

**REPORT BY JUSTICE B. C. PATEL**

**IN THE MATTER OF**

**NAVYUVA SANGATHAN**

**VS.**

**THE SECRETARY NARMADA WATER RESOURCES**

**WATTER SUPPLY & KALPSAR DEP. BEING OA**

**NO.50/2018.**

**PROCEEDINGS DATED 21-09-2020.**

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FOLLOWING QUESTIONS ARISE.....

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## FLOODS

1. Whether allowing the development in the river bank areas and flood prone areas was illegal and arbitrary knowing the history of floods of 1883, 1884, 1894, 1942, 1944, 1945, 1949, 1959, 1960, 1994, 1998, and 2006 which affected the areas either in the month of July, or August, or September?
2. Whether the authorities acted illegally and arbitrarily allowing the development in flood prone areas knowing fully well the history of frequent floods and that except the old city of Surat, the river areas were opened, the lands were used as agricultural lands hence, River Tapi, had no devastating effect of the floods?
3. Whether the authorities acted illegally and arbitrarily allowing the development on the river Bank and flood prone areas knowing fully well that the total area under *submergence* was 128 km (which is roughly 5.44 times more than the area affected in 1998), the area inundated more than 75% of the city area which claimed 135 human lives which is 6.75 times more than the floods of 1998 (Page 18 of the CEPT report.)?
4. Whether the authorities acted illegally and arbitrarily in allowing the development in the river areas and flood prone areas by ignoring the flood maps of 1998 and 2006 at page 4 of the report (CEPT), the satellite images with the blue line and red line, drawn after a period of 14

years after the erection of buildings on the banks of the river Tapi or flood prone areas?

### **EMBANKMENTS/PALAS/RETAINING WALL**

5. Whether the authorities acted illegally and arbitrarily in allowing the development in flood prone areas knowing fully well that the embankment capacity was reduced from 8.5 lakhs to 4 lakhs cusecs water and out of total work of 82.389 Km of PALA/ retaining wall/ embankment only 36.288 km work was completed?
6. Whether allowing any erection of buildings on the river banks or the flood prone area is illegal, unjust and playing a mischief with the River and environment in absence of the area being completely protected with the embankments, erosion found on the river banks having been accepted by SMC and corroborated by the Executive Engineer?
7. Whether the failure in acquiring the land as the landowners along the river edge did not surrender their land which resulted in the shift in the alignment?
8. Whether instead of a straight alignment on the left bank, the same was moved inwards towards the land side on the edge of the river which resulted in the river side of the embankment unprotected? Whether the authority's failure in erecting embankment as aforesaid caused an

adverse impact on the natural flow of the river and environment?

9. Whether the State government has failed in exercising its power by prohibiting the erection of any building within the flood prone areas/near the bank of the river? whether the authorities failed and neglected to protect the river despite calling frequent meetings by the authorities and the Hon'ble Ministers and conveying their decisions?
10. Whether the authorities failed to protect the River Tapi and nearby areas affected in the flood of 2006 or the flood prone areas, on account of their failure in amending quickly or suspending the rules applicable in the areas of the river, it's banks and flood prone areas?
11. Whether the State Government/authorities should be held liable for damages to the river and environment in absence of reasonable explanation for failure to exercise the power to prohibit the erection of buildings on the river banks, or flood prone areas, or for not amending or suspending the rules immediately?
12. Whether the State Government failed to exercise the powers *u/s 11 of Gujarat Irrigation and Drainage Act, 2013* and failed to prohibit the formation of obstruction in river Tapi, whether The State Government is obliged not only to prohibit such formation of any such obstruction but is also required to make an

order of removal or modification of such obstruction?

13. Whether the District Collector failed to exercise the powers conferred under the provisions of *Section 5 of the Gujarat Town Planning and Urban Development Act, 1976* in not suspending execution of order, resolution or decision under which the work of development was carried out likely to cause injury or is unlawful?
14. Whether the authorities acted illegally, arbitrarily and contrary to the fact-finding report which was sought by SMC itself? Whether the authorities' acted illegally or arbitrarily in allowing the construction or permitting the development in flood prone areas in *TPS No. 10 and No. 26 where elevation is below 7 m from MSL and hence flood prone.*? Whether the authorities acted illegally and arbitrarily in re-granting the land or allotting to the plots of lands to individuals etc, out of the land acquired for embankment?

#### BOUNDARY OF RIVER TAPI.

15. Whether the authorities acted illegally, arbitrarily in not fixing the boundaries of river Tapi despite the decision taken on 14/11/06 calling upon the Municipal Commissioner, Surat and Executive Engineer, Irrigation, to fix the boundary of river Tapi?

16. Whether the authorities acted illegally and arbitrarily in allowing the development despite knowing fully well that the river boundaries have changed on account of erosion, concave, convex shape and frequent floods?
17. Whether the authorities acted illegally and arbitrarily and ignored while allowing the development, the decision taken on 13/03/09, that the area submerged in the river is a part of the river, and the area submerged is considered as the River.
18. Whether the authorities acted illegally and arbitrarily in allowing the development despite the fact that the Maps with the District Land Revenue Records and that were with SUDA and SMC had a lot of discrepancies and the accuracy was between 60% to 65% only?
19. Whether the authorities acted illegally and arbitrarily in allowing the development knowing fully well that *in the last 50 years there has been a significant difference in the river boundary as per satellite image, revenue records and survey of India. (Images are printed at page No. 10 of the report of CEPT?*

#### BUILDING CONSTRUCTION

#### & BLUE-RED LINES

20. Whether the authorities acted illegally and arbitrarily in allowing the development in absence of *a complete year wise profile of*

*buildings. (Meeting 13-03-09) and survey of all buildings including private buildings falling in low-lying areas and susceptible to flooding?*

21. Whether the authorities acted illegally and arbitrarily *in allowing the development* knowing fully well the decision taken in a meeting held on 13/03/2009 that the area submerged in the river is a part of the river, final plots allotted under TPS should not be allowed to develop as it forms a part of the river?
22. Whether the authorities acted illegally and arbitrarily in allowing the development knowing fully well that the decision was taken that no structures shall be allowed to be erected on the land falling between embankments and the river on either side of the river, under the excuse that the land between the embankment and riverbank is eligible for development?
23. Whether the authorities took appropriate steps to protect *the old city area having old G+3/G+4 residential structures in the areas vulnerable to floods located within the horse-shoe bend of River Tapi?*
24. *Whether the Development Plan proposes development of residential land use in some areas which have experienced very high inundation in the past?*
25. Whether the authorities have failed in acting promptly to modify the *Development Control Rules and building by-laws of SMC, SUDA and*

*other authorities to clear for flood flows? (in the background of the orders made by the High Court in case of "Tapovan Farm House" and the recommendation made by Commission appointed by the State Government)*

26. Whether the authorities acted illegally, arbitrarily ignoring the law laid down by Apex Court in case of *M.C. Mehta v/s Kamal Nath* and the High Court of Gujarat *in the case of Shailesh R Shah Vs State of Gujarat*, where it has been pointed out that " *Even any construction on the waterway is prohibited by the decision of this court?*
27. Whether the blue line and red lines drawn are inconsistent with the report submitted by the CEPT and whether construction from 15m from the embankment or 30m from the river would protect the river in case of floods?
28. Whether the authorities have acted illegally and arbitrarily for allowing the development and making the amendment in the provision by ignoring the *real river boundaries and that has shifted in the last 50 years on account of floods, erosion and concave and convex shape?*
29. Whether a meeting was called on 29-03-12 for the purpose of considering the nature of construction that can be permitted within the embankment and outside the embankment or was for permitting the construction within the embankment and the development was to be undertaken as per 2004 rules?

30. Whether a meeting was held on 26-03-2013 to consider that on both sides of the river there should be embankments and restrictions on development? Whether the Irrigation Department recorded its decision that the area which comes under water is to be considered as a river? Whether a decision was taken in the said meeting that within the river no construction shall be allowed and no obstruction shall be allowed either by filling/levelling the land or otherwise obstructing the flow of the river? whether in the said meeting it was decided that outside the river boundary, up to 150 m, the construction shall be restricted in the area which shall be considered as a restricted zone?
31. Whether the 6 parameters and 31 zones selected by the CEPT so as to get a representative coverage of 500m buffer from the river edge on both the sides is considered while amending the provisions? If considered what are the reasons recorded by the competent authority for not making a buffer of 500m as suggested?
32. Whether the studies of river hydraulics were undertaken for a buffer zone to be properly delineated? If not, what are the reasons for the same? Whether the CEPT advised for 150m from the river to be considered as a restricted zone?

**PERMISSION TO DEVELOP/MAPS SHOWING  
DEVELOPMENT IN  
PROHIBITED AREAS  
RED AND BLUE LINES.**

33. Whether there is inordinate delay in amending the provisions as the drawings were already submitted before 19/12/19, and the Hon'ble Tribunal was assured that within two months there will be implementation of the Blue and Red lines the same were not implemented for about a year?

**DEVELOPMENT ZONE  
AND EMBANKMENT. (SMC).**

34. Whether the authorities have acted arbitrarily, illegally and committed breaches of the environmental laws in declaring "No Development Zone" and "Restricted Development Zone"?
35. Whether distance prescribed for the land behind the embankment and the land having no embankment is unconstitutional and in violation of Right to equality? Whether the person having a plot behind the embankment will get protection from floods? Whether the person having his plot in the same area having no embankment shall be protected from floods?
36. Whether the measurement of 150m, 15m and 30m, drawing the blue and red lines and allowing the development is required to be

reconsidered in view of the decision taken as to what part is to be considered as the river and the river boundaries (Banks of the River) do not run parallel as that of tracks of the train?

37. Whether the decision-making process to amend the provisions is arbitrary and illegal?
38. Whether detailed contour survey and a geo-corrected cadastral map has been reconciled with each other, as suggested?

#### *T.P. SCHEMES*

39. Whether in a meeting held on 13/03/09, it was decided that the Town Planning Scheme formed earlier under which *final plots were allotted should not be allowed to develop as it forms a part of the river.? whether the plots have been allowed to develop?*
40. *Whether in a meeting held on 13-03-09 it was decided that the T.P. Schemes shall not be implemented within embankments, no land acquired for embankment shall be taken in the T.P. Schemes and final plot shall not be allotted in acquired land of embankments.? Whether the T.P. Scheme has been implemented within the embankment and/or the land acquired for embankment has been included in T P Scheme and/or final plots have been allotted and allowed to develop?*
41. *Whether the Recreation and Residential Developable Zones earmarked on the banks of River Tapi in the Sanctioned Development*

*Plan-2004 of Surat, has been implemented and development is allowed till November 2020?*

42. Whether the flood waters overflown the embankment and crossed the areas? Whether a permission to erect a building was granted where there is no embankment or is a vulnerable low-lying area or flood prone area?
43. Whether granting permission to erect a building with a compound wall is justified as the flood water on account of force/speed is likely to cause more damage to human lives and property on account of space being not available?

#### RIVER REGULATORY AUTHORITY

44. Whether the River Regulatory Authority is required to be constituted for river rejuvenation, protection of natural flow of water, environmental laws, preservation of natural water, erosion of rivers etc, in view of detailed discussion under the detail heading (11) RIVER REGULATING AUTHORITY?

#### SEWAGE TREATMENT PLANT AND TOWN PLANNING SCHEME

45. Whether the directions are required to be given to the authorities while drawing TPS for decentralisation of STP and to provide STP of adequate size to use the treated effluent for gardens/greenery and lakes in view of what is discussed in the report under headnote (12)

## Sewage Treatment Plant/Town Planning Scheme?

46. Whether the District Collector has delayed the erection of STP by not taking initiative despite the SMC and SUDA both having taken interest so as to see that work is carried out at the earliest?
47. Whether discharging the sewage without proper and required treatment by the SMC/SUDA is in contravention of the provisions contained in the environmental laws?
48. Whether the GPCB has taken appropriate action for discharging the sewage without proper and required treatment against the SUDA/SMC? Whether the actions have been taken is in accordance with law?

# THE REPORT

1. Various directions were issued by the Hon'ble National Green Tribunal on 11/07/2019 including to (1) prevent untreated sewage discharge into the river; and (2) preventing illegal constructions in the flood prone zone; and further direction issued on 19/09/19 to (1) demarcate red line; and (2) blueline and implementation of environmental norms.

### **1. RIVER TAPI**

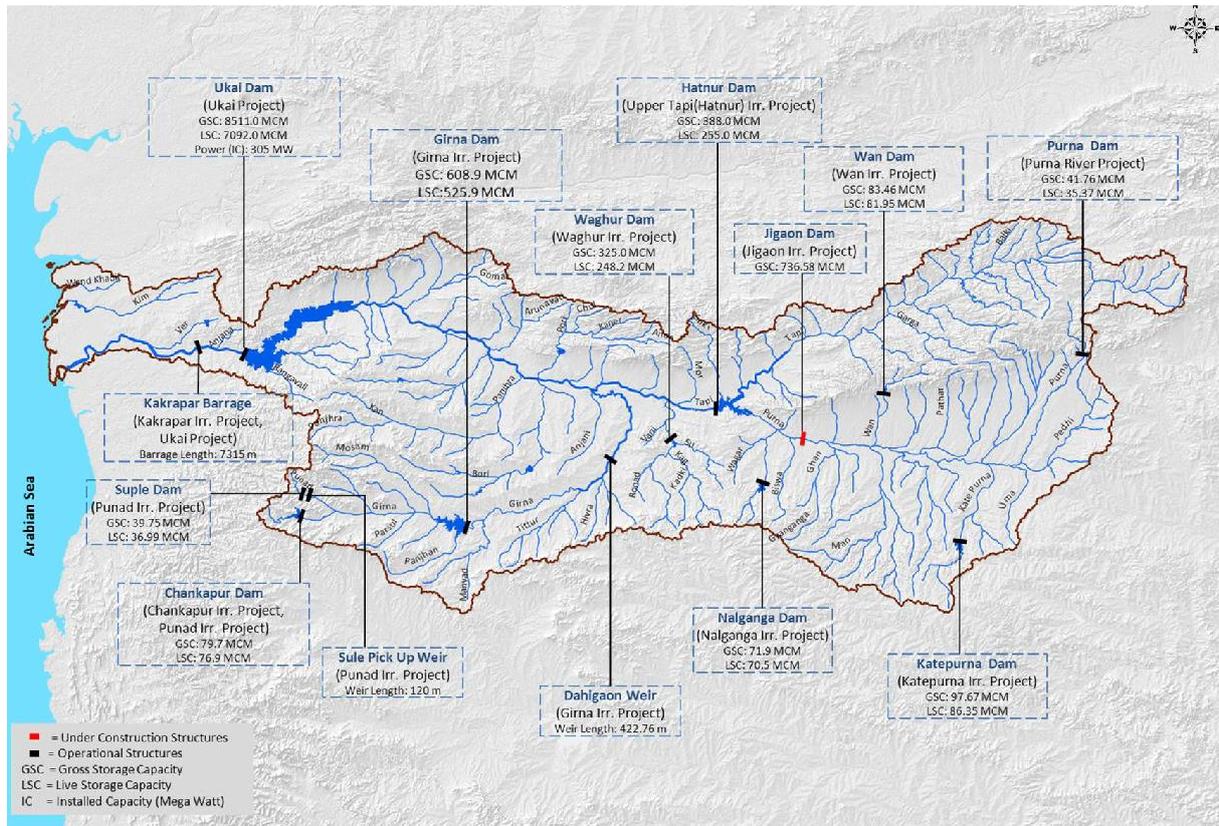
2. Tapi River is the second largest westward draining interstate river of the Peninsula. It originates near Multai reserve forest in Betul district of Madhya Pradesh at an elevation of 752 m. The total length of the river from origin to outfall into the Arabian Sea is 724 km. For the first 282km, the river flows in Madhya Pradesh, out of which 54 km forms the Common boundary with Maharashtra State. It flows for 228 km in Maharashtra before entering Gujarat. Traversing the length of 214 km in Gujarat, the Tapi River joins Arabian Sea in the Gulf of Cambay after flowing past the Surat city.

### **2. FLOODS IN RIVER TAPI.**

3. On account of heavy floods in River Tapi (Surat) various meetings took place to find out the ways and means so that there is no loss of persons and the properties. One need not refer to all the meetings, but it is necessary to refer to certain meetings and some decisions/discussions only. It appears that the State Government appointed a Commission after the

floods and the Commission submitted the report to the State Government. Surat city and nearby villages situated on the banks of the river Tapi flourished on account of development. However, the authorities drawing the Town Planning Schemes appear to have not taken care of the danger of the flood. It may be noted that since, more than hundred-year floods in river Tapi have been recorded. More particularly the floods in the years 1883, 1884, 1894, 1942, 1944, 1945, 1949, 1959, 1960, 1994, 1998, and 2006 affected the area either in the month of July or August or September. According to one survey from 1869 to 1884 there was heavy flood in river Tapi, every two and half years. The flood frequency between 1949 and 1979 was once every 4 year. However, after 1979 the 5 major floods in the year 1979, 1990, 1994, 1998 and 2006 affected a lot. The floods of 2006 inundated more than 75% area of the city and not only the economy of the city and industries suffered a huge loss but there was loss of human beings. As per IIM studies In the ninety-four years, from 1876 to 1970, the Tapi crossed the danger level at Hope Bridge in Surat for 19 times, i.e., on an average every five years. However, the floods were not regular. The 1968 flood had been the biggest flood with peak flow of about 15 lakh cubic feet of water per second (Cusecs). The flood in 1970 too was quite big with a peak flow of 13.14 lakh cusecs.

