

# **City-Lake/Waterfront Development, PPP & Concession Agreements**

**By**

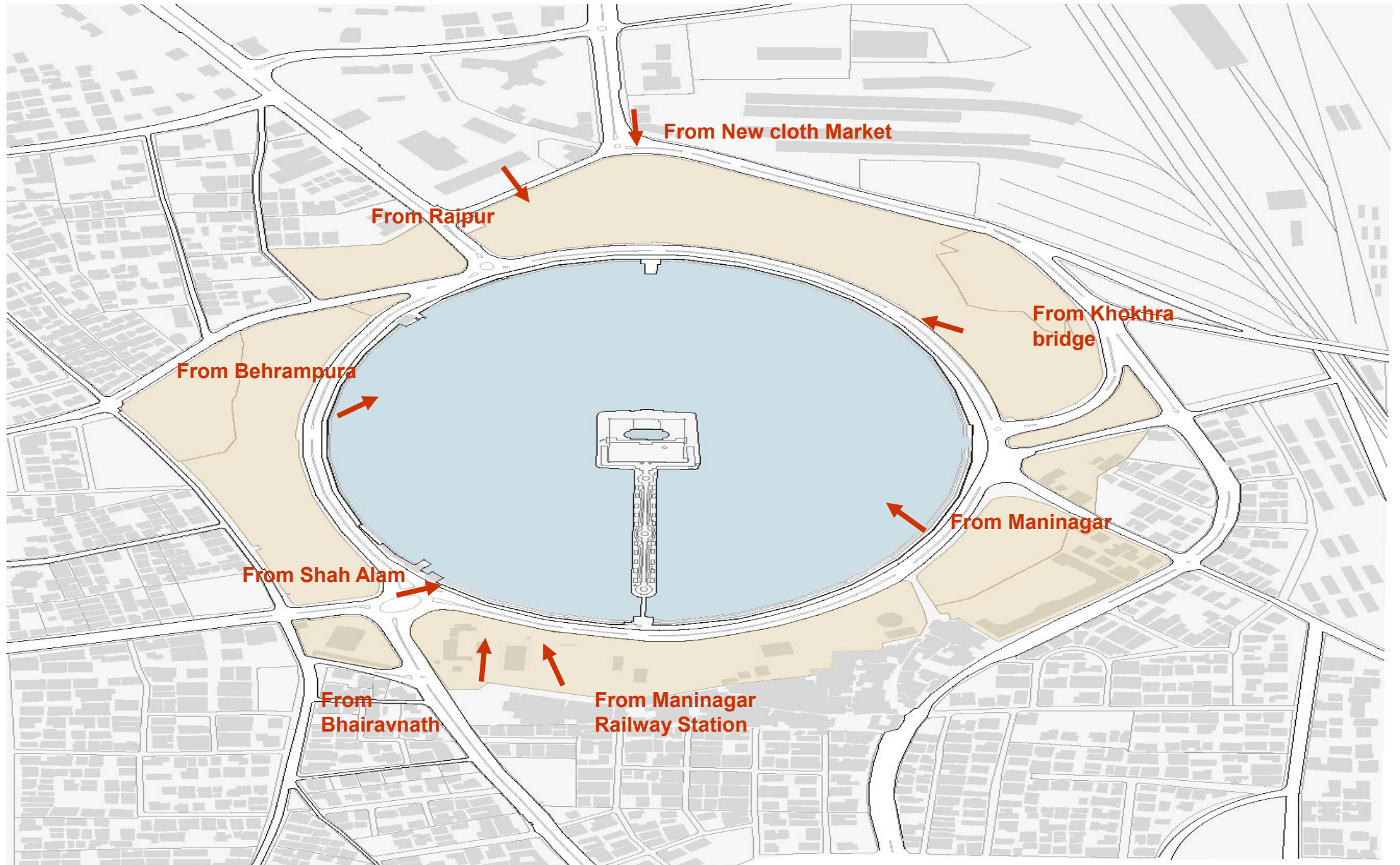
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**Chairman Sabarmati Riverfront Co. & Mahatma Gandhi Ashram Sabarmati, Ahmedabad**

# Scheme of Presentation on Lake & Waterfront Development in Ahmedabad

1. Kankaria Lakefront Development 2006-08 & facilities added in the coming years too:
  - Overview
  - Methodology
  - PPP arrangements & further Management
2. Sabarmati Lakefront Development Project, Phases 1 of 11.5 Kms & Phase 2 of 5.5km :
  - Overview 2005 to 2014
  - Methodology of Implementation of Waterfront Dev.
  - PPP arrangements & further Management
3. SRF Extension further: Phase 3 to Phase 6 (22.8 km) beyond Indira Bridge to Gandhinagar
4. Contract Agreements/ Concessions Agreement on BOT or DBOT basis
5. Auditor's concerned once a breach of Contract, Revenue losses or otherwise?

# Historic Kankaria Lake, Used as a Traffic Circle till 2006: Before Development





## Balloon Safari in Kankaria Lake-Front on PPP basis

- Passenger-carrying tethered helium balloon normally flies to 500 feet high. Show a 360-degree view of the city
- Carry 30 passengers for 10-15 minutes
- First in India, on a PPP (Revenue Sharing model ) by a UK-based operator



Aerial Photography from 350 feet of height



# Aquarium, Baal Vatika, Open Air Theatre, Zoo



# Kids City of Kankaria Lake: A Unique Project of Its Kind



 AMDAVAD  
MUNICIPAL  
CORPORATION



A dream world for  
the little ones  
For the Children, of the children,  
by the Children

**+91 79 3245 3344**  
[www.kidscityamdavad.com](http://www.kidscityamdavad.com)

## Mini Trains ( 2.2 km Rail-Line): Atal /Swarnim Jayanti Express Mini Trains



# **Phase-wise Implementation of Various Recreational Activities & Projects on PPP**

## **2008-10:**

- City History on Stone Murals ( Kankaria Walls) by MSU Baroda
- Toy Train, Children's Play areas, Park & Garden Developments, PPP or Revenue Sharing models  
(This model, also implemented for City Lakes, like Naroda, Ghodasar, Asharwa, Vastrapur & Sarkhej Roja)

## **2010:**

- Helium Tethered Balloon – on PPP mode
- Atal Express & Swarnim Jayanti Express Mini-Trains – O&M on PPP mode
- Kids City – Many units & full O&M on PPP mode

## **2010-11 (Implemented- on PPP mode)**

- Desert Safari, Bungy Ejection & Trampoline
- Obstacle Courses & Artificial Rock Climbing
- Baby Cars & Moon Walkers

