

# Appraisal of City Development Plan

Navi Mumbai

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## Appraisal of City Development Plan: Navi Mumbai

The City Development Plan (CDP) of Navi Mumbai Municipal Corporation (NMMC) provides a reasonably good idea of the existing situation, the goals and service outcomes, the strategies and action plans as well as the capital investment plan.

### 1. Profile

Navi Mumbai is world's largest planned city with a horizon of 344 sq.kms. It includes an area of 95 villages in it, having a coastal stretch of 34.2 kms along Thane and Panvel creeks. Plan for Mumbai Metropolitan Region (MMRP) prepared under the provision of Maharashtra Regional and Town Planning act 1966 developed the Navi Mumbai. The City and Industrial Corporation of Maharashtra Ltd. (CIDCO), fully owned by state Government was declared as New Town Development Authority under the provisions of MRTP Act, 1966 to develop Navi Mumbai. CIDCO carved out 14 nodes (small townships) namely Airoli, Ghansoli, Kopar Khairane, Vashi, Sanpada, Nerul, CBD Belapur, Kharghar, Kalamboli, Jui Kamothe, New Panvel, Ulwe, Pushpak and Dronagiri. As the city grew, in 1992 NMMC came into existence covering 29 villages out of Navi Mumbai project and another 15 villages from Kalyan complex area (Total 44 villages from Thane Taluka). This area is known as NMMC Area. Subsequently the developed nodes within the jurisdiction of NMMC were transferred by CIDCO to NMMC for maintenance purpose although CIDCO continues to own and develop vacant land within these nodes as the development authority. All the capital and revenue expenditure in these nodes is borne by NMMC.

### Existing Situation

#### 1.1 Demography

Given below is the Population of NMMC area from the year of establishment.

#### Population in NMMC :

Year	Total Population	Source
1971	116789	Census
1981	198290	Census
1991	387206	Census
2001	703947	Census

*Population growth:* The decadal population growth rate in NMMC area is 87.5% as per the Census 2001. The growth has been due to shifting of industrial hub and other projects to this area. Being a planned city from day one with good infrastructure, it justifies well the growth rate of this area over the last two decades.

## Growth rate of population in NMMC area: A comparison

Category	Decadal Growth Rate (1991-2001)
NMMC area	87.5%
Greater Mumbai	20.68%
Maharashtra	22.73%
India	21.54%

Source: Census 2001

### 1.1.1 Population Projection

Based on past trends and internal and external factors, assumptions were framed and thus population projections have been worked out.

### 1.2 Economy

The main economic activities are concentrated in Thane Belapur Industrial Area. Large scale employment opportunities in different sectors of economy especially industry, agriculture produce market and construction providing direct and indirect jobs both in organized and unorganized sectors, has been explained.

### 1.3 Land use

Total area under jurisdiction of NMMC is 162.5sqkm. Land use plan of NMMC area is depicted well. The nodes in NMMC have been discussed in detail.

## Existing Situation Assessment

Navi Mumbai project was adopted with objective to reduce growth rate of population in Greater Mumbai, therefore a wholesome planning approach was laid to provide physical and social services to different sections of the population keeping in view the future population growth.

### 1.4 Water supply

NMMC has constantly upgraded the Water Supply System for the growing need of the city. Even though, water distribution system in NMMC area is satisfactory, NMMC is up grading the same continuously to bring it at par with most modern practices.

The water demand and supply upto 2031 is calculated as per the population projections done. The water supply falls short to the demand only in 2031 with water supply of 450 mld from Morbe dam.

The projections are given below –

### Water demand and supply projections

Sr no	Particulars	2006	2012	2016	2021	2026	2031
1	Population	983326	1476451	1694216	1964951	2219970	2501019
2	<b>Water Demand</b>	<b>262</b>	<b>295</b>	<b>339</b>	<b>393</b>	<b>444</b>	<b>500</b>
3	<b>Surplus/Shortage</b>	<b>+188</b>	<b>+155</b>	<b>+111</b>	<b>+57</b>	<b>+6</b>	<b>-50</b>

*Population Projections by UPH Survey of NMMC*

### 1.5 Sewerage System

NMMC has provided underground sewerage system for collection of raw sewage in almost 95% of NMMC area. It is considering the policy for providing underground sewerage system in slum area. There are also several private sewage treatment and recycling plants in NMMC area.