4. It was known to the authorities that the catchment area is very large with heavy rains. No doubt, a dam known as UKAI dam was constructed about 90 km from Surat. This was constructed for irrigation as also to control the flood and to generate hydropower for the benefit of the public at large as well as the industries. The authorities were required to bear in mind the capacity of the dam to store the water and heavy rainfall not only in the catchment area, but also in the areas roundabout Surat and downstream of river Tapi. They were also required to bear in mind that the Arabian Sea is hardly at a distance of 14-15 km away from the city and the effect of high tide recorded. It was also required to be kept in mind that Surat city and nearby areas are hardly 10 m above the sea level.
5. (Tapi Basin, published by Government of India, march'14) From the map of River Tapi Basin, it appears that before the waters of the river are stored at Ukai on River Tapi, at various places on account of construction of dams or weir water is stored and to that extent the flow of river Tapi can be said to have been reduced near Surat. Major water resources structures and projects have been indicated in the map.



6. Maharaja Sayajirao University of Baroda, undertook the study and submitted its report about the floods in Tapi. Following 2 tables being important are reproduced.

**TABLE 1.**

FLOOD EVENT	DISCHARGE (LAC CUSECS)	WATER LEVEL AT HOPE BRIDGE	PERIOD
1883	10.5	11.05	JULY
1884	8.46	10.05	SEPTEMBER
1894	8.01	10.33	JULY
1942	8.60	10.56	AUGUST
1944	11.84	11.32	AUGUST
1945	10.24	11.09	AUGUST
1949	8.42	10.49	SEPTEMBER
1959	12.94	11.55	SEPTEMBER
1968	15.5	12.08	AUGUST
1994	5.25	10.10	AUG.-SEPT.
1998	7.0	11.40	SEPTEMBER
2006	9.09	12.40	AUGUST

**TABLE 2.**

DATE	LEVEL AT UKAI (FT.)	INFLOW AT UKAI (CUSECS)	DISCHARGE FROM UKAI (CUSECS)	WATER LEVEL AT WIER CUM CAUSE WAY (m)	WATER LEVEL AT HOPE BRIDGE (m)
	DANGER LEVEL 345 FT.			DANGER LEVEL 6m	DANGER LEVEL 9.5 m
01/08/2006	331.54	62903	1200	6.71	2.30
02/08/2006	333.09	75263	1200	6.88	2.36
03/08/2006	334.44	73715	23784	7.20	1.90
04/08/2006	335.06	73413	23680	7.02	2.20
05/08/2006	335.42	150047	125464	6.97	0.90
06/08/2006	337.12	503027	352056	9.70	6.90
07/08/2006	342.98	1166390	829829	-	11.90

7. The First table indicates the scenario from 1983 to 2006 indicating discharge of water in Cusecs (in lakhs). It indicates water level at Hope Bridge in metres. The table No. 2 indicates the position as on 01/08/2006 to 07/08/2006 level at Ukai Dam which is very close to the danger level marked at 345'. It indicates inflow and discharge of water in cusecs and the last column indicates the level in metres at Hope Bridge. The Chart below in table 3, is giving the figures of level in feet, inflow and outflow with date and time.

**TABLE 3**

Time	Date	Rule Level in Ft	Level in Ft	Storage In MCM	Inflow in Cusecs	Outflow In Cusecs
1.00	3/8/06	333.46	333.14	5960.52	62903	1200
10.00			333.65	6024.69	85323	23620
16.00			334.07	6077.61	148105	23816
23.00	4/8/06		335.02	6198.32	85979	23688

22.00	5/8/06		335.42	6249.13	125464	125494
1.00	6/8/06	334.15	335.37	6242.78	63309	125600
20.00	6/8/06		336.48	6384.39	330216	254780
24.00			337.12	6466.50	503027	302056
11.00	7/8/06		340.42	6893.34	929334	608752
13.00			340.70	6929.94	936221	705398
14.00			341.02	6971.77	1119101	708760
15.00			341.33	7012.30	1204877	807289
24.00			342.98	7229.24	1166390	829819
19.00	8/8/06		345.52	7569.33	1028899	906277
1.00	9/8/06	334.84	345.68	7591.55	950876	910068
4.00	10-8-06	335.07	346.07	7646.08	651003	651003
1.00	11/8/06	335.30	345.09	7509.60	343233	452218
15.00	12/8/06	335.53	345.23	7529.05	301301	301301
6.00	13/8/06	335.76	344.14	7382.52	155507	299317
24.00	13/8/06		342.03	7103.56	141817	297203
13.00	14/8/06		340.00	6838.43	139974	319492
1.00	15-8-06	336.22	338.35	6632.42	121039	316141
21.00			336.14	6340.77	122704	147914

8. Thus, it was known to all the authorities involved in the subject matter about the aspects which are indicated hereinabove and therefore, they were required to take immediate decision so that there may not be further consequences resulting in loss of property or persons. (Embankments were not capable of restricting the flow of approximately 4 lacks cusecs of water. (Meeting held by Add. Chief Secretary 14-11-06)

- 9 The flow increased even in the year 2019 and 2020. In the year 2019, the overall flow was 7,70,826 cusecs on 09/08/19. The flood was successfully routed by gradual release with the maximum outflow of 1,94,492 cusecs between 09/08/19 and 11/08/19. In the year 2020, the maximum hourly inflow was 2,45,843 cusecs on 23/08/20. They were anticipating higher inflow and the increased outflow to avoid severe flood conditions.

### 3. LARGER AREA AFFECTED

#### IN 2006 FLOOD

- 10 Centre for Enrolment Planning and Technology, Ahmedabad (Known as CEPT) in association with Alchemy Urban Systems, Bangalore, undertook the study. On page 4 of the report Surat flood map 1998 and 2006, are printed and that indicates that the floods of 2006 affected much larger areas than the area was affected in 1998. About 60% of Surat was flooded in 1998. Around 4 lakh people were affected and 63,115 took refuge in the relief camps. The most affected areas were Singanpor , Tunki near the Tapi loop and areas along Koyali, where the inundation was more than 6 feet. Rander and Adajan and few parts of the city area were affected and most of the areas have embankment along the river.
- 11 *While flooding in 2006 was greater. Various areas where the inundation was more than 10 feet. Although these areas had embankments along the river edge, they were ineffective on account of poor condition and breaches (breaks) that occurred. The rest of the city*

*also submerged and inundation ranged from 3 to 5 feet. In 1998, 6.99 lakhs cusecs of water were released for about 16 Hrs. In 2006, 6.0 to 7.5 Lakhs Cusecs of water was released for a duration of 13 hrs and another 8.0 to 9.5 lakhs Cusecs for a duration of 42 hrs. About 19 lakh people were affected and the total area under submergence was 128 km. (which is roughly 5.44 times more than the area affected in 1998). In 1998 floods claimed 20 lives while 2006 floods claimed 135 lives. (Page 18 of the report.)*

- 12 As Ukai dam was constructed in 1973, the area affected in 2006 should be much less. What is important is that even after the construction of Ukai dam, not only Surat city but nearby the areas were affected. Shri G. I. Joshi, Assistant Professor, Civil Engineering Department, Faculty of Tech. and Eng., Shri A. S. Patel Head, Civil Engineering Department, FTE, M. S. U., Vadodara, Gujarat, India. noted that: -

“Subsequent to construction of Ukai dam large urban developments have taken place along Tapi river banks. With the moderation of flood at Ukai reservoir, no major floods were experienced at Surat and Hazira till 1994. During 1994, 1998 and 2006 floods of the order of 14870 m<sup>3</sup>/s (5.25 lakh cfs), 19820 m<sup>3</sup>/s (7.00cfs) and 28315 m<sup>3</sup>/s (9.10lakh cfs) were experienced. Large portion of Surat area was inundated along with large scale flooding at Bhata, Bharatpur, Surat, and surrounding areas. There were heavy damages of industrial and urban properties costing 21000 Crores. This paper presents CHARISMA mathematical model for prediction of water levels in Tapi Creek under the influence of

flood and tide. This mathematical model is capable of handling unsteady floods in river channel network validated for September 1998 flood situation and then applied for predictions with 28315 m<sup>3</sup>/s (10 lakh cfs flood discharge). On the basis of the results this study the necessary measures to be taken for flood forecast and flood protection schemes to minimi (minimise) Tapi river flood impacts on Surat, Gujarat, India, have been suggested".

"The most unforgettable and severe event was the flood of 2006. Overtopping of Tapi River embankments resulted in great damages in different areas like Fulpada, Chhapra-Bhata, Amroli- Uttran, Jahangirpura-Rander, Katargam, Ved, Dabholi, Rander-Adajan etc. covering major important areas of main city including outskirts. In addition to overtopping, backwater effect of tide influenced the flood water level and added to the severity of the disaster"

#### **(4) REGULATION OF 2004 ALLOWED DEVELOPMENT DESPITE THE HEAVY FLOOD TILL NOV'2020**

13. In a meeting held on 13-03-09, Surat Municipal Corporation (hereinafter referred as "SMC") and Surat Urban Development Authority (hereinafter referred as "SUDA") were asked to submit a proposal to the Government, for making necessary modifications in the existing Development Plan, 2004 and DCR regulations for development in the area *vulnerable to flood or required to be kept open as per river boundary*. Unfortunately, the DCR were drawn after a period of 14 years and by that time it appears that the authorities sanctioned the development plan as a

result of which one will notice a lot of constructions where it should not have been allowed in view of heavy floods.

14. *As a matter of fact, looking at the damages caused, soon after the floods the authorities were required to modify the Regulations or were required to deny the permission for development so as to see that no construction is allowed in the areas which got submerged or were affected a lot or were flood prone. The Collector reviewed the permission granted in view of the Commission's recommendations and the land owners were asked to maintain the land as agricultural land. Even otherwise for the safety of the occupiers, the permissions ought not to have been granted and only after the rules are framed and published in accordance with the rules, the persons entitled should have been granted permission. Merely by stating that between the embankment and the river nobody is allowed to erect a building was not sufficient as very large areas on either side of the river were without embankment.*

#### **(5) EMBANKMENTS/PALAS/RETAINING WALL**

14. Earlier embankments were erected in such a way that 8.5 lacks cusecs water can be flown in river Tapi however, for the reasons indicated the capacity has been reduced to approximately 4 lacks cusecs water. (Meeting held by Add. Chief Secretary 14-11-06)
15. In the meeting held on 04/04/2019 There is a reference to **TAPI SHUDDHIKARAN PROJECT** which is in the length of 85 KM from Kakarapar barrage

to ONGC bridge which has been approved under National River Conservation Plan, Ministry of Environment and Forest. The project cost is ₹971.25 crores which will be available from Central as well as State government. Despite the funds being available, it seems that the same has not been used in time and the work is yet to be carried out as per the map produced which is referred to in the next paragraph.

16. Whatever the embankments were there were required to be protected from encroachment. The existing embankments were required to be strengthened (reference a meeting dated 14-11-06) for which the sum of ₹150 crores was required to be spent. For the new areas, it was decided that after a phase study, the work will be undertaken for erection of embankment. Map shows that out of the total work of 82.389 Km of PALA/ retaining wall/ embankment only 36.288 km work is completed. 36.288 Km construction of Pala is yet to be taken up and 5.065 Km work commenced is yet not completed. *It is in this scenario; one will have to consider granting permission of erection of buildings*. Copy of a map **Annexed herewith and marked Annexure 1** will indicate the work to be carried out and the work completed.

(ANNEXURE-1-Tapi Flood Protection)

17. The Irrigation Department was asked to indicate the tentative requirement of land for future embankments with a view to impose restrictions on development of such land. Alignment of embankment was to be decided by the Irrigation Department. SMC was called

upon to prepare a flood risk vulnerability map, identifying low-lying areas and flooding risk for different levels of discharge into the river from 3 lakhs to 16 lakhs cusecs.

18. In a compliance of the minutes of 13-03-09 SMC pointed out that *It was decided that structures shall not be allowed on the land between the embankments and the river on either side of the river. No T.P. Schemes shall be implemented within embankments and no-land acquired for embankment shall be taken in T. P. Scheme and final plot shall not be allotted in acquired land of embankment.*
19. There was a need for a strong system, which can ensure effectively the policy of embankments and lands within the embankments to prevent encroachment and unauthorised development. SMC was called upon to shift unauthorised encroachments falling on public lands situated within the embankments.
20. From the detailed report it appears that from 04/02/15 to 17/10/19 in all on approximately 34 occasions the encroachments were removed and on some occasions with the help of machineries also apart from men power, staff of SMC and the police department.
21. After the Commission appointed by the State of Gujarat submitted the report, other NGOs conducted a survey and it was found that on both the banks of the river there is erosion and it was pointed out that at various places there is no embankment or retaining

wall and that has caused the erosion. The details are given. Even the SMC accepted this position. The Executive Engineer corroborated the views expressed on soil erosion. As per the report submitted by the CEPT, no construction should be allowed. However, it was decided to use the land for certain purposes as indicated therein. (Though it has not been suggested by CEPT)

22. In the report, CEPT pointed out that in the area of Katargam, the embankment did not follow a straight alignment on the left bank where it moved inwards towards the land side instead of being on the edge of the river. Due to this, land on the riverside of the embankment was unprotected, increasing vulnerability in case of flooding. This discrepancy was attributed to the land acquisition process where the landowners along the river edge did not surrender their land and this resulted in the shift in the alignment. In a matter of flood having devastating effect, the work was to be carried out in a very effective method. The law pertaining to Land Acquisition has not been followed, the land was not acquired and the land appears to have been allowed to develop. The land owners objected to taking possession despite the adequate provision to acquire indicates softness of the authorities in allowing the development on the bank of the river. The authorities expressed the views that the land between the embankment and riverbank which belongs to private individuals is eligible for development currently. Thus, from 2006 to November 2020 they allowed the erection under the pretext that

*the rules were not amended. The question is whether the State has no power to issue the rules? By calling frequent meetings by the authorities and the Hon'ble Ministers suggestions were made but nothing positive was done to protect the river and the areas affected.*

- 23. To protect the River Tapi and nearby areas affected on account of flood in 2006 or the flood prone areas, immediate action was required to be taken. The ordinance could have been issued in view of the situation to protect the River and nearby areas or the applicability of the rules could have been suspended in the areas affected or prone to flood. The provisions could have been amended quickly looking at the situation. Only after the National Green Tribunal took cognizance, however, the provisions were amended in November 2020 and by that time the persons developed their lands which were under water at the time of the flood or were flood prone areas. The Revenue Authorities granted permission for development of Tapovan Farm House by keeping aside the relevant record and only after the Commission reported, the permissions granted were revoked.*
- 24. Even the provisions of Gujarat Irrigation and Drainage Act, 2013 empowers the State Government u/s 11 to prohibit the formation of obstruction of rivers. The construction made which may obstruct the current of the River, within the limits notified, the State Government is not only obliged to prohibit such formation of any such obstruction but is also required*

*to make an order of removal or modification of such obstruction.*

25. It is also pointed out by the CEPT in the report that TPS No. 10 Adajan and No. 26 Rander have been located in areas where elevation is below 7 m from MSL and hence flood prone. From the satellite map it clearly appears what is stated about Katargam and the embankment. It is also indicated (at page 21) that 19.67 (100%) lakhs square metre area was acquired for embankment. Out of this 7.20 lakh square metre land was re-granted (36.6%). Only 7.29 lakh square m (37.06%) was allotted for embankment. 12.45 lakh Square meter (63.40%) was under 13 TP Schemes. 2.28 Lakhs Square Meter (11.59%) was allotted for public purpose (largely on the river side). 2.35 lakhs Square (11.95%) meter was allotted for roads. 0.13Lakh Square meters (0.66%) was Government Land and 0.43 lakhs Square Meter (2.19%) was allotted to private persons. At page 22 with photographs, it is indicated that the land under the building was never acquired by the irrigation department. After the floods, the Irrigation Department raised the height of the embankment to 16 m. In doing so they had to expand the base and since the building construction had already taken place in the scheme there was no mushroom to expand leading to a situation where the boundary wall of one of the residential flats is now on the slope of embankment. The other picture indicates construction on the embankment or the riverside or public property close to the river bank or apartment close to the river bank or the apartments right behind

the embankment at Rander or waterworks and slums on the riverside of the embankment wall at Katargam etc. Very interestingly, it is pointed out that 13 TP schemes were along the riverside through which the embankment passes and 7 TPS have been finalised. About 2.19% land which was converted into final plots on the riverside of embankment was returned back to the private landowners. This leads to development in an at-risk area increasing vulnerability. At page 25 it is pointed out the occupation of public and private land were slums at the relevant time and were in extremely poor conditions.

#### (6) BOUNDARY OF RIVER TAPI

26. In a meeting held on 14/11/06 it was decided that the Municipal Commissioner, Surat and Executive Engineer, Irrigation, shall take steps so as to fix the boundary of river Tapi. On account of change having taken place in the flow of the river which *shifted its boundaries*, there was an urgent need of fixing the boundary.
27. In the meeting that took place on 13/03/09, the Irrigation Department was asked to finalise the boundary of the river, in consultation with the Collector and DILR and to formulate necessary Development Control over the land, within the river boundary identified by the Irrigation Department. There must be records available with the Revenue Department, the Collector and Surat Municipal Corporation about the boundary of the River. It may

be that on account of change of flow, the boundaries are required to be decided afresh. Against this it has been indicated that earlier river boundaries were marked by superimposing the satellite imagery on revenue maps along the river from Ukai to Hazira with the help of BISAG. However, in context to the observations of Hon'ble National Green Tribunal, a blueline (river boundary) and redline (150M in restricted zone) maps had been given to the Surat Municipal Corporation. It appears that the maps have been given to the Corporation with a letter dated 11/12/2019. (this is said in response to meeting held in 2009)

28. In a meeting held on 13/03/09, it was considered that the area submerged in the river is a part of the river.
29. It is also pointed out the existence of storm water drains discharge in River Tapi at 16 locations within the area of Surat Municipal Corporation. There was no accuracy of the River map. Some plots were without revenue numbers and others were with multiple numbers. Maps with the District Land Revenue Records and that were with SUDA and SMC had a lot of discrepancies and the accuracy was between 60% to 65% only.
30. Looking at the images of the river, as on (1) 14<sup>th</sup> December, 2000, (2) 6<sup>th</sup> November, 2004 and (3) 4<sup>th</sup> June, 2009 at page 10 of the report clearly indicates shift in the river. On account of erosion or deposition; the river width keeps on changing. It has been estimated that in the last 50 years there has been a

significant difference in the river boundary as per satellite image, revenue records and survey of India. Images are printed at page No. 10 of the report. On account of floods, erosion when it was revealed that the river width keeps changing, the same appears to have been taken into consideration, however, it appears that the same is not taken into consideration.

