

**IN THE NATIONAL GREEN TRIBUNAL,
WESTERN ZONE BENCH, PUNE**

Original Application No- 74/2022(WZ)

Navi Mumbai Environment Preservation Society ... Applicant

Vs.

City an Industrial Development Corporation
Of Maharashtra & Ors ... Respondents

INDEX

Sr No	Contents	Page Number
1	Report of the NCSCM Chennai along with maps	352-364

Advocate for Respondent No 1

S. Shankar

Shivshankar Swaminathan

Pune

Dated : 11.07.2023

CRZ MAPPING FOR PLOT No. 2A, SECTOR 54, 56 AND 58, NERUL(W), NAVI MUMBAI, THANE DISTRICT, IN RESPECT OF OA No. 75/2022 FILED IN THE HON'BLE NGT

1.0 Introduction

THE HON'BLE NGT, in case original Application No. 74/2022 and original Application No. 75/2022 versus CIDCO, pertain to plot No. 2A, located in sector 54, 56 and 58 of Nerul (W) of Navi Mumbai, district Thane, has directed to the Maharashtra Coastal Zone Management Authority (MCZMA) to produce the CRZ map of the above-mentioned subject plots, for exact determination of CRZ status of the plots. Considering the directions of the Hon'ble NGT, M/S CIDCO requested National Centre for Sustainable Coastal Management (NCSCM), Ministry of Environment, Forests & Climate Change, Government of India, Chennai to prepare a project level Coastal Regulation Zone (CRZ) map by demarcating the High Tide Line (HTL), Low Tide Line (LTL), Coastal Regulation Zone (CRZ) and Ecological Sensitive Areas (ESAs) for the above for the Project Site.

Demarcation of the HTL, LTL, ESAs and identification of Coastal Regulation Zones (CRZ) have been carried out in cadastral level (1:4000 scale) to provide detailed information on the CRZ categories with respect to the project site. CRZ map of 1:4000 scale was prepared as per the Approved CZMP of Maharashtra state as per CRZ notification, 2011 and by using the field survey conducted during February 2023.

2.0 Objective

The objectives of the study are:

- Identification of HTL and LTL for the proposed project area
- Mapping of Ecological Sensitive Areas
- CRZ categorization as per CRZ Notification, 2011
- Preparation of CRZ map based on approved CZMP as per CRZ Notification, 2011
- Super imposing of Proposed Project Boundary in the CRZ map.

3.0 Location

The proposed project site is located at Nerul Ward, Navi Mumbai, Thane District of Maharashtra State. The Proposed Project site falls within the Latitude, Longitude of $19^{\circ} 0'7.01''\text{N}$, $73^{\circ} 1'2.64''\text{E}$ and $19^{\circ} 0'15.04''\text{N}$, $73^{\circ} 1'9.63''\text{E}$ (Refer Fig. 1 Location Map).

