

Executive Summary
Coastal Zone Management Plan for Mira Bhayandar Municipal Corporation

Introduction/Preamble:

Mira Bhayandar Municipal Council was established on 12th June 1985 which comprised of 9 revenue villages. Thereafter in 1990, additional 10 revenue villages were incorporated in the municipal limits.

The Mira Bhayandar Municipal Council was converted into Mira Bhayandar Municipal Corporation on 28.2.2002. The area of the Mira Bhayandar Municipal Corporation is 79.40 km².

The population of the Mira Bhayandar Municipal Corporation as per Census 2011 is 8,14,655. The Population of the Mira Bhayandar Municipal Corporation is increasing rapidly compared to the population of the year 2001. The increase in population has doubled in the year 2011 as compared to 2001. Considering the rapid increase in population in the past decade, it is expected that the population of the Corporation will increase to more than 16 Lakhs in the year 2021. The proximity of Mira Bhayandar Municipal Corporation with Mumbai Metropolitan City is the main reason for this. The area of the Mira Bhayandar Municipal Corporation starts from Dahisar check post of the Mumbai Municipal Corporation. Besides, the services of Mumbai Suburban Train Services are available to the area of Mira Bhayandar Municipal Corporation.

Mira Bhayandar Municipal Corporation area is divided into two parts of east & west due to Mumbai Ahmedabad Railway Line. Eastern part is predominantly industrial area and the western part is traditionally residential area.

Coastal Zone Management Plan (CZMP)

As per CRZ Notification 1991, the Coastal Zone Management Plan (CZMP) was prepared by National Centre for Earth Science Studies in the year 2005. Subsequently as per the new CRZ Notification 2011, National Centre for Earth Science Studies (CESS), Thiruvananthapuram was appointed by the Mira Bhayander Municipal Corporation to undertake the preparation of the CZM Plans for Mira Bhayandar Municipal Corporation.

As required under the CRZ Notification 2011, CESS has prepared the study report along with the CZM Plans in 1:25000 scale.

CZMP/CRZ map of Mira Bhayandar in 1:25000 scale

The MBMC area is shown in two toposheets of 1:25000 scale

Besides MBMC area toposheet No.47 A 15 SW includes part areas of Vasai Virar Municipal Corporation and Thane Municipal Corporation. Part area of Bhiwandi taluka is included in Toposheet No.47 A 15 SE.

The CRZ field survey was carried out during March – December 2013. High Water Line (HWL) has been extracted from geo-referenced Survey of India (SOI) toposheets by

following standard procedures. Field data was generated from 18 villages in MBMC area namely Chowk, Tarandi, Raimrdhe, Murdhe, Uttan, Morva, Dongri, Bhayandar, Khari, Ghoddev, Ghodbundar, Versave, Chene, Kashi, Mira, Mahajanwadi, Penkarpada and Pali.

The HWL has been appropriately modified with the HTL obtained from field observations and satellite imageries for preparing the CZMP as per CRZ 2011.

The CZMP (1996) is superimposed on to the CZMP and the variations of present HTL from that of CZMP is verified and the variations are discussed in the report.

Data Sources

In addition to field investigations including GPS/DGPS mapping, data sources such as topographic sheets, hydrographic charts and satellite images have been used. Field mappings were carried out during March to December 2013. An initial assessment of the morphology and ecosystems is obtained from Google imageries which are mostly Quick Bird images. Google imageries (Quick Bird) of 2010 and 2011, were downloaded as different scenes with resolution zoomed to the required level. These are then merged in photoshop and georeferenced.

PAN merged IRS-IC/ID LISS III and IRS P6 LISS IV data were also used wherever required (Fig. 2). PAN has a resolution of 5.8 m, whereas LISS III has 23 m resolution. The IRS P6 LISS IV has a resolution of 5.8 m.

CRZ Categories

The CRZ of Mira Bhayandar consists of CRZ I, CRZ II, CRZ III and CRZ IV. The CRZ IA are those ecologically sensitive and the geomorphological features which play a role in maintaining the integrity of the coast such as mangroves, corals sand dunes, etc. The CRZ IB is area between Low Tide Line and High Tide Line. The CRZ II is those developed areas (with more than 50% built up area) in legally designated urban areas. Mira Bhayandar being a Municipal area, the CRZ in Mira Bhayandar which have more than 50% built up area, is CRZ II. The CRZ IV is the near shore waters, the inland water bodies and the bed. The details are given in the CRZ map (Fig 1) and Table 1 & 2.

Acanthus iliforus, *Avicenia officinalis*, *Exocarria agallocha* are the dominant variety of mangroves. Tidal influence in many low lying areas is regulated by bunds/ sluices to facilitate agriculture. These sluices/ bunds are constructed and maintained by the Khar Land Board. Many such sluices has become non-functional due to non maintenance and decreasing agricultural uses. Mangrove vegetation has also spread in such areas. As suggested by MCZMA, wherever mangrove vegetations are present, those are shown as CRZ IA irrespective of whether these are landward of bunds or not. In some cases the bunds have been strengthened or reconstructed blocking or regulating the flow of tidal waters. These have been considered while demarcating the HTL. The scenario of the Khar Land Board gets the other bunds/ sluices repaired and made functional in future has not been considered.