31. The Irrigation Department has submitted the maps of River Tapi. One map shows the extent of inundation and by drawing blue line and red line, the areas affected in 2006 and 1968 respectively, the copy of the said map is annexed herewith **Mark Annexure 2**.
32. One page map (Google image) with blue line and red line drawn as per amended GDR gives a complete picture of the relevant area on both the sides of River Tapi. On account of development having already taken place the authorities are finding it difficult to put more restrictions. However, the Google images taken by the Irrigation Department in all 19 will indicate the area where the development has taken place and areas where development has not taken place.

#### **(7) BUILDING CONSTRUCTION/ BLUE-RED LINES**

33. SMC was asked to survey all buildings including private buildings falling in low-lying areas and susceptible to flooding and SMC was called upon to prepare a complete year wise profile of buildings. (Meeting 13-03-09) If the profile of buildings would have been prepared and placed on record it would have been known that how many buildings were

*erected after the floods on the river Bank or the areas which got submerged or the areas which were affected badly on account of the floods or in the areas which were flood prone. In the end of the year 2019 building regulations have been published and by that time many buildings have been erected and occupied. Again, the flood similar to that of 2006 hits the areas, who would be responsible for allowing the construction and occupation of the buildings and responsible for the loss that may be sustained?*

- 34. It was decided that no structures shall be allowed to be erected on the land falling between embankments and the river on either side of the river. However, it is interesting to note that the authorities came out with the version that the land falling between the embankment and riverbank which belongs to private individuals is eligible for development currently. It is stated that the residential development has already taken place along the riverbank where there is no embankment/retaining wall. (In the areas i.e., Umra, Magdalla Gamtal, TP areas in Fulpada, Pat, Adajan).*
- 35. About the construction it is stated the No building plans have been approved on private lands falling within the embankments in the last several years. Existing structures are either utilities or hutments on the government/SMC lands, religious structures or old construction on private land. There was instruction to prepare a building profile year wise to know the year of construction. However, it appears that the same has not been prepared.*

36. About the measures taken to ensure flood sensitivity in planning and development within existing rules, it stated that most of the undeveloped land along the river and within the embankment is designated as a recreation/agricultural zone in DP 2004. It appears that SMC is encouraging the construction with the hollow plinth considering high flood level in low-lying areas in Surat.
37. The CEPT pointed out that the old city area has G+3 or G+4, mainly residential structures which are quite old and *the areas are vulnerable to floods as the same is located within the horse-shoe bend of River Tapi. The Development Plan proposes development of residential land use in some areas which have experienced very high inundation in the past. Certain areas are low land areas.* (P18 of the Report)
38. While drafting T. P. schemes with a view to see that the water ways are not obstructed, the final plots should not have been carved out in the areas prone to flood and such land should not be allotted. Even if earlier allotted should not be allowed to develop. There is an illustration about granting and revoking the permission. It was stated that District Panchayat and SUDA granted permission for erection in” Tapovan Farm House”. It is also interesting to note that the Irrigation Department gave an opinion for agricultural activities mentioning that this area is not submerged up to the release of 3 lacks cusecs water from Ukai Dam. However, the permission granted earlier for

development has been cancelled. (In view of the recommendation made by the Commission to reconsider the development permission granted with respect to the land the decision was taken)

39. The High Court of Gujarat in case of Dipakbhai Jaikant chokshi and others v/s Surat Urban Development Authority and others in Special Civil Application No. 723 of 2011 with Special Civil Application No. 3881 of 2011 decided on 13/06/2011 had an occasion to deal with the case of " Tapovan Farm House". The Commission appointed by the Government, examined the matter and recommended to reconsider development permission granted with respect to the land. After giving an opportunity of hearing and considering various aspects in the report submitted by technical personnel, the development permission was cancelled on 30/12/2004. The land in question was in the midst of the River Tapi and within Palas. While concerning the development permission the provisions contained in sections 33 and 34 of the Gujarat Town Planning Act were taken into consideration. On behalf of the Executive Engineer, it was submitted that the land is downstream of Nehru bridge. The land in question is located at Bhata bet which is a law area as per sub merge map. It was also submitted that a proposed revised Development Plan area in question is put under " no construction zone" which is under active consideration of the State Government. The High Court quoted the observations made by the Commission. It reads as "The competent authority-SUDA has approved the plan (Exh.74) and

the Collector, Surat has also given consent for this development. It appears that approvals are given based on certificates, dated 7.2.1995, filed by the local Talati and Panchayat of villagers wherein it is stated that the area is not getting flooded due to construction of Kakrapar weir and Ukai dam on the upstream side. The Executive Engineer has certified that this area is not affected by flood of 3.5 lacs cusec and no flood protection measures are required for the agriculture use. Both affidavits and Executive Engineer's opinion are obtained by Shri Jayesh Dalal, Architect of the scheme. *Records of floods and flood relief operations attended in the past are available with the Revenue Department including Talati as well as SUDA and all local authorities but reference to these records are avoided by all concerned for the reasons best known to them.*" The High Court further quoted the observations made by the Commission which reads "that existing Development Control Rules and building by-laws of SMC, SUDA and other authorities should be modified to clear for flood flows. Such modified rules shall be drafted with specific provisions for observance of flood vulnerability of the area."

40. The High Court reproduced the remarks made by the Commission which reads as under: -

"In fact, this low-lying area is a water way / drainage path carrying water all the time. This area is a private agriculture land/plots or government land. On revenue map (village map), it is shown as fields bearing survey numbers. The village maps do not reflect flood levels or water line and drainage path but in fact, it acts as a water way almost throughout

the year..... It was observed that in 2006 flood, this area was completely submerged and depth of water was as high as 8 ft to 10 ft. The Executive Engineer has certified that this area is not affected by flood of 3.5 lacs cusec and no flood protection measures are required for the agriculture use. Both affidavits and Executive Engineer's opinion are obtained by Shri Jayesh Dalal, Architect of the scheme. Records of floods and flood relief operations attended in past are available with Revenue Department including Talati as well as SUDA and all local authorities but reference to these records are avoided by all concerned for the reasons best known to them.”

41. The High Court of Gujarat in the aforesaid case in paragraph 11 pointed out that” Even any construction on the waterway is prohibited by the decision of this court reported in the case of Shailesh R Shah Vs State of Gujarat reported in 2002 (3) GLR 2595”. Even if the watercourse has changed its way to such an extent that it would not be advisable to allow any kind of activity and it is always open to restrict the use of the land which has submerged or is likely to be submerged. Once you restrict the waterway by making any hindrance or obstacle, it would cause much harm and therefore, it is not advisable to allow any type of construction, where the water is likely to flow. That would be allowing the person to play mischief with the environmental laws.
42. Being aggrieved by the decision delivered by a learned single judge of the High Court, in the aforesaid case, Letters Patent Appeals No. 1104 of 2011 and 1253 of

2011 were preferred by the original petitioners. The Division Bench on 03/04/2014 by a detailed judgement dismissed the appeals. It was contended that an error has been committed by invoking section 34 of the Gujarat Town Planning and Urban Development Act, 1976 (hereinafter referred as "the Development Act"). It was further contended that when third-party right is created the said provision cannot be invoked. The Division bench considered the opinion of an expert inter alia stating that it has been opined that no construction is permissible on the land in question which is absolutely in the midst of the River Tapi and which is likely to obstruct the natural way of the water of River Tapi and it is not in larger public interest. The Division Bench dismissed the appeals and thus, the order made by the learned single judge was confirmed.

43. One will have to examine the provisions of the Gujarat Town Planning and Urban Development Act, 1976 (hereinafter referred as "the Development Act") The word "development" is defined in sub-clause (viii) of section 2 of the Development Act. It reads "development" with all its grammatical variations and cognate expressions, means the carrying out of any building, engineering, mining, or other operations in, or over, or under land or the making of any material change in any building or land or in the use of any building or land, and includes layout and sub-division of any land; Thus, the development refers to the land and not the river. In case of various rivers, on account of heavy rains in catchment areas and the local areas

on account of flood, the rivers are widened, however, after some time on account of decrease in the inflow, or the summer, there may be shrinkage of rivers. On the bank of a river, if on account of flood, the land has submerged, or in view of the flow it is likely to be submerged, or Once upon a time it was submerged and the possibility of submerging cannot be ruled out, would not entitle the person to act in such a way which may become hindrance in the waterway. Even in such a situation the person cannot claim any right.

44. Section 5<sup>6B</sup>. Of the Development Act Reads as under: -

(1) A copy of every order, resolution or decision of the appropriate authority <sup>6</sup> [other than the Urban Development Authority] shall be sent to the Collector of the district.

(2) If, in the opinion of the Collector, the execution of any order, resolution or decision of an appropriate authority or the doing of anything which is about to be done or is being done by or on behalf of an appropriate authority is causing or is likely to cause injury or annoyance to the public or to lead to a breach of the peace or is unlawful, he may by order in writing suspend the execution or prohibit the doing thereof and where the execution of any work in pursuance of the order or resolution of an appropriate authority is already commenced or completed, direct an appropriate authority to restore the position in which it was before the commencement of such work.

(3) When the Collector makes any order under this section, he shall forthwith forward to an appropriate authority affected thereby a copy of the order with a statement of the reasons for making it and also

submit a report to the State Government along with copies of such order and statement.

(4) Against the order made by the Collector under 7 [sub-section (2)], the appropriate authority or any person affected thereby may prefer an appeal to the State Government within thirty days from order of Collector to suspend execution of order, etc. of appropriate authority, the date on which it receives a copy of the order. The State Government may on such appeal rescind the order or may revise or modify or confirm the order or direct that the order shall continue to be in force, with or without modification, permanently or for such period as it may specify:

Provided that the order shall not be revised, modified or confirmed by the State Government without giving the appropriate authority or, as the case may be, a person affected thereby reasonable opportunity of showing cause against the order].

45. Thus, it is clear that even the Collector is empowered to take action. Even if the appropriate authority has exceeded its limit or an order made under section 29 of the Development Act, authorising the person to develop the land is likely to cause injury or annoyance etc, as referred hereinabove, the Collector can make suitable order. As pointed out above in the case of Tapovan Farm even the permission accorded was cancelled by invoking Section 34 of the Development Act. In view of heavy floods and considering the history of the heavy floods in River Tapi, the authorities ought not to have allowed any kind of development. In the instant case at the appropriate time no action has been taken and only after the

cognizance was taken by the Hon'ble National Green Tribunal, the authorities all of a sudden took action and published GDR in the month of November, 2020 which is more than 14 years after the flood caused huge damages to the residents of Surat as well as commerce and industry.

46. The Commission appointed by the State considering the effect of flood and the areas affected specifically observed that "that existing Development Control Rules and building by-laws of SMC, SUDA and other authorities should be modified to clear for flood flows. Such modified rules shall be drafted with specific provisions for observance of flood vulnerability of the area." It is thereafter the authorities revoked the development permission to develop the farm house. That order was challenged in the year 2011 before the High Court.
47. The High Court decided the matter in the year 2011 and pointed out the need of change, yet, only in November, 2020 rules were amended and before that number of buildings came to be erected and who will be responsible for the damages, both to person and property? Even after the decision, the meetings were convened to consider the nature of construction that may be allowed.
48. A meeting held on 29/03/2012 was presided over by the Hon'ble Minister which was attended by three other Hon'ble ministers, members of legislative assembly, Additional Chief secretary, Municipal Commissioner, Chairman, Town Planning Committee, and other high-ranking officers. In all seventeen

members took part in the meeting. The agenda of the meeting makes it clear that the meeting was convened for the purpose of considering the nature of construction that can be permitted within the embankment and outside the embankment. Thus, the decisions were taken in one after the other meeting. The plot holders developed the land as indicated earlier but no rules were framed after the heavy floods and as per 2004 Rules the development proceeded.

49. A meeting was held on 26/03/13 under the chairmanship of Shri Babubhai Bokharia, Hon'ble the Minister, water resources, Shri Nanubhai, Hon'ble the Minister (State) water supply and water resources, seven MLAs, Chairman, Town Planning Committee, Additional Chief Secretary, Municipal Commissioner and three other high-ranking officers were present in the meeting. From the minutes of the meeting, it transpires as under: -

1. After the floods of 2006, the Government appointed a Commission which submitted its report, which was considered at different levels. One of the subjects was on both sides of the river there should be embankments and restrictions on development.
2. SMC requested the CEPT to undertake the study. On the banks of river Tapi on account of erosion, area up to 150 m is restricted zone measuring from either from the river affected on account of erosion or has submerged or embankment.
3. About the river boundary it was decided that the area which comes under water is to be considered as a river and the irrigation Department shall decide the same. The retaining wall or the embankment are required to be taken into consideration for deciding the boundary

of the river. In the map, it is to be indicated accordingly and the same is to be shown in the development plan.

4. River boundary as decided by the irrigation department.
  - a. Within the river no construction shall be allowed and no obstruction shall be allowed either by filling/levelling the land or otherwise obstructing the flow of the river.
  - b. Outside the river boundary, up to 150 m, the construction shall be restricted in the area which shall be considered as a restricted zone and the regulations shall have to be drawn afresh. The buildings which are already in existence will not be governed by the new rules but on development of the building, such rules shall be considered.
  - c. As indicated above in (a) and (b) the SUDA will have to draw/frame the rules which may be submitted to the Government and in place of proposal forwarded earlier, the present Rules shall be taken into consideration at the appropriate level of the Government to take a decision.
  - d. The private lands within the river boundary are to be acquired and for that Irrigation Department to make appropriate proposals. SMC shall have to take immediate steps on this behalf.
  - e. Within the river boundary, the Irrigation Department will have a control so as to see that no construction or earth filling is carried out, and, the Department by issuing the notice will take appropriate action.
  - f. For the construction of embankment or retaining wall there should be no requirement of acquisition of land. SMC and SUDA shall see that in the drawings/map of the Town Planning Scheme embankments or retaining walls are specifically indicated.

50. The aforesaid details are placed only with a view to examine that the flood had devastated effects in the year 2006, and soon thereafter, why amendment was not made in GDR so as to stop the construction within the area likely to be adversely affected on account of floods.
51. Wherever there is natural flow of the water no construction of any type can be permitted so as to block the said flow. On account of change in the flow of the river or the river is found changing the width, the private land might have submerged or is likely to be submerged and therefore, the construction cannot be allowed. Under the pretext that the GDR did not prohibit the construction, the private parties were allowed to erect the structures. The explanation given by the authority that the lands belong to private individuals and till there is prohibition, the authorities were under the obligation to sanction the plans.
52. This explanation runs contrary to the law. It should be remembered as pointed out by the Apex Court in case of M.C. Mehta vs Kamal Nath & Ores on 13 December, 1996 that "the (The) ancient Roman Empire developed a legal theory known as the "Doctrine or the Public Trust. It was founded on the ideas that certain common properties such as rivers, sea- shore, forests and the air were held by Government in trusteeship for the free and unimpeded use of the general public. Our contemporary conceded about the environment bears a very close conceptual relationship to this legal doctrine. Under the Roman Law these resources were either owned by no one (res Nullious) or by everyone

in common (Res Communious). Under the English common law, however, the Sovereign could own these resources but the ownership was limited in nature, the Crown could not grant these properties to private owners if the effect was to interfere with the public interests in navigation or fishing. Resources that were suitable for these uses were deemed to be held in trust by the Crown for the benefit of the public. Joseph L. Sax, Professor of Law, University of Michigan proponent of the Modern Public Trust Doctrine - in an erudite article "Public Trust Doctrine in natural resource law: effective judicial intervention". Michigan Law Review Vol. 68 Part-1-page 4/3 has given the historical background of the Public Trust Doctrine as under:

53. The Apex Court further pointed out that "The source of modern public trust law is found in a concept that received much attention in Roman and English law - the nature of property rights in rivers, the sea, and the seashore. That history has been given considerable attention in the legal literature, need not be repeated in detail here. But two points should be emphasized, First, certain interests, such as navigation and fishing, were sought to be preserved for the benefit of the public; accordingly, property used for these purposes was distinguished from general public property which the sovereign could routinely grant to private owners. Second, while it was understood that in certain common properties - such as the seashore, highways, and running water - "perpetual use was dedicated to the public," It has never been clear whether the public

had an enforceable right to prevent infringement of those interests. Although the state apparently did protect public uses, no evidence is available that public rights could be legally asserted against a recalcitrant government.