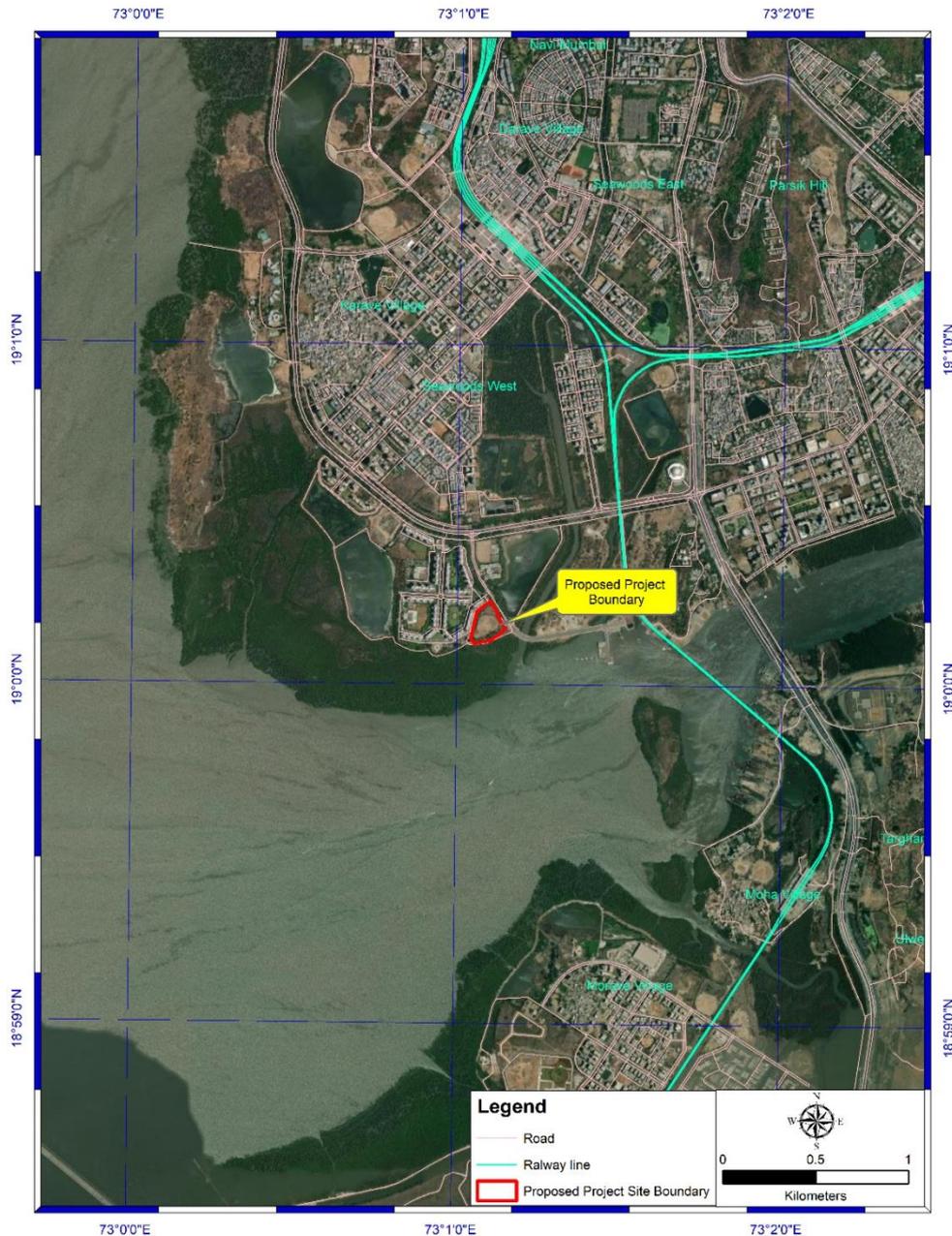


Fig. 1: Location map showing Proposed Project Site

4.0 Approach & Methodology

The CRZ map is prepared on large scale base maps to facilitate easy and accurate implementation of CRZ in the field. The HTL/LTL is identified following the guidelines issued by MoEF, Govt. of India.

The key elements of the approach and methodology are:

- Extraction of HTL from the approved CZMP as per CRZ Notification, 2011 for Maharashtra State.
- Field Mapping.
- Transfer the HTL to the cadastral map with respect to the control point.
- Preparation of the CRZ map.

4.1 Extraction of HTL

Extraction of HTL was carried out from the approved CZMP of Maharashtra state prepared as per CRZ Notification, 2011 and verified in the field. HTL extracted from the approved CZMP map is verified in the field based on geomorphologic features and other features such as embankments, landward boundaries of tidal flats (MoEF & CC, 2011). The line of monsoon berm crest or boundary of perennial vegetation/permanent vegetation forms the HTL along the seacoast.

5.0 Data Source

In addition to the field investigation, data from various sources were used for the compilation of the final CRZ map and preparation of the CRZ report. The principal data sources include:

- Hydrographic charts of Naval Hydrographic Office
- Approved CZMP maps
- Survey of India Toposheets
- Satellite images

6.0 Tide

Coastal zone regulations are restricted to the sea coast and banks of water bodies influenced by tidal action. The tidal range is an important parameter that decides the landward extent of the reach of seawater into the land and the location of the HTL including the extent of CRZ. The distance up to which development along rivers, creeks and backwaters is regulated depends on the landward extent of tidal influence. The tidal range data with respect to Chart Datum pertaining to Trombay (Lat. 19°02' Long.72° 57'), NHO Chart Name- ULWA Channel and NHO Chart No. 2123, provided by Naval Hydrographic Office, Dehra Dun is given below in Table 2.

