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ANALYTICAL STUDY OF DEVELOPMENT OF NAVI MUMBAI BY CIDCO SINCE 1980

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Declaration

I hereby declare that the thesis entitled "ANALYTICAL STUDY OF DEVELOPMENT OF NAVI MUMBAI BY CIDCO SINCE 1980" completed and written by me has not previously formed the basis for the award of any degree or other similar title upon me of this or any other Vidyapeeth or examining body.

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List of Abbreviation

Sr. No.	Abbreviation	Longform
1	AAI	Airport Authority of India
2	AIDS	Acquired Immune Deficiency Syndrome
3	APM	Agricultural Produce Market
4	APMC	Agricultural Produce Market Committee
5	BEST	Brihan Mumbai Electric Supply and Transport
6	BMTPC	Building Material Technology Promotion Council
7	BNHS	The Bombay Natural History Society
8	BOLD	Build Operate Lease and Transfer
9	BOT	Build Operate Transfer
10	BPO	Business Process Outsourcing
11	BUDP	Bombay Urban Development Project
12	CBD	Central Business District
13	CDP	City Development Plan
14	CE Wing	Civil Engineering Wing
15	CIDCO	City and Industrial Development Corporation of Maharashtra Ltd.
16	CRZ	Coastal Regulation Zone
17	CSIA	Chatrapati Shivaji International Airport
18	CST	Chatrapati Shivaji Terminus
19	C-Tech/ SBR	Cyclic Activated Sludge Process / Sequential Batch Reactor
20	CUC	Controller of Unauthorised Department
21	CW & PRS	Central Water and Power Research Station
22	CZMP	Coastal Zone Management Plan
23	DIPL	Dronagiri Infrastructure Private Limited
24	DMRC	Delhi Metro Rail Corporation
25	EAC	Export Apprisal Committee
26	EIA	Environment Impact Assessment
27	ESR	Elevated Storage Reservoirs
28	EWS	Economical Weaker Section

29	GDCR	General Development Control Regulation
30	GEC	Gujrat Ecology Commission
31	GOI	Government of India
32	GOM	Government Of Maharashtra
33	GSDA	Ground Water Survey Department Agency
34	GSR	Ground Storage Reservoirs
35	HIG	High Income Group
36	HSR	High Storage Reservoirs
37	HUDCO	Housing and Urban Development Corporation Ltd.
38	ICAO	International Civil Aviation Organisation
39	IDSMT	The Integrated Development of Small and Medium Towns
40	ITES	Information Technology Enabled Services
41	JNNURM	Jawaharlal Nehru National Urban Renewal Mission
42	JNPT	Jawaharlal Nehru Port Trust
43	LIG	Lower Income Group
44	MBR	Master Storage Reservoir
45	MCZMA	Maharashtra Coastal Zone Management Authority
46	MIDC	Maharashtra Industrial Development Corporation
47	MIG	Middle Income Group
48	MLD	Millions of litter per day
49	MM	Mili- Meter
50	MMR	Mumbai Metropolitan Region
51	MOCA	Ministry of Civil Aviation
52	MOD	Ministry of Defence
53	MOEF	Ministry of Enviornment and Forest
54	MPCB	Maharashtra Pollution Control Board
55	MR & TP Act	Maharashtra Regional and Town Planning Act
56	MRTS	Mass Rapid Transport System
57	MSEB	Maharashtra State Electricity Board
58	MSEDCL	Maharashtra State Electricity Distribution Corporation Ltd.

59	NBO	National Building Organisation
60	NCZMA	National Coastal Zone Management Authority
61	NGO	Non Government Orgnisations
62	NH	National Highway
63	NHB	National Housing Bank
64	NMIA	Navi Mumbai International Airport
65	NMM	Navi Mumbai Metro
66	NMMC	Navi Mumbai Muncipal Corporation
67	NMSEZ	Navi Mumbai Special Economic Zone
68	PAP	Project Affected Person
69	PCO	Public Call Office
70	PHPDT	Peak Hour Per Direction Traffic
71	PPP	Private Public Partnership
72	RPZ	Resource Park Zone
73	SCADA	Supervisory Control and Data Acquisition
74	SEZ	Special Economic Zone
75	SICOM	The State Industrial Development Corporation Of Maharashtra Ltd.
76	SPA	Special Planning Authority
77	SPC	Special Purpose Company
78	SPV	Special Purpose Vehicle
79	TEFS	Techno - Economic Feasibility Study
80	TOD	Transit Oriented Development
81	TOR	Terms of Reference
82	TP & E Wing	Transportation Planning and Engineering Wing
83	UBSP	Urban Basic Services for the Poor
84	ULCRA	Urban Land Ceiling and Regulation Act, 1976

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Chapter 1

Introduction

1.1 Introduction

1.2 Overview of urban development in India since independence

1.3 Background of study

1.4 Genesis of Navi Mumbai

1.5 Establishment of CIDCO

1.6 Significance of Study

1.1 Introduction:-

Today we live in era of rapid urbanization. Peoples from villages and small towns are migrating to cities for better employment opportunities, education, and healthcare i.e. for better quality of life. In 2010 almost 31% of Indian population is residing in urban area. Urban India has proved itself as economic engine of the country in recent past. Large urban population in the country and continuous migration from rural area has identified need of urban development in the country.

India has a glorious past of planned cities such as Udaipur in Rajasthan, Fatehpur Sikri, Hampi, Vijayanagar and the ancient Harrappan townships. After attaining indipndance in 1947 Indian Government has a huge task to modernize the country while keeping its soul intact. Chandigarh became first planned city of modern India.

1.2 Overview of Urban Development in India since independence:

Urban development is connected to implementation of five year plans by the government. Following is plan wise details of urban development in India from first plan to eleventh plan

The First Five Year Plan (1951-56):[1] The government concentrated on institution-building and on construction of homes for government employees and the weaker sections of society. Huge amount was spent on rehabilitation of the refugees from Pakistan and on building the new city

[1] Source: Rahul Shrivastava, Planning the past: History of Indias Urban plans, infochangeindia.org

of Chandigarh. Government also initiated an Industrial Housing Scheme. Chandigarh, with its obvious modernist edge, in some perverted way became the model for the low-cost yellow buildings that were so ubiquitous during the two decades after Indian independence and continue to remain so today.

The Second Five Year Plan (1956-61):[2] Government expanded the scope of housing programmes for poor. The Industrial Housing Scheme was widened to cover all workers. Government introduced three new schemes: 1) Rural Housing, 2) Slum Clearance and 3) Sweepers Housing. During this plan Town and country planning legislations were enacted in many states and for the preparation of Master Plans for important towns necessary institutions were established. Experts criticized that these schemes were not in tandem with other vital inputs that create habitats good roads, deep connections with rural hinterlands and facilities such as hospitals and education.

The Third Five Year Plan (1961-66):[3] Government made efforts to co-ordinate all agencies and orient the programmes to the needs of the low-income groups. Government introduced scheme to give loans to state governments for a period of 10 years in 1959 for acquisition and development of land. The acquired land was to be used in order to make available building sites in sufficient numbers. During this plan master plans for major cities were prepared. Gandhinagar and Bhubaneswar were developed. The architectural fetish for starting afresh got a fresh lease of life. The dominant idea became to invest in new townships that often had no connections with earlier built forms and traditional urban habitats.

The Fourth Five Year Plan (1969-74):[4] This plan stressed the need to prevent the further growth of population in large cities and also identified need for decongestion or dispersal of population. This plan envisaged

[2] Source: Rahul Shrivastava, Planning the past: History of Indias Urban plans, infochangeindia.org
[3] Source: Rahul Shrivastava, Planning the past: History of Indias Urban plans, infochangeindia.org
[4] Source: Rahul Shrivastava, Planning the past: History of Indias Urban plans, infochangeindia.org

creation of smaller towns in order to prevent population growth in cities. Government established The Housing & Urban Development Corporation (HUDCO) to fund housing and urban development programmes. A scheme for environmental improvement was undertaken. This scheme was focused on providing a minimum level of services, like water supply, sewage, drainage, street pavements in 11 cities with a population of 800,000 and above. The scheme was later extended to nine more cities. This was in principle a good move, but for reasons to do with the general inability to actually implement grandiose plans, remained excellent ideals.

The Fifth Five Year Plan (1974-79):[5] The government reiterated the policies of the preceding Plans to promote smaller towns in new urban centres. During this plan government took efforts to augment civic services in urban areas with particular emphasis on a comprehensive and regional approach to problems in metropolitan cities. The Urban Land (Ceiling & Regulation) Act was enacted to prevent concentration of land holdings in urban areas and to make urban land available for construction of houses for the middle- and low-income groups.

The Sixth Five Year Plan (1980-85):[6] This plan was focused on integrated provision of services along with shelter, particularly for the poor. Government launched The Integrated Development of Small and Medium Towns (IDSMT) scheme in towns with population below 1 lakhs. The scheme was focused on development of roads, pavements, minor civic works, bus-stands, markets, shopping complexes etc. This plan also proposed for setting up new industries and commercial and professional establishments in small, medium and intermediate towns. Many of the 4,000 plus townships and urban agglomerations that are part of the 2001 census are a legacy of these moves.

[5] Source: Rahul Shrivastava, Planning the past: History of Indias Urban plans, infochangeindia.org
[6] Source: Rahul Shrivastava, Planning the past: History of Indias Urban plans, infochangeindia.org

The Seventh Five Year Plan (1985-90):[7] This plan stressed the need to entrust the major responsibility of housing construction to the private sector. Government established The National Housing Bank (NHB) to expand the base of housing finance. Government reconstitute The NBO (National Building Organisation) and a new organisation called Building Material Technology Promotion Council (BMTPC) was set up to promote the commercial production of innovative building n. Government established a network of Building Centres during this Plan period. This plan recognised problems of the urban poor and for the first time an Urban Poverty Alleviation Scheme known as Urban Basic Services for the Poor (UBSP) was launched. During this period private builders got an enormous boost to enter the mass housing market and make materials even more expensive for the poor.

The Eighth Five Year Plan (1992-97):[8] Government recognised the role and importance of the urban sector for the national economy for the first time during this plan. During this plan growth rate of employment in the urban areas averaged around 3.8% per annum, it dropped to about 1.6% in the rural areas. Therefore, the urban areas have to be enabled to absorb larger increments to the labour force. The Plan had identified the key issues in the emerging urban scenario, viz: the widening gap between demand and supply of infrastructural services. This situation had worst impact on poor, whose access to the basic services like drinking water, sanitation, education and basic healthcare is shrinking. Uncontrolled growth of the urban population creates housing shortages and resulting in the proliferation of slums and squatter settlements and decay of city environments.

The Ninth Five Year Plan (1997 – 2002):[9] This plan was focused on increasing agricultural and rural income and to improve the conditions of

[7] Source: Rahul Shrivastava, Planning the past: History of Indias Urban plans, infochangeindia.org
[8] Source: Rahul Shrivastava, Planning the past: History of Indias Urban plans, infochangeindia.org
[9] Source: Rahul Shrivastava, Planning the past: History of Indias Urban plans, infochangeindia.org

the marginal farmers and landless labours. The plan intends to implement social schemes in housing for different states by providing loan assistance from HUDCO and other financial institutions. The most important decision taken by government was to repel ULCRA (Urban Land Ceiling and Regulation Act, 1976) to promote urban development.

The Tenth Five Year Plan (2002-2007): During this plan government decides to provide for strengthening vulnerable houses of EWS/LIG category. During this plan government took a major step in urban development by announcing National Urban Housing and Habitat Policy in December 2007. This plan also pioneers public private partnership specifically for urban area to tackle the new challenges in relation to requirement of shelter and growth of slums in urban areas.

The Eleventh Five Year Plan (2007-2012): This plan was focused on development of infrastructure. It prefers PPP model for development and operation of infrastructure services. It launches 'Yojana' expressway across the country. The most important urban development program of recent times JNNURM (Jawaharlal Nehru National Urban Renewal Mission) was also launched during this plan.

1.3 Background of Study:

It is important to understand background for development of Navi Mumbai to get an idea of the study. The reason for development of Navi Mumbai is congestion at Mumbai. Mumbai is situated on west coast of India in the state of Maharashtra. Mumbai is capital city of the state of Maharashtra and also known as financial capital of India. Mumbai attain this status after undergoing different phases of development.

Mumbai is the entrance of India on its west coast. In the British Rule the Mumbai Island was given a vital importance for the defense of the country as well as an important part of the kingdom. Today's modern Mumbai port was built in 1870. Since then Mumbai is developed as financial and commercial capital of the country and remain the backbone of Indian financial system after independence. The development of Mumbai is due to the concentration of different industries in the city.