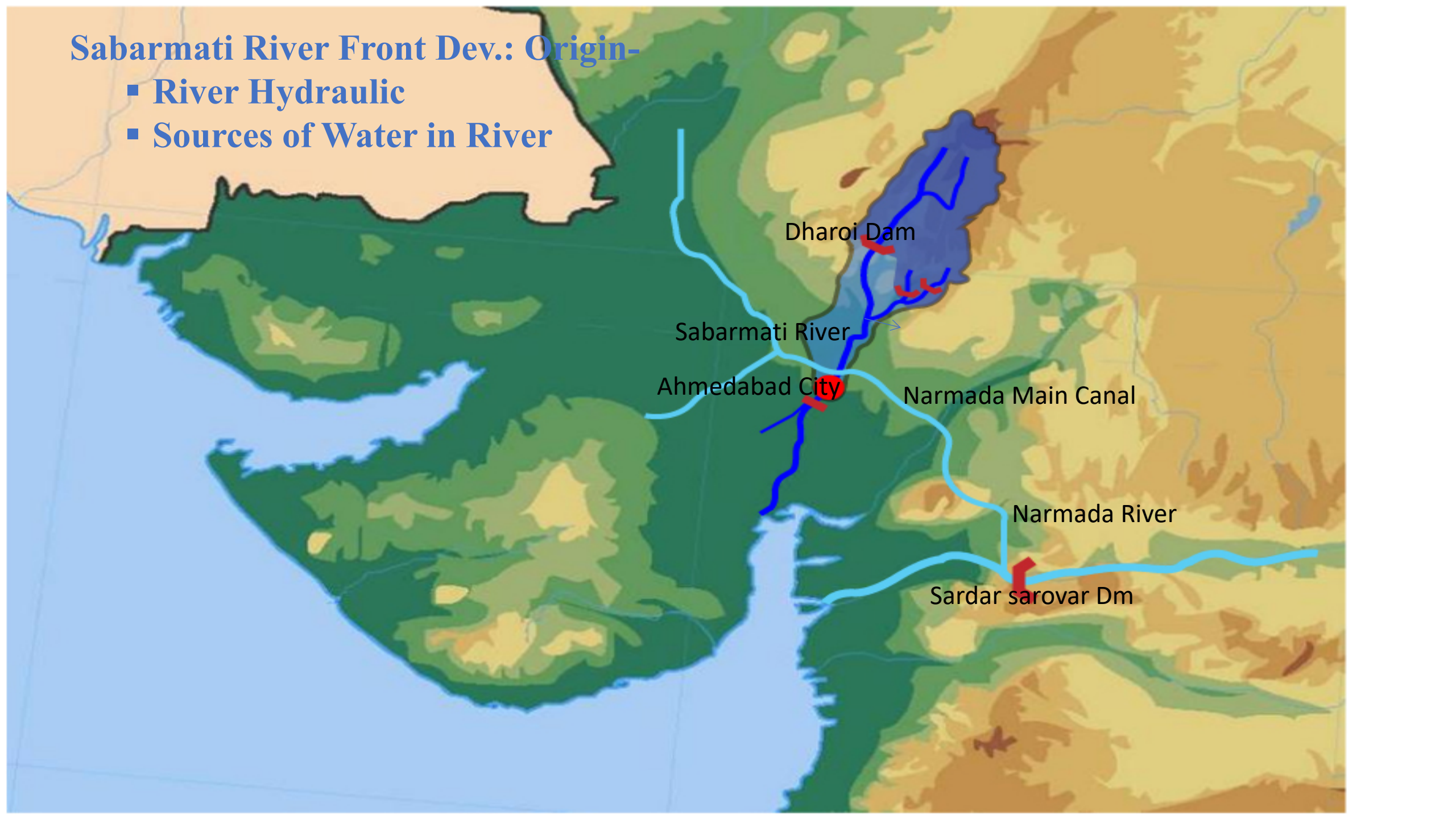
## **2011-14: Implemented- on PPP mode)**

*Miniature Golf Course with tree walk, Aqua Cart, Archery Adventure, Segway Safari, Mirror Maze, Discovery, Black Flash/Maverick, Vertical Swing, Ring of fire, Carousel, Mega Disc' O, Tower Ride, Roller Coaster, Sky Fly, Kid's zone, Paint Ball*

**SABARMATI RIVERFRONT PROJECT  
2005 ONWAWRDS**

## Sabarmati River Front Dev.: Origin-

- River Hydraulic
- Sources of Water in River

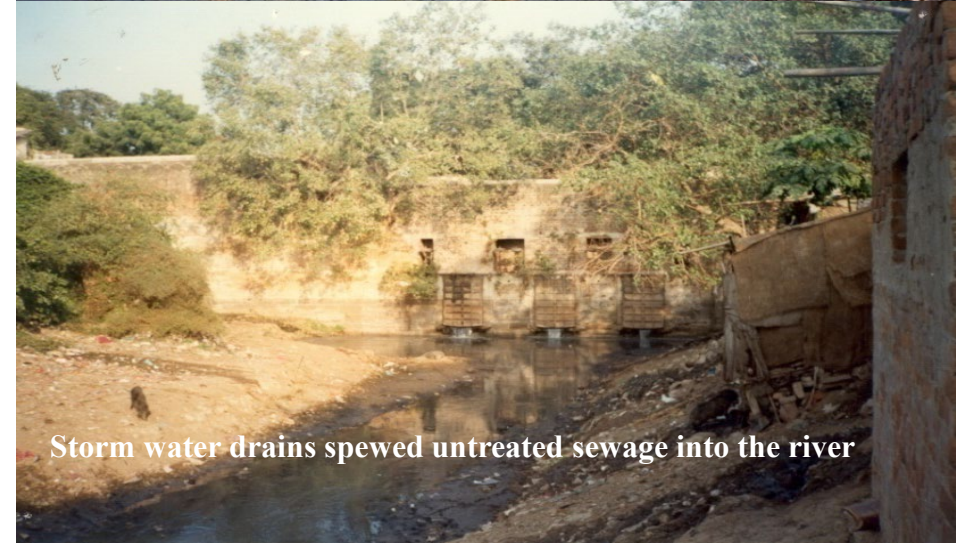


# River was abused for many years!

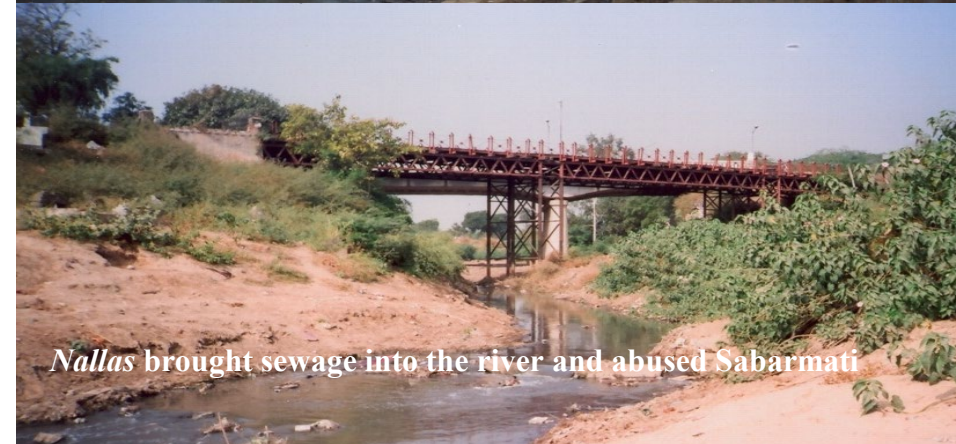
- Due to increased pressures, the carrying capacity of the existing sewage system was falling short, and was being diverted into the stormwater system, which was being released into the River without Treatment.
- Illegal sewage connections in the stormwater drains made the river water unusable and became dark grey
- Open defecation from the nearby human settlements spreads over the entire length of 8-9 kms.
- Discharge of industrial effluent through some SWDs and open Nalas was carrying Domestic & chemical effluent in the river without treatment
- Migration to Urban, illegal encroachments in the riverbed have given shelter to thousands of slum dwellers, which has reduced the carrying capacity of the river.



Sabarmati became a place to dump garbage



Storm water drains spewed untreated sewage into the river

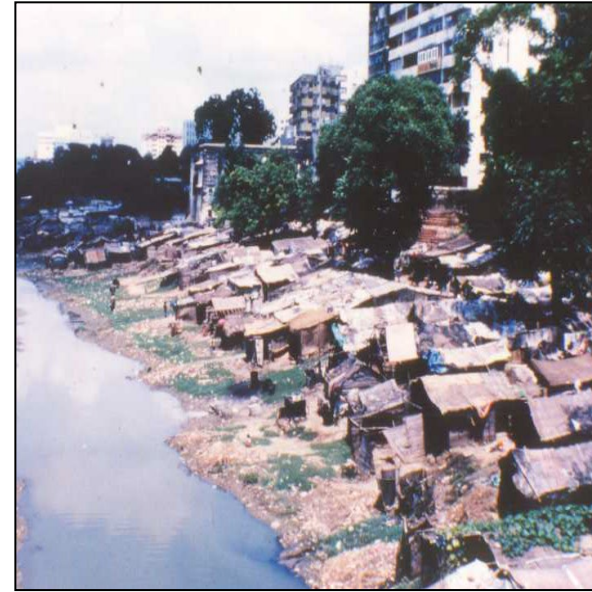


Nallas brought sewage into the river and abused Sabarmati

**More than 11000 huts were in the riverbed before 2010 Which resettled in 2011-12**



**Places for washing and drying clothes**



**Places for holding the traditional Market**



# The Main Challenges of a Riverfront Development

- **Drainage Shifting:** Thoroughly polluted and contaminated Sabarmati through 40 stormwater outlets and 48 drainage lines. Shifting of these lines into a new network & with Treatment facilities downstream (*done 2005-09 for First Phase*)
- **Hydrological Study:** To decide the carrying capacity of the River and the design of the Riverfront & other structures in the riverbed (*Done by Dr CC Patel, former Secy GoI, MOWR 2002-3*).
- **Environment Study:** To study the impact on the environment & water/river behaviour after the construction of the Riverfront (*done by CEPT University 2003*).
- **Maintaining the Flow of the River:** How to maintain the water level on the front throughout the year is the biggest challenge (*Barrage, Check Dams, or other ways to maintain the water level*)
- **Religious Processions/Rituals:** The river is being used for immersions, various idols and rituals invite standing threats to the riverfront if the Community doesn't support it.
- **Sustainability:** Riverfront needs funds for maintenance & operational expenditure, which needs to be worked out before the start of a new one.
- **Avoiding Land Disputes:** Land boundaries/disputes in the River with Private, Cantonments, Railways, and other authorities need to be resolved amicably for timely completion: 698 cases were resolved in phase 1

