point and non-point sources.
- Treatment of Catchment area.
- Desilting and weed control.
- Research & Development studies on floral and faunal activities and related ecological aspects.
- Other activities depending on the lake specific conditions such as integrated development approach, including interface with human populations.

The funding pattern under National Lake Conservation Plan was revised to 70:30 costs sharing between Central and the State Government with effect from January, 2002. In view of a large number of proposals being received from various States, the scope of NLCP has been enlarged during the Tenth Plan Period by including the rural lakes in the programme along with urban lakes. The funding pattern is same for the year 2007- 2008.

The Environment (Protection) Act, 1986 (EPA)

According to EPA, "Environment" includes water, air and land and the inter-relationship which exists among and between water, air and land, and human beings, other living creatures, plants, micro-organism and property.

Section 3 of the EPA states, that Central Government shall have the power to take all such measures as it deems necessary or expedient for the purpose of protecting and improving the quality of the environment and preventing controlling and abating environmental pollution.

National Environment Policy, 2004

The National Environment Policy (NEP, 2004) is a response to the national commitment to a clean environment, mandated in the Constitution in Articles 48A and 51 A (g), strengthened by judicial interpretation of Article 21. The Objective of NEP 2004 is:

- Conservation of Critical Environmental Resources
- Intra-generational Equity: Livelihood Security for the Poor

6.4 Initiative of the State Government

Appreciating the urgency and enormity of the task for the integrated development of lakes, the Department of Environment and Ecology proposed the constitution of the Lake Development Authority. The Lake Development Authority was created vide Government Order No. FEE/12/ENG/02, Bangalore, Dated. 10th July 2002. It is a registered society under the Karnataka Societies Registration Act, 1960 and a non-profit organization working solely for the regeneration and conservation of lakes within Bangalore Metropolitan Region Development Authority jurisdiction.

However, from 30.04.2003 the Lake Development Authority's jurisdiction has been extended over the lakes in city municipal corporations in the State as well as lakes in the city Municipalities which are the main sources for drinking water. The Lake Development Authority is responsible for:

- Restoring lakes and facilitating restoration of depleting ground water table.
- Diverting/treating sewage to generate alternative; sources of raw water and prevent contamination of underground aquifers from wastewater.
- Environment impact Assessment studies.
- Environmental Planning and GIS Mapping of lakes and surrounding areas.
- Improving and creating habitat for water birds and wild plants.
- Reducing sullage and non-point water impacts.
- Improving urban sanitation and health conditions especially for the weaker sections living close to the lakes.
- Impounding run-off water to ensure recharge of ground water aquifers and revival of borewells.
- Monitoring and management of water quality and lake ecology.
- Utilizing the lakes for the purpose of education and tourism.
- Community participation and public awareness programmes for lakes conservation.

It also has the governing council which has the powers to:

- Frame regulations, byelaws
- Enter into agreements with public or private bodies to further objectives
- Accept endowments grants etc
- Establish and spell out membership of committees, task forces
- Appoint advisory board and other such special committees
- To invite experts to meetings of governing council

Apart from this, the Memorandum of Association of Lake Development Authority also provides for the creation of an Empowered Committee of the Lake Development Authority. The functions and powers of the Empowered Committee are:

- Seeking funds for the regeneration/development/maintenance of lakes
- Grant Approval for the Detailed Project Reports to be submitted to Ministry of Environment and Forests under the Lake Conservation Plan

- Grant approvals for the works to be taken up by following due process under the Karnataka Transparency in Public Procurements Act, 1999
- Powers to constitute any sub-committee/s for the above purposes.

Constitutional Provision and applicable legislations

Protection of environment and improvement were explicitly incorporated into the Constitution by the Constitution (Forty-Second Amendment) Act of 1976. Article 48A of the directive principles of state policy declares: “the State shall endeavour to protect and improve the environment and to safeguard the forests and wild life of the country”. ‘Fundamental Duties’ as envisaged in Article 51A (g), imposes a similar responsibility on every citizen ‘to protect and improve the natural environment including forests, lakes, rivers and wild life and to have compassion for living creatures.

The Water (Prevention and Control of Pollution) Act, 1974

The Water (Prevention and Control of Pollution) Act, 1974 suggest that only State Governments can enact water pollution legislation. Article 252 empowers Parliament to enact laws on state subjects for two or more states, where the State Legislatures have consented to such legislation. Under this Act, the State Boards were vested with the regulatory authority and were empowered to establish and enforce effluent standards for factories discharging pollutants into water bodies. A Central Board performs the same functions for union territories and coordinates activities among the states.

The Water (Prevention and Control of Pollution) Cess Act of 1977

The main object of this Act is to meet the expenses of the Central and State water boards. Economic incentives are provided for control of pollution by differential levy of tax structure. The local authorities and certain designated industries are required to pay a cess

for water consumption. The revenues accruing thus are in turn used for implementation of the Water (Prevention and Control of Pollution) Act, 1977. The Central Government, after making deductions for collection expenses, pays the Central board and the States such sums as it deems necessary to enforce the provisions of The Water (Prevention and Control of Pollution) Act, 1974. On the installation of effluent treatment equipment and meeting the applicable norms the polluter is entitled to get a rebate of 25% on applicable cess.