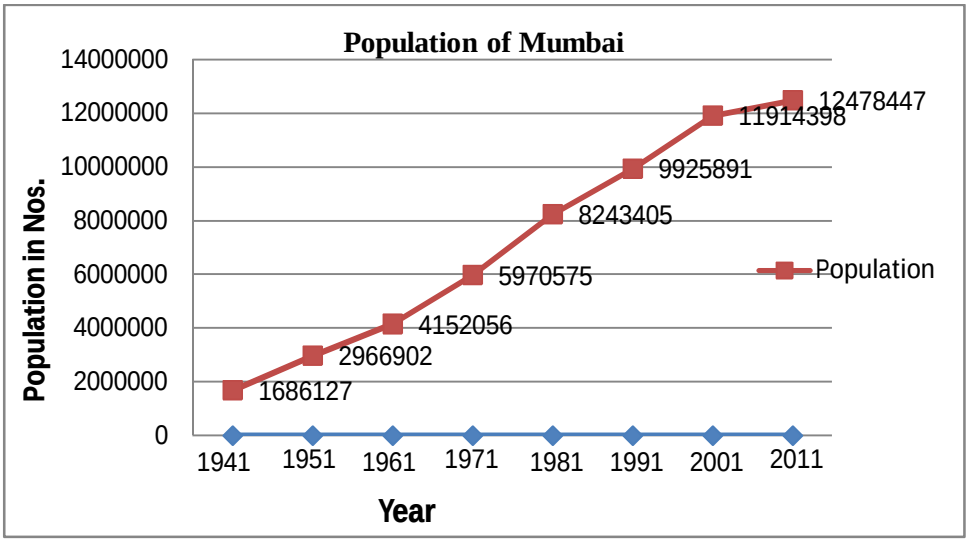
Mumbai is headquartering major industrial houses such as Tata Group, Reliance Industries, Aditya Birla Group etc. Existence and growth of different industries is resulted into concentration of economic power and different types of employment opportunities at Mumbai which leads to the tremendous growth of its population. However this tremendous growth of population put tremendous pressure on city's infrastructure which deteriorates quality of life. The following is historical data of population of Mumbai from 1941 - 2011.

Table 1.1 : Decade wise population of Mumbai

Sr. No.	Year	Population	Change in %
1	1941	16,86,127	100 %
2	1951	29,66,902	176 %
3	1961	41,52,056	246 %
4	1971	59,70,575	354 %
5	1981	82,43,405	489 %
6	1991	99,25,891	589 %
7	2001	1,19,14,398	707 %
8	2011	1,24,78,447	740 %

(Sorce : various census report)

Graph 1.1 : Trend of Population in Mumbai



The above table and graph clearly indicates a massive and continuous growth of population in Mumbai. Since 1941 population of the city is

increased almost seven and half times. This massive growth is due to migration from all over the country. Such sudden growth in population creates various problems which are discussed below.

Heavy burden of population in Mumbai leads to major urbanization problems. Few of such problems are listed below.

- Widespread poverty,
- Growth in unemployment rate,
- Poor performance of public transport,
- Overall congestion in the city,
- Increase in criminal and anti social activities,
- Poor public health, civic and educational facilities for a large section of the population.
- Increase in slum areas

Mumbai residents often reside in cramped, relatively expensive housing. Although these houses are usually far from workplaces, resulting into long commutes on crowded mass transit, or clogged roadways. Many of them live in close proximity to bus or train stations although suburban residents spend significant time travelling southward to the main commercial district. In short that there is a severe deterioration in quality of life.

1.4 Genesis of Navi Mumbai

Government took serious efforts to decongest Mumbai since colonial period. It includes reclamation to join all seven islands, annexation of Salaste island and extension of Municipal limits. Population figures mentioned above indicates that after independence problem of growing population became very serious and government decides to take action on the same. Municipal Corporation limits were extended twice in 1950 and latter in 1957.

However the State Government realized that extension of Municipal limit is not a proper solution and development plan of Mumbai have become out dated hence it appointed a study group headed by late Shri. S. G.

Barve and consisting of five panels to probe into the extent of the existing urban problems of housing, building materials, open space and other community needs, industrial sitting and traffic. This group submitted its report in 1959 it recommended a planned development of the suburbs, planned use of land for different urban uses, the immediate construction of the two express ways recommended by the earlier Master Plan, apart from feeder routes in the suburbs. It also emphasizes to connect Bombay to the mainland by building a rail – cum – road bridge across Thane creek. It also stresses eastward development by creation of satellite townships in the adjoining districts, and a planned program of public housing.

The Government of Maharashtra accepted the Barve Group recommendations and to examine metropolitan problems in a regional context it appointed another committee chaired by Prof. D.R. Gadgil in March, 1965. The government had asked committee to formulate broad principles of regional planning for the metropolitan regions of Bombay, Panvel and Pune and make recommendations for the establishment of Metropolitan Authorities for preparation and execution of such plans. The Gadgil Committee made two important recommendations. One, a planned decentralization of industries with severe restrictions on further industrial growth in the Bombay region. Two, development of the mainland area as a multi-nucleated settlement, each settlement (Node) will have population less than 2.5 lakhs and must be self-contained in respect of schools and shopping and other essential services and separated from each other by green spaces. While giving these recommendations committee was influenced by various factors such as the existing industrial sites at Thana-Belapur area and Taloja, the imminent completion of the Thana Creek Bridge and the proposal of the Bombay Port Trust to establish a new port at Nhava Sheva.

The Draft Bombay Metropolitan Regional Plan was prepared on the basis of recommendations made by these committees / study groups. The plan proposed development of a twin city across the harbor on the mainland, as a counter-magnet to the office concentration taking place at the

southern tip of Mumbai. It was expected that the development of new city will siphon off the over concentration of employment and population from Mumbai and reallocate them on the mainland.

The decision to establish Navi Mumbai was aimed at decongesting Mumbai in respect of both population and commercial activities by shifting industries, market and office activities making the new city sustainable physically, economically and environmentally. The new city projected to accommodate 21 lakhs peoples and 7,50,000 employment opportunities.

1.5 Establishment of CIDCO

The State Government of Maharashtra identified need of a separate institution to execute this massive project on self financing basis. The City and Industrial Development Corporation of Maharashtra Limited (CIDCO) was incorporated on 17th March 1970 under the Indian Companies Act, 1956 as a subsidiary of SICOM. The government notified for acquisition of privately owned land covering 86 villages and admeasuring 15,954 Ha. within the present limits of Navi Mumbai in February 1970. CIDCO was designated as the New Town Development Authority for the Navi Mumbai project in March, 1971. CIDCO undertook to prepare and publish a Development Plan in October, 1971 as required by the Maharashtra Regional and Town Planning Act (1966). Land belonging to further 9 villages, admeasuring 2,870 Ha. was additionally designated in August 1973 for inclusion in the project area.

The corporation started functioning as a company fully owned by the State Government with initial subscribed capital of Rs. 3.95 crores from the government. CIDCO was entrusted to develop necessary social and physical infrastructure The CIDCO has to develop Navi Mumbai on self financing basis hence it also entitled to recover all cost of development from sale of land and constructed properties.

1.6 Significance of the Study

Development of Navi Mumbai was the first task assigned to CIDCO. Navi Mumbai is called as City of 21st century; it is developing itself as an alternative to Mumbai in respect of residential and commercial activities.

In last 2 decades Navi Mumbai is emerged as one of the best option to live and pursue career in India. It is one of largest planned cities in the world. It offers world class physical infrastructure with excellent education and healthcare facilities. Navi Mumbai is spread over 344 Sq. Kms. on eastern shore of Thane Creek. The city limits stretch from Airoli near Thane in the north, to Uran in the south. The city was established as satellite city of Mumbai with an intention to reduce burden of population on crumbling infrastructure of Mumbai.

CIDCO had invested thousands of crores in Navi Mumbai till the date on development of its infrastructure and other facilities. Today majority of the projects are undertaken either on PPP basis or BOT / BOLT basis but in case of development Navi Mumbai role of private sector is negligible and restricted to building houses on plots allotted by CIDCO. So it is interesting to study role of CIDCO development of Navi Mumbai during 1980 - 2010.

This scientific and systematic study on development and progress of Navi Mumbai is conducted to taste hypotheses of the study and to provide guidelines for future development to the concern authorities.

Conclusion: This chapter provides overview of urban development in India after independence. It also informs about background for development of Navi Mumbai and establishment of CIDCO. The chapter underlines significance of this study and the next chapter provides details on how this study was conducted by researcher.

Chapter: 2

Research Outline and Literature Review

2.1 Objective of Study

2.2 Literature Review

2.3 Research Problem

2.4 Criterion for Development

2.5 Research Question

2.6 The Study

2.7 Research Design

2.8 Research Methodology

2.9 Hypotheses

2.10 Limitations of the Study

2.11 Contribution of Research Work

The researcher undertook research in planned manner, following is the research outline followed by researcher for the study.

2.1 Objectives of Study

1. To study development of Navi Mumbai.
2. To study management strategies of CIDCO and its functions.
3. To study various City Development Plans of Navi Mumbai drafted by CIDCO during 1980 - 2010.
4. To study the status of different projects undertaken by CIDCO in Navi Mumbai during the period 1980 - 2010
5. To study benefits and limitations of the projects within the framework of its objectives.
6. To find out gaps in the development of the City and make suggestions for the same.

Parameters for Development: To ascertain fulfillment of study objectives following Parameters are selected to study development of Navi Mumbai. **Housing, Education, Market places, Healthcare, Employment, Transportation, Recreation, Hygiene and Physical infrastructure including Water supply, electricity, stormwater drainage, social and religious centres.**

2.2 Literature Review

The review of literature provides micro insight in the past development. The researcher review different types of informative material related to the area of study selected, which includes the reference books, project report of nodes, reports published by CIDCO, journals, magazines, websites etc. a brief review of work done so far in this context is given below.

A] Review of Books

B] Review of Project Reports

C] Review of Reports of CIDCO and Other Authorities

D] Review of Articles

E] Review of Websites

A] <u>BOOKS</u>

1. **Memorandum of Association and Articles of Association of CIDCO**

   CIDCO is a company registered under Companies Act, 1956. As per legal requirement it needs to prepare Memorandum of Association.

   Different clauses of Memorandum of Association of CIDCO provide basic information about the organization which includes name, registered office, objectives, capital etc.

   Just like any other companies the memorandum and articles of association provide guidelines for function and management of CIDCO.

2. **Issues in urban Development (A case of Navi Mumbai); 2001; Rawat Publications Jaipur and New Delhi; Editors- R.N.Sharma, K.Sita; ISBN 81-7033-688-0.**

   The book is basically collection of 18 research papers related to various aspects of Navi Mumbai contributed by well known authorities in the subject matter. The book contain four sections

   Section I Planning and Development: This section specifically deals with planning and development of Navi Mumbai. Under this section there are 3 research papers. These research papers were contributed by Annapurna Shaw, Shirish Patel and Arun Mhaisalkar

   Section II Land, People, and Econimic Activities: This section foucuses on Land use pattern demographic profile and economic activities in Navi Mumbai. 5 research papers are found under this section which were written by K. Sita, M. Ray, Kamal Gupta, Ardhendu Bhattacharya, Tapati Mukhopadhyay and Mohan Gurnani

   Section III Housing and Infrastrcture: This section has 5 research papers contributed by Alain Jacquemin, Swapna Banerjee-Guha, R. N. Sharma, S. Siva Raju, R. K. Jha, P.M. Deshpande, Sanghmitra Acharya and Reema Dixit.

   Section IV Issues in Urban Development: This sections also has 5 research papers written by J. B. D'Souza, S. B. Deshmukh, Minar Pimpale, Pallavi Matkari, R. N. Sharma, A. K. Bhattacharya and Uma Adusumilli

3. **The Making of Navi Mumbai; Annapurna Shaw; Orient Longman, Hydrabad; 2004; ISBN 81 250 2600 2**

   This book is written by Ms Shaw which provides details of development of Navi Mumbai.

   The book has 9 chapters which contains different aspects of development such as historic background of city planning in India, Political and Economic framework of Urban policy making in India,

Planning of Navi Mumbai, Development of Navi Mumbai, Rehabiliation efforts by CIDCO for project affected peoples etc.

This book provides an insight in respect of political situation and urban policies existed in Maharashtra. The book provided input that helped researcher to identify gaps and research areas for the study.

4. **Mumbai Fabbles; Gyan Prakash; Princeton University Press; 2010. ISBN 9780691142845;**

   This book is autobiography of Mumbai. In this author depicts history of city it provides details from 16th centuary till recent times.