# Community Support for the Lake/River Front Development

- To develop any waterfront project, community participation & supports both are both necessary for success.
- Stopped idol emissions in Lake & River with the help of the community since 2006: A unique negotiation.
- More use of Electric/CNG crematoriums and reducing the use of wood-based rituals.
- Negotiating with Heads of religious structures, situated along the river, keeping users' sentiments in mind.
- Creating & maintaining a vibrant neighbourhood with common facilities in reclaimed land of 130 hectares
- More than 12000 families (*slum dwellers*) got a decent house of 2 Rooms under Project rehabilitation.
- A weekly Hat-Gurjari Bazaar, a 100-year-old bazaar (*in the Sabarmati riverbed*), very popular among the lower middle & middle class, was given adequate space in reclaimed land with proper facilities.
- Dhobi Ghat (*old washing space*) for the city was relocated with a water & treatment facility in the same area.
- New Road network, both sides with parking & recreational facilities for all age groups on reclaimed land.
- All these waterfronts have improved the environment and created public space for people to a large extent.



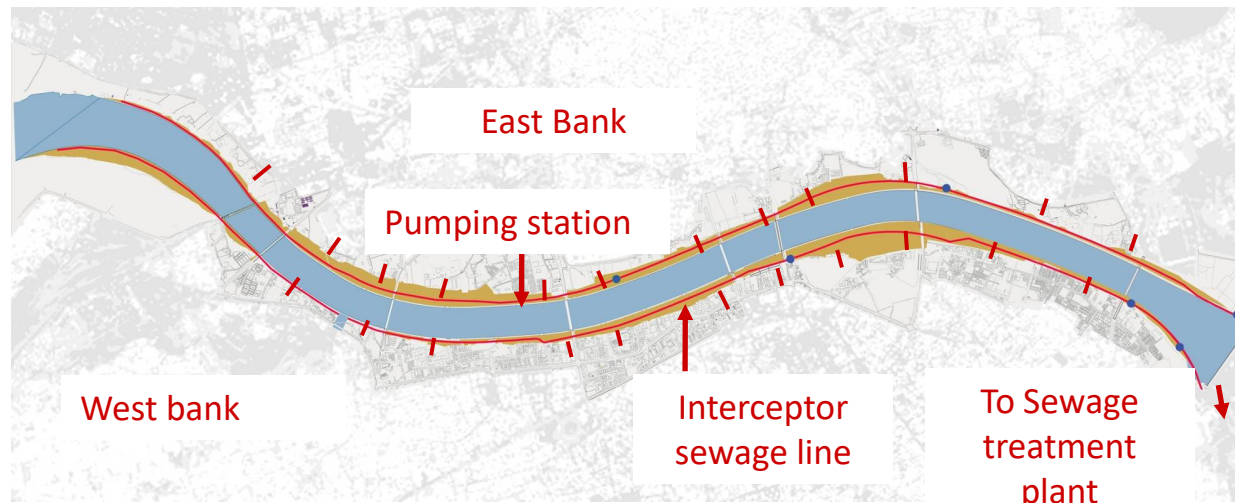
# Sewerage Network & Treatments

To stop flow of sewage and to keep the river clean

- Diversion (Interceptor) of Sewage
  - East Bank: 15 Km
  - West Bank: 12.3 Km

**Total work of First Phase of 11.5 kms:**

- RCC pipe (1.2 m to 2.2 m Dia) 17800 Rmt
- RCC Box drains (1.7 m x 1.8 m to 2.25 m x 1.8 m twin box) 3200 Rmt
- Rising main: 5000 Rmt and GRP pipeline : 1300 Rmt.
- Total drains: 48 Nos (28 on West & 20 on East)
- Junction chambers: Total 41 Nos. (23 on West and 18 on East)

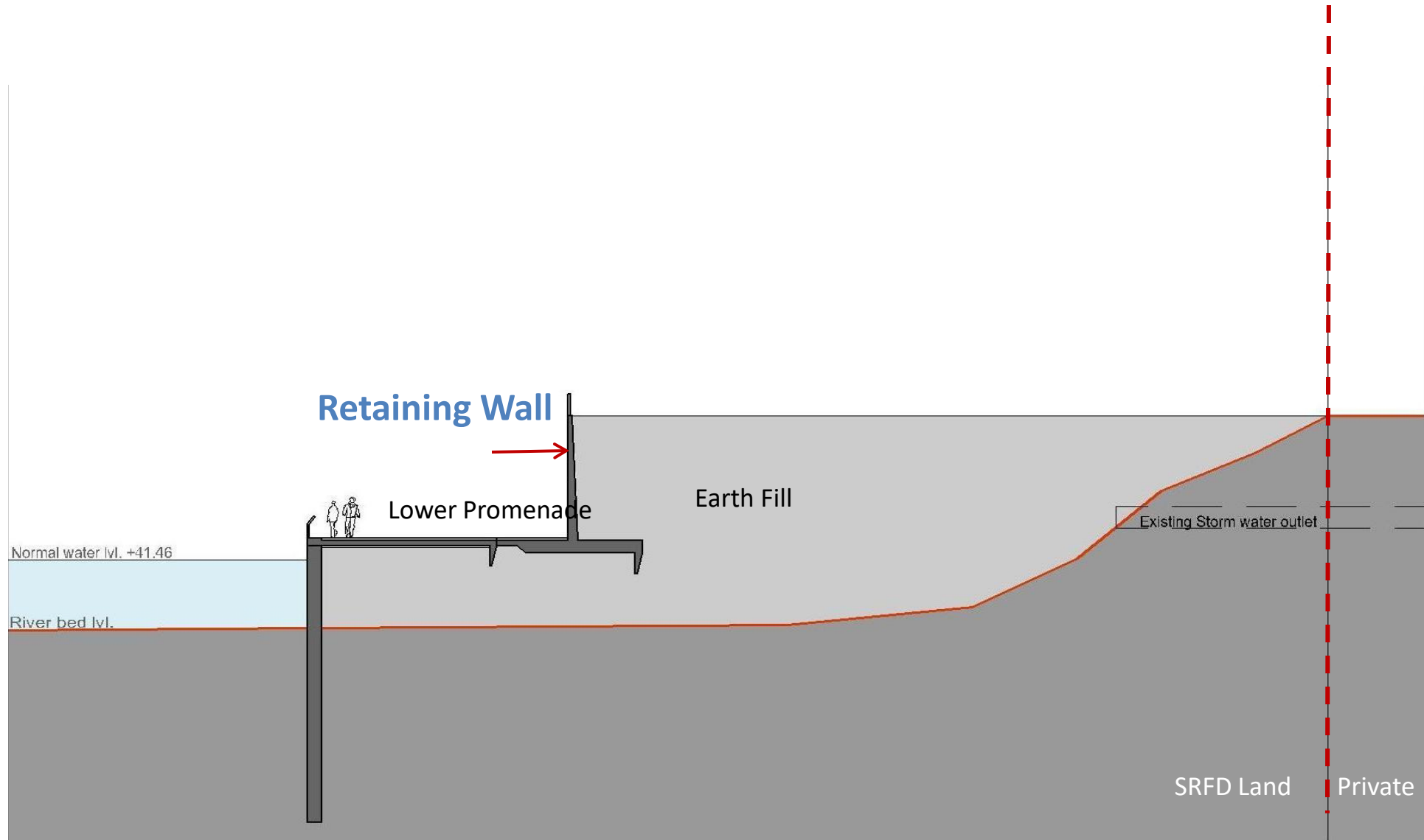


## Phase 2 : General Earth Filling, Interceptor Drainage-Network work in progress



# Construction Process: Diaphragm Wall & Retaining Wall

- Retaining Walls, Earth Fill & Road network



Dredging: Unique Method Used for earth, filling on both sides.



