Chapter: 5
Development of Navi Mumbai and Status of Upcoming Projects

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5.1 Introduction

In earlier chapter we have studied establishment of CIDCO. CIDCO was entrusted with the responsibility of establishing Navi Mumbai. It includes planning and development of physical as well as social infrastructure of the city. To develop the city the developing authority need to undertake different projects as per need and objective of the proposed development. The development process begins with preparation of City Development Plan. This plan laid down guidelines for development it identifies development to be done in the proposed area this city development plan or development plan or master plan needs approval from government, after its approval CIDCO acquires land from its previous owners. Acquisition of land is a major step because any development is not possible without actual possession of land. CIDCO adopted polycentric approach for development of Navi Mumbai so entire city is divided in different nodes. Nodal plan for every node is prepared for its development and after finalizing the nodal plan actual development begin.

Process of land development:

The process begins with acquisition of land. After acquisition of land a detail survey of land is done which includes Topographical survey, contour survey etc. These surveys provide information on characteristics of acquired land which is helpful in preparing development plan for each node.

The nodal plan is prepared considering important details of development such as Roads, proposed railway lines, Water supply, Sewerage, High Tension power lines, residential area, commercial area, open spaces, social utility plots, storm water drainage and other public utility development which constitutes physical as well as social infrastructure of the city.
After preparing plan CIDCO start actual development. At first leveling of land is done. It may require filling or cutting to make it developable. Then CIDCO undertake development of physical infrastructure such as water and electricity supply, Sewerage system, storm water drainage system and internal roads in the proposed area. After satisfactory completion of these developments further development in the form of residential, commercial property, social and public utilities etc. can be started. At this stage either CIDCO itself undertake further development of land or allot land to private developers.

5.2 Overview of development:

5.2.1 First Decade 1970 – 1980: This decade is out of scope of the study so only important events are considered by researcher. These important events are incorporation of CIDCO in 1970, Appointment of CIDCO as planning and development authority for Navi Mumbai Project. Preparation and approval of city development plan of Navi Mumbai. Completion of Vashi Creek Bridge. Major acquisition of land for the project. Commencement of development of Vashi and other nodes along with first phase of APMC Vashi and Steel Market complex at Kalamboli.

5.2.2 Second Decade 1981 - 1990:- This was a great decade for the city. In this decade CIDCO immensely contributed in the development of the city. During this period all important nodes i.e Airoli, Kopar Khairane, Vashi, Sanpada, Nerul, and CBD Belapur was developed by CIDCO. In this decade development of other nodes like New Panvel and Kalamboli was also started. CIDCO built approx 57000 houses in this decade. The major achievement of this decade was shifting of onion potato market and steel market from Mumbai to APMC Vashi and Kalamboli respectively. In this decade JNPT port was commissioned and development of suburban railway was started.

5.2.3 Third Decade 1991 – 2000:- This decade was full of achievements; most important was arrival of suburban railway in Navi Mumbai. The suburban railway link Navi Mumbai to Mumbai (CST) through harbour
line. In 1992 CST – Vashi service was started latter it was extended to Panvel in 1998. In this decade Navi Mumbai Municipal Corporation was established and Government transferred developed nodes i.e. Airoli, Kopar Khairane, Vashi, Sanpada, Nerul, and CBD Belapur along with Ghansoli. This decade boost involvement of private sector in development of city. Second half of this decade was particularly difficult in that period India face recession which curtails growth in this region. Different concepts like Navi Mumbai Special Economic Zone, Navi Mumbai International Airport were conceived in this decade. The major setback came in the form of implementation of 12.5% scheme, this scheme forced CIDCO to reserve 1065 Hectares developed land for allotment to PAP’s. All these factors curtail involvement of CIDCO in development of Navi Mumbai. CIDCO changed its focus and started acting like administrative authority which set guidelines which should be followed by private sector for development.

5.2.4 Fourth Decade 2001-2010: This decade witness tremendous growth in the city. The major achievements include starting of Thane – Vashi suburban railway, opening of Central Park at Kharghar, Appointment of CIDCO as Nodal Agency for new international airport at Navi Mumbai, launching of Navi Mumbai Special Economic Zone. In this decade CIDCO started using PPP (Private Public Partnership) model for development of its projects. Projects undertaken under this mode include Navi Mumbai Special Economic Zone, Navi Mumbai International Airport.

5.3 Land Usage in Navi Mumbai
CIDCO develops Navi Mumbai utilizing land as major resource of development. The entire study of development of Navi Mumbai is based on utilization of available developable land by CIDCO. Pushpak node didn’t exist and development of Ulwe node is not reported, hence researcher excluded further study of these nodes. Following table shows actual land use plan of developable land by CIDCO.
Table 5.1: Actual use of developable land Navi Mumbai

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Particular</th>
<th>Area in Ha</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Residential</td>
<td>2930.74</td>
</tr>
<tr>
<td>2</td>
<td>Commercial</td>
<td>819.98</td>
</tr>
<tr>
<td>3</td>
<td>Industry &amp; Warehousing</td>
<td>959.09</td>
</tr>
<tr>
<td>4</td>
<td>Social Facility</td>
<td>771.01</td>
</tr>
<tr>
<td>5</td>
<td>Public utility</td>
<td>1148.37</td>
</tr>
<tr>
<td>6</td>
<td>Open Space</td>
<td>1329.25</td>
</tr>
<tr>
<td>7</td>
<td>Circulation</td>
<td>1986.92</td>
</tr>
<tr>
<td>8</td>
<td>Infrastructure Corridor</td>
<td>1152.44</td>
</tr>
<tr>
<td></td>
<td><strong>Total Developable Area</strong></td>
<td><strong>11097.8</strong></td>
</tr>
</tbody>
</table>

(Source: Compiled with help of developable land usage plan of each node)

Graph 5.1 Distribution of Developable land according to actual use

The above graph shows actual land use pattern in Navi Mumbai. The highest area is used for residential usage (27%) followed by circulation (18%) and open spaces (12%).

The researcher has focused on needs of society and its integration with above mentioned land use plan. Following table shows activities / facilities are selected by the researcher to study its development and role of CIDCO in developing those activities / facilities in Navi Mumbai.
Table 5.2 Needs, Required Facilities, and Applicable Land usage.

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Need</th>
<th>Facilities</th>
<th>Applicable Land Usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Housing</td>
<td>Housing</td>
<td>Residential</td>
</tr>
<tr>
<td>2</td>
<td>Education</td>
<td>Primary, Secondary and Higher Secondary Schools, Colleges and Professional Education, Technical Education</td>
<td>Social Facility</td>
</tr>
<tr>
<td>3</td>
<td>Market Places</td>
<td>Wholesale and Retail Market</td>
<td>Commercial</td>
</tr>
<tr>
<td>4</td>
<td>Health Care</td>
<td>Clinics, Hospital, Pathology Labs</td>
<td>Social Facility</td>
</tr>
<tr>
<td>5</td>
<td>Employment</td>
<td>Government and private employment</td>
<td>Industry Warehousing and Commercial</td>
</tr>
<tr>
<td>6</td>
<td>Transportation</td>
<td>Roads, Railways, Water and Air Transport Parking Facilities</td>
<td>Circulation, Public Utilities and Infrastructure Corridor</td>
</tr>
<tr>
<td>7</td>
<td>Recreation</td>
<td>Playgrounds, Gardens, Drama and cinema theatres etc.</td>
<td>Social Facilities, Open Spaces, Public Utilities</td>
</tr>
<tr>
<td>8</td>
<td>Hygiene</td>
<td>Sewerage and Solid Waste Management</td>
<td>Public Utilities</td>
</tr>
<tr>
<td>9</td>
<td>Physical Infrastructure and Miscellaneous</td>
<td>Water Supply, Electricity, Storm Water Drainage Religious and Regional centres</td>
<td>Social Facilities, Open Spaces, Public Utilities</td>
</tr>
</tbody>
</table>

(Source: Primary data)

5.4 Housing Facilities:

A good and affordable Housing Facility is a basic need of the society. It plays an important role in overall improvement of quality of life and economic development of the society. CIDCO had earmarked 2921.08 hectares of land to be solely used for residential purpose. CIDCO planned for housing schemes to be developed by CIDCO itself, Bungalow plots, Row House Plots and society plots to be developed by private institutions / developer.
CIDCO’s Role in Development of Housing:

Navi Mumbai has 3,66,718 households at the end of 2010, of which 1,22,233 were developed by CIDCO and remaining 2,44,485 were developed by private developers.

During 1970 – 1990 CIDCO was the major source of housing for low income and middle income group in Navi Mumbai. CIDCO had also constructed houses for high income group.

Details of Houses constructed by CIDCO for various Income Groups

CIDCO constructed houses for all income groups. It constructed houses of area upto 25 Sq. Mtr. For LIG / EWS, 26 – 75 Sq. Mtr. for MIG and above 75 Sq. Mtr. for HIG.

CIDCO was focused on providing affordable housing for all income groups in the city. This was achieved by CIDCO by charging premium rate for HIG houses which enable CIDCO to provide houses to other groups at subsidised rates. CIDCO decided to use a maximum surcharge of 15% on housing for highest income to compensate for a maximum subsidy of 45% to lowest income groups.


CIDCO also undertook some ambitious housing projects were also undertaken by the Corporation for different income groups i.e. Gherkin and Spaghetti for LIG, and MIG, Millennium Towers for MIG and Seawoods Estate for HIG like Non Resident Indians.