54. The judiciary in the country has always protected the fundamental rights of the citizens and one of such fundamental rights is “right to live” which includes enjoyment of all-natural resources. Without water even insects would not survive. To protect the human beings the Government is spending crores of rupees for making water available to the people and industries. Therefore, rights of the enjoyment of the sea shore, highways, and running water cannot be restricted but can be regulated. This is required to be done for the benefit of the citizens. It is in the general interest of the people to impose the restriction on erection of buildings on waterways or in the flood prone areas. The authority has to protect the rivers and cannot allow a person to erect a building, not only in a watercourse but the places where floodwater is likely to reach is required to be protected.
55. One cannot be allowed to interfere with the natural flow of the river by trying to block the natural river/spill channel of the river. In case of M.C. Mehta vs Kamal Nath & Ores, the Apex Court pointed out that “the Motel management admitted that "over the years, and especially after the severe flood erosion last year, we have built extensive stone, cemented and wire-mesh embankments all along with the river banks at considerable expense and cost. We have also

gradually and painstakingly developed this entire waste and Banjar area". The Supreme Court pointed out "that the Motel-management has by their illegal constructions and callous interference with the natural flow of river Beas has degraded the environment. We have no hesitation in holding that the Motel interfered with the natural flow of the river by trying to block the natural relief/spill channel of the river." In view of this it is clear that one can not interfere with the natural flow of the water.

56. The need to protect the environment and ecology may come in conflict with some individual's rights, but for the larger interest of the public, environment and ecology, such individual rights cannot be exercised so as to adversely affect the environment and ecology. By permitting some individuals to erect a building or structure which would affect the waterway, certainly would amount to permitting such individuals to act contrary to the public policy and environmental laws. Such eventualities will demand for judicial protection of the public's interest in environmentally critical resources. In short, the environment imposes constraints on our freedom; these constraints are not the product of value choices but of the scientific imperative of the environment's limitations. (David B. Hunter (University of Michigan) in an article titled an ecological perspective on property: (*M C Mehta supra*))
57. According to Professor Sax the Public Trust Doctrine imposes the following restrictions on governmental authority.

"Three types of restrictions on governmental authority are often thought to be imposed by the public trust: first, the property subject to the trust must not only be used for a public purpose, but it must be held available for use by the general public; second, the property may not be sold, even for a fair cash equivalent; and third property must be maintained in particular types of uses".

58. Marks v. Whitney, 6 Cal.3d 251, The court summed up the powers of the state as trustee in the following words: - (Taken from M C Mehta's case)

"Thus, the public trust is more than an affirmation of state power to use public property for public purposes. It is an affirmation of the duty of the state to protect the people's common heritage of streams, lakes, marshlands and tidelands, surrendering that right of protection only in rare cases when the abandonment of that right is consistent with the purposes of the trust.....

60. In Phillips Petroleum co. vs. Mississippi 108 S. Ct. 791 (1988), the United States Supreme Court expanded the public trust doctrine to identify the tide lands not on commercial considerations but on ecological concepts. The Supreme Court in case of M C Mehta after considering the observations in case of Phillips Petroleum pointed out that "We see no reason why the public trust doctrine should not be expanded to include all eco-systems operating in our natural resources."

61. The Supreme Court in case of M C Mehta (supra) pointed out as under: -

(i) Environment measures - by the State Government and the statutory authorities - must anticipate, prevent and attack the causes of environmental degradation.

(ii) Where there are threats of serious and irreversible damage, lack of scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.

(iii) The "Onus of proof" is on the actor or the developer/industrialist to show that this action is environmentally benign.

**(8) PERMISSION TO DEVELOP/MAKES  
SHOWING DEVELOPMENT IN  
PROHIBITED AREAS  
RED AND BLUE LINES**

62. About the Blue and Red lines what the Bench of the Tribunal at Pune has observed on 19/12/2019 is also relevant to note: -

“6. Regarding drawing of red line and blue line of river Tapi, it was submitted that a drawing indicating the demarcation along the bank of the river Tapi had been submitted by the Narmada Water Resources, Water Supply and Kalpsar Department and action would be taken by the respective authorities as per their jurisdiction.

7. It had been submitted by the Learned Counsel for the Municipal Corporation on instruction of the Executive Engineer, Surat Municipal Corporation, that

implementation of red line and blue line submitted by the Narmada Water Resources, Water Supply and Kalpsar Department would be completed within two months. As prayed for on behalf of Municipal Corporation, the said department was directed to coordinate with the other departments for effective implementation of the demarcation. It had been clearly directed that work should be completed expeditiously within two months.”

63. When the Tribunal was hearing the matter in December 2019, the statement was made that the Blue and Red lines are to be demarcated as per the design of the lines by Kalpsar Department.
64. The question arises as to why after the floods in River Tapi in the year 2006, the developers developed their plots, which were underwater on account of floods in 2006, or in the flood prone areas? Keeping this aspect in mind it is required to be considered that in a meeting dated 13/03/09 SMC was called upon to prepare a complete year wise profile of buildings. It seems that no such profile has been placed. If it would have been placed, one would have come to know as to how many permissions for development were granted after the floods in the areas which were adversely affected on account of the flood or were likely to be adversely affected on account of the flood. It is also difficult to understand as to how the individuals were in possession of land in the River Tapi, or the area which submerged and became a part of the River, or an area likely to be adversely affected, or submerged? how the parcels of lands were given survey numbers?

That can be explained by the Revenue Department only. As indicated above in the beginning, since 1880 there used to be heavy floods in River Tapi and hence the question becomes relevant.

65. Despite floods in River Tapi, the development has taken place on the riverbanks. On account of expansion of the commercial as well as industrial activities nearby villages also developed. Some villages were on the bank of the river. The Commissioner, Surat Municipal Corporation, forwarded the development plans-2035. It is divided in 7 sections, 01 Kathor to Valak, 02 Valak to Fulpada, 03 Fulpada to Singanapor, 04 Singanapor to Umra, 05 Umra to Dumas, 06 towards Dumas and 07 Dumas to Sultanabad.
66. Superintending Engineer, Surat prepared separately Blue line and Red line on one page map. The drawing shows the details of the river boundary margin line along with Tapi River. In the map earthen embankment with River boundary in blue line is shown. From the boundary 150 m is drawn. From the river boundary, a 30 m margin line is shown. This would indicate that up to 30 m margin line, there shall be no development. Looking at the drawing it appears that the development will be restricted between 30 m margin line and 150 m restricted line. In the same design retaining wall is indicated having Gabion Pitching. (Gabion walls are executed mainly for the purpose of soil stabilization behind the wall) On the other side also, similar pitching is indicated. On the side of the retaining wall, a river boundary with blue

ink is indicated as a blue line. 150 m is shown in red ink and above that, 30 m margin line is shown in pink ink. Thus, from the River boundary to the 30 m margin line is shown as No Development Zone. After 30 m margin line up to 120 m is indicated as a restricted zone line/Red line. Similarly, a drawing is shown without an embankment/retaining wall. There also, from the River boundary, a Blue line of 30 m margin line is shown to indicate that there will be no development. From the River boundary, blue line, 150 m away Red line is indicated. Thus, from the River boundary, blue line to 30 m margin line there will be no development and from the margin line restricted development will be permitted up to a distance of 150 m from River boundary line.

67. In all 19 maps have been submitted for perusal. The same are annexed herewith **Mark Annexure 3 to 21.**

Map No. 1 (Annexure-3) indicates red and blue lines. On the banks of the river, on one side there is a village Kholvad and on the other side there is a village Kathor. The construction in the villages can be said to be touching the blue line and obviously many constructions are within the red line. However, on both sides of the villages there are open lands. The blue line as well as the red line could have been drawn differently so as to cover more land.

Map No. 2 (Annexure-4) indicates that on one side of the river there is a village Abrama. Large tracts on both sides, except the construction carried out by the villagers, lands are open and therefore these lines

should have been widened so as to see that more space is made available to the floodwater. The lands which are open appear to be agricultural lands.

Map No. 3 (Annexure-5) touches the other part of village Abrama on one side of the river and Bhada Gam village on the other side of the river. On both sides nearby villages and on the banks of the river, lands are open and agricultural lands.

Similarly, in Map No. 4(Annexure-6) on the banks of the river there are habitations/small villages but, a major portion of the lands on the riverbanks are open lands and agricultural lands. At this place also, adequate changes should have been made in the blue and red lines.

In Map No. 5(Annexure-7) , the part which is open should be re-examined for the purpose of refixing the blue and red lines.

Map No. 6(Annexure-8) indicates residential colonies or buildings on both sides even within the redline. However, so far as and open lands are concerned the blue as well as redline should be reconsidered and appropriately fixed.

In Map No. 7(Annexure-9) constructions within the red line on both sides of the river can be noticed however, there are open lands also and the same requires rethinking for fixing the blue and red lines.

In Map No. 8(Annexure-10) there are constructions on both sides within the red line and some

constructions can be seen within the no development zone.

In Map No. 9(Annexure-11) at many places there are structures even within the redline however, some lines are noticed as open lands. The authorities should examine the question of redrafting of the line in this area.

In Map No. 10(Annexure-12) , there are some constructions within the redline however, on both sides there are open lands. One can see that the flow takes a turn here and therefore, it is necessary to see that more lands are kept open so as to see that there is least damage.

Similarly, in Map No. 11(Annexure-13) , one can see the change in the flow of the river. On the side of Dabholi village more parcels of lands are open. Other side also open lands can be seen. Therefore, this may be examined for appropriately fixing the lines.

In Map No. 12(Annexure-14) except few patches the construction is found within the redline.

In Map No. 13(Annexure-15) , there is a sharp curve and bottleneck is also noticed in the river. There are a lot of constructions even within the red line. At some places the construction can be seen even within the blueline area.

Map No. 14(Annexure-16) indicates a lot of construction including that of the Government within the redline area. From the map image it also appears

that there is residential society even within the blueline.

In Map No. 15(Annexure-17) there appears to be a lot of construction between the blueline and redline however, on Adajan village side more open lands are seen.

In Map No. 16(Annexure-18) it appears that in the river, there are agricultural fields and the construction is carried out between the blue and redline on the river side of Vasundhara Society. Even on the other side at many places' construction is noticed. Whether agricultural activities can be permitted even in the river? On account of agricultural activities, it is likely that the level of the land used for agricultural purposes is raised. Even standing crops would obstruct the water flow.

In Map No. 17(Annexure-19), most of the lands are open and used as agricultural lands. It appears that in the river there are agricultural fields and some construction can also be noticed.

In Map No. 18(Annexure-20) on one side there are more open lands and little construction is noticed between blue and redline. On the other side also, some construction is noticed but more fields are seen. From the map, it appears that an island has come up in the river and the same is being used for agricultural operations.

Map No. 19(Annexure-21) takes one to Dumas, a well-known place near Surat. One will find

construction in some areas even between the blue and redline. On the other side of Dumas accept the open land nothing is indicated. All these are images taken from Google map and details of blueline and redline are marked on these maps.

68. Considering the history of the floods and looking at the maps, it is difficult to understand the use of riverbanks or near about the places of the riverbanks. In the past when there were no Dams or reservoirs or weir to store the river waters, the flow in the river would have been much more than what is noticed at present day. Earlier there was no development in the areas and the lands were used as agricultural land as it is found at various places. It is indicated earlier about frequent floods in River Tapi. In absence of development which is noticed now, there may not be a devastating effect of the floods. Despite having the history of floods in River Tapi, the areas of Surat were underwater on account of floods, how the developers developed the plots? In view of the clear picture that on banks of River Tapi, the areas which were affected on account of flood or, were likely to be affected on account of flood the authorities should not have allowed any development. Even after the floods of 2006 in River Tapi the permissions appear to have been granted within the areas which were under water or, which were prone to flood.

69. It appears that the SMC consulted the CEPT in the subject matter and the opinion is given by the CEPT

which is in detail. The recommendation made by the CEPT are as under: -

**Recommendations for Zones 1 to 3:**

A clear policy needs to be formulated taking into account the ownership of land in the zoning area.

The following table encapsulates the key recommendations for the zones tentatively delineated in the study area:

Zone	Characteristics of land	Recommendations
1	<p>Tapi River</p> <p>No dispute on status — River bed as per cadastral map as well as physical situation — this includes small islands where land has no survey number</p>	<ol style="list-style-type: none"> <li>1. Declare as no-development area</li> <li>2. Vacate over a period of time (there may be issues of relocation and compensation depending on whether existing development is legally valid, politically sensitive, etc)</li> </ol>
2A	<p>From the Tapi River Edge to 15 m behind river bank/embankments</p> <p>This is an area that is certain to be inundated in a high flood situation. The space between the embankments is required for discharging the flood in a high flood situation</p>	<ol style="list-style-type: none"> <li>1. Declare as no-development area Vacate over a period of time (there may be issues of relocation and compensation depending on whether existing development is legally valid, politically sensitive, etc)</li> <li>2. The recommendations are the same as in Zone 1, but far more complex to implement as there is considerable existing development, which is legal and authorized as per land ownership as well as regulations.</li> <li>3. A long-term plan needs to be developed for vacating this zone using multiple mechanisms in combination. This may include compensation, relocation, Transfer of Development Rights, etc.</li> </ol>
2B	<p><u>From 15 m away from river bank/ embankments to 150m.</u></p> <p>In general, this area is at risk to a lesser extent than Zone 2A. However, there are places that have no embankment. At these locations, Zone 2A and 2B are continuous and are at higher</p>	<ol style="list-style-type: none"> <li>1. <u>Please note that the distance of 150 m is notional. A buffer zone can be properly delineated only on the basis of detailed studies of river hydraulics.</u></li> <li>2. The following modifications to be introduced in the Development Control Regulations: <ol style="list-style-type: none"> <li>1. All buildings to be on stilts</li> </ol> </li> </ol>

	<p>risk than at places where the embankment exists.</p>	<ul style="list-style-type: none"> <li>2. Ground floor to be used only for parking or open space uses</li> <li>iii. All-natural drain channels to be left open</li> <li>iv. Structural design to take into consideration the possibility of inundation</li> <li>. Create embankments where there is a break in embankments</li> <li>4. Strengthen storm water drainage</li> <li>5. Convert public land into public open spaces</li> <li>6. Create safe shelters where required</li> </ul>
<p>3</p>	<p><b><u>Vulnerable Low-Lying Areas</u></b></p> <p><b>In this study, within the limitations of data availability, all areas with a level less than 9.5 m have been delineated as Zone 3.</b></p>	<ul style="list-style-type: none"> <li>1. It is important that the delineation of this zone be done using a detailed contour survey and a geo-corrected cadastral map reconciled with each other. The city's Development Plan also needs to be rectified both for cadastral information and for geographical accuracy.</li> <li>2. The following modifications to be introduced in the Development Control Regulations: <ul style="list-style-type: none"> <li>i. All buildings to be on stilts</li> <li>ii. Ground floor to be used only for parking or open space uses</li> <li>iii. All-natural drain channels to be left open</li> <li>iv. Structural design to take into consideration the possibility of inundation</li> </ul> </li> <li>3. Create embankments where there is a break in embankments</li> <li>4. Strengthen storm water drainage</li> <li>5. Convert public land into public open spaces</li> <li><b>6. Create safe shelters where required</b></li> </ul>

70. About area delineation, (page 15 CEPT Report) considering the effect of the floods in 2006, area proposed to be 150 m on either side of the river as buffer, it was indicated that it was decided that the study area delineation would not strictly follow the 150 m buffer around the Tapi River, rather it would include areas within 500 m from the river, on the main road. (Report of the CEPT)

In paragraph 11 at page 14 parameters for identification of the critical areas were indicated.

1. Areas where 3 river boundaries (Revenue Village, Satellite Image and Survey of India) conflict;
2. flood affected areas (1998 and 2006) close to river;
3. Areas close to embankments;
4. low-lying areas along the river;
5. Areas having tricks along the river, and
6. Various Building Typologies along the river.

71. Based on the above parameters total 31 Critical Areas were identified on both sides of the river Tapi within SUDA limits. The critical areas were selected so as to get a representative coverage of the 500 m buffer from the river edge on both the sides.

72. In a meeting held on 13/03/09, it was considered that the area submerged in the river is a part of the river. It specifically states that the Town Planning Scheme formed earlier under which final plots were allotted should not be allowed to develop as it forms a part of the river. It is noted by the authorities that there is

considerable existing development, which is legal and authorised as per land ownership as well as regulations. In the beginning SMC was called upon to prepare a complete year wise profile of buildings. Why has such a profile not been prepared? However, the SUDA as well as the Department submitted its proposals/suggestions. It appears that the suggestions of SUDA or the Department were accepted. There are no reasons indicated to take a view different than that expressed by CEPT in its report. The Institute which has expertise in the field and after studying the subject in detail submitted the report. The same is to be considered in its proper perspective. Any suggestion which is not accepted should have good reasons and should be in favour of preserving the River and ecology. It is also to be noted that the CEPT specifically pointed out that "Please note that the distance of 150 m is notional. A buffer zone can be properly delineated only on the basis of detailed studies of river hydraulics." There is no reference to such studies having been undertaken.

73. CEPT after a detailed study at page 14 of the report in para 11 Parameters for identification of the critical areas were indicated. Based on the parameters, total 31 Critical Areas were identified on both the sides of the river Tapi within the SUDA limits. The Critical areas were selected so as to get a representative coverage of a 500-meter buffer zone from the river edge on both the sides. This important aspect has been kept aside while framing the rules.

**(9) DEVELOPMENT ZONE AND EMBANKMENT.**  
**(SMC)**

74. SMC submitted a report dated 6<sup>th</sup> February, 2021 along with annexures 1 to 9. Annexure-6 refers to regulation for Tapi flood prone area, at serial No. 19. Table No. A 6.8 refers to regulation, where there is a reference of a riverbank with existing embankment/retaining wall. No Development Zone is declared from the edge of the river shown in the development plan to the existing embankment/retaining wall. However, in the last column permissible structures are indicated. At serial No. 2 in the same table, *No Development Zone* from the existing embankment/retaining wall to 15 m is declared. In both cases development is prohibited however, structure on stilts is permitted insofar as the development is undertaken by Government/ Semi Government/Urban Local authority for public purposes. Thus, up to the existing embankment/retaining wall and even thereafter up to a distance of 15 m, no development shall be allowed, *except for the development undertaken by the authorities referred above*. At serial No. 3 Restricted Development Zone is declared for the area falling between 15 m and 150 m from embankment/retaining wall. Within this area construction as per zone is permitted, provided the buildings shall be constructed on stilt and ground floor shall be used for the purpose of parking or open space and the basement shall be used only for the purpose of parking. All-natural drains

shall be retained. Structural design be prepared considering the flood prone area.