Table 1: Tidal Level at Trombay (NHO Chart No. 2123- 31st August 2016).

Tide Type	Height (m)
Mean High Water Spring (MHWS)	4.4
Mean High Water Neap (MHWN)	3.4
Mean Sea Level (MSL)	1.7
Mean Low Water Neap (MLWN)	0.7
Mean Low Water Spring (MLWS)	2.5

7.0 Field Investigation

Field investigation was carried out during February, 2023. HTL, LTL and ESAs extracted from approved CZMP maps were verified at field based on geomorphologic features and other features such as embankments, landward boundaries of intertidal zone (MoEF & CC, 2011). HTL was plotted with respect to reference points identified in the field as well as located in the cadastral map. An appraisal of existing landuse/landform in the project area was also carried out. The distance and positions of HTL to control points which were

extracted from the approved CZMP were verified in the field using high precision Trimble GPS.

8.0 Coastal Landuse/Landcover

The major landuse landcover around the project site are mangroves, waterbody, industry, mixed vegetation, settlement and associated infrastructure such as roads, railway, etc.

9.0 Coastal Regulation Zone and HTL

The Government of India Notification [S.O.19 (E) dated 6.1.2011] under Section 3(1) and Section 3(2)(v) of the Environment (Protection) Act, 1986 and Rule 5(3)(d) of Environment (Protection) Rules, 1986 declares 'the coastal stretches of the country and the water area upto its territorial water limit as Coastal Regulation Zone (CRZ)' (MoEF & CC, 2011). All developmental activities in the CRZ are regulated through the CRZ Notification (MoEF & CC, 2011).

The CRZ consists of the following:

- I. Land area from High Tide Line (HTL) to 500 m on the landward side along the sea front.
- II. Land area from HTL to 100 m or width of the creek whichever is less on the landward side along the tidal influenced water bodies that are connected to the sea and the distance up to which development along such tidal influenced water bodies is to be regulated are governed by the distance up to which the tidal effects are experienced which is determined based on salinity concentration of 5 parts per thousand (ppt) measured during the driest period of the year and distance up to which tidal effects are experienced would be clearly identified and demarcated accordingly in the Coastal Zone Management Plans (CZMPs). Tidal influenced water bodies mean the water bodies influenced by tidal effects from sea, in the bays, estuaries, rivers, creeks, backwaters, lagoons, ponds connected to the sea or creeks and the like.
- III. Land area between HTL and Low Tide Line (LTL) which will be termed as the intertidal zone.
- IV. The water and the bed area from the LTL to the territorial water limit (12 Nm) in case

of sea and the water and the bed area from LTL at the bank to the LTL on the opposite side of the bank, of tidal influenced water bodies.

According to the CRZ Notification, 2011, the tidal influenced water body has been defined as bays, estuaries, rivers, creeks, backwaters, lagoons and ponds connected to the sea or creeks and the like. The distance from the HTL shall apply to both sides of the tidal influenced water body. The CRZ Notification categorizes Coastal Regulation Zones as CRZ I, CRZ II, CRZ III and CRZ IV based on whether the area is ecologically sensitive, developed, undeveloped or water body and its bed. Ecologically sensitive and important areas and the intertidal zone constitute CRZ I. Sensitive ecosystems such as mangroves, corals, turtle nesting grounds, salt marshes, mudflats, etc., are classified as CRZ IA. Intertidal zone is CRZ IB. The areas that have already been developed up to or close to the shoreline are categorized as CRZ II. Areas that are relatively undisturbed belong to CRZ III. The water area and the bed constitute CRZ IV.

The CRZ Notification of 2011 has also defined Critical Vulnerable Coastal Areas (CVCA), which includes Sundarbans, and other identified ecological important areas including Gulf of Khambhat and Gulf of Kachchh in Gujarat. It is to prepare Integrated Management Plans (IMPs) for such CVCA keeping in view of the conservation and management of mangroves, needs of local communities such as, dispensaries, schools, public rain shelter, community toilets, bridges, roads, jetties, water supply, drainage, sewerage and the impact of sea level rise and other natural disasters. The IMPs will be prepared as per the guidelines of the MoEF & CC.

The Coastal Zone Management Plan (CZMP) prepared and approved based on the CRZ Notification 2011 is applicable to the State of Maharashtra for the approval of CRZ project.