   It gives details how islands were seized by pourtugese then transferred to bristish. How the British develop this island into a thriving city. How the Indian government tried to develop the city since independence. The book had given special importance to Navi Mumbai as Navi Mumbai is a satellite city of Mumbai. It describe formation of CIDCO which is the development authority of Navi Mumbai and developmental efforts by CIDCO

5. **Draft Uraban & Regional Development Plans Formulation & Implementation Guidelines 2014 Vol 1; Feb 2014; Ministry of Urban Development:**

   This book can be called as bible for development for Indian cities. The government of India had published these guidelines for development of cities.

   This book provides guidelines for urban and regional development. These guidelines incorporates varius aspects of development such as planning process, contents of plans suugested in planning system, resource mobilization for implementation of plan, institutional reforms required at state level etc.

6. **Smart City Mission Statement and Guidelines, Ministry of Urban Development 2015:**

   This book was published after announcement of development of 100 smart cities in India which is also called as smart city project by Government of India.

The book provides guidelines for development of smart cities. The book elaborate varius aspects of smart city such as essential features of smart city, planning of smart city, smart city selection process, financing of smart citites etc.

B] <u>PROJECT REPORTS</u>

7. **Project Report of Airoli Node in Navi Mumbai; September 1997. Prepared by Economics Department of CIDCO :**

   The Economics department of CIDCO prepared project report for each node. This report was focused on Airli node.

   This report provides details regarding development of Airoli Node. The details of development include gross area of node, its geographic details, planned usage of land etc.

   These details provide valuable inputs regarding development process of Node as well as Navi Mumbai since beginning till the date of project report.

8. **Project Report of Ghansoli Node in Navi Mumbai; July 1993. Prepared by Economics Department of CIDCO :**

   The Economics department of CIDCO prepared project report for each node. This report was focused on Ghansoli node.

   This report provides details regarding development of Ghansoli Node. The details of development include gross area of node, its geographic details, planned usage of land etc.

   These details provide valuable inputs regarding development process of Node as well as Navi Mumbai since beginning till the date of project report.

9. **Project Report of Kopar-Khairane Node in Navi Mumbai; September 2001. Prepared by Economics Department of CIDCO :**

   The Economics department of CIDCO prepared project report for each node. This report was focused on Kopar-Khairane node.

This report contains details regarding gross area available for development, its geographic details nsuch as boundries of node, planned usage of land etc. of Kopar-khairane node since beginning till the date of project report. All these details are proved to be valuable inputs which throw light on process of development as well as development of node.

10. **Project Report of Vashi and Sanpada Node in Navi Mumbai; July 1997. Prepared by Economics Department of CIDCO :**

The Economics department of CIDCO prepared project report for each node. This report was focused on Vashi and Sanpada node.

This report provides details regarding development, such as gross area, its geographic details, planned usage of land etc. of Vashi and Sanpada node since beginning till the date of project report.

These valuable inputs are usefull to understand development of city and node.

11. **Project Report of Nerul Node in Navi Mumbai; October 1996. Prepared by Economics Department of CIDCO :**

The Economics department of CIDCO prepared project report for each node. This report was focused on Nerul node.

Nerul is second most developed node. This report provides details regarding development, such as gross area, its geographic details, planned usage of land etc. of Nerul node since beginning till the date of project report.

These details provide valuable inputs regarding development process of Node as well as Navi Mumbai since beginning till the date of project report.

12. **Project Report of CBD Belapur Node in Navi Mumbai; August 2001. Prepared by Economics Department of CIDCO :**

The Economics department of CIDCO prepared project report for each node. This report was focused on CBD Belapur node.

CBD i.e Central Business Distric is the node which is specifically planned for offices and commercial activities. This report provides details regarding development such as gross area, its geographic details, planned usage of land etc. of CBD Belapur node since beginning till the date.

The project report is usefull for researcher to understand progress of development of node as well as city.

13. **Project Report of Kharghar in Navi Mumbai; September 1996. Prepared by Economics Department of CIDCO :**

The Economics department of CIDCO prepared project report for each node. This report was focused on Kharghar node.

Kharghar is one of the most important node in Navi Mumbai, it is also termed as model township developed by CIDCO. This report provides details regarding development such as gross area, its geographic details, planned usage of land etc. of Kharghar node since beginning till the date of project report.

This report provides valuable inputs in respect of development of node which also help to understand progress of Navi Mumbai.

14. **Project Report of Kalamboli Node in Navi Mumbai; December 1995. Prepared by Economics Department of CIDCO :**

The Economics department of CIDCO prepared project report for each node. This report was focused on Kalamboli node.

Kalamboli is a special node it is developed as alternative steel market and transport hub. This report provides details regarding development that include gross area, its geographic details, planned usage of land etc. of Kalamboli node since beginning till the date.

These details provide valuable inputs regarding development process of Node as well as Navi Mumbai since beginning till the date of project report.

15. Project Report of New Panvel Node in Navi Mumbai; March 1994. Prepared by Economics Department of CIDCO :

The Economics department of CIDCO prepared project report for each node. This report was focused on New Panvel node.

New Panvel is important node as it is in close vicinity of prposed international airport. This report provide details regarding development such details include gross area, its geographic details, planned usage of land etc. of New Panvel node since beginning till the date.

These details provide valuable inputs regarding development process of Node as well as Navi Mumbai since beginning till the date of project report.

16. Project Report of Dronagiri Node in Navi Mumbai; December 1994. Prepared by Economics Department of CIDCO :

The Economics department of CIDCO prepared project report for each node. This report was focused on Dronagiri node.
This report provide details regarding development such details include gross area, its geographic details, planned usage of land etc. of Dronagiri node since beginning till the date.

These details provide valuable inputs regarding development process of Node as well as Navi Mumbai since beginning till the date of project report.

C] <u>REPORTS of CIDCO and OTHER AUTHORITIES</u>

17. India's Urban Vision 2021 (An Agenda for Shaping the Urban Future); Dr. U. Venkateswarlu (Minister of State for Urban Affairs and Employment); 1997 :

This document is prepared for presentation at the national seminar on future cities: Urban vision 2021 in October 1997 in New Delhi. The report was prepared to provide vision for further urban development in India.

The report throws light on various issues in respect of urban development such as private public participation in development of city, urban management, financing model for development of cities various socio-economic issues in respect of development of the city.

18. **Survey of Industries in Navi Mumbai Region; Yuva Consulting; 2007; Published by CIDCO :**

The report is an outcome of census survey of various industries at MIDC in Navi Mumbai project area. Nodes of Navi Mumbai was planned around MIDC area considering the industries in MIDC will provide employment opportunities to the residents.

The report provides important statistical data on these industries such as no of industrial units employment opportunities growth prospects etc.

19. **Socio Economic Survey of Households in Planned Nodes in Navi Mumbai; 2005; CIDCO- Economic Section; Prepared by Kirloskar Consultants Ltd. Pune :**

This is a periodic survey undertaken by CIDCO. The objective of this report is to find out total housing stocks in Navi Mumbai and undertake study of the population in planned nodes in Navi Mumbai.

This report provides exact no of houses in planned nodes of Navi Mumbai, demographic features of population, socioeconomic profile of residents etc.

20. **Health Infrastructure, Facilities Personnel and Services in Navi Mumbai; 2008; statistics department CIDCO; published by CIDCO:**

This report was prepared to give an insight regarding health infrastructure, health services and health personnel in Navi Mumbai.

This is a crucial report as health infrastructure is one of the most important aspect of development of city. This report gives detail overview of general hospitals, private clinics, and pathology laboratories available in the nodes of Navi Mumbai.

21. **Impact of 12.5% Scheme on Socio Demographic and Economic Profile of PAPs (Project Affected Person) under the Navi Mumbai Project; Statistics Department (CIDCO) and Tata Institute of Social Science; 2009; Published by CIDCO :**

This study report was specifically designed to asses socio-demographic and economic profile of the Project Affected People in 14 villages of Panvel Taluka who had taken possession of land allotted under 12.5% scheme. The report also focuses on use of the plot allotted under 12.5% scheme and future plans if it is the plot are still undeveloped. It also tries to study that how the allotted land is shared by legal heirs of the PAP's. The report also focuses on level of satisfaction of the PAP's in respect of land allotted to the PAP's, physical and social facilities, including benefits provided to them as part of their rehabilitation.

22. **Socio Economic Profile of Households in Planned Nodes in Navi Mumbai-2010; Statistics Department (CIDCO) & M/s Kirloskar Consultants Ltd.; 2011. Published by CIDCO :**

This is a periodic survey undertaken by CIDCO. The objective of this report is to find out total housing stocks in Navi Mumbai and undertake study of the population in planned nodes in Navi Mumbai.

Apart from providing exact no of houses in planned nodes of Navi Mumbai. This report highlights behavior of Navi Mumbai residents in terms of migration, demographic and socio economic characteristics.

23. **Wholesale, Retail, Service Industry and Open markets in Navi Mumbai- Employment, Investment and Turnover; Prof. P. C. Saxena and Statistics Department; 2009; Published by CIDCO**

Navi Mumbai was specifically planned for dencongestion of Mumbai. It could be achived by shifting market places from Mumbai to Navi Mumbai.Accordingly government had shifted APMC from Mumbai to Vashi and Steel Market to Kalamboli.

It is expected that due to migration of markets into Navi Mumbai employmwnt opportunities in Navi Mumbai will increase. This report provides informatation on different types of commercial sector and quantum of employment generated in wholesale and retail markets, Service industries, and open markets in Navi Mumbai.

24. **Primary and Secondary Schools in Navi Mumbai Facilities, Student Enrollments and Performance and staff profile; Prof. P. C. Saxena and Statistics Department (CIDCO) ; 2010; Published by CIDCO**

This report is an outcome of extensive survey of the schools in Navi Mumbai. The schools include Primary, Secondary and Higher Secondary schools.

The report reveals that there are 431 schools in Navi Mumbai accommodating 3,60,000 students and about 9000 teaching and non teaching staff.

This report gives insight on location and characteristics of the schools, infrastructure facilities, sports and extracurricular activities, student's enrollment, performance, fee structure, student teacher ratio.

25. **Higher and Professional Education in Navi Mumbai: Educational streams, Infrastructure, Sports facilities, Student Enrolments and Staff Profile; Statistics Department; 2010 ; Published by CIDCO :**

This report was prepared to understand infrastructure available for higher and preofessional education in Navi Mumbai.

The report provide all possible details like number of colleges of Higher and Professional education and training by location, year of establishment of colleges, authority of their registration and affiliation to the body of accreditation. It gives total strength of staff (teaching and Non-teaching) and their socio demographic and economic characteristics by type of college.

D] ARTICLES

26. Rahul Shrivastava, Planning the past: History of India's Urban plans :

This article was published on http://infochangeindia.org/urban-india/backgrounder/planning-the-past-history-of-indias-urban plans.html. This article provides an overview of urban development in India. It describes major policy decesions taken by government in respect of urban development under each 5 year plan.

27. Sanjay Banergee, 11 reasons to live in Navi Mumbai, Mumbai Mirror

This article was published on 11/11/2001 in Mumbai Mirror. In this article author Mr. Sanjay banergee had evaluated life in Navi Mumbai. The article had identified and produces 11 different reasons to live in Navi Mumbai.

E] WEBSITES

28. www.cidco.maharashtra.gov.in:

This is official website of CIDCO. This website provides authentic details of CIDCO. It also provides details in respect of establishment of CIDCO, management of CIDCO, various projects undertaken by CIDCO.

29. www.nmsez.com :

This is the official website of Navi Mumbai SEZ. This provide all necessary details of Navi Mumbai SEZ. This website provide details in respect of area of SEZ, development plan of SEZ and other details.

2.3 Research Problem:

In earlier chapter it is already discussed that how need for development of Navi Mumbai arises and CIDCO was appointed as development authority for the same. CIDCO is developing Navi Mumbai from 1970 and its development is on the verge of its completion. Following are the research Problem for the Study.

1. To study the reasons for residing in Navi Mumbai.
2. To study about facilities provided by CIDCO to residents.
3. To know the availability of social infrastructure facilities in the area and their satisfaction.
4. To know whethere CIDCO is successful in developing Navi Mumbai
5. To study gaps in the project development

2.4 Criterion for Development:

The literature review reveals that the CIDCO was established for development of Navi Mumbai. Government had allotted land to CIDCO and entrust responsibility for development of physical and social infrastructure of Navi Mumbai. At that time concept of development was based on basic human needs i.e. easy and sufficient availability of food, shelter and clothings hence in initial stage developmental criterions of Navi Mumbai were cicumstancial and factual.