Salt pans invariably occupy low lying tidal areas. But the continuous use of these low lying areas as salt pans has changed the terrain characteristics. Some of the salt pans are completely separated from streams and creeks through bunds and the salt water

required is pumped from adjoining streams/ creeks. Where bunds are breached and the saltpan remains unused, mangrove vegetation has come up. Those saltpan areas which have been converted to other development uses/farming have been considered accordingly. Distinction between salt pans into which salt water is pumped and those dependants on natural tidal flow has not been considered for non availability of details.

Mira Bhayandar Municipal Corporation being highly developed with a very high potential for further development, the Maharashtra Coastal Zone Management Authority took the view that the CRZ areas in MBMC, other than CRZ I, CRZ IV could be considered as CRZ II. Accordingly the CRZ in MBMC, other than CRZ I, CRZ IV, are shown as CRZ II.

The MBMC has HTL for a length of 114.23 km. The total CRZ area is 65.41 km² which includes those areas outside the revenue boundaries in the intertidal zone.

The table No.1 gives CRZ details of Mira Bhayandar Municipal Corporation, and Table No.2 gives CRZ details of 18 villages in the area of Mira Bhayandar Municipal Corporation. The above information has been incorporated based on the report prepared by CESS.

Table No.1. CRZ details of Mira-Bhayandar Municipal Corporation

HTL Length (km)	Mangroves (CRZ IA within Sy plot (km ²))	Mangroves (CRZ IA within Sy plot and outside (immediately adjoining) (km ²))	ITZ (CRZ IB) within Sy plot (km ²)	ITZ (CRZ IB) (CRZ IB) within Sy plot and outside (immediately adjoining) (km ²)	Saltpan (km ²)	Mangrove buffer zone (CRZ I) (km ²)	CRZ II (km ²)
114.23	14.33	18.82	5.96	8.10	9.28	20.89	8.32

Table No.2. CRZ details of Mira-Bhayandar Municipal Corporation (in each village)

(mangroves and inter tidal zones given only for those within survey plots)

Village Name	Length of HTL (km)	Mangroves (CRZ IA) (m ²)	ITZ (CRZ 113) (m ²)	Saltpan (m ²)	Mangrove Buffer zone (CRZ 1) (m ²)	CRZ 11 along creek (m ²)	CRZ 11 along sea coast (m ²)
Chowk	2.90	10372.74	88296.33	0	55776.18	53379.31	739018.72
Tarandi	3.99	414262.32	367905.68	130795.98	646104.99	183792.95	0
Raimrdhe	12.38	1603843	1649524.8	2828283.94	2596018.53	313284.28	0
Murdhe	4.16	433297.92	353320.9	1013959.71	904107.61	351465	0
Uttan	17.39	6994269.85	540600.76	181816.18	792365948	481998.27	1529899.6
Morva	1.98	291975.98	62745.97	682207.49	615989.33	237411.66	0
Dongri	4.57	118694.81	126405.23	516613.28	274392.41	212317.68	0
Bhayandar	33.52	1621421.15	1652939.47	3833514.99	3257400.94	1528332.86	0
Khari	2.13	43814.83	29218.3	0	146697.4	224879.89	0
Ghoddev	0	0	0	0	0	0	0
Ghodbundar	8.20	125752.12	638456.39	53655.76	420918.85	425497	0
Versave	6.72	240736.78	60009.78	0	441688.93	378574.98	0
Chene	6.32	565654.113	92939.355	0	797920.33	565690.05	0
Kashi	0	0	0	0	0	0	0
Mira	0	0	0	0	0	0	0
Mahajanwadi	0	0	0	0	0	0	0
Penkarpacla	8.45	1874768.19	282514.15	40684.04	2808098.6	624905.93	0
Pali	1.52	0.517627	11396.1	0	4314.3	0	473924.28
Total	114.23	14.33 km²	5.96 km²	9.28 km²	20893087.88	5.58 km²	2.74 km²

Summary:

- Mira Bhayandar Municipal Corporation (MBMC) is in Thane district in Maharashtra. It has Arabian Sea is on its west and Vasai Creek/ Ulhas River on its north .
- The CZMP is prepared in 1:25000 scale based on field information collected from cadastral maps.
- MBMC is contained in toposheets No. 47 A 15 SW and 47 A 15 SE. Parts of Thane Municipal Corporation and Bhiwandi taluka are also seen in these toposheets.
- 1:25000 CZMP is prepared based on data collected from cadastral maps.
- Bunds and sluices which have been strengthened or reconstructed blocking or regulating the flow of tidal waters have been considered while demarcating the HTL. The scenario once the Khar Land Board gets the other bunds/ sluices repaired and made functional has not been considered.
- Those saltpan areas which have been converted to other development uses/farming have been considered accordingly.
- Distinction between salt pans into which salt water is pumped and those dependant on natural tidal flow has not been considered since the details are not readily available.
- MBMC being developed area with a very high potential for further development, the CRZ in MBMC, other than CRZ I, CRZ IV has been categorized as CRZ II
- The MBMC has HTL for a length of 114.23 km.
- The CRZ of MBMC consists of CRZ I, CRZ II and CRZ IV. Parks, play grounds and similar open spaces are to be categorized as CRZ III.
- The total CRZ area is 65.41 km² which includes those areas outside the revenue boundaries in the intertidal zone.
- Mangrove area (CRZ IA) is 18.82 km² with a mangrove buffer zone of 20.89 km².
- Intertidal zone (which includes seasonal beach on the seacoast and mudflats on the banks of creek/river) is CRZ IB and is spread over 8.10 km². No distinction is made between biologically active and not biologically active mudflats.
- Saltpan area is 9.28 km².