10.0 Coastal Regulation Zone for the Proposed Project Site

Two maps have been prepared by superimposing Project Boundary to CRZ Map in 1:4000 scale based on approved CZMP of Maharashtra State as well as field mapping conducted

during February, 2023 as per CRZ Notification, 2011 and the same is shown in Figure 2 and Figure 3 respectively. A CRZ map covering about 7 Km radius of the project site representing CRZ categories is given in Figure 4.

10.1 Coastal Regulation Zone for the Proposed Project Site based on approved CZMP as per CRZ Notification, 2011

The proposed project boundary superimposed on 1:4000 Scale CRZ map prepared based on approved CZMP of Maharashtra State prepared as per CRZ Notification, 2011 and it's shown in the Figure 2. As per approved CZMP some part of Proposed Project Boundary falls on 50m Mangrove Buffer Zone - CRZ IA and CRZ Landward of HTL (CRZ II) categories (Refer Figure.2).

10.2 Coastal Regulation Zone for the Proposed Project Site based on Field Mapping and CRZ Notification, 2011

- The proposed project boundary superimposed on 1:4000 Scale field-based map prepared based on field-mapping conducted during February - 2023 prepared as per CRZ Notification, 2011 and it's shown in the Figure 3. During field visit a patch of mangrove is observed within the proposed project boundary. The Proposed Project Boundary falls on Mangrove, 50m Mangrove Buffer Zone (CRZ IA) and CRZ Landward of HTL (CRZ II) categories (Refer Figure.3).

11.0 SUMMARY AND CONCLUSIONS

- The HTL, LTL and CRZ categories are presented in 1:4000 scale cadastral maps with survey plot information (Refer Figure 2 CRZ Map & Figure 3 Field-based Map).
- A CRZ map (1:4000 Scale) of Figure. 2 has been prepared based on the approved CZMP of Maharashtra State as per CRZ Notification, 2011.

- As per approved CZMP and CRZ Map the south part of the Proposed Project Boundary falls on CRZ IA (50m Mangrove Buffer Zone) and CRZ Landward of HTL (CRZ II) categories.
- A field-based map of 1:4000 Scale (Figure. 3) has been prepared based on field survey conducted during February 2023 as per CRZ Notification, 2011 to understand the present status of the project site.
- As per field survey conducted during February 2023 south part of the Proposed Project Boundary falls on CRZ IA (Mangrove and 50m Mangrove Buffer Zone) and CRZ landward of HTL (CRZ II) categories. Also, observed an existing road creek ward side of proposed project boundary (Figure 3).
- The proposed project boundary falls within the Sheet Number E 43 B 4 / SW Map Number MH 77 approved CZMP (Maharashtra State) prepared as per CRZ Notification, 2011.

REFERENCE

MoEF, 1991. Notification No.S.0114 dated 19th February, 1991, Ministry of Environment and Forest, Government of India, New Delhi.

MoEF, 1996. Letter No. Letter No. J-17011/8/95-IA-111, dated 27-9-1996 dated 27th September 1996 to the Chief Secretary, Govt. of Maharashtra. Ministry of Environment and Forest, Government of India, New Delhi.

MoEF, 2011. Notification No. S.O.19 (E) dated 6.1.2011, Ministry of Environment and Forest, Government of India, New Delhi.

NHO, 2018. Hydrographic Chart no 211 – Satpati to Dighi Harbour. Naval Hydrographic Office, Dehra Dun, 2018.