Development of city is a continuous process. CIDCO understood this very well and moved ahade of its time by do not preparing a rigid master plan for development but adopted flexible approach in development which helps the CIDCO to incorporate changes in city development plan according to needs of society and need of time.

Now socio-economic situation is different advancement of science and technology and growth in income results in additional criterias for development. **Following criterias are selected to study development of Navi Mumbai. Housing, Education, Market places, Healthcare, Employment, Transportation, Recreation, Hygiene and Physical infrastructure including Water supply, electricity, stormwater drainage, social and religious centres.**

2.5 Research Question

The appointment of CIDCO as town development authority for upcoming NAINA and Khopta cities on the basis of development of Navi Mumbai leads to the research question that "Whether residents of Navi Mumbai are satisfied with the efforts undertaken by CIDCO for development of Navi Mumbai?"

2.6 THE STUDY

The state government had assigned task for development of Navi Mumbai to CIDCO. The study evaluate role of CIDCO in development of Navi Mumbai, and find out CIDCO's success and failures in developing Navi Mumbai based on its objectives by giving maximum weightage to beneficiary of this project i.e. residents of Navi Mumbai.

- The study evaluates reason of residents to choose Navi Mumbai as their place of residence.
- It also determines availability of different civic services and elements of social infrastructure to them.
- It obtains opinion of the residents on Whether CIDCO is successful in developing Navi Mumbai and
- The study also presents suggestions and complaints from Navi Mumbai residents which show their degree of satisfaction and required improvements in development of Navi Mumbai

An attempt is made to provide guideline for future development systematically and scientifically to concern organization by finding out suggestions and complaints from residents of Navi Mumbai.

2.7 Research Design

The study is focused on role of CIDCO in development of Navi Mumbai. It depends on collection of primary as well as secondary data. Following table presents research design applied for the study.

Table 2.1: Research design of the study

Sr. No.	Parameter	Description
1	Type of Research	Descriptive Research
2	Nature of Research	Quantitative
3	Research Instrument	Structured Questionnaire and Interview
4	Dependent Variable	Development of Navi Mumbai
5	Independent Variable	Efforts of CIDCO
6	Control Variable	Not Available
7	Survey period	1980 – 2010
8	Method of data collection	Sample Survey

9	Universe	Population in planned nodes of Navi Mumbai
10	Population	11,80,598 (Source :- Socio Economic Profile of Households in Planned Nodes in Navi Mumbai 2010)
11	Sample Size	Sample Size = (Z-score)² x StdDev x (1-StdDev) / (margin of error)² Z score = zscore @ 95% confidence StdDev = Standard Deviation and e = Margin of error. Z score = 1.96, Std Dev = 0.5 and e =3.25%
12	Calculated Sample Size	909 rounded off to 900
13	Sample elements	People in Navi Mumbai
14	Sample Method	Random Sampling
15	Data Collection Sources	Primary and Secondary Sources
16	Primary Sources	Structured Questionnaire and Interview
17	Secondary Sources	Books, Project Reports, Reports, Newspapers, websites etc.
18	Question type	Rankings, Closed Ended, Open Ended
19	Data Interpretation	Table, Graphs
20	Tools for data analysis	Percentage, Graphical Presentation, Correlation
21	Statistical software	MS Excel
22	Test	z-test

2.8 Research Methodology and Techniques Used.

The research is based on case study method as it is best suitable for the title of research study. In addition to collect statistical data and information to micro focus on the study following additional method of research will be taken into consideration.

2.8.1 Data collection

a) Primary data: - The research is largely based on the data and information provided by CIDCO officer and general public which was obtained through interview and questionnaire.

Sample size: Sample of 900 respondents is decided on the basis of following formula by taking into consideration of Population size of Navi Mumbai. Sample Size = $(Z\text{-score})^2 \times StdDev \times (1-StdDev) / (\text{margin of error})^2$
(Source : Scott M. Smith, Determining sample size)

Z score at 95% confidence level is taken at 1.96, Std. deviation is taken at 0.5 and margin of error is taken at 3.25% or 0.0325.

By applying above formula sample size is derived at 909 respondents which were rounded off to 900. Responses for questionnaire are obtained from 900 respondents who live in different nodes of the city. Details of sample are presented in following table.

Table 2.2: Node wise details of sample

Node	Population	Sample	Node	Population	Sample
Airoli	115335	90	Kharghar	139693	105
Ghansoli	65593	50	Kamlamboli	62073	50
Kopar Khairane	132827	100	Kamothe	74249	55
Vashi	139573	105	New Panvel	123171	95
Sanpada	79894	60	Dronagiri	20382	15
Nerul	162366	125	**Total**	**1180598**	**900**
CBD Belapur	65442	50			

(Source :- Socio Economic Profile of Households in Planned Nodes in Navi Mumbai 2010)

b) Secondary data: Secondary data will be collected through newspapers, electronic media, magazines, websites, government plans, manuals, and various reports.

2.8.2 Techniques used: - The research report includes various statistical techniques such as various types of tables, graphs and diagrams for analysis of collected data and application of test for confirmation of inferences.

2.9 Hypotheses

Considering the objectives of the research following hypotheses are tested for its validity.

1. CIDCO has been successful in development of Navi Mumbai.
2. There are gaps in projected development plan and actual development of Navi Mumbai.

2.10 Limitations of the Study

1. The study is restricted to planned nodes of Navi Mumbai area only.
2. The study is focused on development of the city during 1980 – 2010. (At the time of approval of research proposal interaction made with committee and on its recomondation it was decided to cover period of 1980-2010)

2.11 Contribution of Research Work

The study is helpful to the society in many ways. The study is focused on to find out whether CIDCO is successful in developing Navi Mumbai, i.e whether it is successful in attaining its objectives set for establishing Navi Mumbai. The study tried to find out achievements of CIDCO as well as gaps between projected development plans and actual development. It also finds out reasons for such gaps. The study also tried to find out obstacles in future development of Navi Mumbai. This study has multiple facets it could benefit society at large. Today India is changing at very fast pace. Peoples are migrating to urban areas for employment, education and better quality of life. Government need to strengthen existing urban infrastructure and build new cities to absorb these immigrants. This study will provides guideline to management of CIDCO and other concerned authorities for future development of Navi Mumbai. This study could also act as a case for development of new cities in India. It will also act as a ready reckoner for the historians in future as it will contain development track of the Navi Mumbai during the research period of 3 decades i.e. 1980 – 2010.

Conclusion: This chapter provides review of literature done by researcher and manner in which research was conducted. Next chapter of thesis describes establishment of CIDCO and its management.

Chapter: 3

Establishment and organizational Management of CIDCO

2.1 Establishment of CIDCO

3.2 Organization & Management of CIDCO

3.3 Departments of CIDCO

3.4 Advantages and Limitations of CIDCO's Organisation Structure

3.1 Establishment of CIDCO:

The concept of development of new city though accepted by government was stuck in red tapism. It started taking its shape when Mr. Shirish Patel and Mr. Charles Correa meet Mr. V. Shrinivasan. In their meeting a need for separate organization to execute the Navi Mumbai plan was noticed. Mr. V. Shrinivasan head of SICOM at that time come up with the solution and a new corporation "The City and Industrial Development Corporation of Maharashtra" was incorporated on 17th March 1970 under Indian Companies Act, 1956.

SICOM promoted CIDCO as its subsidiary with initial subscribed capital of Rs. 3.95 crores with a charge to execute Navi Mumbai plan. Mr. J. B. D'Souza an IAS officer was appointed as first Managing Director and Mr. Shirish Patel as chief planner of the newly formed CIDCO. Government appoints CIDCO as new town development authority for the Navi Mumbai project and it is entrusted with developing necessary social and physical infrastructure. The CIDCO is suppose to recover all cost of development from sale of land and constructed properties.

Mission of CIDCO[10]

"To plan and create environment-friendly, model urban settlements with full fledged physical and social infrastructure to meet residential, commercial and industrial need of population at present and in the years to come."

[10] http://www.cidco.maharashtra.gov.in/Mission_obective.aspx

Objectives of CIDCO[11]

The State Government had adopted the following objectives for the Navi Mumbai Project:

1. To support State-wide location policies which will lead eventually to an efficient and rational distribution of industries over the State and to a balanced development of urban centres in the hinterland?
2. To provide physical and social services which raise living standards and reduce disparities in the amenities available to different sections of the population.
3. To provide an environment which permits the citizens of the New City to live fuller and richer lives – free, in so far as this is possible, of the physical and social tensions which are commonly associated with urban living.
4. To provide training and all possible facilities to the existing local population in the Project Area, to enable them to adapt to the new urban setting and to participate fully and actively in the economic and social life of the New City.

3.2 Organisation and Management of CIDCO:-

The CIDCO is registered under Companies Act, 1956 so its organisation structure is just like corporate bodies. The corporation is controlled by its board of directors. Directors are appointed by the state government. Following is list of persons who compile Board of CIDCO.

1. Chairman of CIDCO
2. Vice chairman and Managing Director
3. Chairman JNPT
4. Principal Secretary Urban Development-I
5. Joint Managing Director CIDCO
6. Divisional Commissioner Konkan Division
7. Commissioner Navi Mumbai Municipal Corporation
8. Other 2 directors

[11] http://www.cidco.maharashtra.gov.in/Mission_obective.aspx

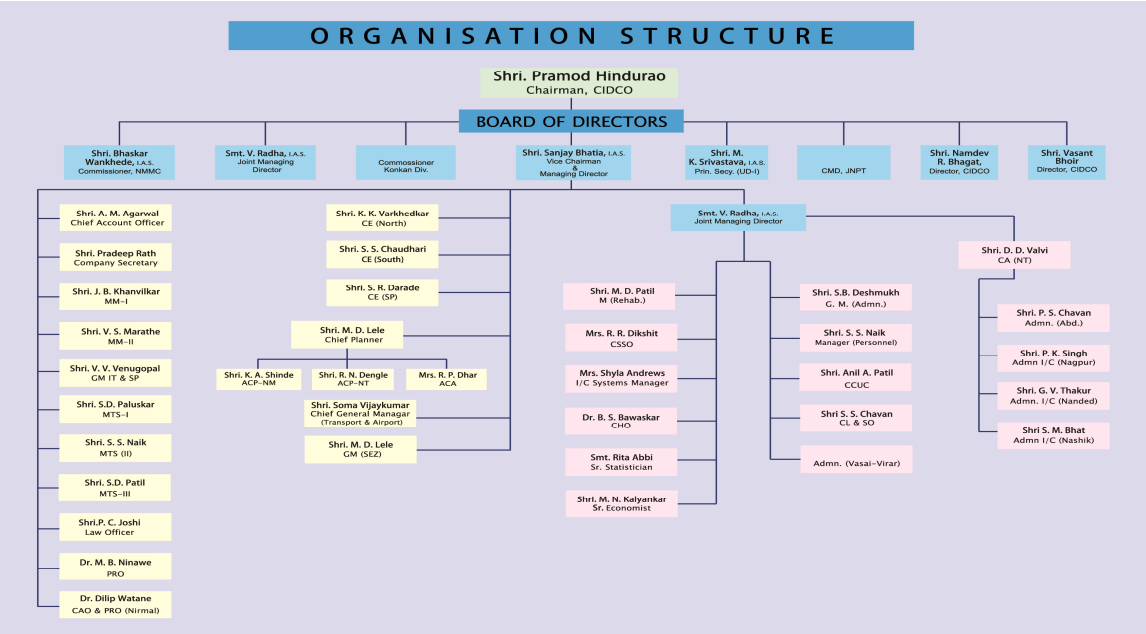
Day-to-day management :- Routine work is looked after by the Vice Chairman and Managing Director, he is supported with a team consisting of joint managing directors, chief administrator (New Towns), heads of various departments, personnel from various technical and non-technical disciplines including officers, engineers and subordinate staff.

Governing laws of the Organisation: - The affairs of the corporation are managed as per the provisions contained in the Companies Act and The Maharashtra Regional and Town Planning Act, 1966. The organizations need to follow guidelines set by provisions of the Memorandum and Articles of Association of the Corporation.

Decision Making: - Democratic process is applied to take decisions i.e. through various meetings. Depending upon the subject matter, meetings of head of departments, committee meetings, board meetings and general meetings are arranged. Considering the exigencies of business to be transacted the Board of Directors of CIDCO meet at least once in a month.

Accountability: - The annual reports on working and affairs of the company with audit report are being regularly presented before the state assembly.

Chart 1. Organisation Chart of CIDCO



(Source : CIDCO website)

3.3 Different Departments of CIDCO

The CIDCO operates through its various departments, according to CIDCO website there are 22 departments taking care of various functions of the organization.