# Construction of Retaining Walls both the Sides



## RCC retaining wall :

- To retain earth filling and protection up to the high flood level.
- Height: 9.0 m to 4.5 m

13/02/2008

# General Earth Fill For Parks/Gardens & Roads



# Before - After: near Gandhi Bridge



# Before - After: Near Dr Ambedkar Bridge



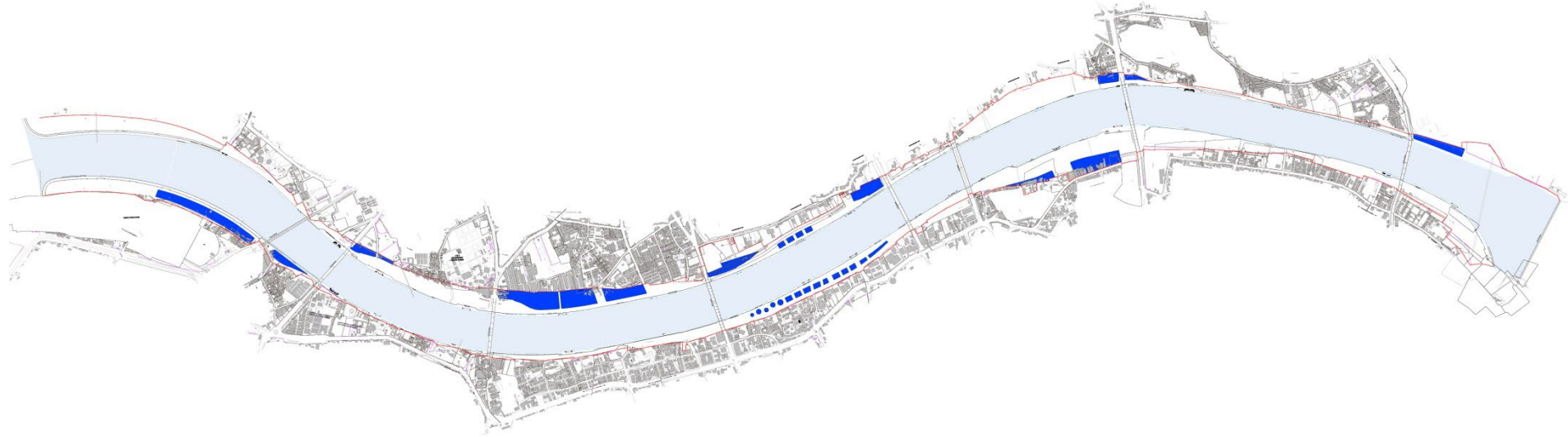
# Sabarmati became accessible: During construction



-Aerial View: Shalish Raval

Source: 26<sup>th</sup> February 2011, I

# Proposed Revenue Generation for Project Financing Phase 1



- Total reclaimed Land 202 Hectors in Phase 1 ( 11.5km) transferred by the Govt.
- 130 hectares of land used for public open space/ Park/ Garden
- Apx. 20% used for the construction of roads on both banks.
- 14% of the reclaimed land is assigned for multi-use purposes/sale for financing the Project of 11.5 Kms from Barrage to Railway bridge under AMC.
- Phase 2 is nearly on completion, and now Phase 3 to 6 of 22.5 km connecting the capital city of Gandhinagar is under implementation.
- SRFDC is 100% owned by AMC and has invested Rs. 240 Cr as Equity in the Co. & Rs. 2100 Cr as Bridge-Loan to SRFDC for project implementation.

# Pier Protection of existing bridges 2009-10

As directed by IIT Roorkee, all five existing bridges, as shown below, have been protected against the expected increased velocity of flood(5 lakh Q/sec):

- Subhash Bridge
- Gandhi Bridge
- Nehru Bridge
- Ellis Bridge
- Sardar Bridge



# Riverfront aerial view with a road network in 2011-12



# Creating a network of public spaces, urban Forest & Garden

**Bio diversity  
Park Near Vasna  
Barrage on West  
Bank : Area 15 Ha.**



- Flower Garden  
Bh. V.S. Hospital  
(W), 4.6 Ha
- Khanpur (E) 2.0  
Ha (Proposed)

# Recreational Activities Ongoing (Inaugural Photo of 2012)



## Boating Facility at three different locations:

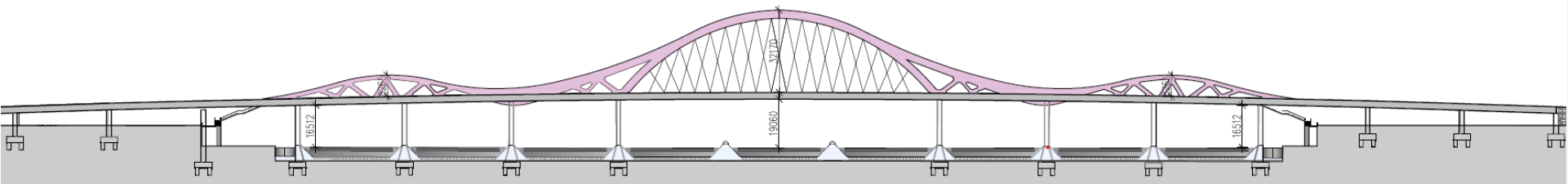
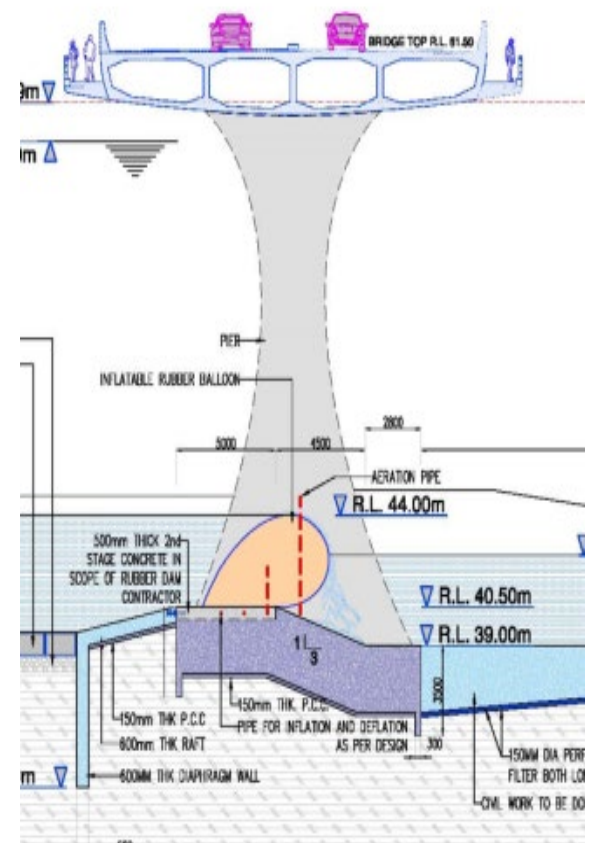
- Vallabh Sadan,
- Sardar Bridge and
- Dadhichi Bridge