PLATES



Plate 1: Proposed Project Site



Plate 2: Another View of Proposed Project Site

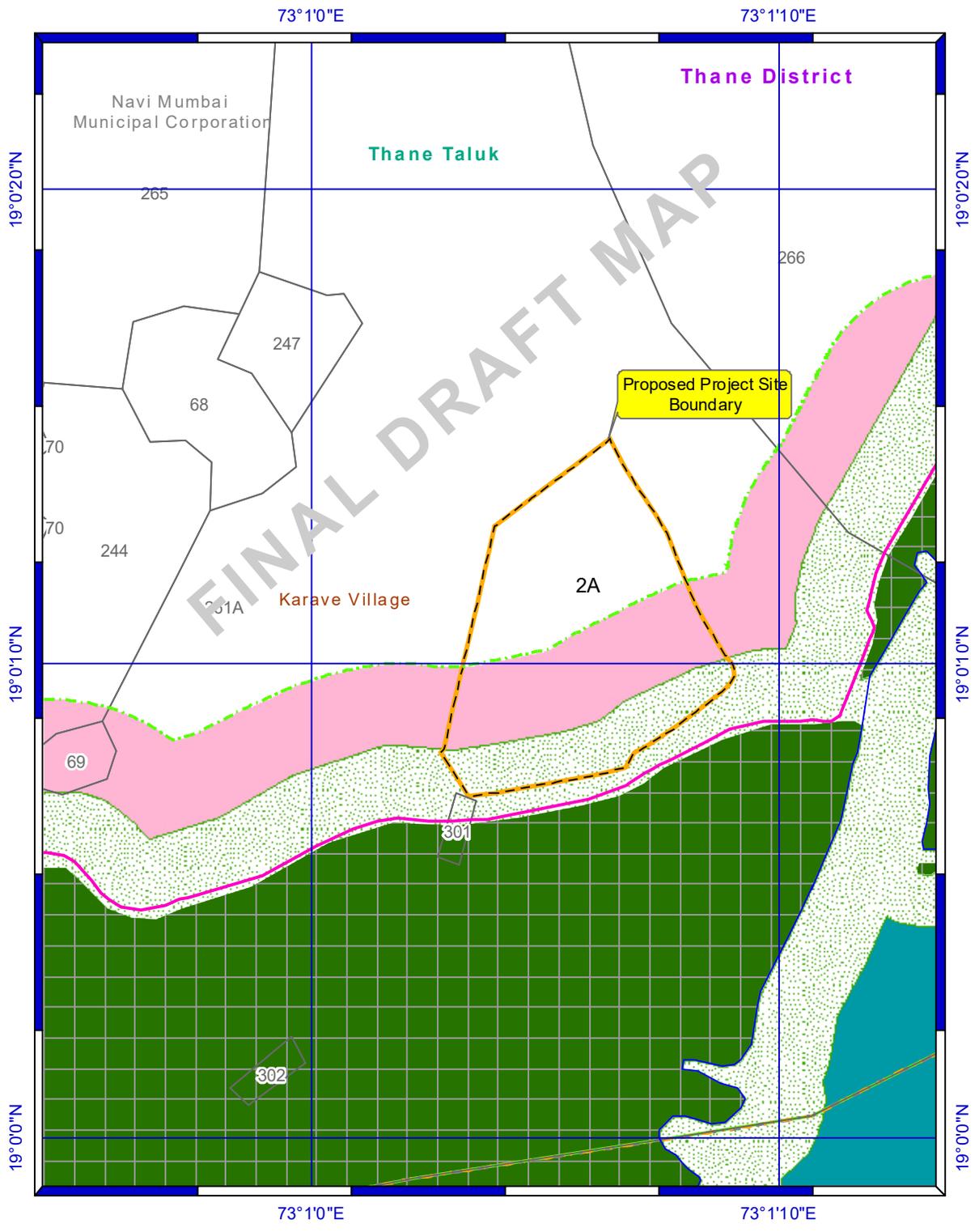


Plate 3: Road near the project site

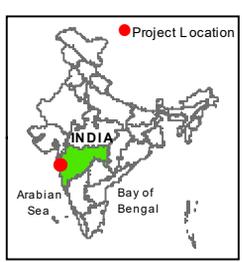
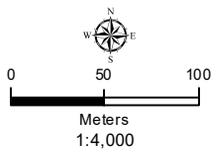


Plate 4: Mangrove inside the proposed project site (South side)

362
**CRZ MAP PREPARED BASED ON APPROVED CZMP
 (AS PER CRZ NOTIFICATION, 2011)**



Prepared in accordance with the approved CZMP of Maharashtra State as per CRZ Notification, 2011