1. **Accounts and Finance Department**[12]

   The accounts and finance department is headed by the chief accounts Officer. Vertically he reports to the vice chairman & managing director. He is assisted by senior accounts officers and accounts officers at the senior and middle management level. Accounts & Finance Department performs three basic functions, viz. Accounting, Finance and Receipt and Payments.

2. **Architecture Department**[13]

   Architecture Department takes care of architectural design of various types of buildings, it also act as consultant for various state governments for construction of buildings. Architecture Department is working with Planning Department and having one head of the Department and one Architectural Section head. Architecture department has three sections to deal with the work. Those sections are,

   1. Architecture (North) – It includes Airoli, Ghansoli, Rabale, Turbhe, Kopar-Khairane and Nerul node
   2. Architecture (South) – It includes CBD Belapur, Kharghar, Kamothe, Kalamboli, Panvel and Dronagiri node.
   3. Railway Projects & New Towns - It includes Nashik, Nanded, Aurangabad.

3. **Company Secretary**[14]

   CIDCO is a company registered under the Indian Companies Act, 1956. The functions and the duties of this department is to ensure compliance of the statutory provisions relating to the Companies Act for and on behalf of the Corporation for eg. Drafting agenda for

[12] http://www.cidco.maharashtra.gov.in/Accounts_Finance_Dept.aspx
[13] http://www.cidco.maharashtra.gov.in/Architecture_Department.aspx
[14] http://www.cidco.maharashtra.gov.in/Company_Secretary.aspx

directors meeting, maintaining minutes of the meetings and filling various returns with the Registrar of Companies. It also provides advice to Board of Directors and officers on any issues pertaining to Companies Act, 1956.

4. **Controller of Unauthorized Construction Department**[15]

   The Controller of unauthorized construction Department deals with action against unauthorized development/constructions in contravention of the provisions of the Maharashtra Regional & Town Planning Act 1966, especially Sections 52 to 55. A team consisting of the security guards and security assistants headed by personnel from CUC keeps on moving in the designated area of Navi Mumbai (Raigad District) to detect unauthorized constructions carried out in developed as well as undeveloped areas.

5. **Economics Department**

   Economics department helps the corporation to take important financial decisions. It undertakes study of financial and economic viability of each new project. It prepare project report of each node, It helps in fixation of reserve price of salable land for each node, fixation of sale price of CIDCO constructed buildings etc.

6. **Engineering Department**

   Engineering Department is the workhorse of CIDCO. This department has technical control over all projects and engineering activities of CIDCO in Navi Mumbai excluding Railway Infrastructure. It undertakes technical appraisal of new projects and its implementation. This department also ensures quality of the work and makes necessary follow ups and inspections for its compliance

7. **General Administration**

   The primary function of the General Administration department is to liaison with Urban Development Department of State Government of Maharashtra. It also liaisons with other Govt. departments. This department handle correspondence with Government /Semi

[15] http://www.cidco.maharashtra.gov.in/CUC_Department.aspx

Government Bodies / Authorities / Ministers, Member of Parliament / Member Legislative Assembly etc. It also plays an important role for implementation of "Right to Information Act, 2005 in CIDCO.

8. Information Technology & Special Projects

CIDCO gives importance to Information Technology undertakings. This department specifically handles marketing of CIDCO premises suitable for information technology companies viz. International InfoTech Park –Vashi, International Technology Centre – Belapur, Commercial Complexes Juinagar and Nerul Railway Stations, Marketing of premises at New Railway Station Complexes. It also undertake special projects such as Integrated Complex at Seawoods railway Station, CIDCO Exhibition Centre - Vashi, Golf Course and Country Club at Kharghar, Heritage Centre at Kharghar, International Diplomatic Enclave at Airoli

9. Law Department[16]

The law department handles legal issues of the corporation. It gives legal opinion on the issues referred by the management / heads of the departments. It appoints panel advocates for defending the court cases on behalf of the Corporation. It undertakes preparation / approval of the written statements / affidavits to be filed in various court matters. It co-ordinates the court cases with the advocates and the various departments of the Corporation.

10. Marketing Department

Marketing department is responsible for marketing of Plots, Commercial premises and housing schemes. It follows a marketing process which includes pre-marketing activities, release of actual advertisement and post marketing activities. Pre-marketing activities refers to preparation of marketing drawings, site visits and evolving suitable marketing strategy. Post – marketing activities refers to issue of allotments letters, receiving payments, execution of agreements, handing over possession etc.

[16] http://www.cidco.maharashtra.gov.in/Law_Department.aspx

11. Personnel Department

Personnel department of CIDCO undertakes recruitment, training, appraisal, transfers, pay fixation and promotions of employees as per the prevailing rules of the Corporation, It maintains all records of the employees, and arrange super annuity payments of the employees retiring from the Corporation. In addition to the above the personnel department also handles all works relating to housekeeping, security and fire department

12. Planning Department

This is most important department of CIDCO it deals with all new projects and developments in Navi Mumbai. The major function of Planning Department comprises Planning and issuing Development Permissions. The Planning Section is involved in the preparation of Development Plan, its approval and modification, from time to time. It is responsible for preparation of nodal and sector plans. The Development Permissions Section of this department is involved in the approval of building plans after its scrutiny..

13. Public Health Department[17]

This department is headed by Chief Health Officer. This department looks after Malaria & Vector Control, allotment of plots for hospitals, dog sterilization, medical bill scrutiny, medical Examination of CIDCO employees, sanitation work in specific nodes, garbage collection, transportation & disposal through the ghantagadi in specific nodes, issuing of Public Health NOC for occupancy certificate for building permission, Controlling problem of Stray animals.

14. Public Relation Department:

The Public Relations Department works as an interface between the Corporation and its Customers as well as Interface between Corporation and Media at large. It uses the tools such as print media,

[17] http://www.cidco.maharashtra.gov.in/Public_Health_Department.aspx

electronic media, internet, photographs, website, press notes, handouts, information brochures, articles, news and other communication tools to provide information about the Corporation. The function of this department strengthens the ties between the Corporation and its customers as well as Corporation and Media.

15. Rehabilitation Department

The rehabilitation department deals with rehabilitation of PAP. It undertakes to issue Stipend for PAP's students; it provides Computer training for PAP's; it facilitates allotment of land for PAP's trust for school & colleges, Community centre, Mahila Mandal and Temples etc.

16. SEZ Department

Navi Mumbai SEZ is one of the most important projects of CIDCO which will take the city to next level. Special Economic Zone (SEZ) is a special duty-free enclave designed to promote foreign investments in a comprehensive range of economic activities including manufacturing, trading and services. This department is responsible for implementation of the SEZ plan perform necessary functions related with the implementation.

17. Social Service department

CIDCO's social service department is one of the important departments of the organization. It mainly looks after social infrastructure of the city. It helps the organization to plan and execute its social service policy. This department is responsible for allotment of plots reserved for social service purpose which includes allotment of plot for schools, colleges, community centers, regional and religious institutions etc. and other related work. It also implements PCO and milk booth policies of the organization.

18. Statistics Department:[18]

Statistics department is basically responsible for collection and compilations of data, it undertake several studies and publish reports for the same. This department helps the Corporation by providing valuable direction for future planning, mainly – in fixing the planning norms for physical and social infrastructure and public utilities. It also provide the statistical information about CIDCO and Navi Mumbai to various departments, other organizations, academicians, research students etc.

19. Estate Department

The Estate Department of CIDCO is mainly concerned with taking care of all the leases granted by the corporation in respect of plots as well as built-up premises. The Estate Department ensures compliance of the conditions of agreements, making of recoveries of service charges, transfer charges etc.

20. Transportation and Communication:[19]

As the name suggest this department looks after development and maintenance of transport and communication infrastructure of the city. This department consists of two wings namely, Transportation Planning & Engineering Wing (TP & E Wing) and Civil Engineering Wing (CE Wing). TP & E Wing is mostly engaged in Planning, Design and Preparation of working drawings for various Transportation Infrastructures which are to be executed either by CE Wing of T & C Department or by Engineering Department. TP & E Wing is also involved in execution of works related to Traffic management such as Traffic Signals, Pavement Markings, Traffic Signs, Operation of Pay & Park Systems at Truck Terminals & Railway Stations forecourt areas and Telecommunication works

[18] http://www.cidco.maharashtra.gov.in/Statistics_Department.aspx
[19] http://www.cidco.maharashtra.gov.in/Transportation_and_Communication.aspx

21. Horticulture Department :

Horticulture department was established by CIDCO with the responsibility to develop and keep Navi Mumbai green. Horticulture department use saplings from the nurseries established by CIDCO for plantation on open spaces and alongside roads. CIDCO launched some innovative projects with the help of this department such as Creating and maintaining greenery below the high tension lines to control encroachments and unauthorized constructions below those lines. This department looks after beautification of traffic islands. It undertakes massive forestation on hills around Uran, Belapur and Kalwa. Horticulture department also take care of 175 public gardens in the city.

22. Railway Project Department[20]

Development of any city depends upon its transport system. The development plan of Navi Mumbai provides for network of commuter railway system to give easy access to commercial, residential and industrial areas in Navi Mumbai.

This department looks after each and every aspect of development of railway network in the city. CIDCO have planned for 6 railway corridors and a Metro railway system in the city in collaboration with Central Railway on cost sharing basis. 2 corridors are successfully completed and commissioned and work is under progress for 3rd corridor and Metro railway under supervision of the department.

3.4 Advantages and Limitations of CIDCO's Organisation Structure

CIDCO is a fully owned government company it has functional organizational structure. Chairman and two directors of board are generally from political background and represents general public, vice chairman and joint managing director are IAS officers who look after day to day administration of CIDCO, other directors represent different authorities involved in development of Navi Mumbai.

[20] http://www.cidco.maharashtra.gov.in/Railway_Project_Department.aspx

CIDCO functions through its departments and all department heads reports to Managing Director or Joint Managing Director and Joint Managing Director report to Managing Director as described in above structural diagram. Managing Director and Joint Managing Director are directors of company and report to board of directors.

Advantages of Organisation Structure of CIDCO

1. Benefits of Specialisation:

The whole company is divided into many departments on the basis of major activities to be performed. Each department is headed by an expert manager. This results in more and better work being accomplished in much lesser time. Hence, the benefits of specialisation become available.

2. Coordination is established:

All the persons working within a department are specialists of their respective jobs. It makes coordination easier at the departmental level.

3. Managerial Efficiency is increased:

It helps in increasing managerial efficiency because of performing the same work again and again. Further, this results in increased profit.

4. Minimal Duplication of Efforts:

In this type of organisation unnecessary duplication of efforts is eliminated. For example, the function of finance is only carried out by the finance department. There is no need to establish two or more departments. It makes it possible to utilise the human and other resources effectively.

5. Training is facilitated:

It facilitates the training of personnel as the focus is only on a limited range of skills. For example, the employees of finance department are given training of financial issues only.

6. **Expansion:**

It offers a greater scope for expansion as it does not face the problem of limited capabilities of a few line managers. The expert knowledge of the functional managers facilitates better control and supervision in the organisation.

7. Representation of other authorities

Organisation Structure if CIDCO inducts representatives of other authorities involved in development of Navi Mumbai viz. Commissioner of NMMC, CMD of JNPT, Divisional Commissioner of Kokan division and secretary of Urban Development Department of State Government of Maharashtra. This enable speedy decision making and execution of projects.

Limitations of Organisation Structure

Limitations of CIDCO's organization structure also are described below.

1. Confusion:

The operation of functional organisation is too complicated and confusing. Workers are supervised by a number of bosses. This results overlapping of authority and thus creates confusion in the organization and badly affects quick decision making of the organization.

2. Difficulty in fixing responsibility:

Because of multiple authority, responsibility for poor performance cannot be fixed easily on a particular person.

3. Conflict

Every departmental head wants to become a functional empire and may not always agree on certain issues. Therefore there may be frequent conflicts which may lead to non-performance.

4. Ignorance of Organisational Objectives:

Each departmental head works according to his sweet will. They always give more importance to their departmental objectives. Hence, overall organisational objectives suffer. For example, to establish its image, the production department may produce quality product ignoring the fact that market trend favors accepting medium quality product.

5. Difficulty in Interdepartmental Coordination:

All departmental heads may work as per their own wish. No doubt this facilitates coordination within the department but it makes interdepartmental coordination difficult resulting in interdepartmental

conflicts, repetition of work and delay in developmental and decision making process.

6. Hurdle in Complete Development:

This system is a hurdle in the way of the complete development of the employees and Navi Mumbai. Each employee specialises only in a small part of the whole job and ignore overall development.