Following table shows node wise details for construction of houses by CIDCO for different income groups from beginning to 2010.
**Table 5.3:** Details of Housing units Constructed by CIDCO upto 2010

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Node</th>
<th>EWS / LIG</th>
<th>MIG</th>
<th>HIG</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Airoli</td>
<td>7,163</td>
<td>2,410</td>
<td>3,010</td>
<td>12,583</td>
</tr>
<tr>
<td>2</td>
<td>Ghansoli</td>
<td>9,499</td>
<td>Nil</td>
<td>Nil</td>
<td>9,499</td>
</tr>
<tr>
<td>3</td>
<td>Kopar Khairane</td>
<td>11,827</td>
<td>1,442</td>
<td>566</td>
<td>13,835</td>
</tr>
<tr>
<td>4</td>
<td>Vashi</td>
<td>9,367</td>
<td>5,560</td>
<td>3,271</td>
<td>18,198</td>
</tr>
<tr>
<td>5</td>
<td>Sanpada</td>
<td>1,816</td>
<td>3,089</td>
<td>3,778</td>
<td>8,683</td>
</tr>
<tr>
<td>6</td>
<td>Nerul</td>
<td>7,282</td>
<td>7,888</td>
<td>7,291</td>
<td>22,461</td>
</tr>
<tr>
<td>7</td>
<td>Belapur</td>
<td>946</td>
<td>3,881</td>
<td>3,407</td>
<td>8,226</td>
</tr>
<tr>
<td>8</td>
<td>Kharghar</td>
<td>4,741</td>
<td>1,451</td>
<td>1,877</td>
<td>8,069</td>
</tr>
<tr>
<td>9</td>
<td>Kamothe</td>
<td>Nil</td>
<td>Nil</td>
<td>Nil</td>
<td>Nil</td>
</tr>
<tr>
<td>10</td>
<td>Kalamboli</td>
<td>5,223</td>
<td>3,296</td>
<td>1,976</td>
<td>10,495</td>
</tr>
<tr>
<td>11</td>
<td>New Panvel</td>
<td>3,533</td>
<td>3,390</td>
<td>2,733</td>
<td>9,656</td>
</tr>
<tr>
<td>12</td>
<td>Dronagiri</td>
<td>80</td>
<td>76</td>
<td>372</td>
<td>528</td>
</tr>
</tbody>
</table>

| Total   | 61,477       | 32,483    | 28,281| 122,233|

(Source: Socio economic profile of households in planned Nodes in Navi Mumbai - 2010)

**Graph 5.2 Details of houses constructed by CIDCO**

The above table and graph shows node wise and income group wise distribution of houses constructed by CIDCO since beginning to 2010. CIDCO undertook construction of houses in 11 out of 14 nodes till 2010. CIDCO build maximum houses for EWS / LIG group and minimum for
HIG group. Maximum houses were built in Nerul Node whereas CIDCO did not construct any house in Kamothe Node.

5.5 Education:-
CIDCO’s role in providing education facilities to Navi Mumbai residents is legendary. CIDCO gives priority for schools and colleges while planning Social Facilities in Navi Mumbai. CIDCO earmarked plots for educational use while preparing development plan of Navi Mumbai. CIDCO designed nodes to provide one primary school per 5,000 population, one high school for 12,500 population and one college per 50,000 population making all nodes self sufficient in terms of providing quality education.

Following table shows educational institutes established in Navi Mumbai nodes as well as other area but on plots allotted by CIDCO.

**Table 5.4** Details of educational institutions in Navi Mumbai excluding Panvel, Uran Municipal Corporations and MIDC area.

<table>
<thead>
<tr>
<th>Node</th>
<th>Primary, Secondary, and Higher Secondary Schools</th>
<th>Colleges and Professional Education</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Airoli</td>
<td>31</td>
<td>5</td>
<td>36</td>
</tr>
<tr>
<td>Ghansoli</td>
<td>24</td>
<td>-</td>
<td>24</td>
</tr>
<tr>
<td>Kopar Khairane</td>
<td>27</td>
<td>8</td>
<td>35</td>
</tr>
<tr>
<td>Vashi</td>
<td>42</td>
<td>17</td>
<td>59</td>
</tr>
<tr>
<td>Sanpada</td>
<td>8</td>
<td>3</td>
<td>11</td>
</tr>
<tr>
<td>Nerul</td>
<td>54</td>
<td>24</td>
<td>78</td>
</tr>
<tr>
<td>CBD Belapur</td>
<td>14</td>
<td>24</td>
<td>38</td>
</tr>
<tr>
<td>Kharghar</td>
<td>15</td>
<td>13</td>
<td>28</td>
</tr>
<tr>
<td>Kamothe</td>
<td>10</td>
<td>6</td>
<td>16</td>
</tr>
<tr>
<td>Kalamboli</td>
<td>13</td>
<td>2</td>
<td>15</td>
</tr>
<tr>
<td>New Panvel</td>
<td>16</td>
<td>13</td>
<td>29</td>
</tr>
<tr>
<td>Panvel Taluka</td>
<td>20</td>
<td>-</td>
<td>20</td>
</tr>
<tr>
<td>Uran Taluka</td>
<td>28</td>
<td>-</td>
<td>28</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>254</strong></td>
<td><strong>115</strong></td>
<td><strong>369</strong></td>
</tr>
</tbody>
</table>

(Source: Compiled by using reports on Higher and Professional Education in Navi Mumbai and Primary and Secondary Schools in Navi Mumbai)
There are 254 schools and 115 colleges in the planned nodes and nearby villages in Navi Mumbai project area. Above table and chart shows node wise distribution of schools and colleges in the city and nearby villages under CIDCO area. Nerul and Vashi have highest no. of educational institutions in the city.

**CIDCO’s Role in Education:** In initial years CIDCO constructed 58 school buildings in different nodes. In other cases CIDCO allotted land to educational institutions for free of cost or at concessional rates.

**Technical Education:** Initially CIDCO established Technical Training Center at Belapur and Uran for project affected person. These centers were handed over to state government and converted into full fledged Industrial Training Institutes. CIDCO still operates 2 technical training institutes at Khandeshwar and Dronagiri.

**Assistance to PAP for Education:** CIDCO provide stipend and other facilities to project affected person perusing technical or higher education.
5.6 Market places

Market places / Shopping centres are important for society as these centres helps to procure necessary commodities. The study of shopping centres is restricted to consumer goods only. Researcher identified existence of different kinds of shopping centres in the city. These shopping centres can be classified as Wholesale Markets, Retail Markets, Open Markets and Malls. Following table shows shopping centres in different nodes.

**Table 5.5 Different Shopping Centres in Nodes of Navi Mumbai**

<table>
<thead>
<tr>
<th>Node</th>
<th>Wholesale Market</th>
<th>Retail Market</th>
<th>Open Market</th>
<th>Malls</th>
</tr>
</thead>
<tbody>
<tr>
<td>Airoli</td>
<td>1,513</td>
<td>346</td>
<td>Nil</td>
<td></td>
</tr>
<tr>
<td>Ghansoli</td>
<td>707</td>
<td>900</td>
<td>Nil</td>
<td></td>
</tr>
<tr>
<td>Kopar Khairane</td>
<td>1,628</td>
<td>674</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Vashi</td>
<td>5,679</td>
<td>5,672</td>
<td>1,257</td>
<td>8</td>
</tr>
<tr>
<td>Sanpada</td>
<td>878</td>
<td>382</td>
<td>Nil</td>
<td></td>
</tr>
<tr>
<td>Nerul</td>
<td>2,013</td>
<td>1,020</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Belapur</td>
<td>916</td>
<td>830</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Kharghar</td>
<td>1,064</td>
<td>515</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Kalamboli</td>
<td>1,019</td>
<td>469</td>
<td>Nil</td>
<td></td>
</tr>
<tr>
<td>Kamothe</td>
<td>519</td>
<td>111</td>
<td>Nil</td>
<td></td>
</tr>
<tr>
<td>New Panvel</td>
<td>2,202</td>
<td>453</td>
<td>Nil</td>
<td></td>
</tr>
<tr>
<td>Dronagiri</td>
<td>360</td>
<td>20</td>
<td>Nil</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>5,679</strong></td>
<td><strong>18,491</strong></td>
<td><strong>6,977</strong></td>
<td><strong>20</strong></td>
</tr>
</tbody>
</table>

(Source: Report on Wholesale, Retail, Service Industry and Open Markets in Navi Mumbai)

There are 31,167 shopping places in planned nodes of Navi Mumbai which includes wholesale, retail, open markets and malls. Shopping centres are highly concentrated in developed nodes like Vashi, Nerul and New Panvel.)
Above Graph shows high concentration of shopping centres in Vashi, Nerul and New Panvel. Other nodes have good no. of shopping centres; however with increase in population there is a good scope for development in Kamothe and Dronagiri nodes.

**CIDCO’s contribution in development of Market Places.**

CIDCO’s contribution in development of market places can be summarized in 3 points.

1. Construction of Wholesale and Retail Market places,
2. Allotment of land for development of commercial property,
3. Providing support services such as Sewerage, Storm Water Drainage and Solid Waste Management services. Following details shows CIDCO’s role in development of all types of shopping centers

**Wholesale Market:**

Development of wholesale market in Vashi is the biggest achievement of CIDCO. Navi Mumbai is established to decongest Mumbai. Considering this objective in the year 1978 decision was taken to shift wholesale agricultural produce market from Mumbai to Vashi Navi Mumbai in phased manner.
In its first phase CIDCO established wholesale market for onions and potatoes. This market is spread over 7.92 Hectares comprising 243 shops-cum – godowns, a large auction hall and G+3 central facility building. In the year 1981 entire wholesale trade of onions and potatoes was shifted from Mumbai to Vashi Navi Mumbai.