75. Under headnote River Bank Without Embankment/Retaining wall, at serial No.1 No Development Zone is declared up to 30 m from the edge of the river as shown in Development Plan. In this ZONE no development shall be permitted except the development undertaken by the Government/Semi Government/Urban/Local Authority provided the structure is on stilt. At serial No. 2 Restricted Development Zone is declared within the area falling between 30 m and 150 m, measured from the edge of the river. The construction is permitted as indicated in the above paragraph against the Restricted Development Zone.
76. So far as No Development Zone is concerned, it is difficult to understand about the construction made permissible by the government or other authorities. A temporary use of the open portion of the River without River water for the purpose of playground and such other purposes can be allowed at the most. There is a reference to structure on stilt. Stilt is nothing but a pillar. On account of the number of stilts there would be obstruction in the speedy flow of flood and that may cause damage to the buildings which have been so constructed and the persons in the buildings.
77. The embankment or the retaining wall may provide protection to some extent. Serial No. 3 under heading riverbank with existing embankment/retaining wall and serial No. 2 under heading riverbank without embankment/retaining wall are referred to as

Restricted Development Zone. If a plot of land of a person namely A is in the area near the river where there is an embankment or a retaining wall, the area falling between 15 m and 150 m from embankment shall be considered as a Restricted Development Zone. But just near the end of the embankment near the riverbank another person namely B has a plot. In this case an area falling between 30 m and 150 m from the edge of the river will be considered as a Restricted Development Zone. Thus, in case of A, he will be allowed to construct leaving 15 m from embankment and up to 150 m as per rules applicable for the construction in Restricted Development Zone, while the other person namely B though in neighbourhood of A but, having no protection of embankment/retaining wall, after leaving 30 m from the edge of the river and up to 150 m will be allowed to construct according to the norms applicable to Restricted Development Zone. This mathematical calculation is required to be considered in view of the floodwaters. As the river boundaries (Banks of the River) do not run parallel as that of tracks of the train. On account of floods, the distance between the boundaries is increasing not mathematically, but on account of force of water as the flood moves very fast and wherever the place is found, floodwater moves. If the space is not available, then on account of force it may make its own way even by destroying the standing structures, which may be buildings, standing trees, bridges, compound walls and even bigger structures like dams. It all depends on the speed and force of the

flood water. How the flood water shall flow? Floodwaters flowing towards the direction of embankment, how will the same flow after the end of the embankment? Take another aspect. Floodwaters flowing towards the area where there is no embankment, and, after some distance i.e., one km, an embankment is constructed, how the flood water will move? In view of the fast flow in view of the embankment flow shall be divided in two streams and one will be moving with the side of embankment facing the river side and the other flow the other side and will cause damage depending on the speed and flow. The construction on the back side of the embankment would be like a hindrance. Considering the convex and concave opening of the River Bank the distance can be fixed. And, not everywhere mathematically.

#### (10) T.P. SCHEMES

78. In a meeting held on 13/03/09, it was considered that the area submerged in the river is a part of the river. It specifically states that the Town Planning Scheme formed earlier under which *final plots were allotted should not be allowed to develop as it forms a part of the river.* No construction should be allowed. It was also considered that the Town Planning Schemes totalling 45 are at various stages. Appropriate decisions should be taken as the area has submerged and therefore, such areas should not be included in the

development plan. The details of 45 TPS are given. No T.P. Schemes shall be implemented within embankments, no land acquired for embankment shall be taken in the T.P. Schemes and final plot shall not be allotted in acquired land of embankments. (See the report submitted by CEPT for allotment of the lands acquired). (13-03-09) 19.67 (100%) lakhs square metre acquired for embankment. 7.20 lakh square metre land was re granted (36.6%). Only 7.29 lakh square m (37.06%) was allotted for embankment. Even the land was allotted to private persons.

79. In the meeting that took place on 15-01-2020 at Gandhinagar, discussion took place about the Recreation and Residential Developable Zones and the same have been earmarked on the banks of River Tapi in the Sanctioned Development Plan-2004 of Surat. Total 38 TP Schemes have been prepared on the banks of river Tapi. Out of which 19 TP Schemes have been finalised while 19 Draft TP Schemes have been sanctioned by the State Government which are being implemented. *It appears that as the Recreation and Residential Developable Zones have been earmarked on the banks of River Tapi in the Sanctioned Development Plan-2004 of Surat, the same was to be implemented and that seems to be the cause of delay in Regulations which were finalised after a long delay of 14 years.*
80. *The Irrigation Department was asked to indicate the tentative requirement of land for future embankments with a view to impose restrictions on development of such land. SMC was called upon to prepare a flood risk*

*vulnerability map, identifying low-lying areas and flooding risk for different levels of discharge into the river from 3 lakhs to 16 lakhs cusecs. (the lands were acquired and how the same was utilised is discussed earlier)*

81. The CEPT Report was considered. However, the most important aspect has been overlooked. Why? While stating “From 15m away from the river bank/embankments to 150m.” It was specifically recommended that “Please note that the distance of 150 m is notional. A buffer zone can be properly delineated only on the basis of detailed studies of river hydraulics.” There is nothing to indicate any study was undertaken as suggested. It seems they took the decision about 150 m distance. Satellite images of the maps clearly reveal the breach. About Vulnerable Low-Lying Areas with a level less than 9.5 m has been delineated as Zone 3. Whether detailed contour survey and a geo-corrected cadastral map has been reconciled with each other, as suggested? It seems for all areas one yard stick is used. Flood water overflowing the embankments crossed the areas. Whether in such a situation, permission to erect a building can be granted where there is no embankment or is a vulnerable low-lying area or flood prone area.
82. Again, what is important is that the buildings erected with compound walls are likely to cause more damage to the human lives and property. The construction of pillars will be futile if it is with compound walls. Therefore, looking at the nature of flood and flood

prone areas no building should have a compound wall and for the protection there can be fencing with wires to protect.

**(11) RIVER REGULATORY AUTHORITY**

84. In a meeting held on 13-09-09, the UDD were asked to examine for setting up a separate River Regulatory Authority to manage and regulate the development and the vulnerable areas along with the river boundary. However, SMC came out with the version that it has been suggested that the map showing the River boundary, alignment of embankments/retaining wall and 150M margin line are already submitted to Surat Municipal Corporation. The Revenue Department gives permission for conversion of agricultural land into non-agricultural land and as and when an opinion is sought by the Revenue Department, Irrigation Department gives the opinion. (And thus, it was suggested that there is no need for a separate River Regulatory Authority). In view of the development permission granted, or the plot holders developed the plots, if there would have been separate authority having experts in the subject of river rejuvenation, protection of natural flow of water, environmental laws, preservation of natural water, erosion of rivers etc, the situation would have been different. Looking at the fast development of cities and that too on the River Banks and on lakes, suggestions should have been welcomed. In almost all the cities' many lakes have disappeared and it is not an exaggeration to say that the local authority is a party in selling the land of the lake. Even the lakes are not

filled with the capacity. The way in which new rules have been made with a lot of delay and much after the development having taken place within the flood prone area, the immediate decision of such authority, if established, would have prevented the development. The question of agricultural or non-agricultural land or the opinion of the Revenue Department is irrelevant. It is the Revenue Department which granted the permission to develop TAPOVAN Farm House earlier in the river area. Why the SMC or SUDA came out with the version that the land falling between the embankment and riverbank which belongs to private individuals is eligible for development currently. It is stated that the residential development has already taken place along the riverbank where there is no embankment/retaining wall. When a decision was taken in a meeting held on 13/03/09, that the area submerged in the river is a part of the river and the final plots allotted should not be allowed to develop as it forms a part of the river. No construction should be allowed. What could be the reason for acquiring 19.67 (100%) lakhs square metre acquired for embankment, out of which 7.20 lakh square metre land was re granted (36.6%). Only 7.29 lakh square m (37.06%) was allotted for embankment. Even the land was allotted to private persons. The Independent authority as suggested by the officer of the State Government should have been considered seriously so as to achieve the goal of a clean environment and Rivers with clean water.

85. This authority should also see that untreated effluent and the effluent which is not meeting with norms laid down under the environmental laws and which are not in consonance with the directions of the Hon'ble National Green Tribunal is not allowed to discharge in the river or lake or any water body including to sea or ocean. Today in various rivers and /or water bodies the local authorities are found discharging the sewage without treatment or which is not meeting with the norms. As a result of this the people in the downstream areas are suffering a lot. The authority should be completely independent.

## **(12) SEWAGE TREATMENT PLANT/TOWN**

### **PLANNING SCHEME**

86. On expansion of the city, the Town Planning Schemes are implemented by the authorities responsible for the town planning. They are aware about the growth of a particular area on account of buildings likely to be erected and the number of people likely to occupy the buildings. They would know therefore, the requirement for water, electricity, roads and generation of sewage. It appears that throughout the State, the authorities have not given importance to the aspect of sewage effluent generated in a particular area to be treated in the same area and the treated effluent is used in the same area for greenery. They are aware that only treated effluent can be discharged meeting with the norms in the river. After the buildings are occupied by the people, the

work commences for the construction of the roads as per requirement. After some time, the work of levying the pipe lines for sewage or stormwater commences and that is nothing but a lot of inconvenience to the people and waste of money paid by the people through direct or indirect taxes.

87. It is known to the authorities that the development of cities is much faster than before yet, for the disposal of sewage no proper arrangements are made and untreated sewage is thrown into the river water/canal or sea. The river water is meant for the purpose of the drinking water and other purposes by the people residing at other places on the banks of the river. Why should they be compelled to use the water which is mixed with untreated sewage?

When a town planning scheme is drawn, considering the area and expected number of people to occupy the buildings in advance there should be proper planning. In every town planning scheme, there should be a garden of appropriate size looking to the area of the scheme and people likely to occupy the buildings for residence or the offices or for commercial purposes. They would be aware about the commercial use of the buildings as they are granting permission to erect buildings for different uses. In the garden, there should be a plant of appropriate size for treatment of sewage which would enable the authorities to use the treated water for the purpose of gardens, greenery, lakes etc. and that would save a lot of clean water. Instead of a giant treatment plant for sewage there is need for decentralisation, which

would save a lot of cost and the amount saved can be used for other better activities. There is a requirement of laying very long pipe lines and pumping stations to take sewage generated to the plants. Depending on the size of the TPS and the number of people likely to occupy the size of the plant can be installed in the area of the schemes. I came across such a scheme implemented in Ahmedabad. ( 0.1. MLD TSTP (Tertiary Sewage Treatment Plant) at Ratanpura, Ahmedabad). The treatment plant is installed on the bank of Lake. The treated water is used by the Ahmedabad municipal Corporation for Ratanpura lake and Garden - in campus of TSTP-this will not only rejuvenate the lake but roundabout the greenery will be there with the treated water. The potable water is saved. There was no odour. The photographs which are annexed herewith would indicate that roundabout the plant people are residing in the buildings newly constructed. For the betterment of the people and to save the water, the TPS must be provided in such a way that the sewage of the area of that town planning scheme is treated within the TPS only. The treated water can be used for greenery in the garden and the trees that are growing on the road side for a clean environment, or for storing the same in the lake as said earlier. In cases of giant STP's constructed faraway places, one is required to spend a lot of money for the pipelines and after a certain period the same is required to be replaced. In view of decentralisation, every TPS will have an advantage of its own treatment plant and will be

able to save a lot of water. The details of a treatment plant and relevant photographs are annexed herewith and are collectively **Mark Annexure. ANNEXURE 22-32**

88. So far as the STP's for the city of Surat and nearby areas are concerned, there are three authorities involved in providing STP's. 1) Surat Municipal Corporation; 2) Surat Urban Development Authority and 3) GWS&SB. According to one of the minutes as per the Government order "Pollution Abatement & Conservation of River Tapi" is to be implemented in Surat city and SUDA by Surat municipal Corporation and in the remaining area by GWS&SB". Looking to the present situation of the sewage treatment plants in all 18 plants were to be erected for treatment of sewage.
89. In the River Tapi (Kakrapar barrage to ON GC bridge-45 km-Surat) 149.0 MLD effluent is being discharged by SMC which is untreated. 174.2 MLD effluent generated in the areas of SUDA is being discharged without treatment. There is generation of effluent to the extent of 46.9 MLD outside the limits of SMC and SUDA. Thus, 370.1 MLD was being discharged into the River Tapi.
90. Out of 149 MLD sewage effluent generated within the area of SMC, 74 MLD was proposed to be treated by in situ remediation from the month of March-21. For this type of treatment SMC has addressed a letter to CPCB on 23/07/2020 to suggest In-Situ Bioremediation Technologies/techniques and reply is awaited. It

was stated that sewage effluent to the extent of 75 MLD will be diverted to existing STP.

91. The latest report submitted by the SMC indicates that one plant at Bhesan STP augmentation (100 MLD) is operating. Another plant known as Gavier STP is completed however, no details are given about the date of functioning and the capacity of the plant or to what extent generated sewage is being treated. Gujarat Pollution Control Board should visit the plants and should report urgently with analysis report of the sewage that is discharged.
92. As indicated in Annexure 2 for STPs, one at Bhatar Augmentation (115 MLD) SMC is expected to operate in the month of July-21 though time limit was given up to April-21 in the River Action Plan. One plant at Singanpore (upgradation and expansion 100MLD) is expected to operate on June 21 instead of April 21. One plant at Valak creek (SUDA) having a capacity of 43.24 MLD is under construction and the progress is 26%. Against the time limit of Feb-22, it is expected to be completed in the month of March-22. Another plant of 51.72 MLD, (At Varachha) despite no work has begun and the time limit was given Feb-22, it is stated that the same is expected to be completed in March-22.
93. For the two STPs, One at Bharthana (TPS 83 (SUDA) for 22.7 MLD) the other at Kholvad (SUDA 16.09 MLD) as possession of land has been received very recently, no work is carried out. The time limit was given for completion of February 22,

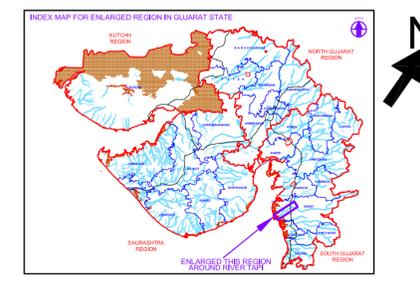
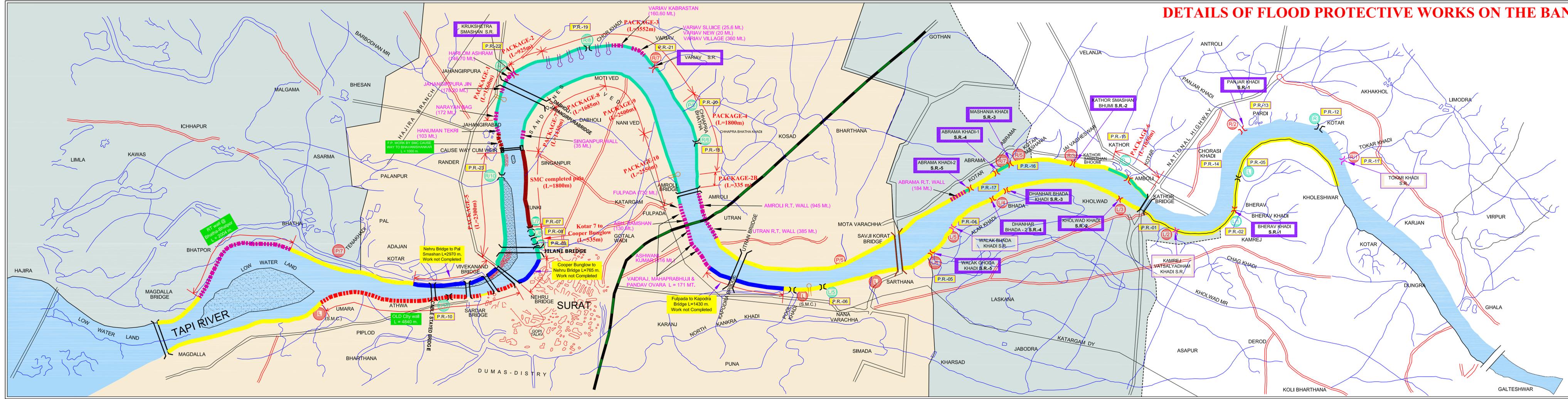
now it is stated that the plants are expected to be completed on September 22.

94. For eight STP's, to be erected for which physical possession of land is yet to be received by SUDA, the expected time limit for completion of all the eight projects was February-22., but now, it is stated that the expected time limit is September-22. (size 1MLD to 14 MLD,) For two plants though possession is not received by SUDA for the plants of 0.33 and 16MLD capacity similar month of expectation for operating the plant is given.
95. In case of one STP, (SUDA -Capacity5.17 MLD) the Block which was sought to be acquired, was grazing land as conveyed earlier but it is found out that the land is for cremation. Therefore, it was proposed to transmit the sewage to another treatment plant where sufficient land is available. Thus, considering the aforesaid aspect, there is no question of erection of the proposed plant.
96. For another STP (SUDA- 16-09 MLD) for the similar reason the land which was proposed for erection of the plant is not available. Now it is suggested that the same may be erected at another place where there is sufficient land available. There is no indication as to when the land shall be acquired and what is the expected time of erection of the plant. For these two STP's before making proposals the authorities were not aware about the actual use of the land?
97. It is very difficult to understand why the State Government takes too much time, in allotting the lands to its own agencies for carrying out the work, which is in the interest of the public at large. The

SMC and SUDA both have taken interest so as to see that work is carried out at the earliest. However, despite the lands being not available, the process of awarding the tender was completed so as to see that soon after the possession of land is given, the work begins. The State Government and the Collector should have taken more initiative. Despite, it was said that the possession of land will be given by the Collectorate, the possession is not given.