7. Limited Public Representation:

Though CIDCO is developmental authority and is also responsible for maintenance of several nodes in Navi Mumbai its management does not have publically elected representatives, there are two directors but they are not elected by general public.

8. Non inclusion of MIDC representative:

Navi Mumbai project has two major MIDC areas i.e Thane Belapur MIDC and Taloja MIDC. Factories in MIDC areas are major source of employment for Navi Mumbai residents, though the area under MIDC is not developed by CIDCO it should consider its representation in board to establish synergy in development of Navi Mumbai.

Conclusion: This chapter studies organization and management of CIDCO to understand how it functions. Next chapter belongs to its actual performance i.e. development of Navi Mumbai, the chapter is focused on development plan of Navi Mumbai.

Chapter 4:

Development Plan of Navi Mumbai

4.1 The Inception of Navi Mumbai

4.2 Project and site details

4.3 The planning philosophy.

4.4 Nodes of Navi Mumbai.

4.1 The Inception of Navi Mumbai

In the earlier chapter we saw how State Government of Maharashtra identified the need for planned growth and development of cities. With view to provide strong legal framework The Maharashtra Regional and Town Planning Act was passed in 1966 and brought into force in January, 1967. The Government notified The Bombay Metropolitan Region in June 1967 and a Regional Planning Board constituted under the Chairmanship of Shri L.G. Rajwade, I.C.S, for study and further development of this region. The Board finalized Draft Regional Plan in January, 1970. It proposed the development of a twin city across the harbour, on the mainland to the east, as a counter-magnet for concentration of offices taking place at the southern tip of Bombay. The Navi Mumbai as an alternative growth pole aimed to siphon off the over concentration of jobs and population in Greater Bombay by shifting existing offices, wholesale markets to decongest Mumbai The New City will provide all facilities, amenities, jobs etc. to inhabitants on self financing basis using land as major resource. The Board recommended establishment of Navi Mumbai at this place due to following.

1. Existing industrial sites in the Thana-Belapur area and Taloja.

2. The imminent completion of the Thana Creek Bridge and

3. The proposal of the Bombay Port Trust to establish a new port at Nhava Sheva.

Following are basic recommendations of the Board

1. Navi Mumbai will accommodate a population of 21 lakhs with job opportunities to 7,50,000 peoples.
2. It will give due attention to the planning and development of smaller centers including Thana, Ulhasnagar, Bhiwandi, Khopoli, Kalyan and Dombivali complexes.

4.2 Project and Site details

The Navi Mumbai project area is spread over approx.343.7 Sq.Kms. Navi Mumbai lies on mainland on eastern shore of Thane creek. The length of the city is almost same as that of Mumbai. Navi Mumbai is one of the largest planed cities in the world. The city limits stretch from Airoli near Thane in North to Uran in South. The Navi Mumbai project area includes Panvel and Uran towns, gaothans of 95 villages in Thane and Raigad districts, Private Land, MIDC area, MESB area, Defense lands, Salt Panes, forest and government land. Except government land and salt panes other lands were small and of irregular shapes, therefore, land assembling was a difficult task. Inherent value of the land was very low because of its physical condition, quality and total lack of infrastructure in the area.

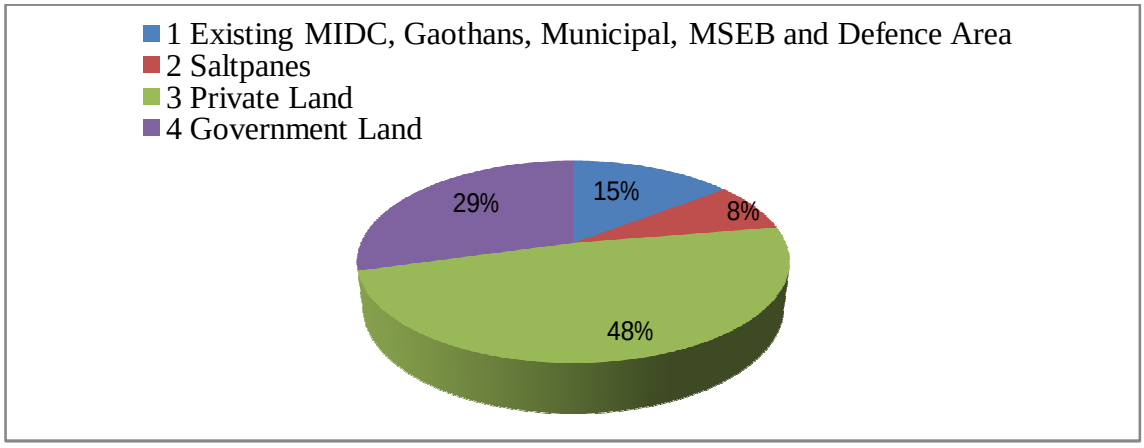
Following table shows details of land acquired from different sources for development of Navi Mumbai.

Table 4.1 Land Acquisition Plan of Navi Mumbai

Sr. No.	Details	Area Sq. Km.
1	Existing MIDC, Gaothans, Municipal, MSEB and Defense Area	50
2	Salt panes	27
3	Private Land	166
4	Government Land	101
	Total :	Approx 344

(Source : CIDCO website**)**

Graph 4.1 Land acquisition details for Navi Mumbai.



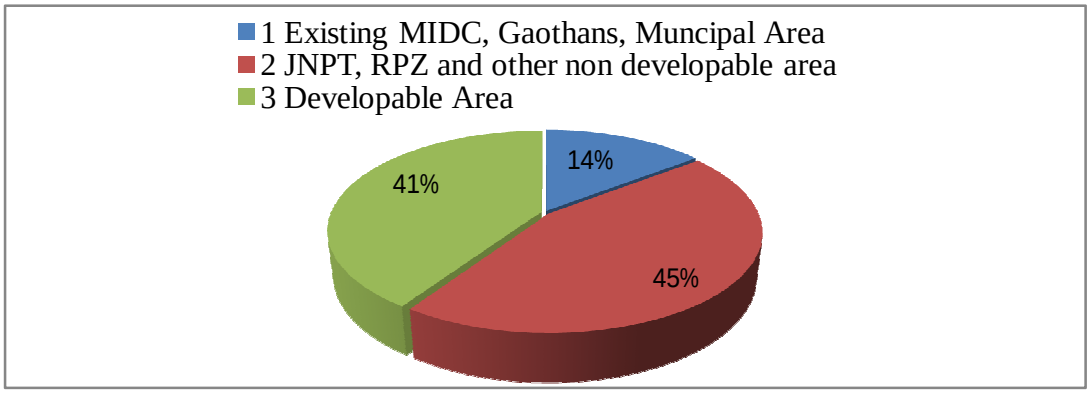
While acquiring land for Navi Mumbai project CIDCO exclude area under 95 gaothans, 2 municipal corporations, MIDC etc. CIDCO proposed land usage for the acquired land as follows.

Table 4.2 : Proposed Land Usage Plan of Navi Mumbai

Sr. No.	Details	Area Sq. Km.
1	Existing MIDC, Gaothans, Municipal Area	50.00
2	JNPT, RPZ and other non developable area	154.21
3	Developable Area	139.49
	Total Area	**343.7**

(Source : CIDCO website)

Graph 4.2: Prposed Land Usage Plan of Navi Mumbai



The project site has peculiar setting with creek on one side and hill ranges bounding it on the other side. The site faces heavy rainfall in the rainy season along-with the high-tide so it may cause heavy flood so the site is vulnerable to flood. This also mark requirement of efficient system for disposal of storm-water to safeguard the city from flood.

4.3 The Planning Philosophy.

For any development absolute control and ownership of land is the most essential and basic requirement, as land is the main resource for development. The first step is to identify all the land that needed to be acquired for development of Navi Mumbai. By February 1970, the government notified for acquisition of private owned land covering eighty six villages and measuring 159.54 km² within the present limits of Navi Mumbai under Maharashtra Regional and Town Planning Act (MR & TP Act), 1966. Land belonging to nine other villages, measuring 28.70 km², was additionally designated in August 1973 for inclusion in the project area. The entire private land was to be acquired by the government and placed at the disposal of development authority

Considering the massive scale of this project the government felt need of establishment of separate authority which could focus on development of notified area and speed up the development process, thus CIDCO was established and immediately appointed as New Town Development Authority for the project.

Polycentric Approach for development

The success of Navi Mumbai lies in the approach adopted while it's planning. Considering the massive scale of Navi Mumbai project and to avoid a Mumbai like situation of activity concentration caused by a mono-centric development model, the planners adopted polycentric nodal pattern of development.

The polycentric approach based on principle of decentralization. It avoids concentration of population, and activities in a particular area rather it works like 'bunch of grapes' and focused on decentralization and balance distribution of residential areas, job centers, wholesale markets, non polluting industries and population density and other activities in different nodes / areas of the city. Each node should be self contained in respect of physical as well as social infrastructure; however all these nodes should be well connected with each other through efficient

transportation and communication network. Well known examples of polycentric cities are Ruhar area in Germany, Stoke-on-Trent in the UK. Today the Ruhar area is a large city that grew from dozen smaller cities, the Stoke – on - Trent is federation of six smaller towns. As a result these cities have no single centre, but several. Other examples are Ranstad in Netherlands or Greater Boston in United States.

This approach enables the planners to divide Navi Mumbai in different 14 nodes. The development plan ensures development of nodes where each node will be self sufficient in terms of housing, shopping areas, education, medical and recreation facilities. Availability of these facilities in the same node ensures proper distribution of population and activities in the city which helps to reduce concentration of particular activities, congestion and need for travel and to avoid Mumbai like situation in the city.

City Development Plan: Concept of city development plan is well defined in toolkit published by government for preparation of City Development Plan under JNNURM. It is as follows

A City Development Plan is a comprehensive document outlining the vision and development strategy for future development of the city, prepared in consultation with a wide range of stakeholders to identify the thrust areas to be addressed on priority basis in order to achieve the objectives and the vision. It thus provides the overall framework within which projects are identified and put forward in a City Investment Plan.

Important features of city development plan[21]

1. Presents current stage of city's development – where are we now?
2. Projects aspirations of the city – what/where do we want to be?
3. Attempts a Resource Based Planning – is city planning inclusive of all resources; social, economic, natural and cultural?

[21] JNNURM toolkit for city development plan

4. Identifies the thrust areas – what are the sectors we need to address on a priority basis?
5. Sets goals for different sectors – inter sectoral and intra sectoral - what specific goals should be targeted?
6. Suggests alternative routes, strategies – what are the practical and implementable approaches to achieve the goals?
7. Identifies specific interventions and their resource requirements – what are the specific projects and initiatives to be undertaken, and what will be the investment needs?
8. Adopts a transparent and consistent framework and prioritizes these interventions - collectively what do we agree are the priorities?
9. Identifies a financial plan that can be operationalised at the institutional level and then as an aggregate at the city level – how do we balance the resource availability (social, economic, cultural and natural) with the requirements of the plan for the medium term? Can the internal resources finance priority investments? Are there other options for leveraging finances?
10. Identifies the actions for developing institutional synergy, drawing on resources from private sector and the civil society, and build the organizational capacity to meet the challenges of implementing these plans – what are the resources we need to put together to be able to implement these plans?
11. Ensures that focused strategies and plans are evolved to address issues of urban poverty - how do we ensure that the goals, strategies and plans promote inclusive growth, and provide the environment to alleviate poverty?
12. Evolves through a process of participatory planning with involvement of all stakeholders – how do we ensure that the CDP has collective ownership and reflects the voice of all sections of society?

When Navi Mumbai was planned at that time normally a master plan is prepared which is not flexible and all developmental activities are carried

out by following that plan. Here CIDCO moved ahead out of its time. Considering development of city is a continuous process, the planners decide not to lay down prescriptions for the entire area at one time which means they did not prepare a rigid master plan to ensure development of land in future will be in accordance of requirement of society. It adopts Land-use zoning and development regulations which are used as tools for environment control in the Development plan of Navi Mumbai. A development (structure plan) plan model is favored with broad land use zones indicating the uses permitted within each zone, as against the conventional master plan that specifies space reservations for all users at one time. Planners divide the city in 14 nodes and while preparing development plan also prepare development plan for each node which facilitate them to concentrate development at micro as well as macro level. In last 40 years numerous amendments in the development plan were made to match the requirements of society, government regulations, mega projects in Navi Mumbai area etc. The development plan of Navi Mumbai is given in Annexure 1. The development plan divide city in different nodes and planners also prepare development plan for each node to facilitate development. Development plan of each nodes is given in Annexure 2.