7. KEY ISSUES

While market demand and economic feasibility of the waterfront development are critical parameters to test the viability of the development concept, the other key issues associated with waterfront development are set out below.

7.1 Policy / Regulatory environment

If the city wants to attract the highest quality development, it should be the easiest part of the city to do business. The process and policies would need to be more streamlined. Removing regulatory hurdles for the project is itself a big incentive for the private developer. There needs to be a strict monitoring framework and policy guidelines for development activities along the waterfront. The guidelines would need to take into consideration the master plan / city development plan and must integrate into the overall development strategies and utility investments (sewer, water, telecommunications) of the city.

7.2 Land Reclamation

The pattern of existing land uses, potential for incorporating new developments and technical issues (pertaining to river hydraulics and embankment design) need to be studied for determining the alignment of the proposed waterfront and the extent of reclamation to be carried out.

7.3 Land acquisition & rehabilitation

The ownership of the land around the waterfront would need to be studied. If the land belongs to private owners, the same would need to be purchased from them at the prevailing market rates. Some resistance can be expected from the owners to part with their land. In lieu of the same, the Government may need to design attractive compensation packages and negotiate with the owners to ensure smooth and quick transfer of ownership.

In case the land is occupied by legal/ illegal immigrants, they would need to be rehabilitated before the process of waterfront development can start.

7.4 Replenishing water

At the very least, throughout the year, a certain amount of depth of water in the water source must be maintained. It would become necessary to replenish seepage and evaporation losses to the extent that the water depth is maintained. Construction of embankments and use of treated sewage water could be explored as options.

7.5 Infrastructure

To the extent that the City can create planning certainty in zoning, transportation, and planning, the easier it will be to attract investment. Completing these efforts ahead of development is important

7.6 Surrounding areas

Unattractive uses in the surrounding area, such as a solid waste transfer station, dumping yard, etc would result in the area lacking a positive image that is necessary to attract residents and high-quality commercial users. Targeted blight removal and beautification of the areas surrounding the waterfront may become necessary so as to create a more receptive context for new investment.

7.7 Environmental issues

The proposed waterfront development would need to arrest environmental pollution and contribute in maintaining a pollution free environment alongside the waterfront. The development must ensure equitable growth without compromising on environment sustainability issues.

8. WAY FORWARD

The next steps to be undertaken in the Study are set out in this Chapter.

- Discussions would need to be held with the DC Shimoga, Commissioner, and officers of various agencies concerned with the Project on the feasibility report. The project structure, land acquisition and other details would need to be finalized in consultation with the officials
- A stakeholder Consultation would need to be organized to ensure buy-in for the Project.
- The site area along with the exact co-ordinates would need to be finalized in consultation with the local officials.
- A detailed viability analysis for the selected site would then need to be undertaken.

Annexure 1

Profit and Loss Statement

Operation Years	Year 2	Year 3	Year 4	Year 5	Year 10	Year 15	Year 20	Year 25	Year 30
A Revenues - Operations									
1 Lease Rentals (LR) -	13.7	14.4	15.1	15.9	20.3	25.9	33.0	42.1	53.8
2 Advertising Rentals (AR)	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2
Total Revenue -Operations	13.8	14.5	15.2	15.9	20.3	26.0	33.1	42.3	54.0
B Expenses - Operations									
1 Maintainance (% of hard cost)	1.3	1.3	1.4	1.5	1.9	2.4	3.0	3.9	4.9
2 Salaries	0.7	0.7	0.8	0.8	1.0	1.3	1.7	2.1	2.7
3 Admn Exp	0.4	0.4	0.5	0.5	0.6	0.8	1.0	1.3	1.6
4 River Conservation	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.4	0.5
5 Utilities (electricity, water, etc)	0.7	0.7	0.8	0.8	1.0	1.3	1.7	2.1	2.7
6 Other	0.7	0.7	0.8	0.8	1.0	1.3	1.7	2.1	2.7
Total Expemses - Operations	3.9	4.1	4.3	4.5	5.7	7.3	9.3	11.9	15.2
C EBITDA	9.90	10.39	10.91	11.46	14.62	18.66	23.82	30.40	38.79
1 Interest	-	3.68	3.25	2.81	0.65	-	-	-	-
2 Depreciation	1.51	1.51	1.51	1.51	1.51	1.51	1.51	1.28	1.28
E EBT	8.39	5.21	6.16	7.14	12.47	17.16	22.31	29.12	37.52
F Tax	2.84	1.76	2.09	2.42	4.23	5.82	7.56	9.87	12.72
G PAT	5.5	3.4	4.1	4.7	8.2	11.3	14.7	19.2	24.8