98. When the taxpayers' monies are to be utilized for the purpose of better environment and despite the promises to operate the treatment plants by a given date when nothing is done till today, who shall bear the higher cost of the STPs as the cost is increasing every day? Who will be responsible for damage to health and environment on account of sewage being discharged without treatment?
-

# DETAILS OF FLOOD PROTECTIVE WORKS ON THE BANK OF RIVER TAPI



STATUS OF TAPI PALA WORKS BETWEEN MAGDALLA BRIDGE TO KATHOR BRIDGE			
PARTICULARS	RIGHT BANK (KM)	LEFT BANK (KM)	TOTAL (KM)
WORK COMPLETED PALA/ RT WALL	17.679	18.369	36.048
WORK NOT COMPLETED	2.970	2.195	5.165
WORK YET TO BE TAKEN UP	15.921	17.575	33.496
<b>TOTAL</b>	<b>36.570</b>	<b>38.139</b>	<b>74.709</b>

STATUS OF TAPI PALA WORKS UP STREAM OF KATHOR BRIDGE			
PARTICULARS	RIGHT BANK (KM)	LEFT BANK (KM)	TOTAL (KM)
WORK COMPLETED S.R.	0.120	0.120	0.240
WORK YET TO BE TAKEN UP	0.120	7.320	7.440
<b>TOTAL</b>	<b>0.240</b>	<b>7.440</b>	<b>7.680</b>
<b>COMPLETED &amp; REMAINING WORK TOTAL</b>	<b>36.810</b>	<b>45.579</b>	<b>82.389</b>

**LEGEND**

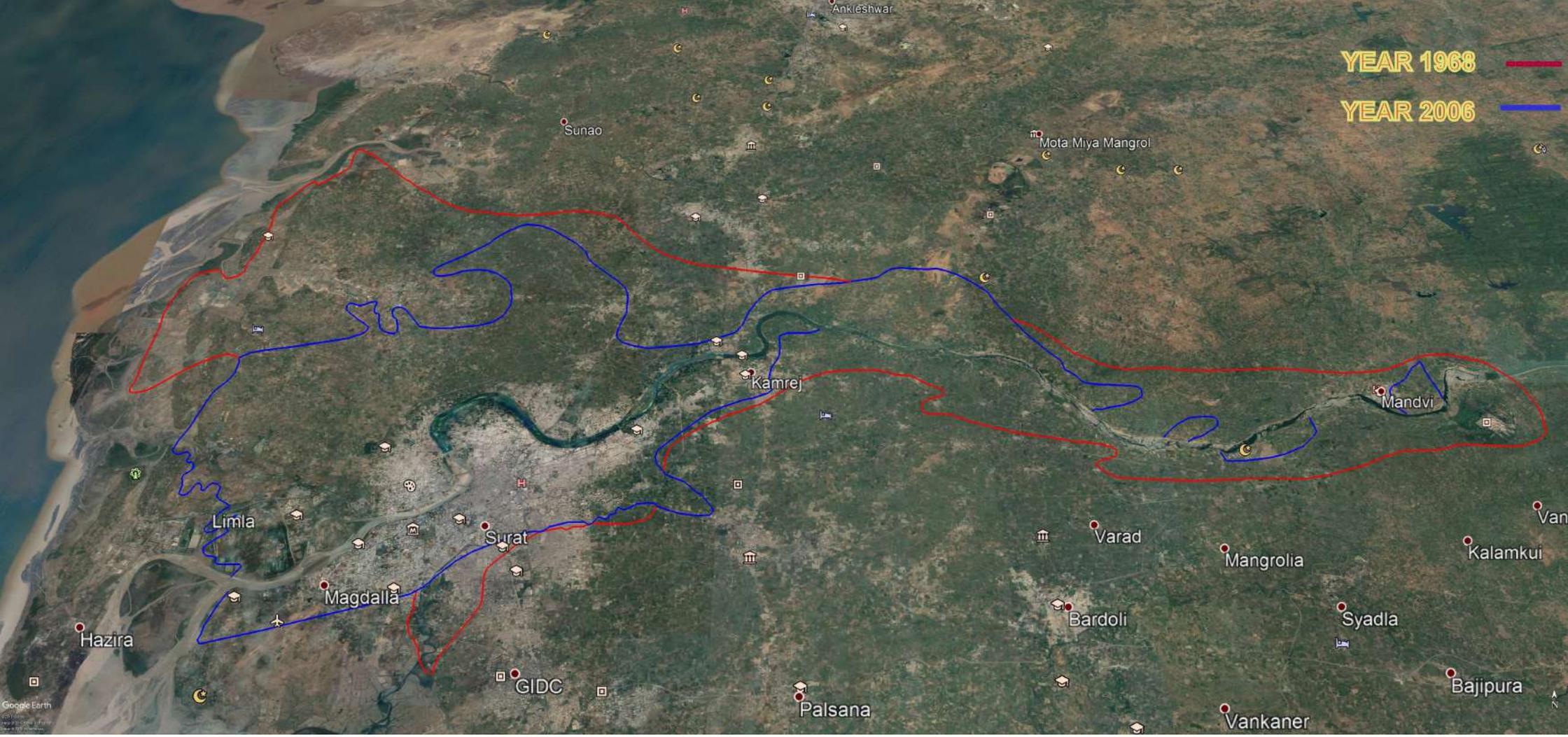
<span style="color: green;">—</span> EARTHEN EMBANKMENT COMPLETED	<span style="border-bottom: 1px dashed black;">—</span> SUDA BOUNDARY
<span style="color: blue;">—</span> FLOOD PROTECTION WORK (IN PROGRESS)	<span style="color: red;">●</span> SLUM POCKETS
<span style="color: red;">—</span> RETAINING WALL COMPLETE	<span style="color: black;">—</span> ROAD
<span style="color: yellow;">—</span> OLD CITY WALL	<span style="color: blue;">—</span> INTAKE WELLS OF INDUSTRIES
<span style="color: orange;">—</span> FLOOD PROTECTION WORK (REMAINING)	<span style="color: purple;">—</span> SLUICE REGULATOR (REMAINING)
<span style="color: green;">—</span> SLUICE REGULATOR TAPI PALA	<span style="color: orange;">—</span> INTAKE WELLS OF SMC
<span style="color: red;">—</span> SLUICE REGULATOR S.M.C.	<span style="color: blue;">●</span> SMC AREA
<span style="color: green;">—</span> EARTHEN EMBANKMENT COMPLETED	
<span style="color: red;">—</span> RETAINING WALL COMPLETED BY SMC	

GOVERNMENT OF GUJARAT  
SURAT IRRIGATION CIRCLE, SURAT

INDEX MAP SHOWING THE FLOOD PROTECTIVE WORKS  
IN LOWER TAPI RIVER BASIN

DEPUTY EXECUTIVE ENGR. T.E.S.D.N. NO. 3, SURAT	EXECUTIVE ENGINEER DRAINAGE DN. NO.2, SURAT	SUPERINTENDING ENGR. SURAT IRR. CIRCLE, SURAT
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# OVERLAPPING OF FLOOD LINES ON SATELLITE IMAGE TO UNDERSTAND THE EXTENT OF INUNDATION





DETAILS OF TAPI RIVER BOUNDARY  
BLUE LINE - Tapi River Boundary  
RED LINE - 100m Buffer Zone

Kathor

MAP 1

Legend

Google Earth

Kholvad



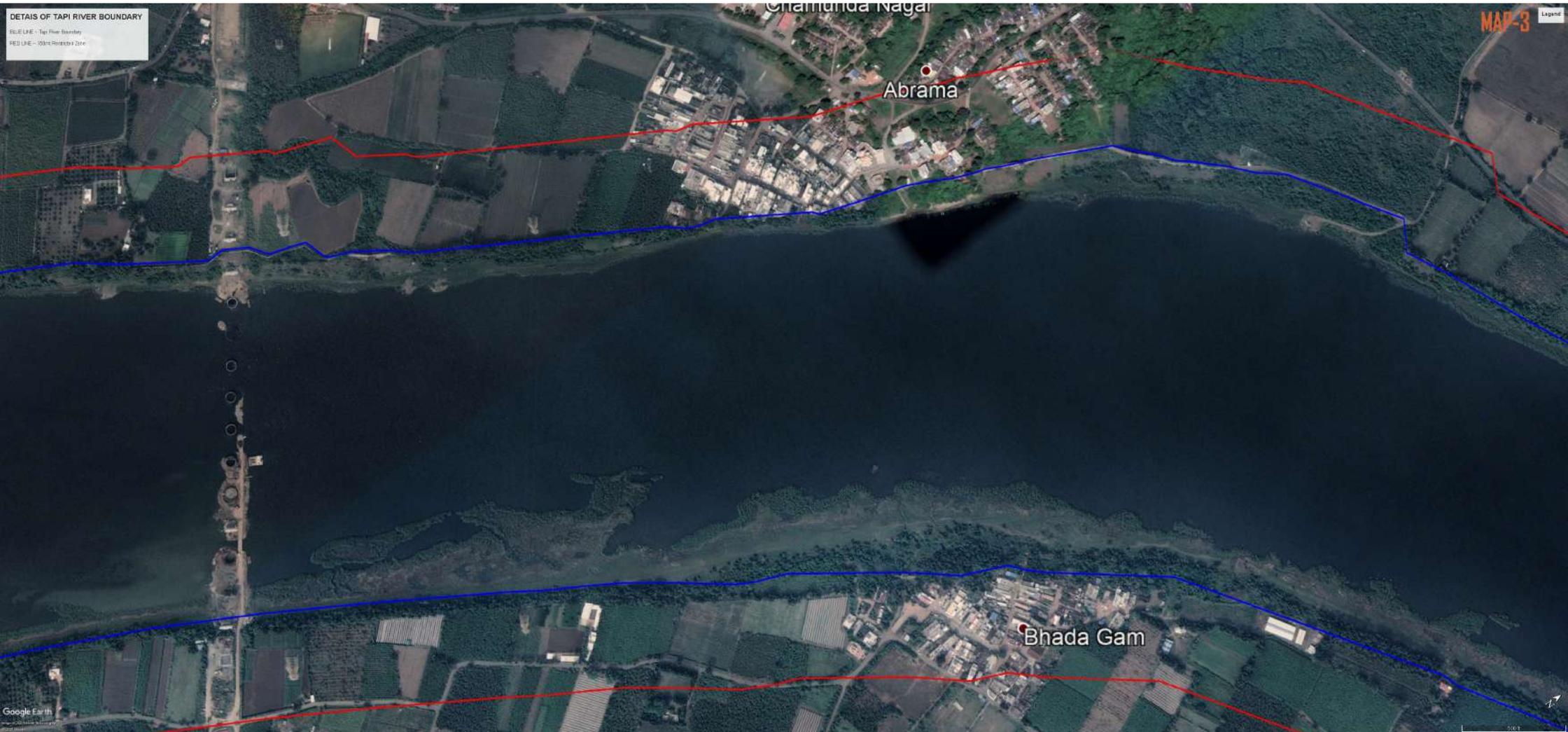
DETAILS OF TAPI RIVER BOUNDARY  
BLUE LINE - Tapi River Boundary  
RED LINE - 100m Protection Zone

Legend

Abrama

Google Earth  
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0.00 km



DETAILS OF TAPI RIVER BOUNDARY  
BLUE LINE - Tapi River Boundary  
RED LINE - 100m Flooded Zone

Chandana Nagar

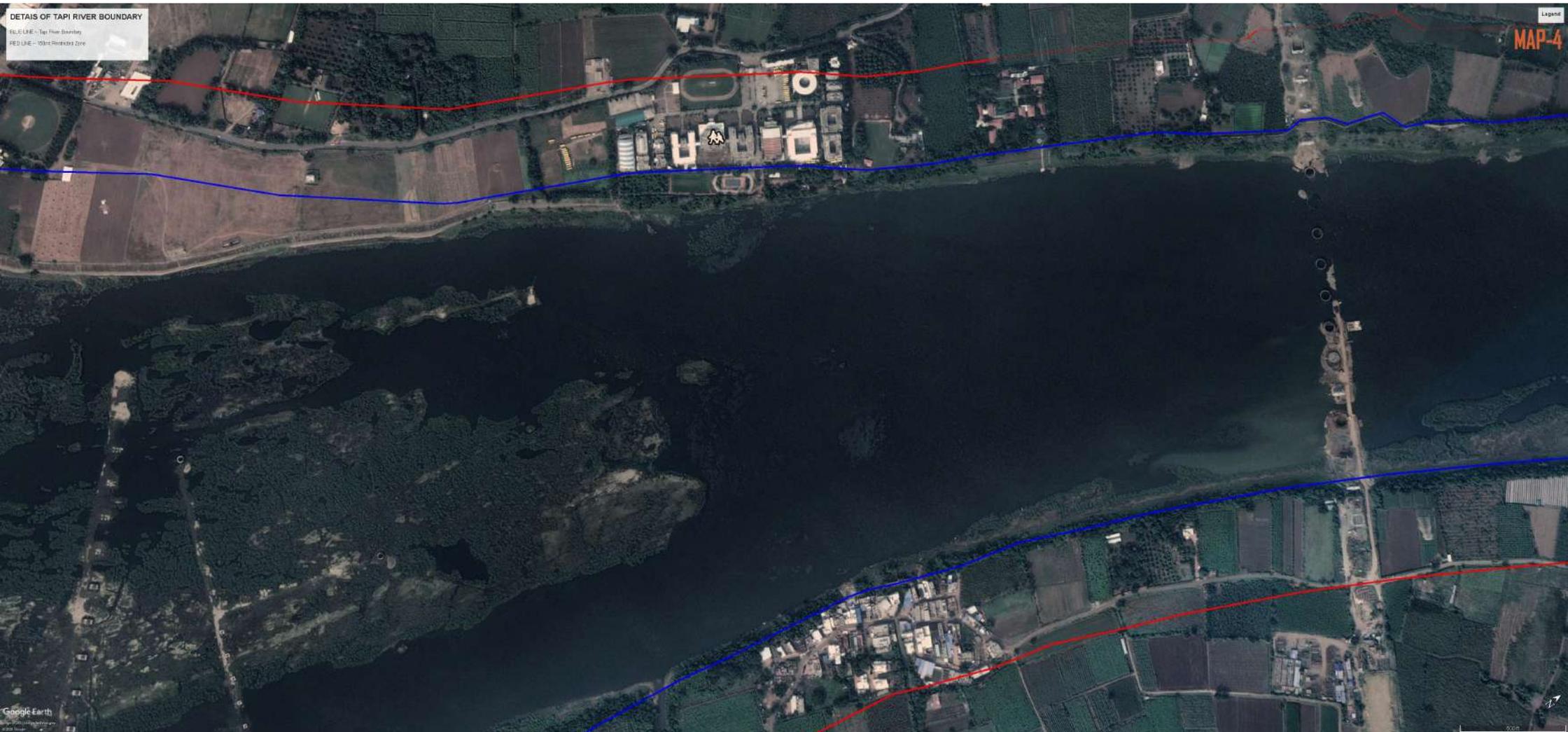
Abrama

Bhada Gam

MAP-3 Legend

Google Earth

100.0



DETAILS OF TAPI RIVER BOUNDARY  
BLUE LINE - Tapi River Boundary  
RED LINE - 100m Protection Zone

Legend  
MAP-4

Google Earth

970.0



DETAILS OF TAPI RIVER BOUNDARY  
BLUE LINE - Top Free Boundary  
RED LINE - 100ft Riverbank Zone