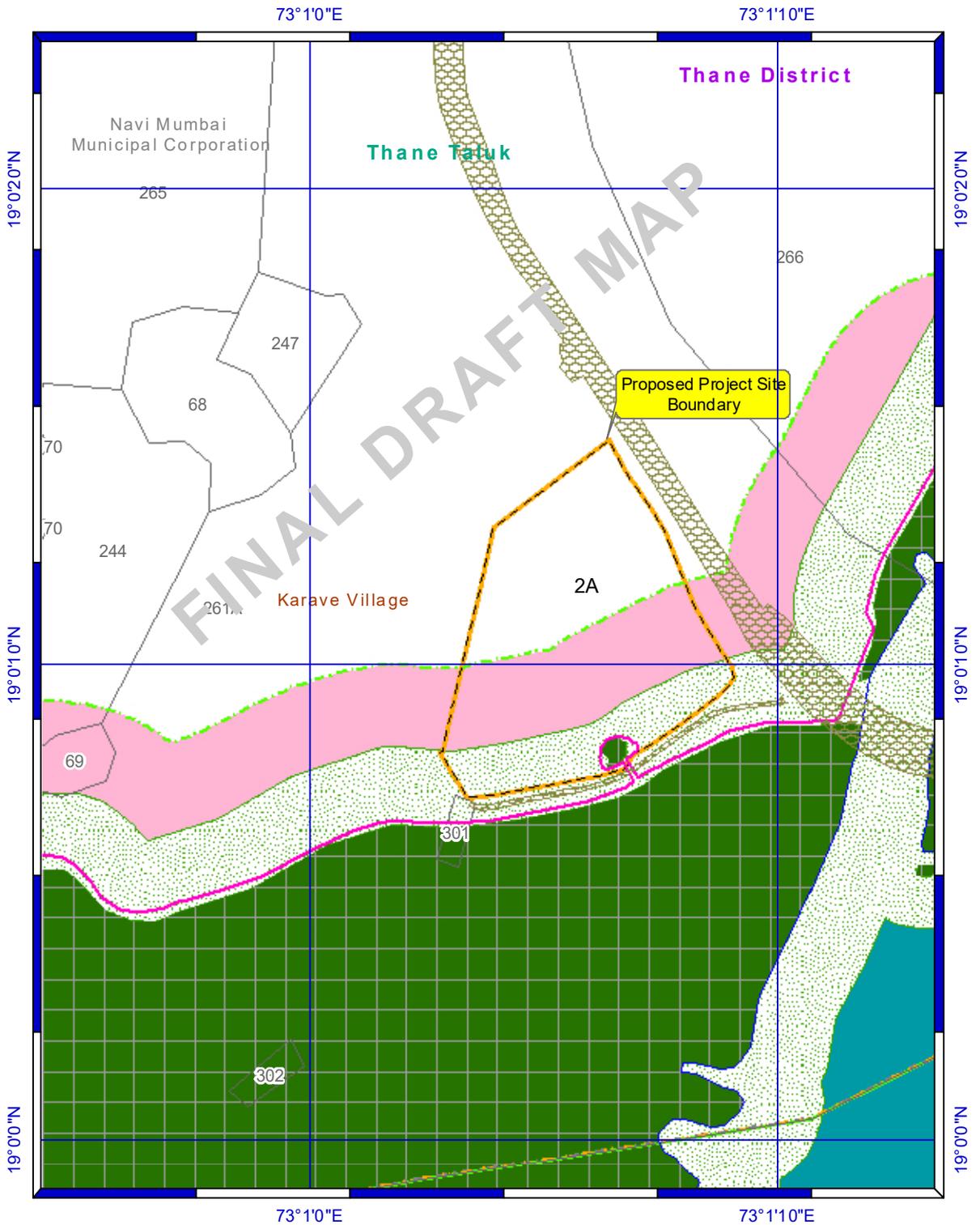


Legend	
	High Tide Line
	Low Tide Line
	CRZ Line for River / Creek
	Survey Plots
	Municipal Boundary
	Mangroves - CRZ IA
	50 m Mangrove Buffer Zone - CRZ IA
	CRZ Landward of HTL - CRZ II
	Waterbody - CRZ I VB
	Proposed Project Boundary (As given by the Project Proponent)
	Proposed Project Site Boundary