## Phase 2: With a changed design of the walkway, at 3 levels (2013-14)



# Proposed Barrage cum Bridge from Contonment to Sabarmati TPS.Phase 2



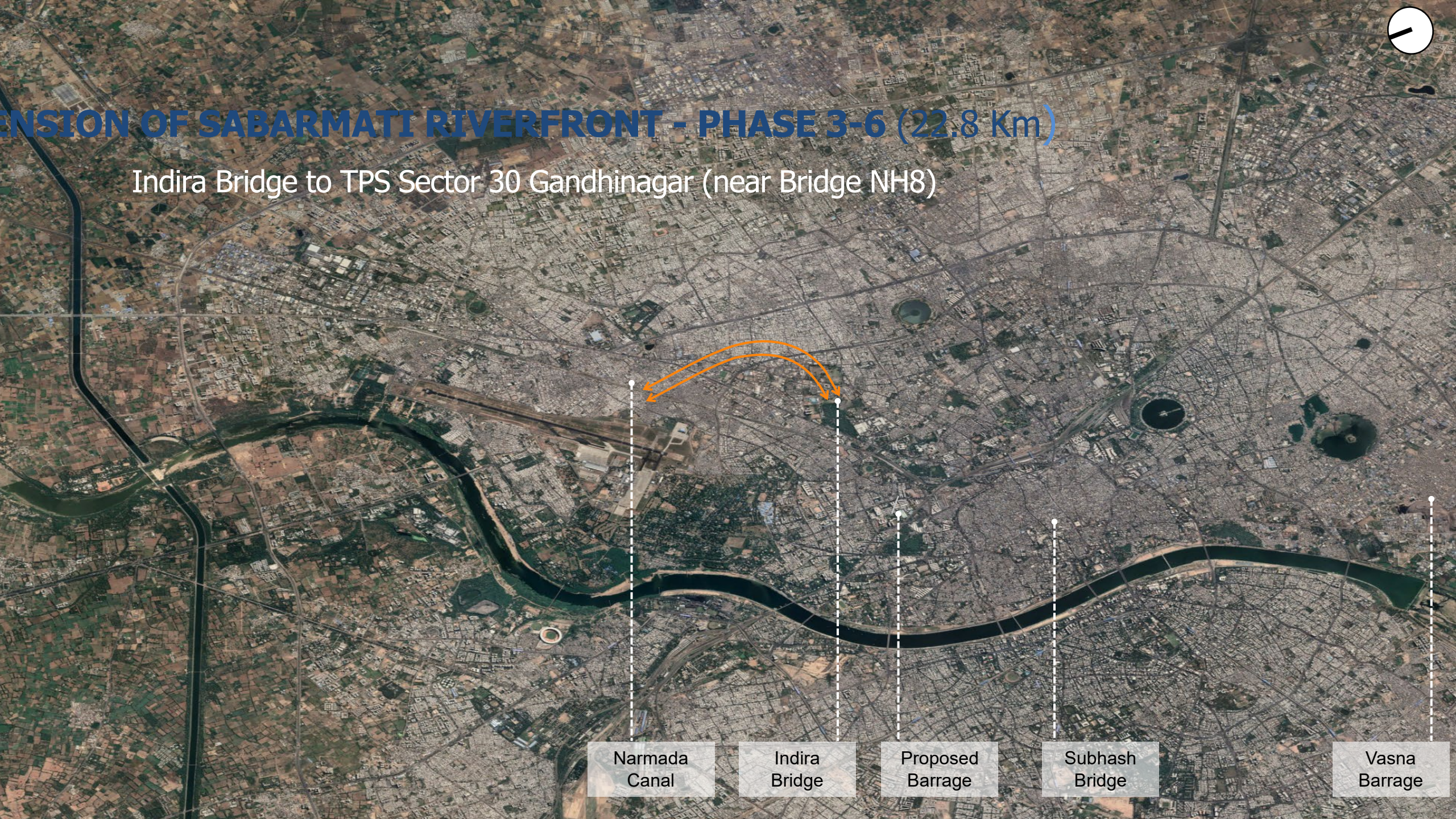
# Phase 2: Retaining wall, Earth Filling, & Road as of July 2025





# EXTENSION OF SABARMATI RIVERFRONT - PHASE 3-6 (22.8 Km)

Indira Bridge to TPS Sector 30 Gandhinagar (near Bridge NH8)