In second phase CIDCO developed Market-I for Sugar, spices, condiments dry fruits etc. and Market-II for Food grains, oilseeds, pulses etc. Market-I comprises of 598 large and 62 small shops-cum-godowns and G+4 central office building. CIDCO also earmark some space for facilities like restaurants, post & Telegraph office and Banks. In year 1991 APM located at Masjid Bunder Mumbai was shifted to Market –I at Vashi. In year 1993 development of Market-II was completed and wholesale trade for food grains pulses etc was shifted from Mumbai to Vashi in May 1993. The Market-II have 412 shops-cum-godowns and a central facility building along with space for banks, post and telegraph offices etc.

CIDCO allotted land to APMC for development of fruits and vegetable market complex. In March 1996 wholesale trade of vegetables and fruits was transferred from Mumbai to newly developed market complexes.

**Retail Market:**
CIDCO planned for development of retail market in each and every node to make that node self sufficient and livable. In initial years along with housing projects CIDCO develop shopping centres such as Janta Bazaars and provide support facilities. Later CIDCO allot plot for development of retail markets and set guidelines for the same in its GDCR.

**Open Market:**
Open markets are basically unorganised shops normally located alongside roads or on pavements. Most of these are unauthorised and liable for action for encroachment on roads etc. during study researcher did not find any policy on issuing hawker license or any sort of administrative control on open markets.
Shopping Malls:

Shopping Malls is comparatively recent trend there are 20 shopping malls in Navi Mumbai. Shopping malls are not found in every node of the city most of the malls are located in developed nodes such as Vashi, Nerul, Airoli, CBD Belapur and Kharghar.

5.7 Health Care Facilities

A good health care system is one of the basic needs of the society. CIDCO allotted plots for medical centers, hospitals in every node of Navi Mumbai. The health care system comprises clinics, hospitals, pathology labs, diagnostic centers and health care professionals. CIDCO encouraged all accepted system of medicines to flourish in Navi Mumbai.

Clinics: In any Health system clinics plays vital role, generally patient approach to clinic located nearby during his illness and if advised by the doctor he goes to the hospital. There are approximately 1177 clinics in Navi Mumbai. These clinics comprise General Practitioners following different system of medicines such as Ayurvedic, Homeopathy, Dentist, ENT, Eye specialist, Pediatrics etc.

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Type of Clinic</th>
<th>Nos.</th>
<th>Sr. No.</th>
<th>Type of Clinic</th>
<th>Nos.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Ayurvedic Clinic</td>
<td>26</td>
<td>6</td>
<td>ENT Clinics</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>Children Clinic</td>
<td>10</td>
<td>7</td>
<td>Eye Clinic</td>
<td>22</td>
</tr>
<tr>
<td>3</td>
<td>Clinics</td>
<td>780</td>
<td>8</td>
<td>General Physician</td>
<td>217</td>
</tr>
<tr>
<td>4</td>
<td>Dental Clinic</td>
<td>102</td>
<td>9</td>
<td>Homeopathic Clinic</td>
<td>18</td>
</tr>
<tr>
<td>5</td>
<td>Dispensary</td>
<td>1</td>
<td></td>
<td>Total</td>
<td>1177</td>
</tr>
</tbody>
</table>

(Source: Health Infrastructure, Facilities Personnel and Services in Navi Mumbai-2008)
Above Table shows that allopathic clinics in Navi Mumbai followed by practicing General physicians. Other system of medicines such as Ayurvedic, Homeopathic and specialist clinics such as ENT, Dentist, Eye clinic are also present in the city.

**Table 5.7 Hospitals and Pathology labs in Navi Mumbai**

<table>
<thead>
<tr>
<th>Node</th>
<th>General Hospitals</th>
<th>Nursing Homes / Specialty Hospitals</th>
<th>Health Center / Other Hospitals</th>
<th>Pathology Labs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Airoli</td>
<td>6</td>
<td>7</td>
<td>3</td>
<td>11</td>
</tr>
<tr>
<td>Ghansoli</td>
<td>3</td>
<td>3</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Vashi</td>
<td>11</td>
<td>9</td>
<td>7</td>
<td>16</td>
</tr>
<tr>
<td>Kopar Khairane</td>
<td>2</td>
<td>-</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Sanpada</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>Nerul</td>
<td>11</td>
<td>17</td>
<td>4</td>
<td>11</td>
</tr>
<tr>
<td>Belapur</td>
<td>3</td>
<td>-</td>
<td>1</td>
<td>10</td>
</tr>
<tr>
<td>Kharghar</td>
<td>9</td>
<td>1</td>
<td>5</td>
<td>10</td>
</tr>
<tr>
<td>Kamothe</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>Kalamboli</td>
<td>5</td>
<td>1</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>New Panvel</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Dronagiri</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>54</strong></td>
<td><strong>41</strong></td>
<td><strong>28</strong></td>
<td><strong>77</strong></td>
</tr>
</tbody>
</table>

*Source*: Health Infrastructure, Facilities Personnel and Services in Navi Mumbai-2008
The table and graph show Vashi, Nerul, Airoli and Kharghar has maximum hospitals and pathology labs. All these hospitals provide different medical services to the residents. These services include gynecology, surgery, pediatrics, orthopedic, dental, leprosy, AIDS, Oncology, Nephrology, and services related to respiratory diseases.

**CIDCO’s Role in development of Health care Institutions:**

In initial years public health department of CIDCO undertook different activities such as vaccination for Malaria and other diseases. At present CIDCO had developed and operate urban health centre in 4 nodes New Panvel, Kharghar, Kalamboli, and Kamothe. CIDCO appointed physicians at these urban health centers to provide primary medical aid, these centers also has pathology labs for elementary analysis.

CIDCO planed and allots land plots to institutions like Tata cancer research institute, Mahatma Gandhi Mission and individuals for development of health care facilities. CIDCO have planned for Super Specialty Hospitals in Navi Mumbai. These hospitals will be located at New Panvel, Ulwe and Kharghar. These hospitals will provide advance surgeries, investigations and specialized treatment to the residents of Navi Mumbai at affordable rates.
5.8 Employment:-

The Navi Mumbai is established to provide an alternate path of growth to prevent migration of people to Mumbai and decongest Mumbai. This requires transfer of markets from Mumbai and creation of employment opportunities in Navi Mumbai which reduce pressure on Mumbai’s infrastructure. Navi Mumbai is planned to accommodate 2 million peoples and to provide 7,50,000 Jobs.

Before 1990 5 major commercial and industrial activities created job opportunities in Navi Mumbai which are as follows.

1. APMC Market Vashi,
2. Steel Market in Kalamboli,
3. Industries in MIDC (Taloja and Thane Belapur) area
4. JNPT (Jawaharlal Nehru Port Trust) and
5. Government offices.

After 1990 country witness boom in IT sector. CIDCO developed IT parks in Navi Mumbai at Vashi, CBD Belapur, Dronagiri and Mahape. In the same decade Navi Mumbai was connected to Mumbai by suburban railway. This development boost development of Navi Mumbai in general and development of employment opportunities in particular, because several private offices were started growing in the city as Navi Mumbai was much affordable than Mumbai. These new organizations created employment opportunities in diverse fields. These organizations include BPO, Call centers, IT and other related services, Logistics, Financial sector, Professional services, Real Estate and so on. The researcher did not consider employment opportunities in MIDC and JNPT area because government had established separate authorities for development of these areas. It is estimated that JNPT and MIDC areas created more than 200000 jobs in the city. Following table shows types of organizations and jobs in the city.
Table 5.8 Details of different offices and no of employees.

<table>
<thead>
<tr>
<th>Type of Offices</th>
<th>Nos.</th>
<th>Employees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Government</td>
<td>456</td>
<td>26454</td>
</tr>
<tr>
<td>IT &amp; BPO</td>
<td>716</td>
<td>67321</td>
</tr>
<tr>
<td>Private Offices</td>
<td>9684</td>
<td>57347</td>
</tr>
<tr>
<td>Wholesale, Retail and Open Markets</td>
<td>33224</td>
<td>192823*</td>
</tr>
<tr>
<td>Service Sector</td>
<td>7831</td>
<td>39266*</td>
</tr>
<tr>
<td>Health Care Facilities</td>
<td>1377</td>
<td>3524*</td>
</tr>
<tr>
<td>Education</td>
<td>369</td>
<td>39266*</td>
</tr>
<tr>
<td>Social, Religious and Regional Institutions</td>
<td>857</td>
<td>2290*</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>54514</strong></td>
<td><strong>428291</strong></td>
</tr>
</tbody>
</table>


*Approximate figure (figure may include employees from units located in villages of Navi Mumbai, Panvel and Uran Municipal areas)

Graph 5.7: Details of Employment in Navi Mumbai

The above graph and table shows distribution of employment opportunities in different fields and offices in Navi Mumbai.
CIDCO’s role in case of developing employment opportunities

CIDCO’s role can be summarized in 3 points

1. Construction of buildings for different business activities.

2. Allotment of plots for development of offices and other commercial activities.

3. Provision of different support services.

Construction of office premises by CIDCO: - Initially CIDCO constructed buildings for government offices, APMC, Steel market, Janta Bazaars, CIDCO also developed Railway station cum Commercial complexes and IT parks which increase supply of office places in the city.

Allotment of Land plots: - CIDCO allotted plots to private developers for development of offices and other commercial activities. CIDCO prepare publish GDCR which act as guideline for development of property by private developer. Apart from constructing office premises allotting land plots, CIDCO developed various supporting facilities such as Transportation, Sanitation, Parking Facilities etc. for improvement work environment and employment opportunities in the city.

5.9 Transportation and Parking: -

Transportation facilities are important for development of the city. It is rightly said that ‘development of roads is road to development’ While planning Navi Mumbai CIDCO adopted Transport oriented Development approach. In Navi Mumbai public transportation facilities are still developing and CIDCO is immensely contributing in this particular area.