MAP-5 Legend

Nandan Society

Gopinath Society

Valkesvar Society

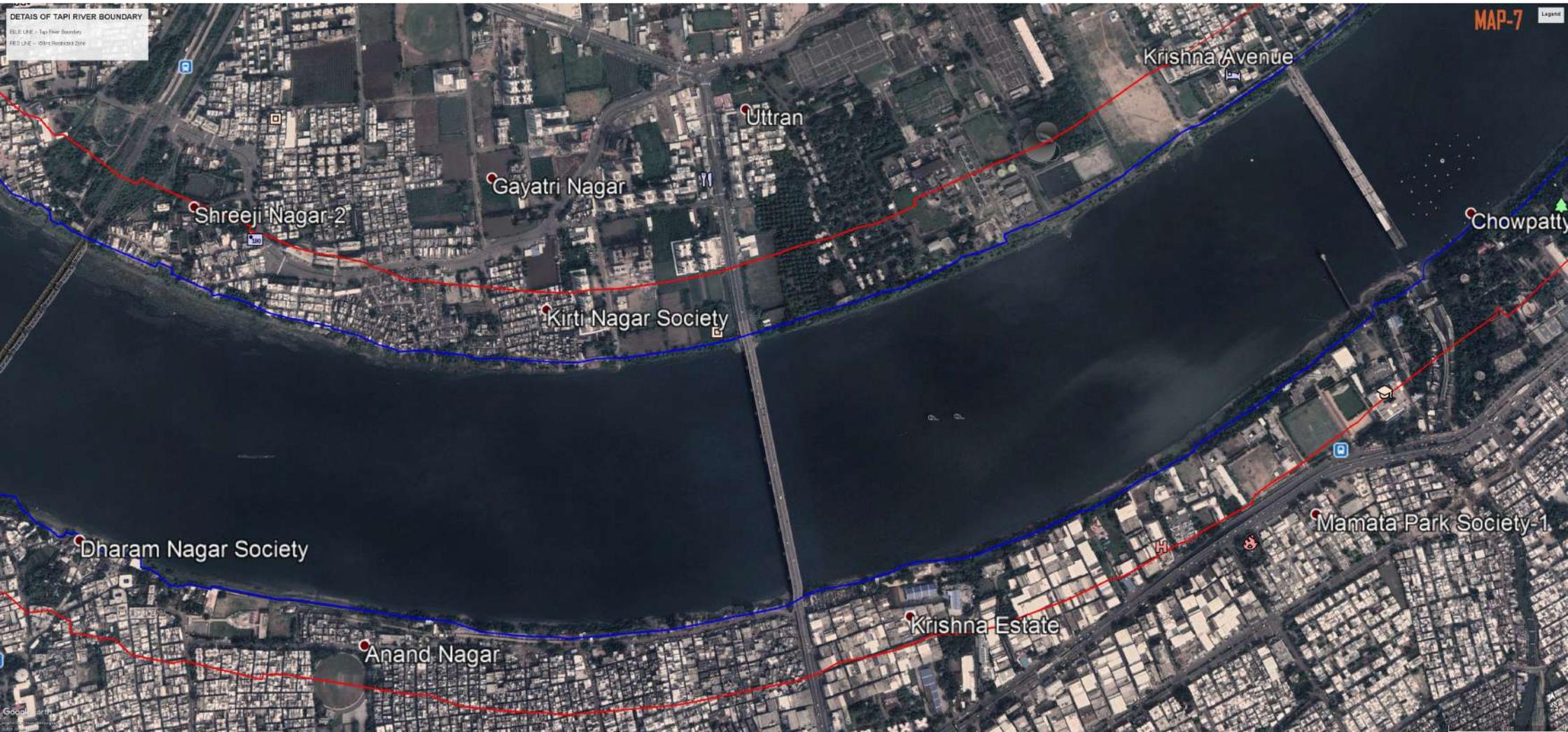
Nature Park and Zoo

National Park Society



DETAILS OF TAPI RIVER BOUNDARY  
BLUE LINE - Tapi River Boundary  
RED LINE - 100m Protection Zone

MAP-6  
Legend



DETAILS OF TAPI RIVER BOUNDARY  
BLUE LINE - Tapi River Boundary  
RED LINE - 100m Buffer Zone 2016

MAP-7 Legend

Google Earth





DETAILS OF TAPI RIVER BOUNDARY  
BLUE LINE - Tapi River Boundary  
RED LINE - 100M Protection Zone

MAP 5 Legend

Navapara

Variav

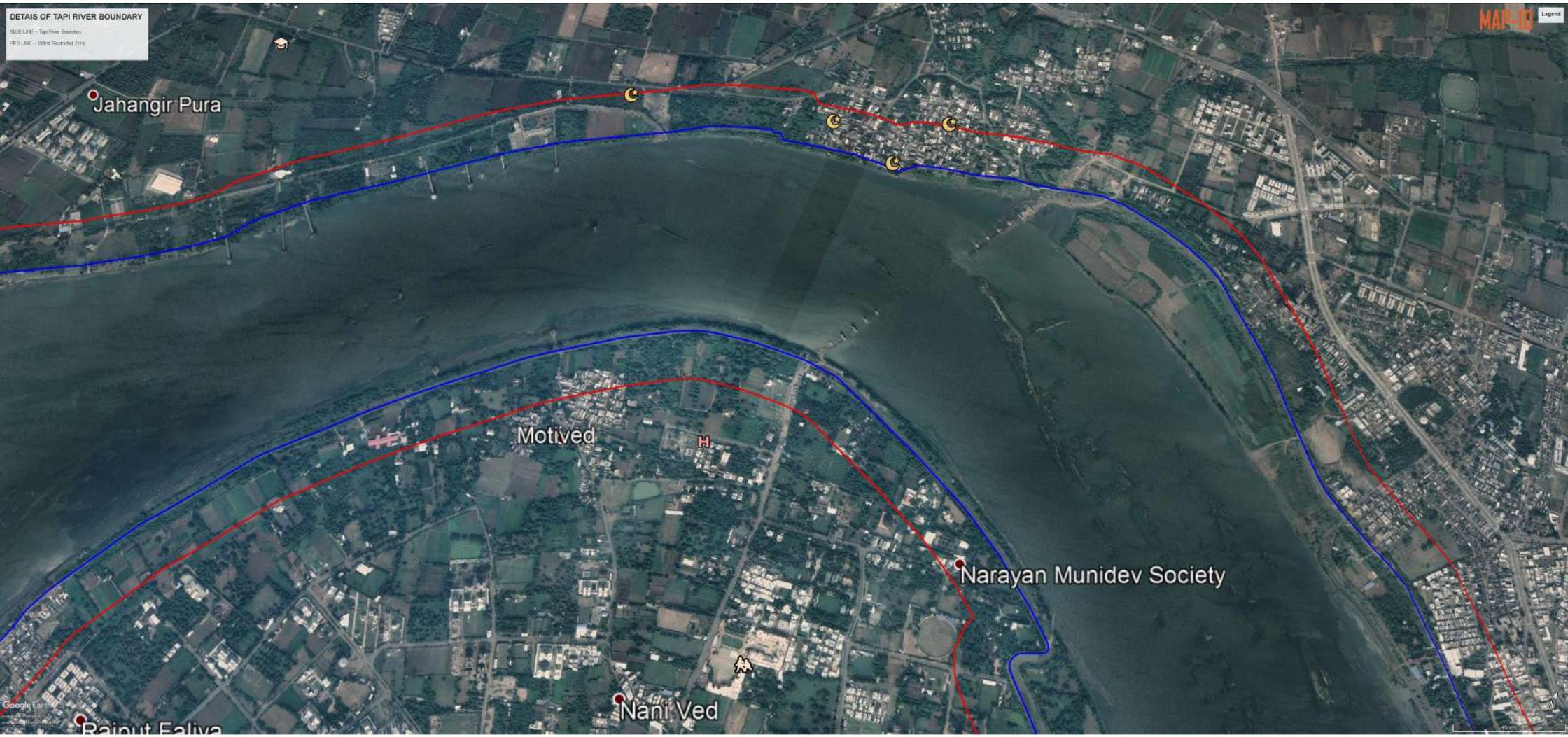
Narayan Munidev Society

Akshar Dham Society

Pravin Mangukiya

Kantik Nagar

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DETAILS OF TAPI RIVER BOUNDARY  
BLUE LINE - Taj Pura Boundary  
RED LINE - 150M Flooded Zone

Jahangir Pura

Motived

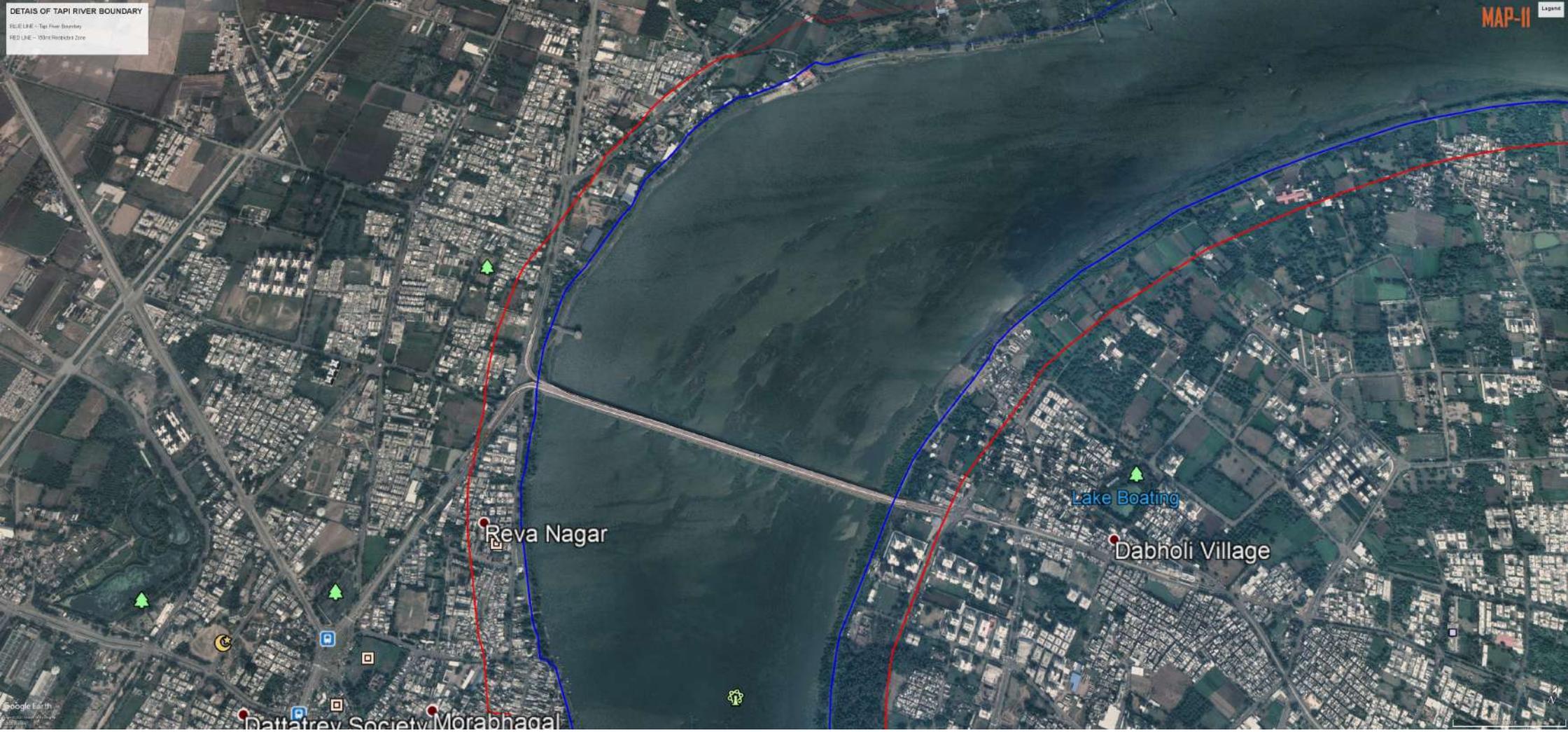
Nani Ved

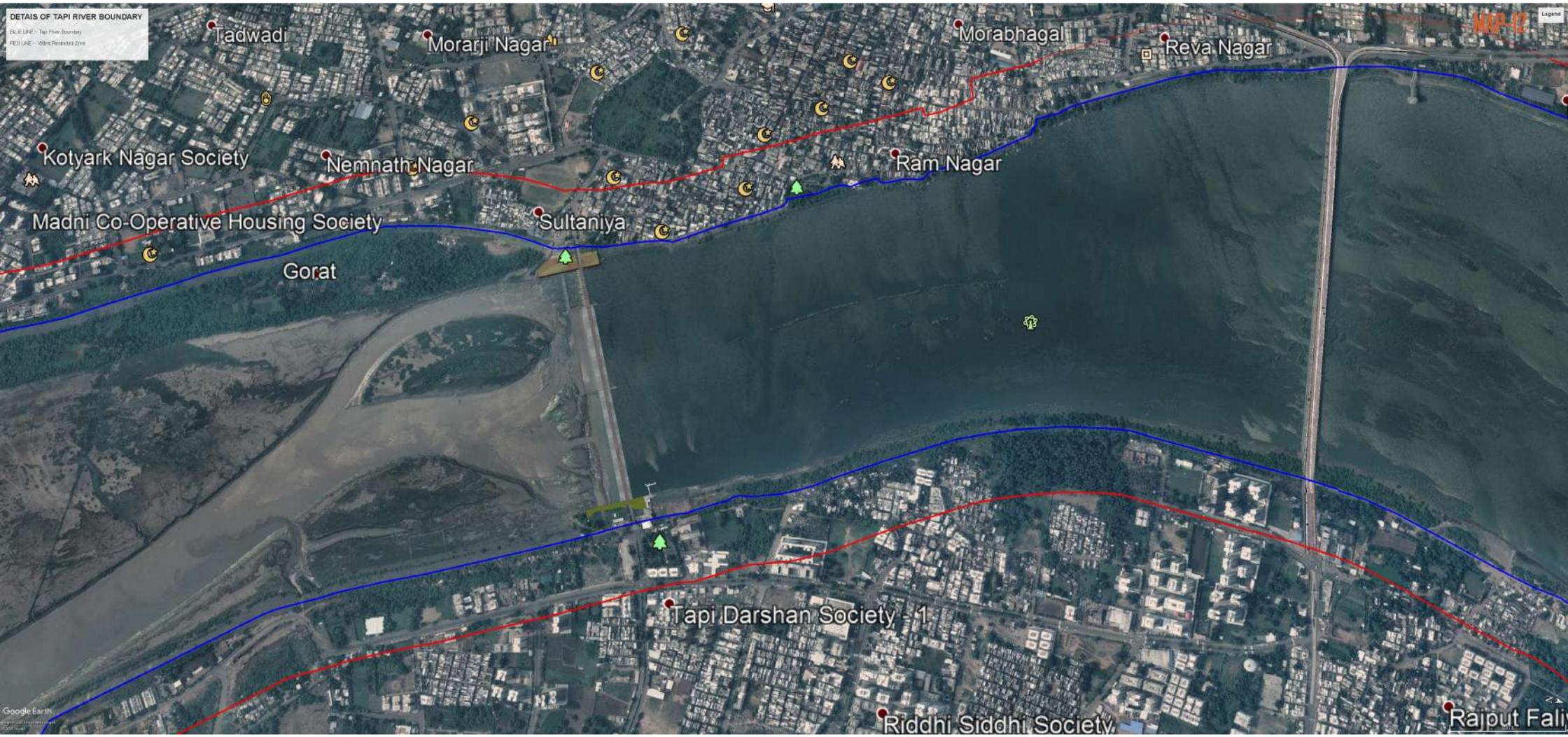
Narayan Munidev Society

Google Earth

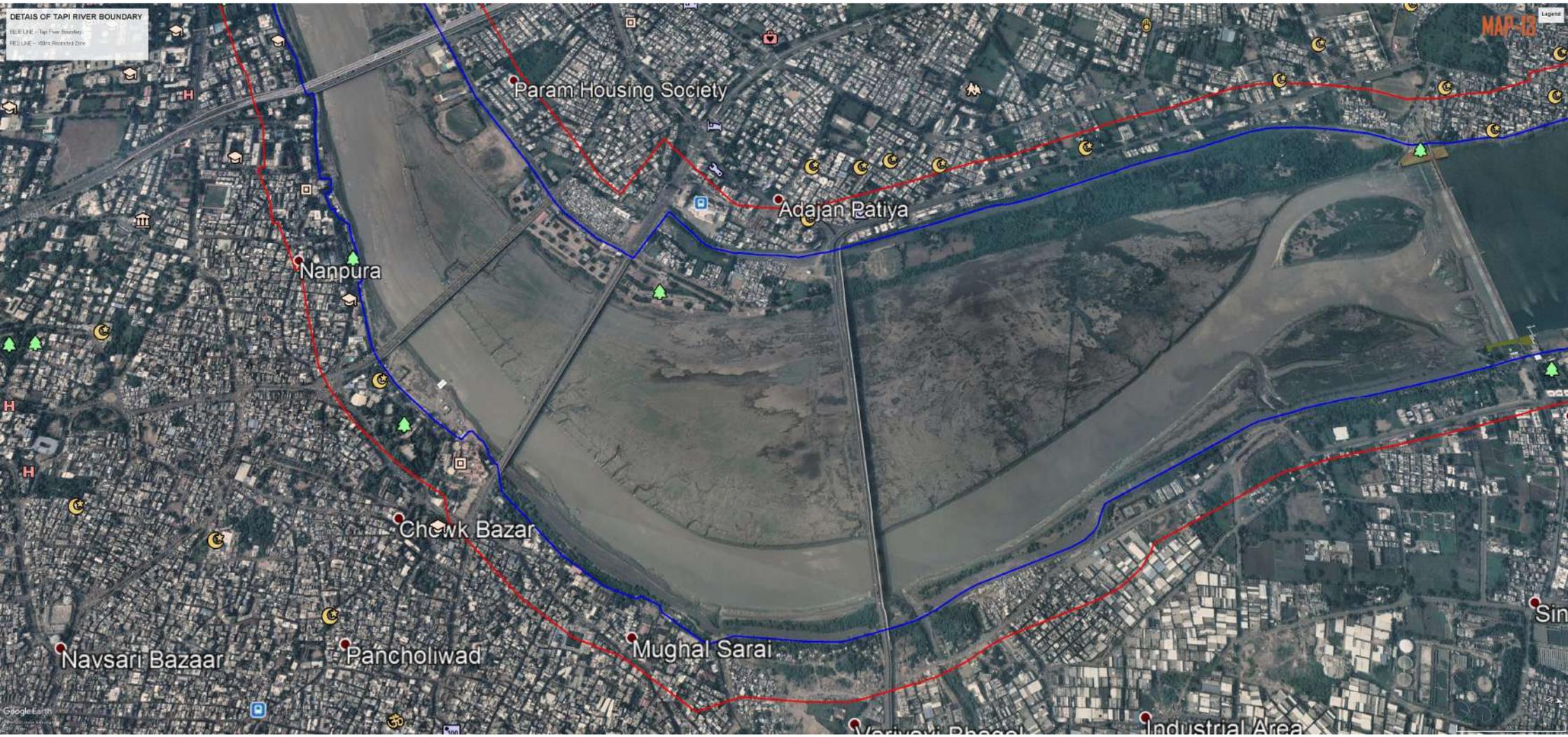
MAPS TO GO Legend

DETAILS OF TAPI RIVER BOUNDARY  
BLUE LINE - Top Floor Boundary  
RED LINE - 100ft Floods Zone