Narmada  
Canal

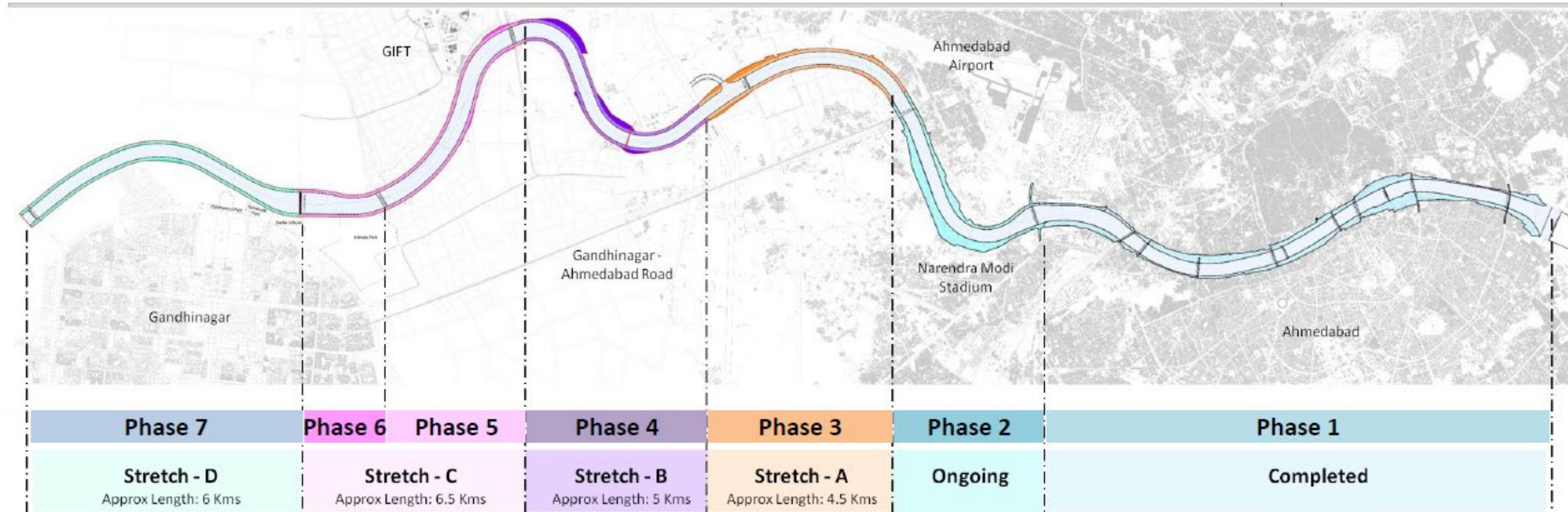
Indira  
Bridge

Proposed  
Barrage

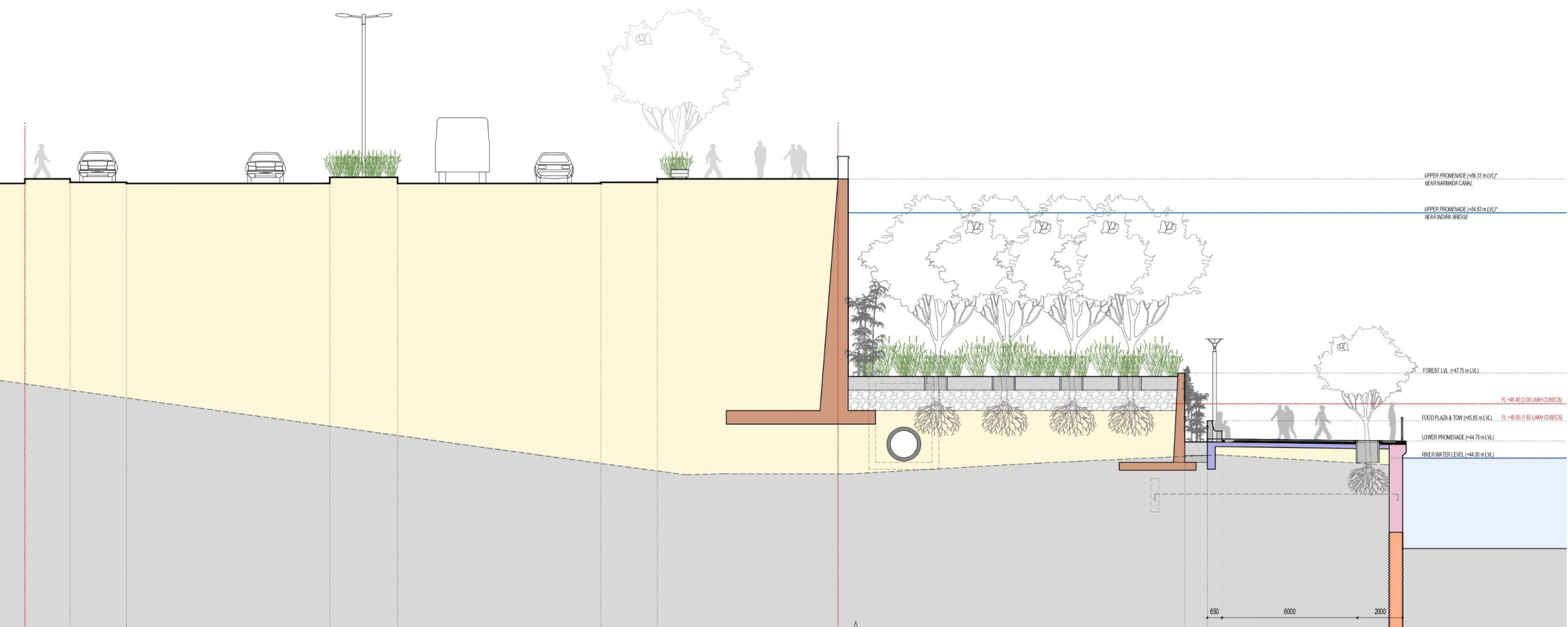
Subhash  
Bridge

Vasna  
Barrage

# Sabarmati Riverfront Connecting GIFT City & Gandhinagar in Phase 3-6



# Typical Embankment Section Phase 3 onwards to Phase 6 A, B, & 6C (A Revised design)



**STREET**

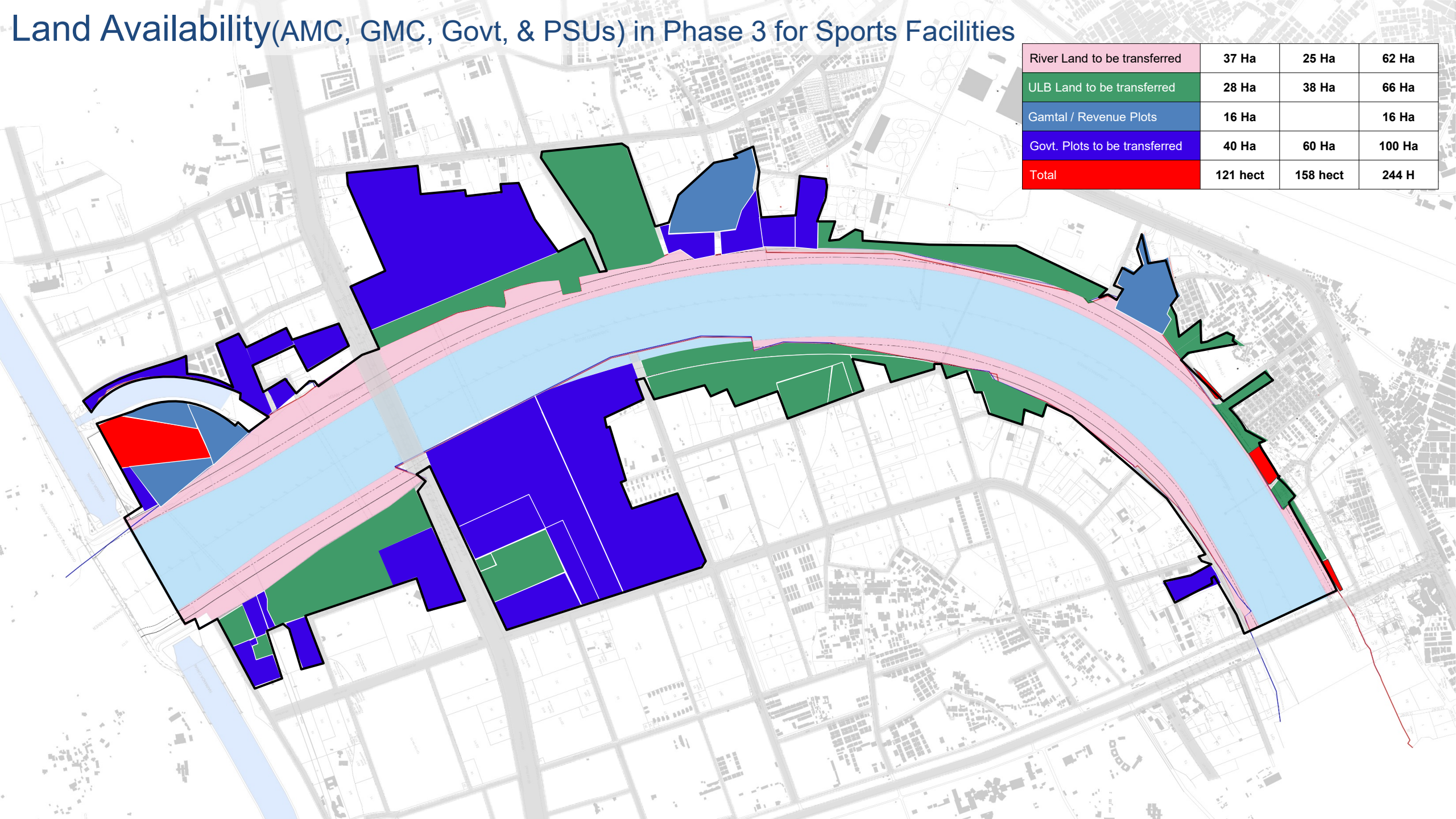
**30 M**

**EMBANKMENT**

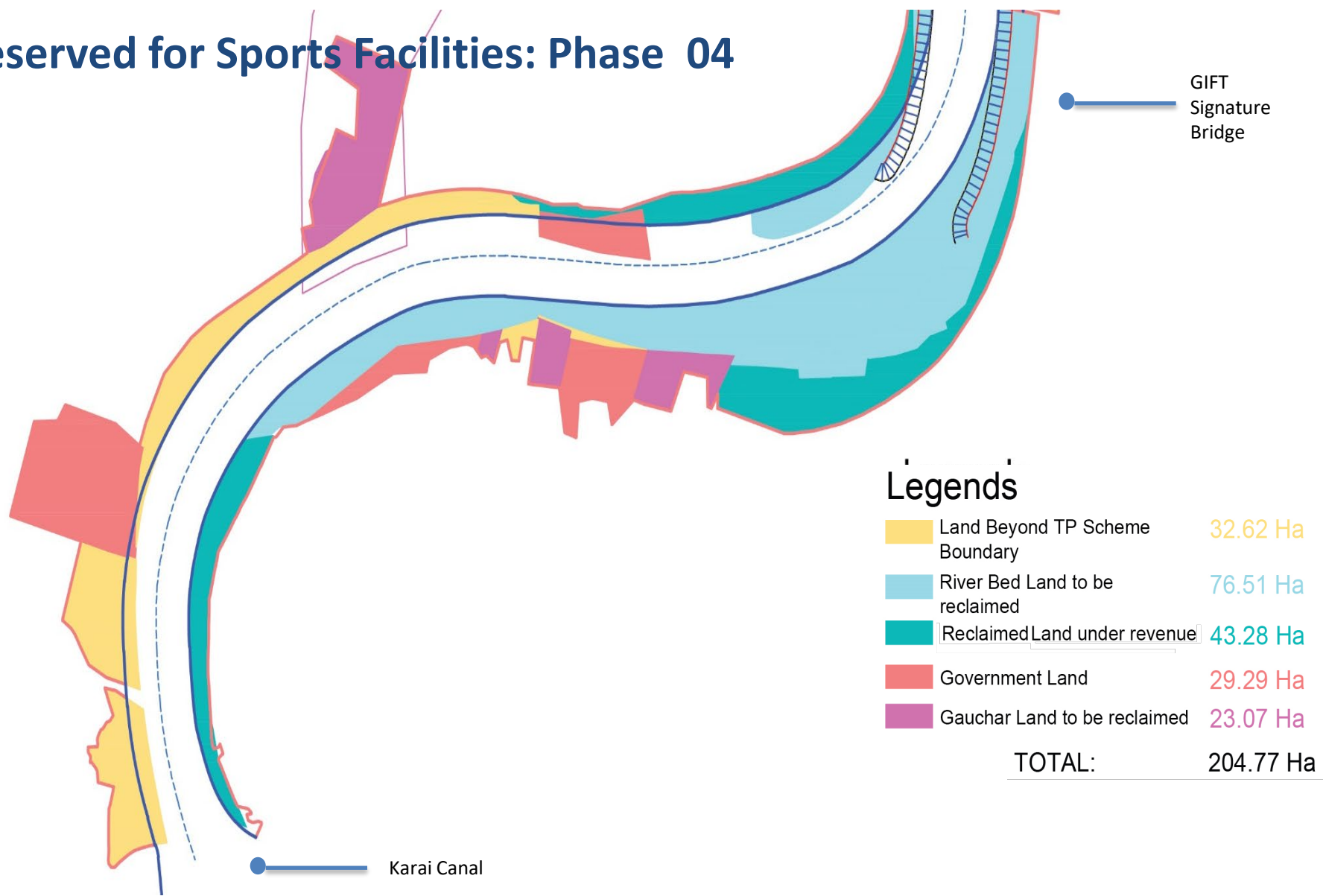