### Sewage generation and treatment (fig in MLD)

Sr no	Particulars	2006	2012	2016	2021	2026	2031
1	Water Demand	262	295	339	393	444	500
2	<b>Sewage generation</b>	<b>210</b>	<b>236</b>	<b>271.2</b>	<b>314.4</b>	<b>355.2</b>	<b>400</b>
3	<b>Shortfall (treatment capacity)</b>	<b>-30</b>	<b>-56</b>	<b>-91.2</b>	<b>-134.4</b>	<b>-175.2</b>	<b>-220</b>

### 1.6 Storm Water Drainage System

All the 29 villages of NMMC are located on high grounds. All the area around villages being low-lying was subject to high tide. Since storm water drains are required to be constructed below ground level, the reclamation and management of NMMC area has been planned on the lines of the Netherlands and called "Dutch Method" to solve the problem.

### 1.7 Solid Waste Management System

NMMC has given entire solid waste management operation to Private Service operators and 20 Sis, 1 SO and 3-4 Engineers do supervision of the SWM operations.

### Solid waste generation projections.

Sr no	Particulars	2006	2012	2016	2021	2026	2031
1	Population	983326	1476451	1694216	1964951	2219970	2501019
2	Garbage generation per day in MT	503	756	867	1006	1137	1281

### *1.8 Traffic and Transport*

NMMC area is presently connected to Mumbai and other parts of country by multi – modal integrated transport system such as expressways, highways and railways. It was well connected by high-speed water transport (hovercraft) facilities also. World-class international airport is also going to be a part of Navi Mumbai shortly. The very crowded road junctions which need improvement keeping in view the future population growth and also ‘Ring’ railway/s connecting some of the major suburban railway stations in Mumbai and NMMC area have been considered.

### *1.9 Coastal Zone Management Plan (CZMP) of NMMC area*

Keeping in view the destruction of Coastlines the M/o Environment in 1991 issued notification for controlling development in Coastal stretches especially influenced by Tidal Action. As per the notification, the coastal areas influenced by Tidal action were notified as Coastal Regulation Zones and classified into few categories, permitting varying degrees of development.

### *1.10 E – Governance*

Current status –

- a) GIS Integrated Works Management System. (YASHDA – A training wing of Maharashtra Government recommended Works Management Application for State wide implementation)
- b) GIS Integrated Property Tax Management – started functioning from 1<sup>st</sup> Nov-06.
- c) Yet to be implemented
  - . Water Tax Management
  - . GIS enabled Water Network management
  - . GIS Enabled Waste Water Network Management
  - . GIS Enables Storm Water management
  - . GIS Enabled ASSET Management System
  - . Portal for Citizen

## **2. Environmental Management**

### *Environmental status and Management*

Ground water quality & Wastewater quality standards are strictly checked regularly. Surface water- there are 9 holding ponds connected to the Storm Water Drainage System and Thane creek from where water flows in and out of the storm water drains during high and low tides. Precautions are taken to keep the drawing free from solid waste to avoid flooding of drains. For solid waste it is still required to process the waste before it is allowed to go into the landfill. NMMC is in contact with MoEF to resolve management problems.

### **3. Urban Poor**

The basic services for upliftment of urban poor have been discussed. The CDP has explained about the existing housing stock constructed for them (no private developers are interested to release houses for lower income groups). The successful implementation of various schemes initiated by the government, and of providing training centers to upgrade their life economically has also been explained.

### **4. Stakeholders Consultations**

The vision for NMMC area was formulated by study of existing situation of the city along with the SWOT (Strength Weakness Opportunities Threats) analysis. Also the stakeholder's participation had a major contribution in developing vision for the city. The various stakeholders also discussed the city's strengths, current issues, concerns, problems, and areas that need to be focused. Representatives were:

#### **a) Public representatives**

- . Senior citizen
- . Mahila Sangathan
- . Auto rickshaw / taxi union
- . Traders association
- . Truck and transport operators
- . Industries associations
- . Social organizations
- . NGO's
- . Professors and teachers

#### **b) Representatives from various Authorities**

- . NMMC officials
- . Corporators & Sabhapatis
- . CIDCO (Planners, Architects & Engineers)
- . Electricity board (MSEB)
- . MJP / Jalswaraj
- . Police / Traffic Police
- . MIDC
- . Telephone department

*Vision statement* – Vision for NMMC area is to create a slum free healthy city with vast water front development and efficient transportation system.

### **5. Proposals**

The study of existing situation and projected population followed by identification of gaps and considerations of stakeholders suggestions lead to the formulation of proposals and it's phasing. All the proposals listed will not be necessarily the part of the investment plan in the phase from 2007 to 2012. The priorities of the proposals were decided after the consultation with

stakeholders and will be detailed out in the city investment plan. The proposals are for Physical Infrastructure, Social Infrastructure, Land use and Transport.

## 6. Municipal Finance

NMMC has maintained a steady growth trend in the revenue incomes. Revenue incomes have grown by 15.9 % per annum and the revenue expenditures have grown by 11.6%. The surpluses have been used to finance the capital expenditures. The borrowings have been kept to a very smaller extent.