DETAILS OF TAPI RIVER BOUNDARY  
BLUE LINE - Tapi River Boundary  
RED LINE - 100M Buffer Zone



DETAILS OF TAPI RIVER BOUNDARY  
BLUE LINE - Top Flow Boundary  
RED LINE - 100m Protection Zone

MAP-13

Param Housing Society

Adajan Ratiya

Nanpura

Chewk Bazar

Navsari Bazaar

Pancholiwad

Mughal Sarai

Industrial Area

Google Earth



DETAILS OF TAPI RIVER BOUNDARY  
BLUE LINE - Top Floor Boundary  
RED LINE - 100m Protection Zone

MAP 19 Legend

Google Earth



DETAILS OF TAPI RIVER BOUNDARY  
BLUE LINE - Tapi River Boundary  
RED LINE - 100m Protection Zone

MAPS  
Legend

Google Earth



DETAILS OF TAPI RIVER BOUNDARY  
BLUE LINE - Tapi River Boundary  
RED LINE - 100m Flooded Zone

MAP 13 Legend

Bhatpore

Bhatha

Rundh Magdalla

Vasundhara Society

Google Earth



DETAILS OF TAPI RIVER BOUNDARY  
BLUE LINE - Tapi River Boundary  
RED LINE - 100m Flooded Zone

Bhatpore

MAP DATA

Bhatia

Google Earth

1000 m



DETAILS OF TAPI RIVER BOUNDARY  
BLUE LINE - Tapi River Boundary  
RED LINE - 100m Protection Zone

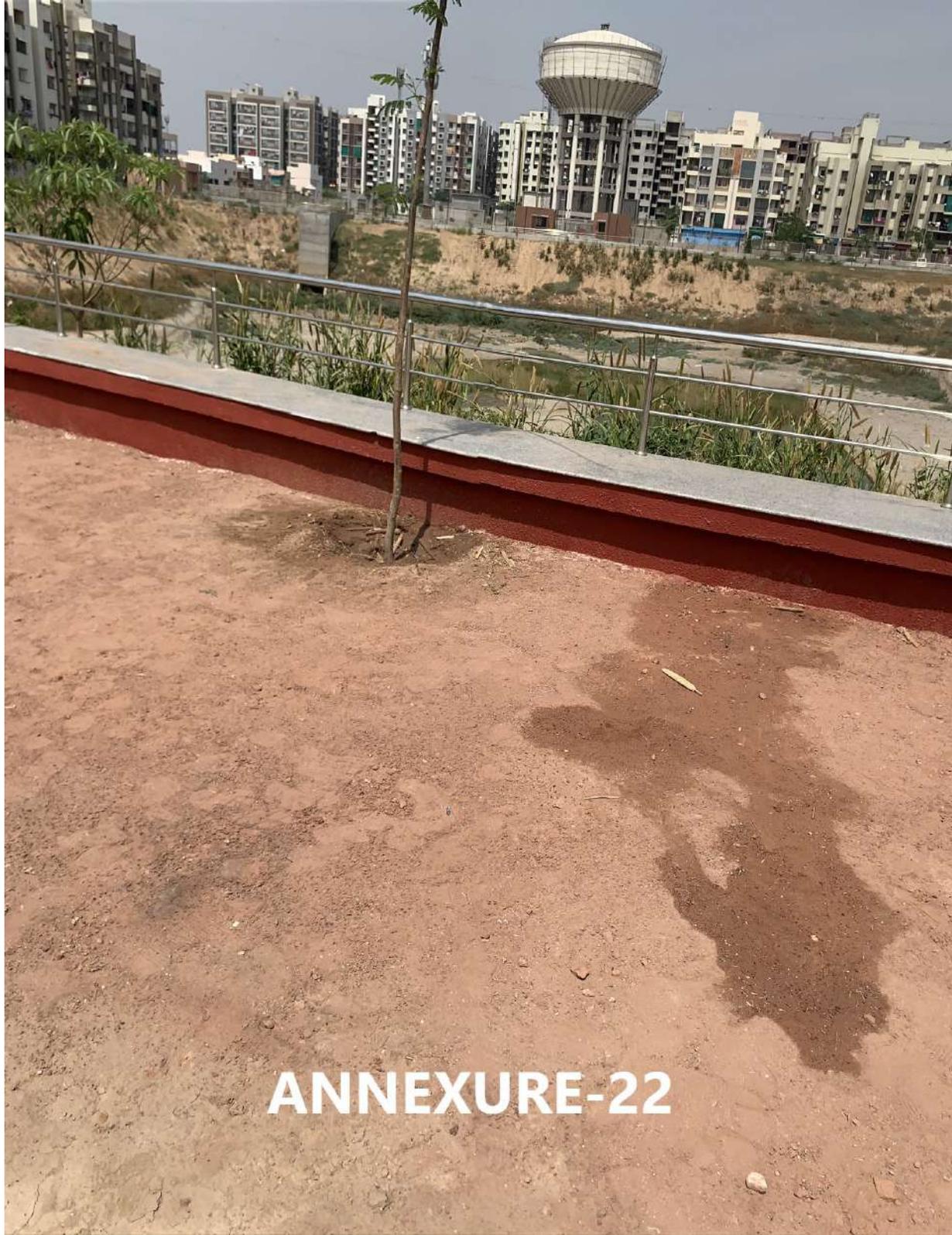
Kidiabet

MAP 18

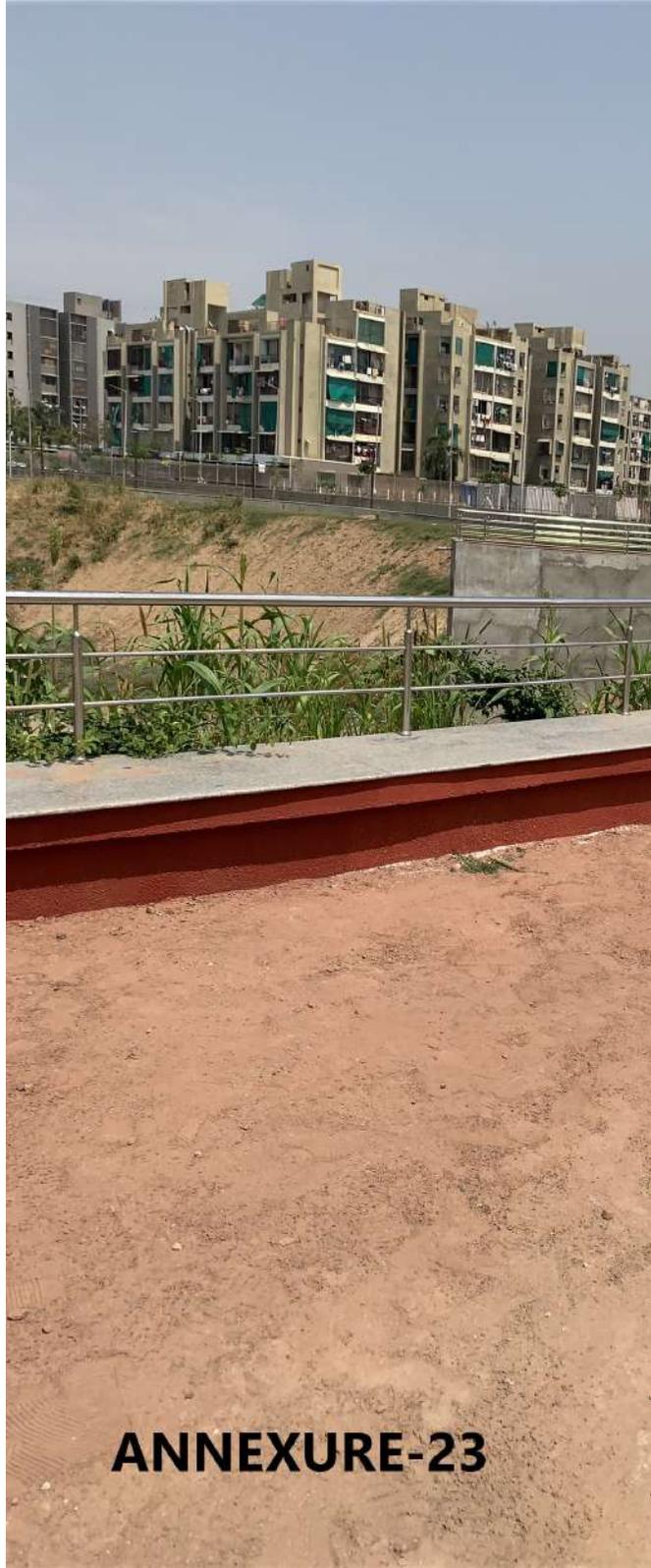
Google Earth

DETAILS OF TAPI RIVER BOUNDARY  
BLUE LINE - Top Floor Boundary  
RED LINE - 100m Flood Zone

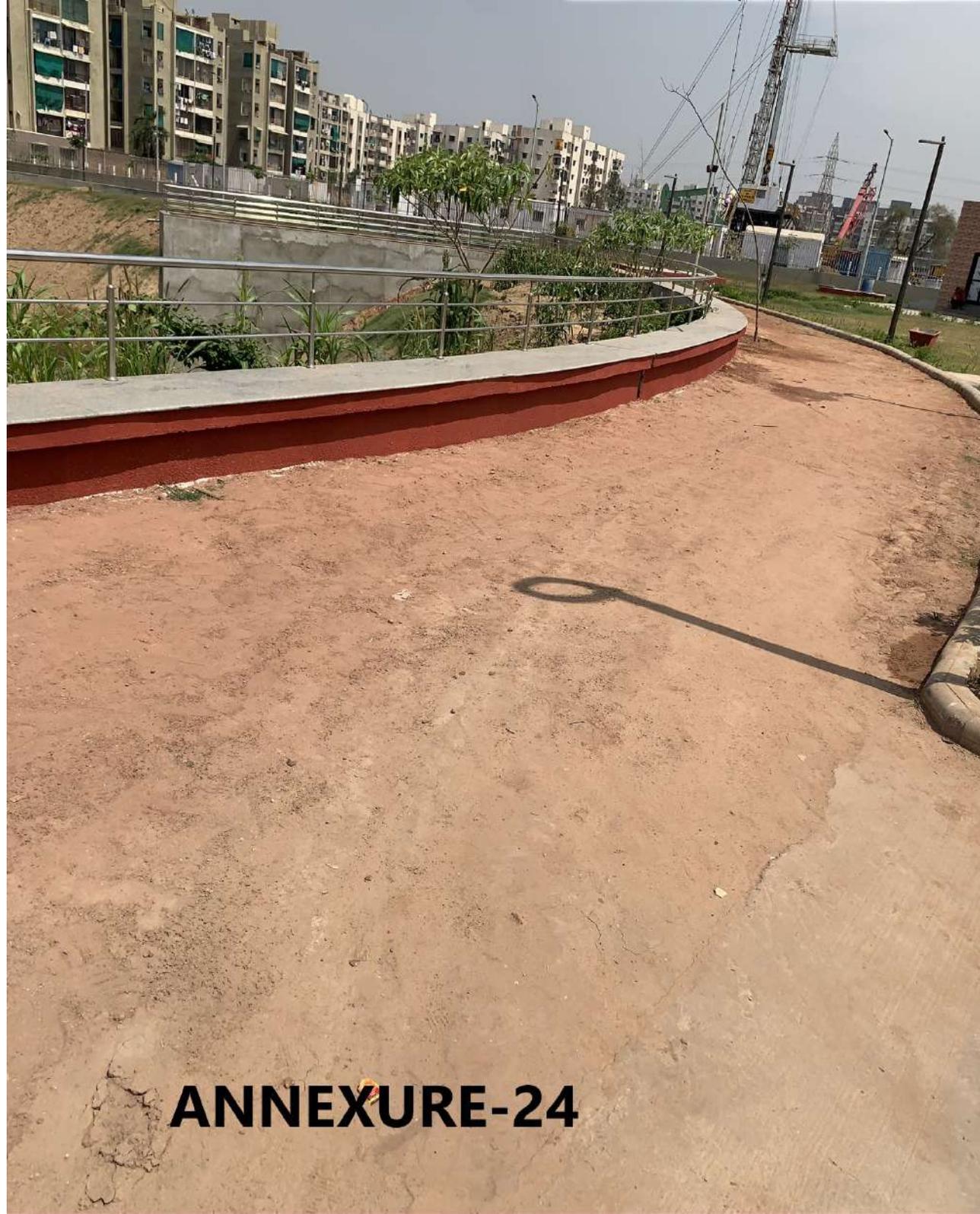




**ANNEXURE-22**



**ANNEXURE-23**



**ANNEXURE-24**

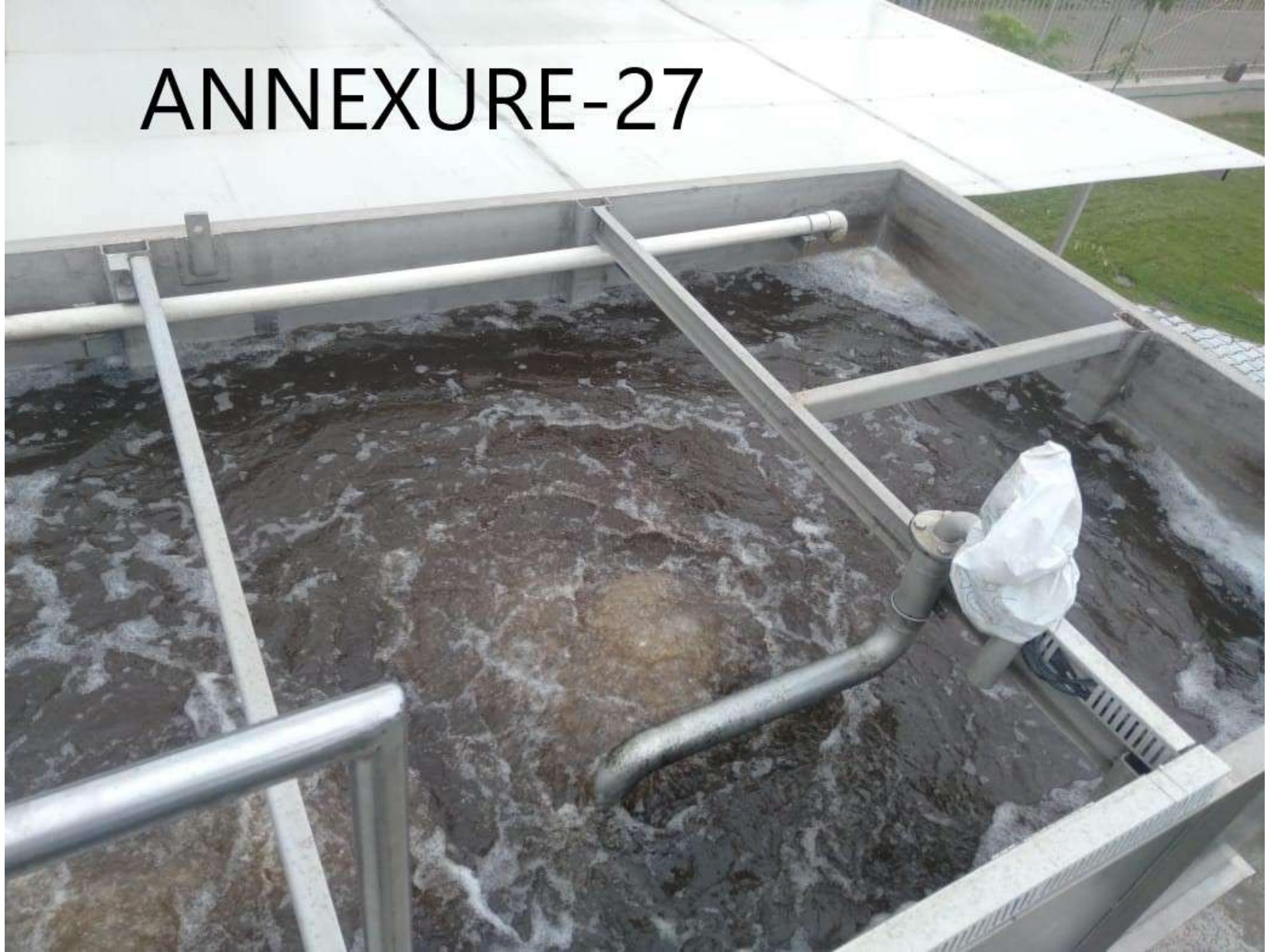
# ANNEXURE-25



# ANNEXURE-26



# ANNEXURE-27



# ANNEXURE-28



AHMEDABAD MUNICIPAL CORPORATION

MEMBRANE BIO - REACTOR BASED  
SEWAGE TREATMENT PLANT (100 KLD)

SET UP & OPERATED BY

EN-VISION ENVIRO TECHNOLOGIES PVT. LTD.

SURAT.

**ANNEXURE-29**

AHMEDABAD MUNICIPAL CORPORATION

MEMBRANE BIO - REACTOR BASED  
SEWAGE TREATMENT PLANT (100 KLD)

SET UP & OPERATED BY

EN-VISION ENVIRO TECHNOLOGIES PVT. LTD.

SURAT.

[www.en-vision.in](http://www.en-vision.in)

**ANNEXURE-30**

NOT DRINKING  
WATER

# ANNEXURE-31



**ANNEXURE-32**