4.4 Nodes of Navi Mumbai

The planners of Navi Mumbai divide the city into 14 nodes which are as follows.

1. Airoli
2. Ghansoli
3. Kopar – Khairane
4. Vashi
5. Sanpada
6. Nerul
7. CBD Belapur
8. Kharghar
9. Kalamboli
10. Kamothe
11. New Panvel
12. Dronagiri
13. Ulwe
14. Pushpak

Following is detail study of each node in Navi Mumbai.

4.4.1 Airoli Node:-

Airoli is one of the good nodes developed in initial years by CIDCO. It was taken up for development during 1983-84. Airoli is located on northern tip of Navi Mumbai. It is adjacent to Thane Belapur Industrial area, the main intention of its development to provide housing facilities to the people working in the MIDC area. It is spread over 380 Hectors and divided in 28 sectors. The boundaries of Airoli node are to the North – MSEB receiving station, To the West – Thane Creek, To the East – Kalwa Turbhe Railway line and To the South – Godhivali and Rabale village.

Table 4.3 Developable Land use plan of Airoli Node

Type of use	Gross Area in Ha
Residential	133.99
Commercial	11.19
Industrial and Warehousing	3.52
Social Facilities	23.74
Public Utility	42.17
Open spaces	38.61
Circulation	71.43
Infrastructure Corridor	52.15
Total	**376.8**

(**Source :** Project report of Airoli Node and primary data)

This node has good connectivity with Mumbai through Mulund – Airoli bridge. It is also well connected with another city Thane through railway as well as by road. The node lies beside the industrial area and also has Mindspace, an IT SEZ generating ample employment opportunities for its residents. It has good physical, social and commercial infrastructure catering various requirement of the residents. However the highlight of the node is International Diplomatic Enclave which was designed and developed by CIDCO to provide a high security enclave for various countries to establish their consulates in Navi Mumbai. This node was transferred to Navi Mumbai Municipal Corporation during 1992.

4.4.2 Ghansoli Node:

The development of this node was started around 1993; the focus was to provide affordable housing to the people working in the nearby industries through BUDP scheme of the World Bank and also to cater residential and warehousing requirements of APM merchants. The node is spread over approx. 538.1Ha. This node heavily suffers from unauthorized constructions and encroachments which make difficult for CIDCO to undertake development of this node. CIDCO had undertaken development of 218.93Ha land which is by and large free from encroachments. The boundaries of Ghansoli node are to the North – Airoli Node, To the West – Thane Creek, To the East – Kalwa Turbhe Railway line and To the South – Godhivali and Rabale village.

Table 4.4: Developable Land use plan of Ghansoli Node

Type of use	Gross Area in Ha
Residential	164.45
Commercial	20.62
Industrial and Warehousing	3.05
Social Facilities	45.00
Public Utility	25.82
Open spaces	59.22
Circulation	70.85
Infrastructure Corridor	17.15
Total	**406.16**

(Source : Project report of Ghansoli Node and primary data)

4.4.3 Kopar Khairane Node

This node is spread over 324.25 Hectares. It is adjacent to the industrial area and Vashi. Development of this node was started in 1986. Kopar Khairane is also known as extended suburb of the Vashi. The Boundaries of the node are To the North: Ghansoli Node, To the West: Thane Creek, To the South: Khairane Nallah, To the East: Kalwa – Turbhe Railway line and Thane – Belapur Road.

Table 4.5: Developable Land use plan of Kopar Khairane Node

Type of use	Gross Area in Ha
Residential	124.78
Commercial	20.91
Industrial and Warehousing	4.58
Social Facilities	14.85
Public Utility	48.01
Open spaces	33.83
Circulation	62.66
Infrastructure Corridor	5.91
Total	**315.53**

(**Source :** Project report of Kopar – Kharane Node and primary data)

The highlight of the node is it is in close vicinity of Millennium Business Park and Dhirubhai Ambani Knowledge City which is a major establishment. The node is well connected by train as well as road. This node was transferred to Navi Mumbai Municipal Corporation during 1992.

4.4.4: Vashi Node

Vashi was the first node taken up for development by CIDCO. Often it is called as King of Navi Mumbai. Vashi is located just across the Thane creek bridge on the mainland. Vashi is spread over 854 Ha. The development was started immediately after opening of Thane Creek Bridge in 1972. Vashi is the commercial hub of Navi Mumbai. It is well connected by railway and road to Mumbai through the creek bridge. Vashi is the most developed node of Navi Mumbai in terms of physical, social and commercial infrastructure. The boundaries of Vashi Node are: To the North – Khairane Nallah, To the West – Thane Creek, To the South – Sanpada Node, To the East – Thane – Belapur Road.

Table 4.6: Developable Land use plan of Vashi Node

Type of use	Gross Area in Ha
Residential	185.17
Commercial	155.20
Industrial and Warehousing	9.98
Social Facilities	53.11
Public Utility	98.33
Open spaces	92.39
Circulation	183.83
Infrastructure Corridor	71.41
Total	**849.42**

(**Source :** Project report of Vashi Node and primary data)

There are many landmarks in Vashi such as Vishnudas Bhave theater inorbit, Raghuleela and other different malls, but the best known are APMC and International InfoTech Centre at the Vashi railway station. The node was transferred to Navi Mumbai Municipal Corporation in 1992.

4.4.5 Sanpada Node

The combine development of Vashi-Sanpada node was started in 1972 but the major development took place when development of APMC market was started. The node is well connected by railway and road. To be precise it has 2 railway stations 1 Sanpada and 2 Jui Nagar. The boundaries of Sanpada Node are to the North – Vashi node, to the West – Thane creek, to the South – Nerul node and to the East – Thane – Belapur Road. The node is well developed in terms of physical, social and commercial infrastructure. Sanpada is developed itself at a very speedy rate. Sanpada is coming up as better place for business expansion. Sanpada became popular for being organized and self-sufficient, large but not too crowded place to do business or to live. This node was transferred to NMMC in 1992.

Table 4.7: Developable Land use plan of Sanpada Node**:**

Type of use	Gross Area in Ha
Residential	83.13
Commercial	8.57
Industrial and Warehousing	1.28
Social Facilities	7.48
Public Utility	26.63
Open spaces	18.88
Circulation	60.15
Infrastructure Corridor	84.22
Total	**290.34**

(Source : Project report of Sanpada Node and primary data)

4.4.6 Nerul Node

Nerul is the second best developed node after Vashi. It is often called as queen of Navi Mumbai. The node is predominantly residential node. The node was taken up for development in 1981. It is spread over 1056.35 Ha. The boundaries of Nerul Node are to the North – Sanpada node, to the West – Thane creek, to the South – Belapur node and to the East – Thane – Belapur Road.

Table 4.8: Developable Land use plan of Nerul Node:

Type of use	Gross Area in Ha
Residential	310.61
Commercial	48.20
Industrial and Warehousing	9.61
Social Facilities	171.36
Public Utility	106.09
Open spaces	76.59
Circulation	200.00
Infrastructure Corridor	123.30
Total	**1045.76**

(Source : Project report of Nerul Node and primary data)

It has various model residential complexes including 'Seawoods Estate' the township specifically designed for Non-resident Indian. It has best facilities of education in Navi Mumbai. It has well developed physical, social and commercial infrastructure. The node is best known for the beautiful D. Y. Patil stadium. The node was transferred to NMMC in 1992.

4.4.7 CBD Belapur Node

This node is located in the heart of the city, so planners decided to make the 'Central Business District' of the city in this node. The size of CBD Belapur is 20 times bigger than CBD of Mumbai. The node is spread over 631 Ha on both sides of Sion – Panvel expressway. The north side is exclusively planned for residential use whereas south side is planned for commercial/mercantile/office uses. The node has head office of CIDCO, administrative office of Maharashtra state Government for Konkan region i.e. Konkan Bhavan, Headquarters for Konkan Railway, Regional office of Reserve Bank of India, Office of Navi Mumbai Municipal Corporation. CIDCO also designed and constructed an InfoTech park in the node. This node has space for almost 3,00,000 jobs. Another highlight of the node is Parsik hill which is also called as Malabar hill of Navi Mumbai. It is needless to say that this node is well connected by railway and road. This node was also transferred to NMMC in 1992.

Table 4.9: Developable Land use plan of CBD Belapur Node:

Type of use	Gross Area in Ha
Residential	104.59
Commercial	85.24
Industrial and Warehousing	0
Social Facilities	33.46
Public Utility	9.28
Open spaces	141.99
Circulation	117.91
Infrastructure Corridor	123.01
Total	**615.48**

(Source : Project report of CBD Belapur Node and primary data)

4.4.8 Kharghar Node:

Kharghar is the futuristic node of Navi Mumbai it was started developing around 1988-89. It spread over 1872 Ha making it one of the biggest nodes in Navi Mumbai. Kharghar is one of the most artistically-designed nodes of Navi Mumbai, with novel concepts, ideas and system forming the cornerstone of the nodes development. It often termed as Model Township of the city. The Kharghar Node is located almost at the centre of the city. It was flanked on the East by Taloja Industrial Estate, touching part of CBD Belapur on South.

Table 4.10: Developable Land use plan of Kharghar Node:

Type of use	Gross Area in Ha
Residential	451.29
Commercial	130.61
Industrial and Warehousing	9.70
Social Facilities	162.13
Public Utility	264.43
Open spaces	235.03
Circulation	314.33
Infrastructure Corridor	216.80
Total	**1784.32**

(**Source :** Primary data)

The node has the best social infrastructure in Navi Mumbai. It has the only golf course of the city. The central park of Kharghar is one of the largest parks in the world. This node is primarily a residential node. CIDCO launched and developed no. of residential schemes in this node. This node is still maintained and managed by CIDCO and in true sense this node really makes Navi Mumbai, “The City of 21st Century”.

4.4.9: Kalamboli Node

Kalamboli is one of the busiest nodes in Navi Mumbai. The node is at the junction of busiest highways i.e. NH 4 (Mumbai – Pune Highway), NH – 4B (Panvel Bypass which also connects to JNPT) and Mumbai Pune Expressway. CIDCO have designed this node in 3 parts, 1 Residential

complex, 2 Warehousing complex and 3 Steel market complex. CIDCO have started developing steel market and warehousing complex by 1979-80 and residential complex by 1982. This node is surrounded by Kasadi River on one side and diva Panvel railway line and Panvel by pass on other. This node is also part of Navi Mumbai Special Economic Zone

Table 4.11: Developable Land use plan of Kalamboli Node

Type of use	Gross Area in Ha
Residential	110.35
Commercial	35.23
Industrial and Warehousing	303.16
Social Facilities	22.64
Public Utility	57.52
Open spaces	30.43
Circulation	59.18
Infrastructure Corridor	8.9
Total	**644**

(Source : Project report of Kalamboli Node and primary data)

Most of labours working in Taloja MIDC, Steel and Warehousing complex at Kalamboli live in this node so it is a node of working population. This node is famous for its steel market, truck terminal and junction of roads. It is also maintained and managed by CIDCO.

4.4.10 Kamothe Node:

Kamothe is one of the developing nodes of Navi Mumbai. It was started developing in 2000. Kamothe is in close vicinity of Jawahar Industrial estate. Most of land in this node was reserved for 12.5% scheme. Most of PAP sold their plots to private developers. CIDCO does not undertake construction of any residential or commercial complex. It allotted land plots to private builders for development.

Table 4.12 Developable Land use plan of Kamothe Node:

Type of use	Gross Area in Ha
Residential	229.20
Commercial	31.95
Industrial and Warehousing	Nil
Social Facilities	59.61
Public Utility	75.39
Open spaces	92.56
Circulation	107.01
Infrastructure Corridor	27.48
Total	**623.2**

(Source : Primary data)

4.4.11 New Panvel Node

This is also one of the developing nodes of Navi Mumbai. Development of this node was started in 1975-76. The node is spread over 541.84 Ha. land and adjacent to the Panvel Nagar Parishad territory. It is near to Taloja MIDC and Panvel industrial area. Boundaries of this node are on South Kalundre River, Matheran hill on the East and Kalamboli steel market complex on North.

Table 4.13 Developable Land use plan of New Panvel Node:

Type of use	Gross Area in Ha
Residential	130.94
Commercial	44.99
Industrial and Warehousing	8.68
Social Facilities	62.31
Public Utility	29.85
Open spaces	71.89
Circulation	105.95
Infrastructure Corridor	20.24
Total	**474.85**

(**Source :** Project report of New Panvel Node and primary data)

The node is well connected with 2 National highways and 2 Railway lines. Panvel is an important railway station on Konkan Railway. It is also near to the new international airport. This node also has good physical, social and commercial infrastructure. This node is still maintained and managed by CIDCO.