**25 M**

# Land Availability(AMC, GMC, Govt, & PSUs) in Phase 3 for Sports Facilities

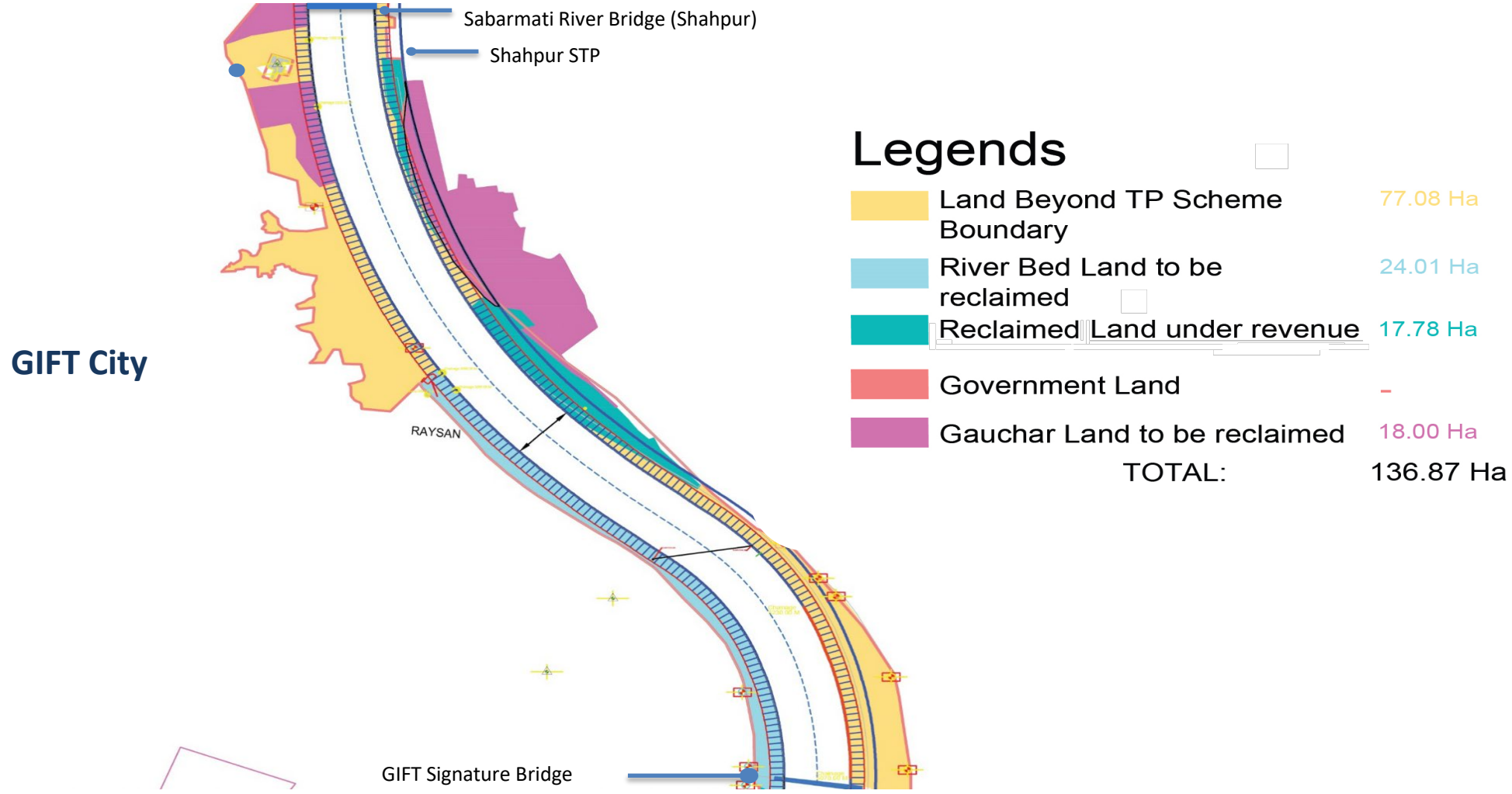
River Land to be transferred	37 Ha	25 Ha	62 Ha
ULB Land to be transferred	28 Ha	38 Ha	66 Ha
Gamtal / Revenue Plots	16 Ha		16 Ha
Govt. Plots to be transferred	40 Ha	60 Ha	100 Ha
<b>Total</b>	<b>121 hect</b>	<b>158 hect</b>	<b>244 H</b>



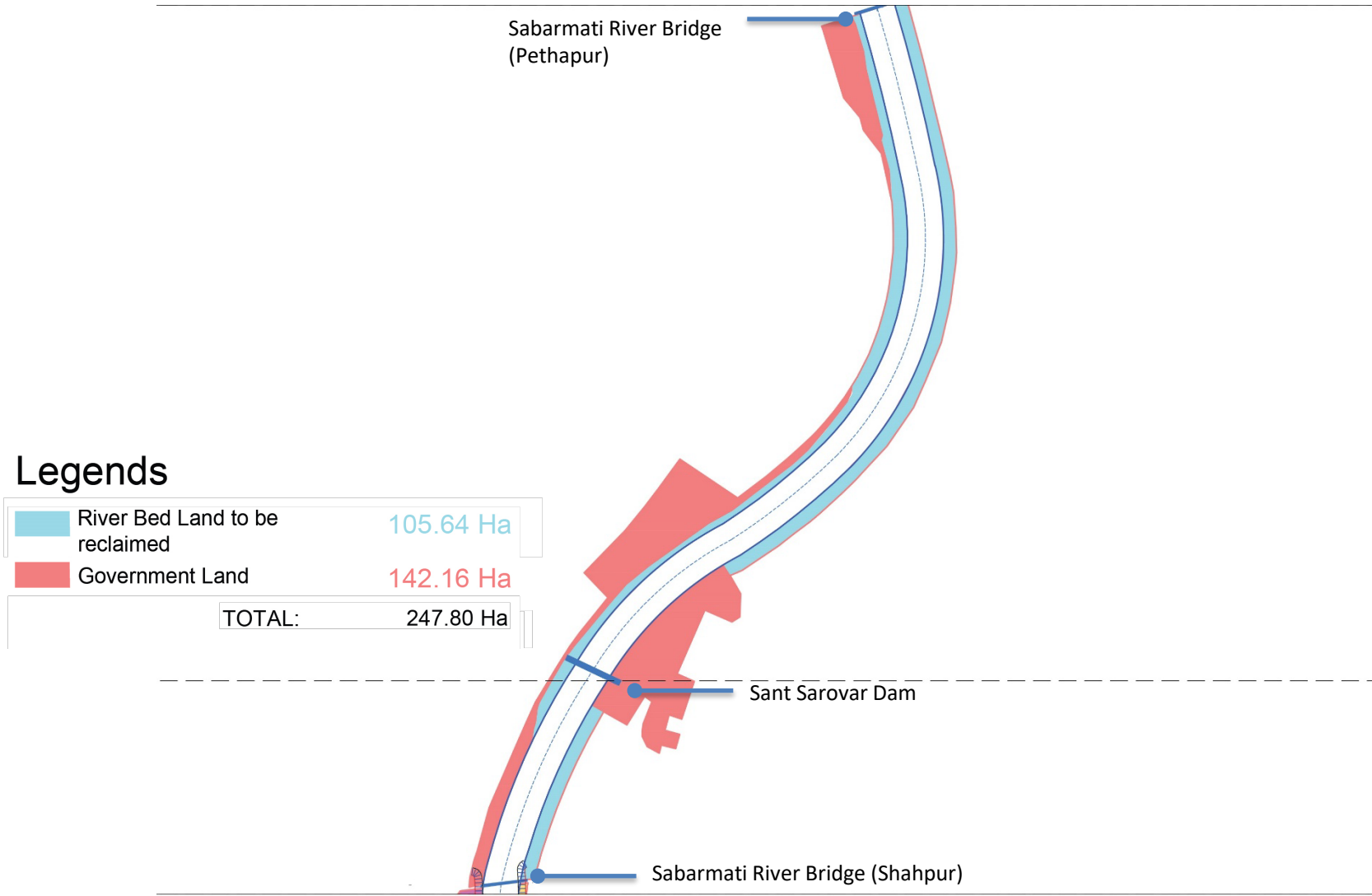
# Reserved for Sports Facilities: Phase 04