CIDCO Urban Transport Policy focuses the need to integrate land use planning with transport plan. The main objective of the urban transport policy is to reduce private car trips, improve public transport like mass transit system with improved level of services with people in focus. CIDCO explored a Transit Oriented Development and Transit oriented land use pattern to develop transport infrastructure of Navi Mumbai. A
Transit Oriented Development (TOD) is a mixed use residential or commercial area designed to maximize access to public transport, and often incorporates features to encourage transit utility.

The development plan of Navi Mumbai provides for an integrated transportation system consisting of roads, railways, waterways and airways. All the nodes are to be well connected by a mass transportation system in the form of commuter railway, which is economical and cost-effective. City level high capacity expressways with controlled access are planned and are being constructed at the periphery of the development of nodes. This facilitates uninterrupted flow of inter-city and intra-city vehicle traffic, considering the overall requirement of Navi Mumbai residents as well as industrial and business people. Feeder road system has also been provided for safe and economical internal movement of nodal traffic. Other complementary transport systems, namely, water and air transport, are also contemplated in the Navi Mumbai transport development plan to provide faster modes of inter-city transport.

5.9.1 Roads
Roads are key factor of development. Roads are the primary transport system hence development of road network is highly essential for development of any city. The development of Navi Mumbai begins with completion of Thane Creek Bridge which established the road link between Mumbai and Navi Mumbai.

Roads include internal roads of different widths, City level roads and pathways. Entire road system of Navi Mumbai implemented in planned manner by CIDCO. The system is designed to cope up with growth of population in the city. Total road network in Navi Mumbai is around 650 Km long. This road network connects all nodes of Navi Mumbai and as well as neighboring towns. CIDCO built 8 large and 16 medium level bridges in the Navi Mumbai which are as follows
**Table 5.9:** Major Bridges built by CIDCO in Navi Mumbai (8 Nos.)

<table>
<thead>
<tr>
<th>Location</th>
<th>Bridge Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mankhurd – Belapur Line</td>
<td>1. Thane Creek Bridge</td>
</tr>
<tr>
<td>Belapur – Panvel Line</td>
<td>2. Taloja Creek Bridge,</td>
</tr>
<tr>
<td></td>
<td>3. Jui Creek Bridge</td>
</tr>
<tr>
<td>Thane – Vashi – Nerul Line</td>
<td>4. Thane Creek Bridge</td>
</tr>
<tr>
<td>Nerul – Seawoods – Belapur – Uran Line</td>
<td>5. Panvel Creek Bridge</td>
</tr>
<tr>
<td></td>
<td>6. Moho Creek Bridge</td>
</tr>
<tr>
<td></td>
<td>7. Seawoods RoB</td>
</tr>
<tr>
<td>Airoli – Mulund</td>
<td>8. Airoli Creek Bridge</td>
</tr>
</tbody>
</table>

(Source : CIDCO website)

**Table 5.10:** Medium Level Bridges built by CIDCO in Navi Mumbai

<table>
<thead>
<tr>
<th>Location</th>
<th>Bridge Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mankhurd – Belapur Line</td>
<td>1. Vashi RoB</td>
</tr>
<tr>
<td></td>
<td>2. Sanpada RoB</td>
</tr>
<tr>
<td></td>
<td>3. Uran RoB</td>
</tr>
<tr>
<td></td>
<td>4. Uran RoB</td>
</tr>
<tr>
<td></td>
<td>5. Belapur RoB</td>
</tr>
<tr>
<td>Belapur – Panvel Line</td>
<td>6. NH 4B RoB</td>
</tr>
<tr>
<td></td>
<td>7. NH 4 RoB</td>
</tr>
<tr>
<td></td>
<td>8. Matheran RoB</td>
</tr>
<tr>
<td>Diva – Panvel Line</td>
<td>9. Khanda RoB</td>
</tr>
<tr>
<td></td>
<td>10. Kalamboli RoB</td>
</tr>
<tr>
<td></td>
<td>11. Pendhar RoB</td>
</tr>
<tr>
<td>Thane – Vashi – Nerul Line</td>
<td>12. Turbhe link RoB</td>
</tr>
<tr>
<td></td>
<td>13. Khairane RoB</td>
</tr>
<tr>
<td></td>
<td>14. Mahape RoB</td>
</tr>
<tr>
<td>Nerul – Seawoods – Belapur – Uran Line</td>
<td>15. Vashi RoB</td>
</tr>
<tr>
<td></td>
<td>16. Dronagiri RoB</td>
</tr>
</tbody>
</table>

(Source : CIDCO website)
Passenger Transport service by CIDCO: In initial years CIDCO provided bus transport service it was started in 1972-73. During 1979 a subsidiary company was formed under the name of CIDCO Transport Corporation Ltd. to take over the business from CIDCO. The company subsequently changed its name as Bombay Metropolitan Transport Corporation Ltd. in 1980. The subsidiary company took over business and related assets from CIDCO. The company had fleet of 200 buses and was operating on 28 routes carrying approx 1,00,000 passengers every day. The operations of the company were stalled during 1984 due to labour unrest. The company applied for winding up in 1986.

5.9.2 Railways

Suburban railway network of Navi Mumbai is Life line of Navi Mumbai. The development of Railway Network in Navi Mumbai is a Joint Venture between CIDCO and Indian Railways, the expenses of development was shared by both mutually. The entire railway network in the city is admeasuring 200 Kms. Covering 900 Hectares of land. The network is divided different corridors and will have 30 stations.

Following are details of different corridors of the railway network

1. Mankhurd – Belapur – Panvel Line: - It is the most important and first railway line of the Navi Mumbai. This line connects Navi Mumbai with Mumbai via harbor line. The line was commissioned in phases as follows.

    b. upto Nerul in Feb 1993.
    c. Belapur in Jun 1993
    d. Khandeshwar Jan 1995 and

The double line commuter rail service from CST - Panvel was commissioned in April 2000. Development of this line was iconic; it introduced several first in Indian history. It is the first project taken up by State Government of Maharashtra and Ministry of Railways. It was
executed under a tripartite agreement between State Government, CIDCO and Central Railway. First time in India permission was granted to exploit space above railway station. This permission enables CIDCO to plan and develop Station cum commercial complex integrated with all facilities. Now these stations cum Commercial complexes become distinct feature of the city.

This line was developed in 2 parts i.e. Mankhurd – Belapur and Belapur – Panvel. The cost of Railway line with railway area in the stations is shared by CIDCO and Railways in the proportion of 67% and 33% respectively for the 1 part i.e. Mankhurd – Belapur. Cost of constructing stations cum commercial complexes was entirely born by CIDCO. In case of 2 part i.e. Belapur – Panvel entire cost is borne by CIDCO. Features of this line are as follows

**Features of Line**

- **Length :-** 29 Kms.
- **No. of Tracks :-** 2
- **Stations :-** There are 10 stations which are as follows.
  1. Vashi
  2. Sanpada
  3. Juinagar
  4. Nerul
  5. Seawoods Darave
  6. Belapur CBD
  7. Kharghar
  8. Manassarover
  9. Khandeshwar
  10. Panvel

2. **Thane – Turbhe – Nerul/Vashi Line, and Kalwa Turbhe Goods Line:** - These lines run from North to South in Navi Mumbai providing commuter service and transportation of goods to various industries located in Thane - Belapur MIDC area and adjoining residential nodes. The commuter line is called as Trans Harbor line. This line connects Navi Mumbai to Thane and also connects northern nodes to other nodes of the
city. This line provides commuter service from Vashi / Sanpada / Panvel to Thane. The goods line run between Kalwa - Turbhe. This line is built by CIDCO and Indian Railways, expenses for commuter line was shared between both as 67% and 33% respectively and expenses for goods line was entirely borne by CIDCO. The goods line was commissioned in 1993; development of commuter line started in 1995 and was fully commissioned in Nov. 2004. CIDCO constructed 5 new railway stations for this line.

**Features of Line**

**Length :-** 23 Kms.

**No. of Tracks :** 2

**Stations :-** CIDCO constructed 5 stations on this line which are as follows.

1. Airoli
2. Rabale
3. Ghansoli
4. Kopar - Khairane
5. Turbhe

**3. Navi Mumbai Metro: -** The CIDCO planned for Metro railway system to support suburban railway network. Government had decided to develop 5 metro rail corridors in Navi Mumbai. The Government of Maharashtra has authorized CIDCO as Administration and implementation agency for Belapur – Pendhar – Kalamboli – Khandeshwar – Navi Mumbai International Airport corridor in Sept. 2010. The CIDCO will develop the corridor 3 phases. Construction work is in progress and will be completed by 2015 or 2016. Detail information is given in Chapter – 6 of this report.

**5.9.3 Water Transport**

Navi Mumbai has major port of India i.e JNPT, today JNPT with 3 operational terminals India’s No. 1 port in handling container traffic. Initially CIDCO was involved in development of JNPT. However Passenger water transport service is quiet a problem with the city. Though it has a good potential to connect Navi Mumbai to Mumbai and
other coastal cities of India it never took off. Several attempts were made by CIDCO, other government agencies and private operators during last 40 years but till the date nobody is successful. The first attempt was made by CIDCO during 1972-73. It started first waterway project with a hover marine service between Ferry Wharf Mumbai and Vashi but it lasted for few days later during 1980 – 2000 CIDCO and other private companies tried to operate catamaran and hovercraft service between Navi Mumbai and Mumbai but failed due to various technical and financial issues. Now CIDCO plan to reintroduce hovercraft service connecting these two cities with a view to improve connectivity for the Navi Mumbai International Airport.