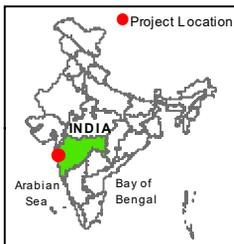
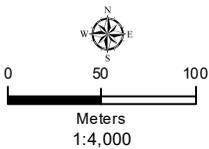
HTL , LTL AND CRZ MAP FOR PLOT NO. 2A FOR CIDCO AT NERUL WARD NAVI MUMBAI, THANE DISTRICT, MAHARASHTRA STATE	
<i>Verified by</i>	<i>Approved by</i>
FINAL DRAFT MAP	
 National Centre for Sustainable Coastal Management (Ministry of Environment, Forest & Climate Change) Chennai - 25	
<i>Prepared for</i> City and Industrial Development Corporation (CIDCO)	

Fig. 2: CRZ Map of the Proposed Project Site (Refer Report No. NCSCM/-----)

MAP PREPARED BASED ON FIELD SURVEY



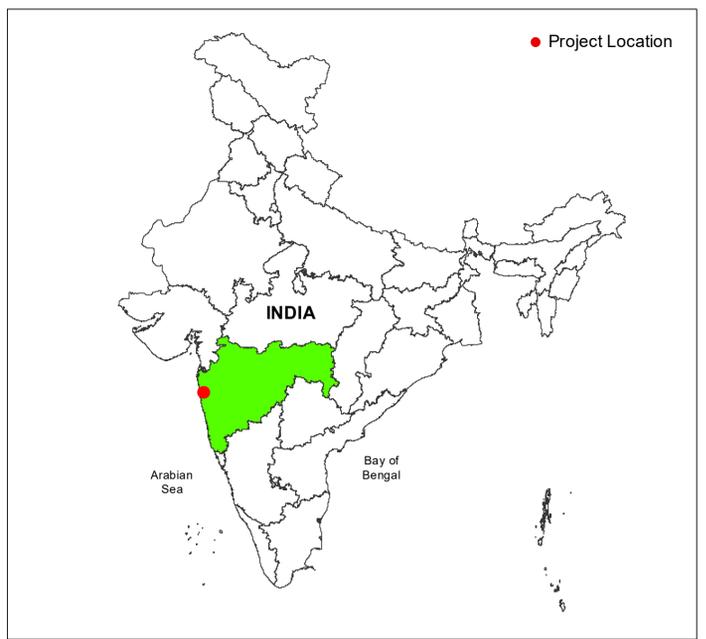
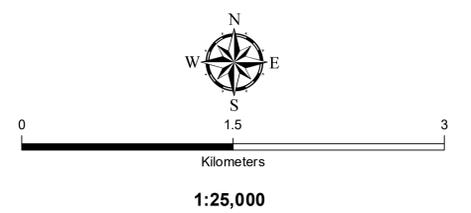
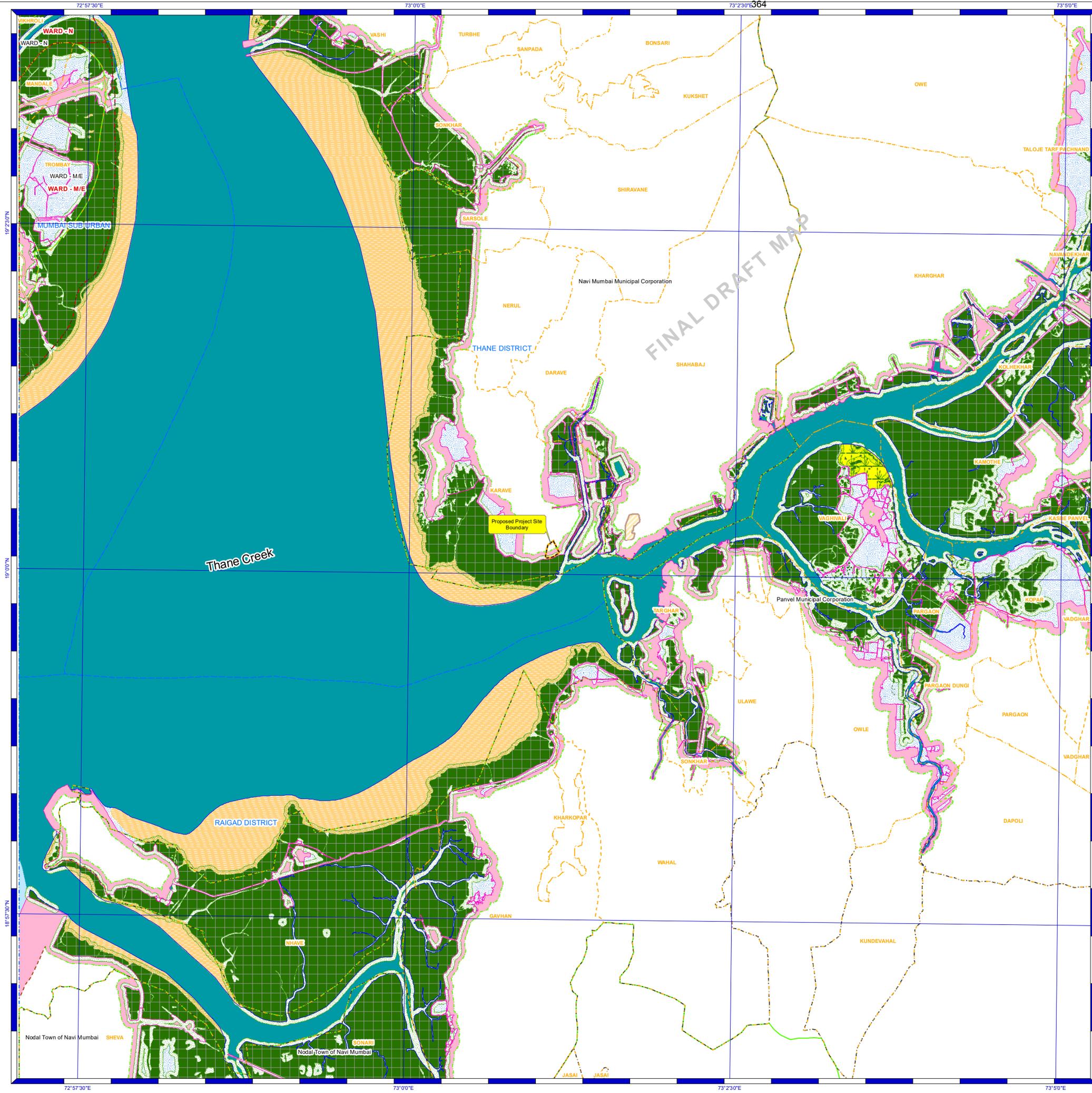
Prepared in accordance with the field survey Conducted during February 2023 as per CRZ Notification, 2011