# Land Reserved for Expansion of the GIFT City: Phase 5





# Land reserved for Parks Garden & Utilities : Phase 6A



# PHASE 6B & C

Sabarmati River Bridge (Pethapur)

## Legends

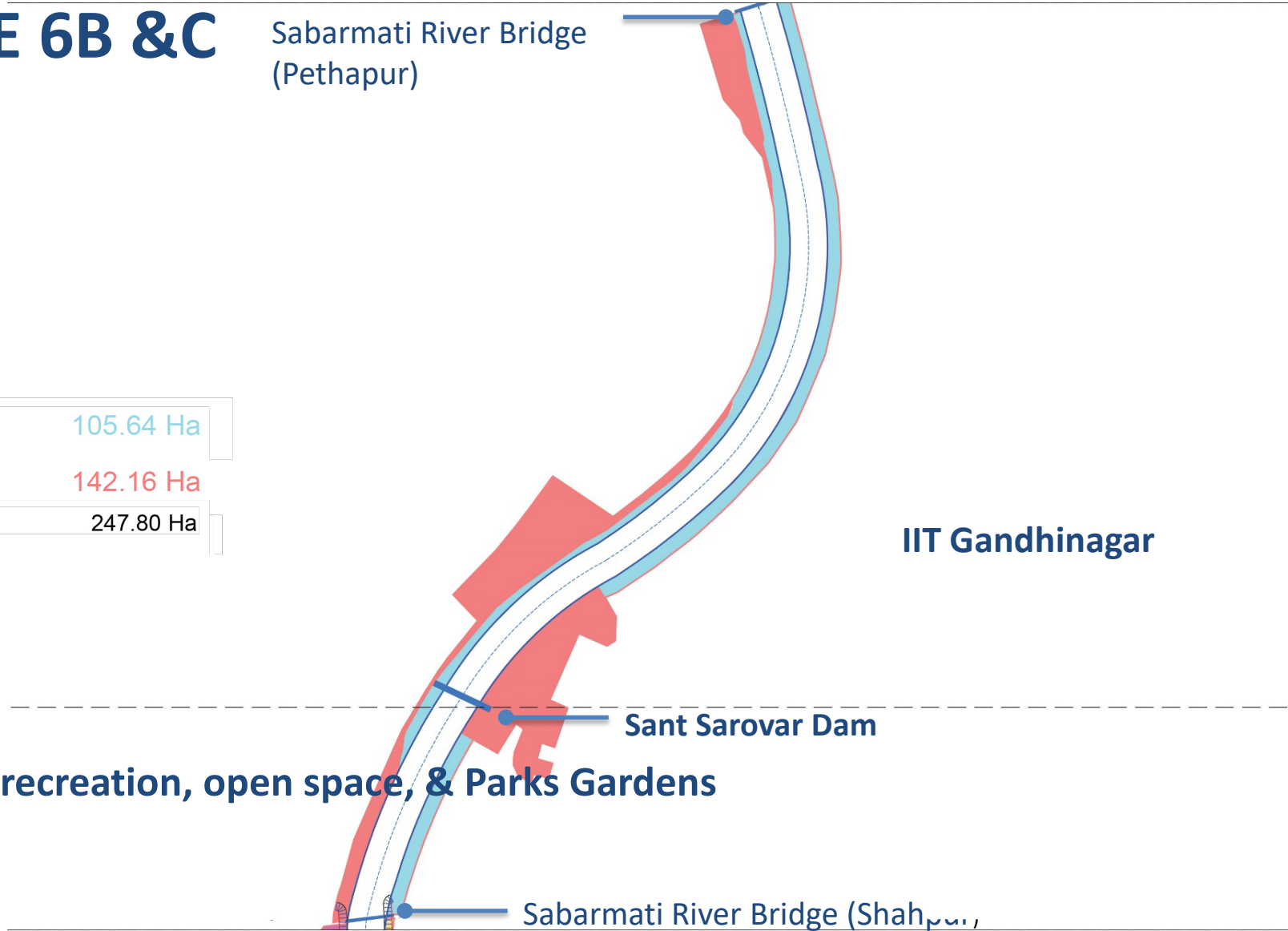
 River Bed Land to be reclaimed	105.64 Ha
 Government Land	142.16 Ha
TOTAL:	247.80 Ha

Reserved Land for recreation, open space, & Parks Gardens

Sant Sarovar Dam

Sabarmati River Bridge (Shahpur)

IIT Gandhinagar



# Development of Waterfronts in Cities on a PPP Mode?

- Project Developments on a city's lakefronts or riverfronts are quite difficult on a BOT basis because the return of land/space used for developing the facilities is generally NOT given back by the developers, after expiry of the 30-year or agreed period, due to sky-high price rise of the property so used for the purpose. Litigation generally a cheaper option than vacating land.
- Revenue-Sharing Models are more feasible where land is situated in commercial areas, where a sudden price rise of property is expected after implementing such projects.
- City Municipal Corporations are generally run by committees/ Boards headed by Elected Executives (five years), the BoT partners get support from ruling or opposition or sometimes both, or even unanimously, for undue extension after expiry of the tenures on nominal increase of revenue, ignoring standard yardsticks of reasonable returns.
- SRFDC has adopted revenue-sharing models in Phase 1 and is trying to replicate the same pattern in Phase 2 also.
- Phase 3 onwards, generally Govt PSU like State Sports Authority/Corpn, Tourism Development Corporation, Police Sports Authority, GIFT City and a few educational institutions like Police Academy, State Training institutes/Universities & IIT are our partners.

## **Creation of Public Facilities under the PPP Mode**

- Parks, Gardens, Sports Complexes and Public spaces Management of Riverfront.
- River-Cruise on PP mode with a restaurant facility and also with a Jetty.
- To promote eco-friendly transportation, a My-Byk project was launched in PP mode, which is very popular among youths on the riverfront.
- Imagicaa Mumbai is opening one branch on more than 20,000 sq. meter land near Atal bridge on Revenue sharing Basis on a PP mode.
- A huge area is assigned for Industrial/ Commercial & Educational Exhibitions on Riverfront reclaimed land for a longer period with adequate Parking Facilities.
- Large areas are also reserved as an Event Centre for Cultural, educational, and other events, including entertainment on a rental basis (online bookings available).
- Many Sports, entertainment, Cultural and educational activities are under planning stage or under process for Phase 2 and also for phases 3 to 6.

## A Cruise on PPP mode





Atal Bridge: iconic foot over bridge

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# BOT Project for Infrastructure Development: A Common Approach

- Due to financial constraints, the Governments reduced their recruitment process under various economic measures, and the capacity to deliver is minimized to a larger extent.
- Where the Government/Organizations could not implement certain projects due to Financial constraints, and the pressure for building the facilities is unavoidable, BOT is one of the options to create such facilities for people.
- Where huge Investment is required to develop certain infrastructure with very slow or low return, or the gestation period is too long. The Government may consider using this route and utilise the savings in other priority sectors like health, education, or social infrastructure.
- Where the government may not have the machinery/ Physical capacity to supervise or implement, and the private sector can recover its investment in the given time frame, the expected Revenue stream or Govt can pay in long-term instalments without putting undue pressure on the Exchequer, BOT/DBO became an easier route to implement/ Built such large infrastructure projects like Airports, Ports, Express Highways et.

## Public Accountability in PPP Mode and Auditor's Concern

- Under PP mode, concession agreements are signed on a long-term basis, generally audited at the beginning when Contracts are signed between the parties. Many conditions changed during the implementation/maintenance, probably not getting proper scrutiny.
- Designed, Built & Operate (*BOO*) contracts are very common in PPP modes nowadays, but in the absence of departmental capacity for interventions, leads to a poor quality of workmanship if the Independent Engineers/ PMC or TPIs are not competent to handle or otherwise.
- Audit interventions (*Pre-Audit*) must be made a precondition in the contract agreement: If any major concessions are given or basic conditions are changed or compromised, then an Audit must be made compulsory before making such changes by the authorities.
- During the prolonged period of operation/maintenance, Private Partners keep writing to the authorities (*Employers*), but replies/resolution of such correspondence are generally ignored/overlooked by the officials, which opens a floodgate of Arbitrations and generates post-retirement employment opportunities to retired Judges, engineers and bureaucrats. This system needs proper scrutiny to avoid huge financial responsibility on the Exchequer.
- To get long-term benefit, departmental capacity needs to be enhanced for keeping checks & balance on large contracts, a time-tested method of Governance.



Thank You