### Highlights of Financial Performance: 2001-2006

(Rs. Lacs)

	Actual					CAGR
	2001-02	2002-03	2003-04	2004-05	2005-06	%
Opening Balance (a)	7904	7851	9868	9139	8309	0
Internal Sources						
Revenue Income	17448	17196	24864	25329	31456	15.9%
( - )Revenue Expenditure	11466	11399	13581	15816	17799	11.6%
Revenue surplus available for Capital Expenditure (b)	5982	5796	11282	9513	13657	22.9%
Capital Receipts (c)	1182	988	833	2587	8350	63.0%
<b>Total Internal Sources (b+c)=(d)</b>	<b>7164</b>	<b>6784</b>	<b>12115</b>	<b>12099</b>	<b>22007</b>	
External Sources						
Grants	71	48	121	53	83	
Loans	202	0	193	99	0	
Govt. Tax collections (net)	-2686	-438	-214	-181	143	
<b>Total External Sources (e)</b>	<b>-2413</b>	<b>-390</b>	<b>99</b>	<b>-29</b>	<b>226</b>	
<b>Total funds available</b>	<b>12655</b>	<b>14245</b>	<b>22083</b>	<b>21210</b>	<b>30541</b>	
( - ) Capital expenses	4804	4376	12944	12909	13425	29.3%
Closing Balance	7851	9868	9139	8301	17116	

CAGR = Compounded Annual Growth Rate

Source wise details of Revenue Income & Growth, Revenue Expenditure, Capital Receipts & Expenditure have been discussed for this period. There has been an increase in the financial strength of the Corporation.

## 7. Investment & Financial Operating Plan

### 7.1 Infrastructure Requirements:

The infrastructure requirements have been identified by very meticulous calculations while arriving at projections under various services. Future Infrastructure requirements for Basic Services to Urban Poor have been identified separately. An inflation of 4% and additional O&M expenses are also considered.

### 7.2 Investments requirements

Total Investments of Rs. 2568.26 crores are required during a period of 5 years between 2007 to 2012. Out of these investments Rs. 940.61 crores i.e. 36.6% are allocated to the Urban and Slum development. . These amounts are derived at current level of prices.

### Investment Plan: 2007 – 2012

(Rs.Lacs)

	City Infrastructure	Basic Services to Urban Poor	Total	Share in Total
Water	45800	5656	51456	20.0%
Sewerage	29325	5100	34425	13.4%
Drainage	27200	2900	30100	11.7%
Solid Waste Management	22550	350	22900	8.9%
Transport	37079	3134	40213	15.7%
E Governance	810		810	0.3%
Housing for Urban Poor		76921	76921	30.0%
<b>Overall for NMMC</b>	<b>162765</b>	<b>94061</b>	<b>256826</b>	<b>100.0%</b>
<b>Proportion of Total</b>	<b>63.4%</b>	<b>36.6%</b>	<b>100.00%</b>	<b>0</b>

According to the CDP on page 61, “The water supply falls short to the demand only in 2031 with water supply of 450 MLD (as shown in Table no.15 of the CDP)”

### 7.3 Financial Operating Plan

In order to finance the investments the funds will be raised as under.

### Investment Financing Plan: 2007 – 2012

(Rs.Lacs)

	City Infrastructure	Basic Services to Urban Poor	Total	Share
Private Participation Investments	25000		25000	9.7%
NMMC	68882	4966	73849	28.8%
Central Govt	48218	47031	95248	37.1%
State Govt	20665	34372	55037	21.4%
Beneficiaries (BSUP)		7692	7692	3.0%
	<b>162765</b>	<b>94061</b>	<b>256826</b>	<b>100%</b>



### 8.3 Evaluation Parameters

	2001-06	2007-12
	(Avg. Annual during period)	
Revenue Income Growth	15.9%	17.6%
Revenue Expenditure Growth	11.6%	17.2%
Revenue Surplus Growth	22.9%	18.2%
Operating Ratio (Rev. Exp/ Rev Income) after considering additional O&M as well	58.6%	49.0%
Debt Servicing Ratio	-	148

The debt for the period 2001-06 is insignificant with respect to available funds. This ratio has improved and will be consistent throughout the next 25 years.

The sensitivity analysis and scenario analysis for variations in overall revenue receipts and expenditure have been carried out. There is little possibility of projections to deviate significantly.

It can be seen that in the most adverse scenarios also the NMMC's surplus can meet the investment requirements very comfortably.

**The CDP of Navi Mumbai Municipal Corporation has been prepared according to the JNNURM Toolkit No. 2.**