Legend	
	Road
	High Tide Line
	Low Tide Line
	CRZ Line for River / Creek
	Survey Plots
	Municipal Boundary
	Mangroves - CRZ IA
	50 m Mangrove Buffer Zone - CRZ IA
	CRZ Landward of HTL - CRZ II
	Waterbody - CRZI VB
	Proposed Project Boundary (As given by the Project Proponent)
	Proposed Project Site Boundary

HTL , LTL AND CRZ MAP FOR PLOT NO. 2A FOR CIDCO AT NERUL WARD NAVI MUMBAI, THANE DISTRICT, MAHARASHTRA STATE	
<i>Prepared by</i>	<i>Verified by</i>
FINAL DRAFT MAP	
 National Centre for Sustainable Coastal Management (Ministry of Environment, Forest & Climate Change) Chennai - 25	
<i>Prepared for</i> City and Industrial Development Corporation (CIDCO)	

Fig. 3:Map of the Proposed Project Site (Refer Report No. NCSCM/-----)



Prepared in accordance with the approved CZMP of Maharashtra State as per CRZ Notification, 2011

Legend

Road	Mangroves - CRZ IA
High Tide Line	50 m Mangrove Buffer Zone - CRZ IA
Low Tide Line	Mudflat - CRZ IA
500m CRZ Line	Salt Marsh - CRZ IA
CRZ Line for River or Creek	Archaeological and Heritage Sites - CRZ IA
Village Boundary	Intertidal Zone - CRZ IB
Ward Boundary	CRZ Landward of HTL - CRZ II
Municipal Boundary	Waterbody - CRZ IVA
Taluk Boundary	Waterbody - CRZI VB
District Boundary	

Proposed Project Site Boundary (As given by the Project Proponent)

Proposed Project Site Boundary

Prepared by

National Centre for Sustainable Coastal Management
(Ministry of Environment, Forest & Climate Change)
Chennai - 25

Prepared for

M/s. City and Industrial Development Corporation (CIDCO)

Fig. 4: CRZ Map covering about 7 Km around the Project Site (Use with report No. NCSCM/.....)