5.9.4 Air Transport

CIDCO has proposed development of Navi Mumbai International Airport in the year 2000 and submit detailed Techno Economic Feasibility study of the project in 2001. CIDCO then submit project feasibility and business plan report to Ministry of Civil Aviation. In 2008 Government of Maharashtra gives its approval for development of Airport on PPP (Public – Private partnership) basis and appointed CIDCO as nodal agency for its implementation. CIDCO appointed M/s LBG – INECO – RITES consortium as prime consultant for preparing master plan and project report.

CIDCO had obtained approvals from various ministries of government including 1. Ministry of Civil Aviation, 2.Ministry of Defense. 3. Ministry of Environment and Forests etc. The project is yet to start, it face problems related with land acquisition because project affected residents does not agree with the compensation offered by the government.

5.9.5 Parking Facilities:-

Development of city brings prosperity for its residents and increases no. of vehicles. Improper planning may fail to absorb increasing no. of vehicles. This result in problems associated with parking places and increases congestion in the city. CIDCO have taken care with this issue while planning the city.
Truck Terminals:-

Navi Mumbai has biggest APMC market in Asia; JNPT is ranked as India’s No. 1 port in terms of container traffic. It also has wholesale steel market at Kalamboli. Several industries are located in Taloja MIDC and Thane - Belapur industrial area. These commercial and industrial activities develop logistic industry in Navi Mumbai and also responsible for huge floating population of vehicles in the city.

Kalamboli has become a transport hub due to its unique location and proximity with JNPT. Keeping this in mind CIDCO had built truck terminal at Vashi APMC and Kalamboli which absorb this floating population of the vehicles by providing them ample parking place and other facilities and prevent them to enter in other part of city. Such proper arrangement helps to keep city congestion free.

Pay and Park Facilities: -

CIDCO planned parking facilities at every railway station, market place and other commercial places in the city. These are pay and park facilities which also generate some revenue for CIDCO.

Parking facilities in Residential area:-

The buildings which are built by CIDCO itself has ample parking place. CIDCO also issue The General Development Control Regulation (GDCR) for the private builders. This GDCR make it compulsory for the builders to leave some space open to be used as parking facility by the residents of that building and guests.

5.10 Recreation Facilities / Centres

Recreation is essential part of human life. Recreation centres are important part of Social infrastructure of a city and included in social facilities in actual land use plan of Navi Mumbai. These centres help people to relax and improve quality of life. These facilities include Cinema halls, Drama Theatres, Gardens, play grounds, sport complex etc. CIDCO contributed in development of these facilities and develop social infrastructure of the city. CIDCO developed some recreation facilities,
allotted plots for such development and provide support facilities as well as maintain these recreation centres, details are as follows.

5.10.1 Gardens:

CIDCO developed 175 public gardens in Navi Mumbai. Most of these gardens are equipped with toys such as slides and swings. Resting places and jogging track. Greenery is maintained in all the gardens. The most remarkable is Central park at Kharghar. This central park was developed by CIDCO blending concept of Hyde Park, London and Central Park, New York. The Central Park Kharghar is spread over 80Ha. in sector 23, 24 and 25. It is developed in 2 phases. The first phase was inaugurated on 25th Jan. 2010.

Different parks and facilities included in the central park are as follows.

- Children Park
- Amphitheatre Area
- Green Area
- Musical Instrument Park
- Hast Mudra Park
- Theme Park
- Food Plazas
- Parking
- Amusement Park
- Club House
- Water Park
- Nurser

Other notable gardens in Navi Mumbai are Rock Garden, Nature Park and Valley Park.

5.10.2 Nature Trails:

Today people want to connect with nature; they want to go away from concrete jungle to mother earth to relax and experience peace. BNHS (The Bombay Natural History Society) identified 6 locations in the city which could be ideal for nature visits. These locations are Artiste Village, Valley Park, Kharghar hills, Parsik hills, Kharghar plateau and area behind Bharati Vidyapeeth. These 6 locations have good biodiversity. 292 species of plant, 295 species of insects, 9 amphibian species, 28 reptile species, 179 bird species, 12 Mammal species and 15 other invertebrate species are found in these 6 locations.
All these locations offer nature trails as follows.

- Parsik Hill offers hill trail.
- Valley Park offers Devi – saddle trail, Stream Trail, Short Valley trail and long valley trail.
- Artiste village offers Temple trail and Grassland trail.
- Kharghar hill has Milkara trail, Rock cliff trail, Langur trail, Ridge walk and table land trail.
- Kharghar plateau offers Plateau trail and Dam trail.

CIDCO is taking good measure to protect environment in the Navi Mumbai by using it as place of recreation. It asked for inputs from the people and NGO’s for development of Valley Park. CIDCO have planned to build parking places at such locations, construct and repair pars around the trees. Plant more fruit bearing trees and develop water ponds to attract birds.

5.10.3 Play Grounds:

CIDCO doesn’t plan for dedicated open playgrounds in the city for outdoor sports such as football, cricket etc. The playgrounds were confined to schools only. Recently 2 major developments took place 1 development of Dr. D. Y. Patil stadium at Nerul, and Ramsheth Thakur International Sport Complex at Ulwe. Both institutions are not developed by CIDCO. Both offer various facilities in respect of sports but both are not easily accessible by all residents of the city. So we can see children playing football or cricket on the streets. CIDCO should develop open play grounds in the nodes under its administration.

5.10.4 Golf Course:

CIDCO developed the 18 - hole international standard golf course and country club at sector 22 of Kharghar opposite to central park. It is spread over 103 hectares and includes a club house, five star hotel, high end residential apartments / bungalows and a golf academy. It is expected that it will influence standard of living of the people and attract tourists to the city by hosting national and international competitions.
5.10.5 Drama Theaters:
CIDCO constructed one of the biggest landmark of the city i.e. Vishnudas Bhave Auditorium. It is the only auditorium in Navi Mumbai. It is located at Sector 16 of Vashi and spread over 51,000 Sq. Ft. It has sitting capacity of 1072 viewers.

5.10.6 Cinema Hall and Multiplexes:
There are cinema halls almost in every node of the city. The concept of multiplexes is new in the city and all the multiplexes are located in malls of the city.

5.10.7 Sea Shore and Beaches:
Navi Mumbai has almost 150 Kms. long coastline. CIDCO developed mini seashore at Vashi except that there is no any development of beaches and seashore as a recreation centre. CIDCO should work on this if possible.

5.11 Hygiene:
Hygiene is one of the most important factors in development of the city. A proper care in this respect helps to reduce pollution in the city. It includes Sewerage Management system and solid waste management.

5.11.1 Sewerage:-
CIDCO built underground sewerage system for Navi Mumbai. Perhaps it is the only city in India which had separated its sewerage system and storm water drainage system. In MMR area CIDCO pioneered practice of treating sewerage before discharging it in sea.

CIDCO has provided 1-2 sewerage treatment plant in each node. These plants are state of the art C-Tech / SBR (Cyclic Activated sludge process / Sequential Batch Reactor) which runs on gravity and pumping mechanism. CIDCO strictly follows standards set by Maharashtra Pollution Control Board before discharging the treated effluent. This treated effluent is used for landscaping and gardening. Extensive water requirement of International Golf course and Central park are met by this treated effluent.
5.11.2 Solid Waste Management:

CIDCO provide solid waste management system through its public health department. Recently a separate cell is created in department to manage these activities. At present solid waste management system is provided by CIDCO in selected nodes i.e. New Panvel, Kalamboli, Kharghar and Kamothe. In case of nodes under NMMC this facility is provided by NMMC. This facility comes under public utility in actual land usage plan. CIDCO strictly follow MSW Rule 2000 for solid waste management system. This system comprises of two components.

1. Collection, transfer and transportation of solid waste management,
2. Development, operation and maintenance of processing and disposal facility.

CIDCO collects and transfer solid waste through ghantagadi and common dustbins in the nodes. CIDCO appointed contractor for collection and transfer of solid waste to the disposal site.

CIDCO developed disposal site on 14.46 hectare of land at Chal village. This disposal site comprises of weigh bridge, segregation area, pre-processing plant, compost area, engineered landfill and leachate holding pond.

After arrival of solid waste on the site it passes through weighbridge to find out weight of solid waste and then it is segregated in biodegradable and non-biodegradable waste further it is bifurcated as recyclable and non-recyclable waste for disposal. Biodegradable waste is shredded and placed on to the compost platform for composting in an organic fertilizer. The landfill is designed in 5 main cells a soil bund will be constructed along the periphery of the landfill. Proper care is taken to prevent ground water contamination. A thick tree belt of meter is developed on the periphery of the site. This system is expected to take care of waste generated in the city for years and dispose the waste in a pollution free manner.
5.12 Physical Infrastructure and other miscellaneous developments

Physical infrastructure and other facilities include water supply, electricity, and storm water drainage, social, religious and regional centers. This development is clubbed under public utility and social facilities in land use plan of CIDCO.

5.12.1 Water Supply:

Water is one of the primary requirements of society. From beginning CIDCO adopted wholesome approach and planned for its own water supply schemes at Hetawane, Morbe and Balganga keeping in view further growth in population. CIDCO incurred around 12% amount allocated for physical infrastructure on development of water supply system which includes Dams, Pipelines, Water treatment plants, Service reservoirs, Pumping stations etc.

At present required water is availed from Morbe Dam, Hetawane Dam and other sources such as MIDC and Maharashtra Jeevan Pradhikaran.

The water is initially brought from different reservoirs to water treatment plant for its purification and latter it is supplied through the water supply network. The water supply system divides each node into subsectors. CIDCO developed 45 ESR, 48 GSR, 8 MBR and 10 HSR having capacity of 67.80 MLD, 87.30 MLD, 57 MLD, a 22.5 MLD respectively which makes total store capacity of 235 MLD. CIDCO had laid down pipeline approx. 400000 meters which stands as backbone of entire water supply system. The Balganga project in Pen Taluka is expected to commissioned soon

5.12.2 Electricity:

Electricity is main feature of modern society, its use have become integral part of our life. Any lacuna in availability and distribution of electricity is considered as major flaw in the infrastructure of the area.

Daily power consumption Navi Mumbai is around 200 MW. Today MSEDCL (Maharashtra State Electricity Distribution Corporation Ltd.) provides required electricity to Navi Mumbai. When CIDCO started development of Navi Mumbai required power infrastructure was almost
absent in this area. The power infrastructure includes power generation and distribution system. To promote growth and make this city ‘City of 21\textsuperscript{st} Century’ CIDCO took major step by establishing separate electric circle.

This circle was established to provide required power infrastructure for civic amenities. This included planning, installation, operation and maintenance of

- Street lighting in every node
- Drinking water pumping plant
- Sewerage plant
- Storm water Pumping plant
- Commercial and residential complexes
- Electrical and mechanical equipments of railway projects under CIDCO supervision.
- Shifting and modifying Extra High Tension, High Tension and Low Tension lines without disturbing CIDCO’s development plan

To attain above objectives CIDCO had done following during the research period

1. It had collaborated with MSEDCL (earlier known as MSEB) for power distribution network within the city.
2. It implemented Supervisory Control and Data Acquisition (SCADA) system for uninterrupted power supply.
3. With the help of MSEDCL it established a single window system at Kharghar for power connection.
4. For efficient and effective power distribution CIDCO installed transformer sub-stations and Double pole structure in the City.
5. CIDCO installed and bear street and open space lighting system.

5.12.3 Storm Water Drainage

Navi Mumbai is perhaps only city in India which had separated its sewerage and storm water drainage system. The Navi Mumbai has sea on its one side and hilly areas on other. Navi Mumbai experience average rainfall of 2500 – 3000 MM which could extend upto 5000 MM. 20% of city area is low laying area which could easily submerge during monsoon.
The initial study reveals that combination of high tide and heavy rainfall is a major threat to the city as water gushes in the city from surrounding areas and if not disposed of properly could cause flood in the city.

CIDCO had 2 major challenges while designing the storm water drainage system

1. To prevent tidal water entering into city and
2. Controlled discharge of rainwater into sea during monsoon.

CIDCO managed to come up with the solution by adopting indigenous, conventional, and Dutch / polder system of reclamation and construct required no. of bunds, detention ponds, holding ponds, overflow channels and pumping stations to prevent tidal water entering into city and discharging storm water into the sea.

Navi Mumbai has 150 Kms. long coast lines. CIDCO constructed Central Overflow Channels and uniquely designed 30 holding ponds with unidirectional flap gates along the coastal belt. The flap gates operate on water pressure. These ponds hold the water during high tide as flap gates remain close due to heavy water pressure of the sea on outer surface of the gate and opens during low tide as water pressure eases and discharge the water held in the pond. These detention ponds also turn out to be a good picnic spot among the residents of the city. CIDCO also constructed 6 detention ponds to control flow of water gushing down from the hills. These detention ponds are functional only in monsoon and run dry during rest of the year. CIDCO constantly study rainfall and flood situation and modify its storm water drainage system of the city.

5.12.4 Social, Religious, and Regional, Community Centres:-

A society is incomplete without a religion, and individual never forget his roots and is bonded with his region. Navi Mumbai is a cosmopolitan city people from every state of India are living in the city. These migrated residents are freely following their religion, traditions and culture. There are Social, Religious and Regional institutions established in Navi Mumbai. These institutions enable the residents to follow their religion, traditions, celebrate festivals and philanthropic aspect of life.
Considering this importance of such institutions in life CIDCO helped to establish and flourish these institutes.

There are 394 Social, 438 Religious and 25 Regional institutions in Nodes of Navi Mumbai. These institutions include Hindu Temples, Mosques, Churches, Buddha Vihar, Gurudwara, different social institutions, and different institutions formed by people of different regions, language and culture. CIDCO allotted 253 plots to regional and social institutes. In initial years CIDCO constructed community centres in most of the nodes to facilitate socio–cultural activities. CIDCO constructed 11 such centres and allotted 2 plots for construction of community centre. CIDCO provide place of such community centre to for conducting social, educational, cultural, recreational and welfare activities to registered group of residents or private individuals by charging nominal rent on hourly basis.

**Part B - Status of Upcoming Projects in Navi Mumbai**

**5.13 Introduction of upcoming projects in Navi Mumbai**

CIDCO develop Navi Mumbai by undertaking various projects. Projects started before 2000 are already completed. However with increasing population and social as well as demographic changes city needs to upgrade its infrastructure according to new demands of the society. These upcoming projects undertaken by CIDCO will bring change in the Navi Mumbai and take it to next level where it will be recognised internationally. The researcher selected following projects for the study due to their tremendous importance in further development of the city.

1. Navi Mumbai Special Economic Zone. (NMSEZ)
2. Navi Mumbai Metro (NMM)
3. Navi Mumbai International Airport (NMIA)
4. Local railway network between Nerul - Uran, Panvel - Uran and Manassarover – Taloja
5.14 Navi Mumbai Special Economic Zone:

Introduction:
In early years Navi Mumbai depends on Taloja and Thane Belapur Industrial area for employment opportunities. As city progresses new opportunities such as APMC, IT parks came into existence which creates diverse job opportunities. Meanwhile population of city also grows, now city require a further push for new job opportunities so CIDCO planned for Special Economic Zone. It is expected that this SEZ will create 5 lakhs job opportunities in the city.

Special Economic Zone is a new concept. This concept is industry friendly, Special Economic Zone functions as deemed foreign territory and offers tax free environment for development and growth. The special economic zone was targeted to attract Foreign Direct Investment to boost industrial activities in Navi Mumbai. The Navi Mumbai Special Economic Zone is located in 3 nodes of the city, 1. Kalamboli, 2. Dronagiri, 3. Ulwe and spread over 2140 Heacters. This project is implemented by CIDCO through public private participation model. Its details are as follows.

Genesis of NMSEZ:22

In 2002, Government of India (GoI) approved the proposal of City & Industrial Development Corporation of Maharashtra Limited (CIDCO) to set up a Special Economic Zone on 2140 Hectares in Navi Mumbai. Government of Maharashtra (GoM) directed CIDCO to implement the Navi Mumbai SEZ project through a Joint Venture and that the Strategic Partner/Investor is selected through a competitive bidding process. CIDCO through a global bidding process selected a Preferred Bidder/Strategic Investor Consortium.

This consortium includes Mr. Mukesh Ambani of Reliance industries and Mr. Anand Jain of Jai Corp and Seaking Infrastructure ltd. The consortium formed a company named Dronagiri Infrastructure Private

22 http://www.nmsez.com/gensis.html
Limited (DIPL) under the Companies Act, 1956. Dronagiri Infrastructure Private Ltd. & CIDCO formed a Special Purpose Company (SPC) in the year 2004 and named it Navi Mumbai SEZ Private Limited (NMSEZ). The DIPL holds 74% and CIDCO hold 26% stake in NMSEZ.

**Special Planning Authority:**

Navi Mumbai SEZ Private Limited has been appointed as the Special Planning Authority (SPA) under the Maharashtra Regional & Town Planning Act, 1966, for the notified areas in Dronagiri, Kalamboli, Ulwe (Airport) and Ulwe (Waterfront) Nodes of Navi Mumbai. As a Special Planning Authority, NMSEZ has the roles and responsibilities to (i) Formulate Development Control Regulations and Norms; (ii) Control and monitor development / Implementation and enforcement of the Master Plan; (iii) Grant / refuse development permission at plot-level and revocation / modification etc.; (iv) Grant / refuse Occupancy Certificate for constructed premises; and (v) such other roles and responsibilities as enumerated in the Maharashtra Regional and Town Planning Act, 1966.

**Unique Features of Project**

The Navi Mumbai Special Economic Zone is said to be best located SEZ in India in terms of connectivity, trade, commerce and resources. The units in SEZ expected to be Manufacturing, Multi Services, Industries related to Gems and Jewellery, IT and ITES companies. It is called as most valuable piece of virgin land in India due to following reasons.

1. **Proximity to Mumbai thereby having access to**

- Finance - Navi Mumbai SEZ's proximity to Mumbai, the commercial centre and financial capital of India, will provide easy and unlimited access to capital, for the units located in Navi Mumbai SEZ;
- Trading centres for many products like diamonds, gems, jewellery and apparels;

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23 http://www.nmsez.com/spa.html
24 http://www.nmsez.com/locationadv.html
Skilled manpower from reputed national and international educational institutes including engineering and technical colleges, management institutes, etc;

Huge urban markets of Mumbai, Navi Mumbai and Pune, with a population base of approximately 20 million which are within the catchment area of the Navi Mumbai SEZ.

2. Proximity to international and domestic transportation infrastructure

- **Seaports** - Located very close to one of India's largest and most modern seaports - Jawaharlal Nehru Port, providing cargo linkages to all the international markets; Other nearby seaports include Mumbai Port and proposed Rewas Port.

- **Airport** - Chatrapati Shivaji International Airport at Sahar, is at a distance of around 45 km from Navi Mumbai SEZ. Planned Navi Mumbai International Airport is planned is adjacent to the Navi Mumbai SEZ and will be accessible within 10 minutes.

- **Road and Rail linkages** – National Highways (NH4, NH4B, NH4B Extn., NH3 & NH17) and State Highways SH54, SH88 & SH81 link the Navi Mumbai SEZ area to the rest of the country. Rail infrastructure – The Navi Mumbai SEZ has proximity to Central Railway Link, Konkan Railway and suburban railway network.

- **Water Transport** –Proposed Water transport, linking south Mumbai to Navi Mumbai SEZ is expected to boost accessibility to the area. With convenient rail, sea, road and air linkages, Navi Mumbai SEZ is well placed to create a vibrant industrial and commercial hub in Navi Mumbai.

3. Proximity to other industrial areas

Connectivity to well-developed industrial areas such as Ambernath, Badlapur, Dombivli, Kalyan, Nasik, Nagothane, Pune, Thane, Taloja, etc., provide excellent backward and forward linkages with support

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26 [http://www.nmsez.com/locationadv.html](http://www.nmsez.com/locationadv.html)
industries and suppliers of intermediates, to the units that would come up within Navi Mumbai SEZ.

The unique feature of the project is it will implement walk to work concept. This requires development of housing facilities and related infrastructure in the SEZ area.

**Progress till the date:**

The entire 2,140 hectares of land required for the Navi Mumbai SEZ has been acquired by CIDCO and is being progressively allotted to NMSEZ. The possessed land has already been notified with details as under.

<table>
<thead>
<tr>
<th>Node</th>
<th>Type</th>
<th>Total Notified Area (Ha)</th>
<th>Processing Area (Ha)</th>
<th>Non Processing Area (Ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dronagiri</td>
<td>Multi Product</td>
<td>1223.68</td>
<td>657.55</td>
<td>566.13</td>
</tr>
<tr>
<td>Kalamboli - IT/ITES</td>
<td>Sector Specific IT / ITES</td>
<td>133.62</td>
<td>111.54</td>
<td>22.08</td>
</tr>
<tr>
<td>Kalamboli – MSS</td>
<td>Multi Services</td>
<td>176.71</td>
<td>119.59</td>
<td>57.12</td>
</tr>
<tr>
<td>Ulwe (Waterfront)- A</td>
<td>Sector Specific IT / ITES</td>
<td>21.12</td>
<td>10.56</td>
<td>10.56</td>
</tr>
<tr>
<td>Ulwe (Waterfront)- B</td>
<td>Sector Specific IT / ITES</td>
<td>38.28</td>
<td>20.01</td>
<td>18.27</td>
</tr>
<tr>
<td>Ulwe (Waterfront)- C</td>
<td>Sector Specific IT / ITES</td>
<td>10.77</td>
<td>6.02</td>
<td>4.75</td>
</tr>
<tr>
<td>Ulwe (Airport)</td>
<td>Multi Services</td>
<td>128.42</td>
<td>64.21</td>
<td>64.21</td>
</tr>
<tr>
<td>Ulwe (Airport)</td>
<td>Gems &amp; Jewellery</td>
<td>33.54</td>
<td>16.77</td>
<td>16.77</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>1766.14</strong></td>
<td><strong>1006.3</strong></td>
<td><strong>759.89</strong></td>
</tr>
</tbody>
</table>

(Source : www.nmsez.com)

Development of physical infrastructure in the notified area is under progress, Boundary walls are being built, Water lines are being laid down and other ground work is in progress on the site. This SEZ will definitely boost the economic development of Navi Mumbai. The article published
in Business standard in Nov. 2012 blames state government for not notifying Maharashtra SEZ Act. According to the article the SEZ developer was going to start procedure for allotment of plots in the SEZ from Dec. 2010 but however the above mentioned act is stuck in political circle which prohibits the company from perusing the allotment procedure. Article published in DNA on 16 Aug. 2014 mentioned another reason due to which project is stalled is introduction of different taxes to SEZ units such as Minimum Alternate Tax and Dividend distribution Tax which makes SEZ completely unviable, the company said to be waiting for reinstatement of the earlier tax regime.

5.15 Navi Mumbai Metro:

Introduction:
The Navi Mumbai is growing at very fast rate since past 20 years. Population growth in this area is tremendous. The city is developed on polycentric pattern which requires good connectivity with other nodes by way of roads or railways. The growth of city demands Mass Rapid Transport System (MRTS). Navi Mumbai has all the ideal dress-up for an excellent rail-based Mass Rapid Transit System to be brought in. The city’s nodes are well connected by wide roads. This provides a very good option for an elevated rail-based MRTS that runs over the roads of the city. Further, there will not be any demolition involved of any private properties for the implementation of the project as Most of the land required is under government control and hence can be easily acquired.

Considering the situation CIDCO envisaged developing Metro Railway in addition to existing commuter railway network and bus based public transport system. This will boost transport infrastructure in the city by providing better north – south and east-west connectivity between all residential nodes. Development of Metro Rail boost transport oriented development approach of CIDCO. It will also help to reduce private vehicle traffic which is helpful to reduce pollution and traffic congestion in the city.
Feasibility Study of Project:\textsuperscript{27} Delhi Metro Rail Corporation (DMRC) was entrusted with the task of conducting feasibility study. DMRC proposed connectivity by Metro Rail System due to various merits such as being energy efficient, pollution free and occupying less land space. Besides this the passenger carrying capacity of medium Metro Rail System can be up to 35000 PHPDT (Peak Hour per Direction Traffic) whereas Monorail System is suitable up to 20000 PHPDT. Hence, Metro Rail System was preferred for Navi Mumbai.

Impact of NMIA and NMSEZ on Navi Mumbai Metro: Navi Mumbai SEZ and Navi Mumbai International Airport bring major change in development plan of Navi Mumbai hence Master Plan of Navi Mumbai’s connectivity needs to be reviewed. M/s LEA Associates South Asia Pvt. Ltd. was appointed to review the Master Plan and to suggest new airport connectivity for Mumbai by various means of transport. LEA Associates South Asia Pvt. Ltd. have recommended I: Mankhurd to Panvel and II: Sewree-Kharkopar-NMIA as Metro rail corridor.

Navi Mumbai Metro Network:\textsuperscript{28} Based on recommendations of DMRC and M/s LEA Associates South Asia Pvt. Ltd. five Metro Rail Corridors had been finalized for development in different phases. Following table shows details of each corridor, its priority and its implementing agency.

Table 5.12: Different Navi Mumbai Metro Rail Corridors

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Corridor</th>
<th>Length</th>
<th>Implementing Authority</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Belapur-Taloja-Pendhar-Khandeshwar-NMIA</td>
<td>23.40 km</td>
<td>CIDCO</td>
</tr>
<tr>
<td>2</td>
<td>Mankhurd-NMIA-Panvel</td>
<td>32.00 km</td>
<td>MMRDA</td>
</tr>
<tr>
<td>3</td>
<td>Sewree-Kharkopar-NMIA (MTHL)</td>
<td>22.00 km</td>
<td>MMRDA</td>
</tr>
<tr>
<td>4</td>
<td>Dighe-Turbhe-Belapur</td>
<td>20.00 km</td>
<td>NMMC</td>
</tr>
<tr>
<td>5</td>
<td>Vashi-Ghansoli-Mahape</td>
<td>9.00 km</td>
<td>NMMC</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>106.40 km</td>
<td></td>
</tr>
</tbody>
</table>

(Source: CIDCO website)

\textsuperscript{27}http://www.cidco.maharashtra.gov.in/NMM_Taking_The_First_Step.aspx  
\textsuperscript{28}http://www.cidco.maharashtra.gov.in/NMM_Taking_The_First_Step.aspx
Development of Navi Mumbai Metro Network:

On 30th September 2010 Government of Maharashtra has authorized CIDCO as MRT system administration and implementing Agency under Indian Tramway Act 1886 for implementation of Belapur-Pendhar-Kalamboli-Khandeshwar Metro Rail Project. The DMRC has submitted the Detailed Master Plan for Line I and accordingly, the corridor of Belapur – Khandeshwar – Navi Mumbai International Airport is planned to be developed in 3 phases. The Line - I corridor is proposed to be developed as follows:

Table 5.13: Phase wise details of development of Line 1

<table>
<thead>
<tr>
<th>Phase</th>
<th>Particulars</th>
<th>Length</th>
<th>Stations</th>
<th>Project Cost (Cr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phase-I</td>
<td>Belapur-Kharghar-Taloja-Pendhar</td>
<td>11.10 km</td>
<td>11</td>
<td>1,985</td>
</tr>
<tr>
<td>Phase-II</td>
<td>MIDC Taloja- Kalamboli – Khandeshwar. Proposed to be extended upto NMIA</td>
<td>10.30 km</td>
<td>8</td>
<td>1,509</td>
</tr>
<tr>
<td>Phase-III</td>
<td>Interlink between phase-I and phase-II</td>
<td>2.00 km</td>
<td>1</td>
<td>574</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>23.40 km</td>
<td>20</td>
<td>4,068</td>
</tr>
</tbody>
</table>

(Source: CIDCO website)

The development of Belapur-Taloja-Khandeshwar Metro Rail corridor will be executed with CIDCO’s funds and accordingly the work of the phase I have been awarded. The ground breaking ceremony of Line 1 was performed at the hands of Honorable Chief Minister, Govt. of Maharashtra on 1st May, 2011, and the construction work is in progress. Metro Line of corridor 1 is completed along with the completion of proposed airport at Navi Mumbai in the next 5 years while it is expected that line 2 and Line 3 will be completed by 2015 and 2016, respectively.
Project Implementation and Operations\textsuperscript{29}

The Belapur-Taloja-Khandeshwar Metro Rail Project will be executed mostly with CIDCO funds. Required funds will be collected by Commercial utilisation of land by way of (leasing/renting) at four stations and depot locations. About 50 Hectares has been earmarked for this purpose. For operation and maintenance of Metro Rail, it is proposed to form special purpose Vehicle (SPV) i.e. a separate entity just like NMSEZ Pvt. Ltd. till then funds would be generated from advertisement, rental of commercial premises and ticket sales. It is proposed to charge double the bus fare being charged by NMMT / BEST or at par with Mumbai Metro. The fares are proposed to be escalated by 11\% after every 3 years.

Once fully implemented this Metro Railway project will provide Navi Mumbai much needed Mass Rapid Transit System and interconnectivity of all nodes. This project will help the city to boast it tag line ‘City of 21\textsuperscript{st} Century’ with proud.

5.16 Navi Mumbai International Airport:
The Navi Mumbai International Airport proves to be most talk about and most controversial project of CIDCO. The study is focused on to give an account of the project from its inception and its progress upto the date.

Need for the Airport:
The air travel demand forecasts reveal that the demand for air travel will reach over 100 million passengers per annum by 2030-31 in the Mumbai Metropolitan Region. The existing airport at Mumbai is fast reaching to its saturation and there is very limited scope for further enhancement of passenger and cargo handling facilities along with aircraft maintenance. Improvement and expansion of aviation facilities in Mumbai Metropolitan Region is essential for maintaining Maharashtra’s leadership in attracting Foreign Direct Investment and cementing

\textsuperscript{29} http://www.cidco.maharashtra.gov.in/NMM_Operations_And_Maintenance.aspx
Mumbai’s future as an International Financial Centre. This underlines requirement of second airport in the Mumbai.

**Genesis of NMIA:** Originally committee appointed by Government of India recommended Rewas - Mandawa site with only one runway in the year 2000 but CIDCO / Government of Maharashtra revised the original proposal and provide alternate site for the development of a new airport at Navi Mumbai with 2 runways. After competition NMIA will be one of the world’s largest Greenfield international airports. The NMIA will offer world-class facilities for passengers, cargo, aircrafts and airlines.

**Location of NMIA**\(^{30}\)

The proposed Airport is situated in the geographical centre of Navi Mumbai, at latitude 18° 59’ 40″ N and longitude 73° 04’ 13″ E on the National Highway No. 4B near Panvel at a distance of approx. 35 km from the existing Chatrapati Shivaji International Airport (CSIA) in Mumbai. The proposed airport is located at Navi Mumbai due to several reasons. The major reason is Navi Mumbai is expected to cater to the future growth in population, business and commercial activities of MMR. The availability of excellent physical and social infrastructure coupled with an environment-friendly site makes the Navi Mumbai Airport project both technically feasible and financially viable. The Airport master plan will be developed in modules and will be operated and managed at par with internationally recognized standards.

**Connectivity:**

The National Highway 4B provides the main road access to the Airport from the east, whereas the Aamra Marg provides road access to the Airport from the west. The Airport site is also accessible from the existing Mankhurd-Belapur-Panvel & Thane-Panvel commuter rail corridors from Khandeshwar Railway Station and from the Targhar Railway Station on the Nerul – Uran Railway line presently under development. The Airport location is well connected to rest of

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\(^{30}\) [http://www.cidco.maharashtra.gov.in/NMIA_LocationofNMIA.aspx](http://www.cidco.maharashtra.gov.in/NMIA_LocationofNMIA.aspx)
Maharashtra by Road and CIDCO is working on improving connectivity of the Airport by starting Passenger Water Transport and extending Metro Railway routes to NMIA.

**CIDCO’s role in development of NMIA:**
CIDCO was appointed as nodal agency for development of Navi Mumbai International Airport. The Government of Maharashtra also directed that the project will be executed on PPP (Public Private Partnership) basis. A suitable private developer will be selected through a process. Once the private developer is selected a SPV will be formed to develop the airport. CIDCO and its nominees will hold 26% of total paid capital of the company and rest will held by private developer, till then entire work will be done by CIDCO.

**Following are different milestones achieved by the project till end of the research period i.e. 2010. It also reveals progress of the project and CIDCO’s role in its progress.**

1. Nov. 1997: Ministry of Civil Aviation (MoCA), Govt. of India (GoI) constituted a Committee to examine the various sites for a second airport for Mumbai.

2. June 2000: The GoI Committee recommended the Rewas - Mandawa site, as Navi Mumbai Airport was proposed with only one runway.

3. CIDCO / Govt. of Maharashtra (GoM) revised the original proposal by providing two runways and submitted a feasibility report to MoCA.

4. Nov. 2000: A Sub-Committee constituted by Airports Authority of India (AAI), examined the Navi Mumbai site and found it technically and operationally feasible and suggested CIDCO to carry out a detailed Techno-Economic Feasibility Study (TEFS).

5. Sept. 2001: CIDCO / GoM submitted TEFS comprising various technical studies. The technical queries and clarifications raised by AAI were successfully answered by CIDCO. AAI then suggested

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carrying out a Simulation Study to examine the inter-operability of the two airports (Mumbai & Navi Mumbai) in a single airspace.

6. Aug. 2006: International Civil Aviation Organization (ICAO) conducted Simulation Study sponsored jointly by CIDCO / GoM & AAI. The Study confirmed that simultaneous operation of two airports is possible with appropriate procedures in place.


8. July 2007: MoCA obtained in-principle approval from the Union Cabinet for the development of a second Airport for MMR in Navi Mumbai and conveyed the decision to GoM. GoI constituted a Steering Committee to oversee the structure and implementation of NMIA Project.


12. Nov. 2007: National Coastal Zone Management Authority (NCZMA) recommended amendment to CRZ Notification of 1991 to make Navi Mumbai Airport development permissible in Coastal Regulation Zone (CRZ) areas with mitigation measures for environment damage.


15. July 2008: GoM granted approval for development of NMIA project on Public Private Partnership (PPP) basis and appointed CIDCO as the nodal agency for its implementation.

16. Feb. 2009: MoEF directed CIDCO/GoM to obtain approval from Honorable High Court Mumbai for amendment of CRZ regulations.


18. May 2009: MoEF issued notification amending the CRZ Notification of 1991 permitting Green Field Airport at Navi Mumbai in CRZ areas, subject to environmental safeguards.


21. Aug. 2009: MoEF conveyed the TOR for carrying out EIA study and IIT B, commenced the EIA Study work in consultation with Central Water Power & Research Station (CW&PRS), Pune, Dept. of Life Sciences, Mumbai University, Ground Water Survey Dept. Agency (GSDA), GoM, Gujarat Ecology Commission (GEC), Govt. of Gujarat, M/s. Hemant Sahai & Associates (Legal Consultant), M/s. DHI, India and M/s. Lewis Environmental Services, Inc. USA.


24. May 2010: MPCB conducted Public Hearing and submitted the Public Hearing report to MoEF.


26. July 2010: MCZMA in its 63rd meeting approved with minor modifications the Coastal Zone Management Plan (CZMP) and recommended it to MoEF for approval.

27. July 2010: EAC considered the proposal for granting Environmental and CRZ clearance to NMIA, in its 89th, 90th, 91st, 92nd and 93rd Meetings – spread over 5 months, starting from 21st July 2010.


29. Nov. 2010: Environment and CRZ clearance for NMIA project granted by MoEF.

30. Dec. 2010: CIDCO applied to Forest Dept. for clearance to commence construction on the Airport site considering mangroves in project area and is presently being examined by PCCF, Nagpur. The proposal is in its final stage of approval.

**Impact of NMIA on Navi Mumbai:**

Navi Mumbai International Airport is a mega project. This project will lead to overall development of the city by creating more job opportunities and better infrastructure. This project requires developing of tans harbor link which will increase connectivity with Mumbai. This project will help to decongest Mumbai Airport and at the same time it will take Navi Mumbai on international map.
Problems in development of the project:

The Navi Mumbai International Airport is truly a Mega project, as of today all major hurdles in the project are removed and necessary approvals are obtained and development of airport could start. However this project is facing serious problems in land acquisition. Government of Maharashtra offered highest compensation package to Project Affected Persons 95% of Project Affected Persons agreed for the package but remaining 5% continuously refusing to accept the same. A recent article in Times of India in Sept. 2014 reported that Mumbai High Court orders agitating project affected person to choose their option for compensation before 6 Oct. 2014 because this project cannot be halted.

5.17 Extension of Local railway Network:

CIDCO is also planning for expansion of present local railway network to promote growth in underdeveloped nodes of Navi Mumbai.

Belapur / Nerul – Uran Line: - This is an important railway line which connects Nerul / CBD Belapur with Uran via Seawoods Darave. This line will provide direct connectivity to CST Mumbai from Uran. This line is so much important because it provide commuter service to rapidly developing region around Jawaharlal Nehru Port Trust, Nhava – Sheva, and proposed Navi Mumbai International Airport.

Development of line was started in 1997 but due to various unforeseen reasons work was delayed and stalled. Recently in 2011 the project was reviewed after tripartite agreement between CIDCO, Railways and Government of Maharashtra the development is restarted and it is expected to complete by 2016.
Features of Line

| Length :- | 27 Kms. |
| No. of Tracks :- | 2 |
| Stations :- | Stations to be built on this line |
| 1. Sagarsangam |
| 2. Targhar |
| 3. Bamandongari |
| 4. Kharkopar |
| 5. Gavan |
| 6. Ranjanpada |
| 7. Nhavasheva |
| 8. Dronagiri |
| 9. Uran |

(Source: CIDCO website)

Other Lines: - Apart from above CIDCO has planned Manassarovar – Taloja and Panvel – Uran Line. Development of these lines is not yet started. Detail information of these lines cannot be obtained by the researcher as it is not made available to public.

(Source: This chapter is compiled with the information obtained from websites of CIDCO, NMSEZ and NMM)

Conclusion: This chapter provides detailed information on development of Navi Mumbai by CIDCO. Further chapter provide analysis of this development from point of view of the residents of Navi Mumbai.