4.4.12 Dronagiri Node

Dronagiri node is the largest node planned by CIDCO it is spread over approx 2592 Ha. It is located at southern tip of Navi Mumbai adjacent to JNPT port. Due to its topography it is very difficult to develop this node. Its proximity to the port makes it ideal for port-based industries. Development of this node was started after 1989. Its basic infrastructure is already developed. This node is planned to meet housing and urban infrastructural needs and development of port based industries. The biggest advantage of this node is its proximity to the JNPT and Navi Mumbai Special Economic Zone. The node is well connected by road, a rail link for transportation of goods to and from the port is already existed and a proposed railway link connecting this node to CBD Belapur is coming up in few years. This node is maintained by CIDCO.

Table 4.14 Developable Land use plan of Dronagiri Node:

Type of use	**Gross Area in Ha**
Residential	460.66
Commercial	103.41
Industrial and Warehousing	594.80
Social Facilities	51.90
Public Utility	303.25
Open spaces	228.93
Circulation	450.88
Infrastructure Corridor	249.29
Total	**2443.12**

(Source : Project report of Dronagiri Node and Primary data)

4.4.13 Ulwe

Ulwe node is located on south of CBD Belapur across the creek. Development of this node is already started. This node is part of Navi Mumbai Special Economic Zone and is adjacent to proposed Navi Mumbai International Airport. Ulwe is upcoming node of Navi Mumbai and its information till 2010 is not reported.

Table 4.15 Developable Land use plan of Ulwe Node**:**

Type of use	Gross Area in Ha
Residential	441.58
Commercial	123.86
Industrial and Warehousing	10.73
Social Facilities	63.42
Public Utility	61.60
Open spaces	208.90
Circulation	182.74
Infrastructure Corridor	155.27
Total	**1248.10**

(Source: Primary Data)

4.4.14 Pushpak

Pushpak node is conjured in connection with upcoming Navi Mumbai International Airport and Airport related activities. Nodal plan for this node is yet not finalized and published till 2010.

Both Ulwe and Pushpak are upcoming Nodes of Navi Mumbai. There was insignificant development of Ulwe node during the research period and Pushpak node was under planning at the end of research period, hence both nodes also excluded by researcher for the further research.

(Source: The facts presented in this chapter are based on information collected from CIDCO website, Project report of different nodes, primary data collected from interview of CIDCO officers etc.)

Conclusion: This chapter was focused on development plan of Navi Mumbai, its planning philosophy and different nodes of the city. Next chapter gives details on actual development of Navi Mumbai.

Chapter: 5

Development of Navi Mumbai and Status of Upcoming Projects

Part A – Development of Navi Mumbai

5.1 Introduction

5.2 Overview of development

5.3 Land Usage in Navi Mumbai

5.4 Housing Facilities

5.5 Education

5.6 Market Places

5.7 Health Care Facilities

5.8 Employment

5.9 Transportation

5.10 Recreation Facilities / Centres

5.11 Hygiene

5.12 Physical Infrastructure and other Miscellaneous Developments

Part B – Status of Upcoming Projects in Navi Mumbai

5.13 Introduction of upcoming projects in Navi Mumbai

5.14 Navi Mumbai Special Economic Zone

5.15 Navi Mumbai Metro

5.16 Navi Mumbai International Airport

5.17 Extension of Local Railway Network

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

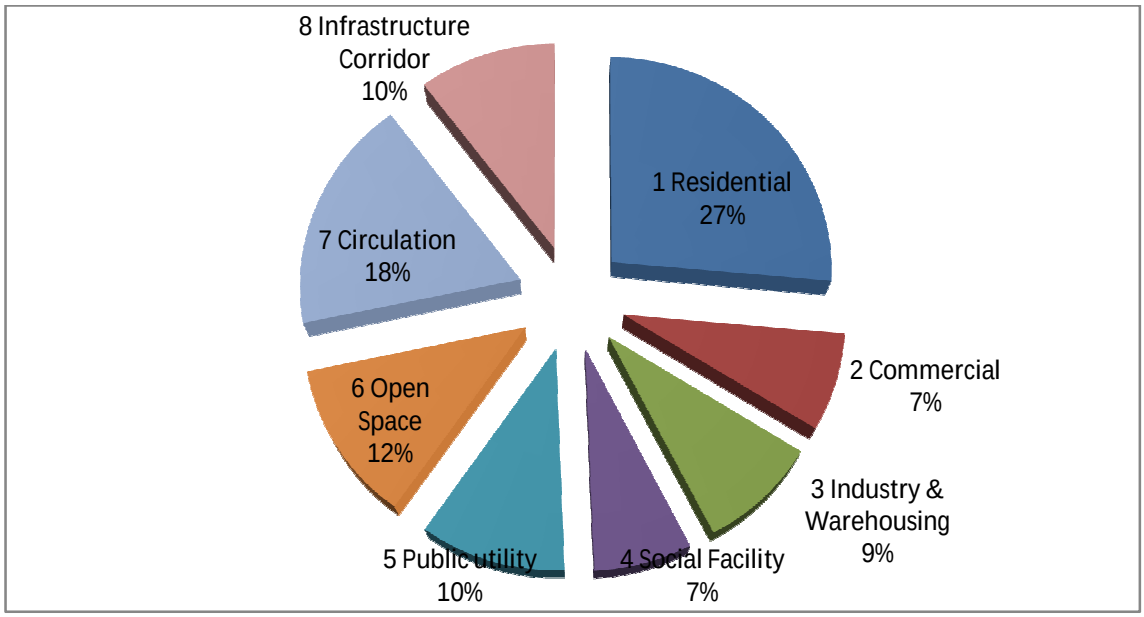
CIDCO develops Navi Mumbai utilizing land as major resource of development. The entire study of development of Navi Mumbai is based on utilization of available developable land by CIDCO. Pushpak node didn't exist and development of Ulwe node is not reported, hence researcher excluded further study of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

Table 5.1: Actual use of developable land Navi Mumbai

Sr. No.	Particular	Area in Ha
1	Residential	2930.74
2	Commercial	819.98
3	Industry & Warehousing	959.09
4	Social Facility	771.01
5	Public utility	1148.37
6	Open Space	1329.25
7	Circulation	1986.92
8	Infrastructure Corridor	1152.44
	Total Developable Area	**11097.8**

(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.

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

(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 constructed houses for EWS under Bombay Urban Development Project (BUDP) I, II and III in Airoli, Kopar Khairane, Kharghar, Nerul, Kalamboli and New Panvel.

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.

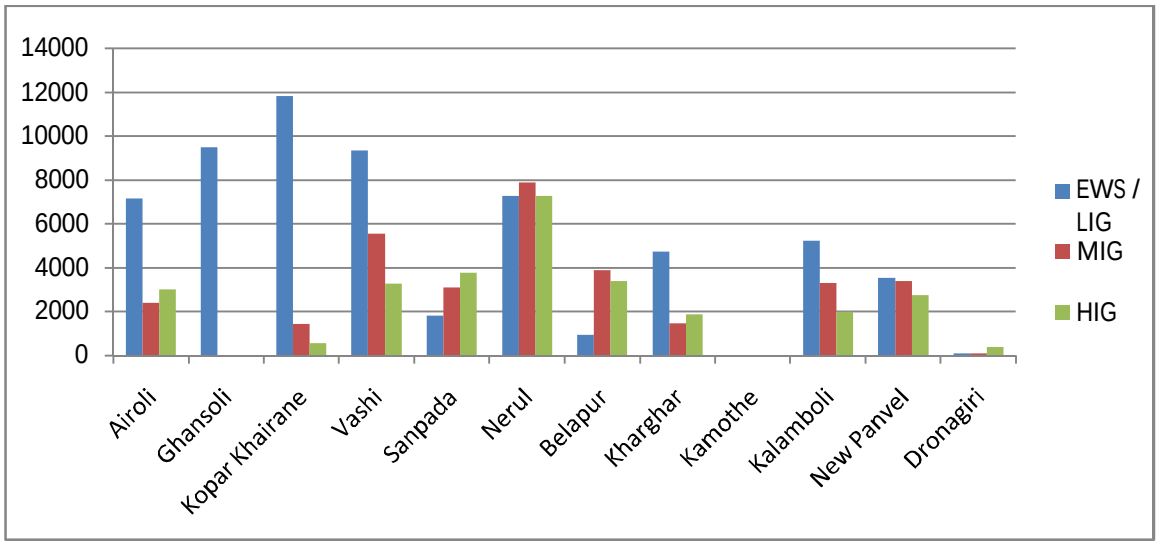
Following table shows node wise details for construction of houses by CIDCO for different income groups from beginning to 2010.

Table 5.3: Details of Housing units Constructed by CIDCO upto 2010

Sr. No.	Node	EWS / LIG	MIG	HIG	Total
1	Airoli	7,163	2,410	3,010	12,583
2	Ghansoli	9,499	Nil	Nil	9,499
3	Kopar Khairane	11,827	1,442	566	13,835
4	Vashi	9,367	5,560	3,271	18,198
5	Sanpada	1,816	3,089	3,778	8,683
6	Nerul	7,282	7,888	7,291	22,461
7	Belapur	946	3,881	3,407	8,226
8	Kharghar	4,741	1,451	1,877	8,069
9	Kamothe	Nil	Nil	Nil	Nil
10	Kalamboli	5,223	3,296	1,976	10,495
11	New Panvel	3,533	3,390	2,733	9,656
12	Dronagiri	80	76	372	528
	Total	**61,477**	**32,483**	**28,281**	**122233**

(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.

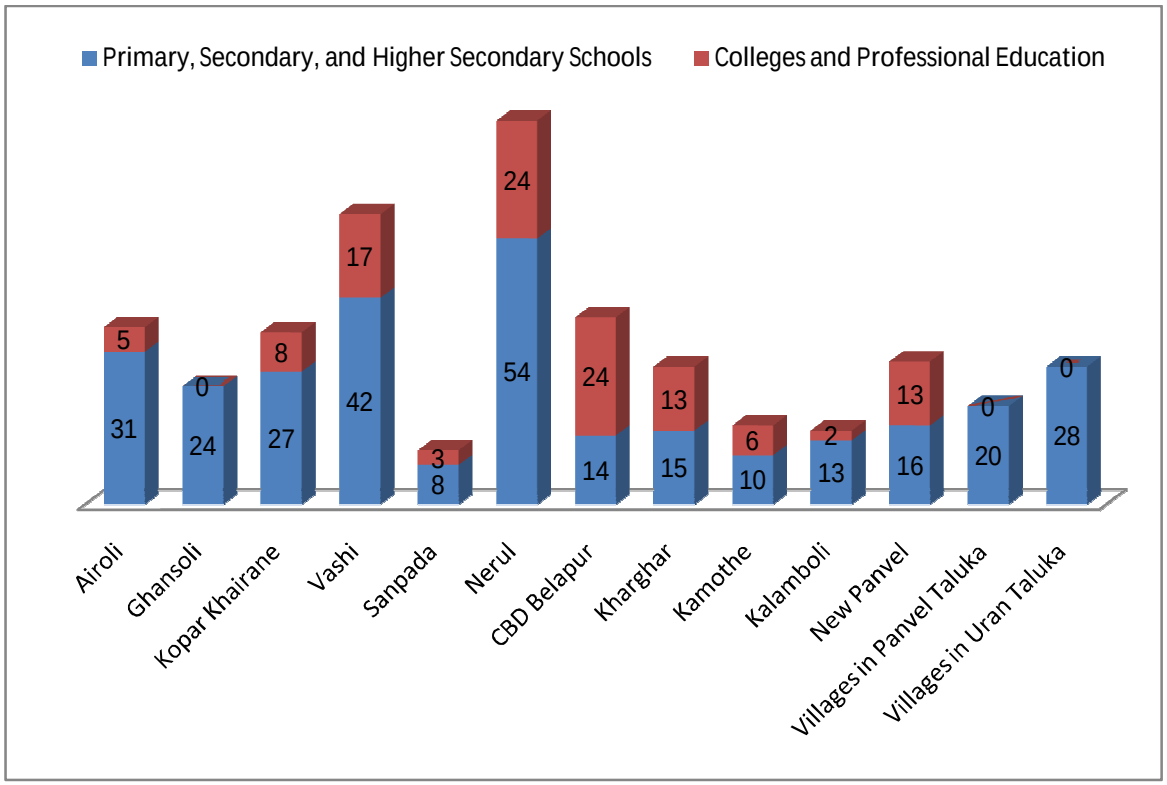
Following table shows educational institutes established in Navi Mumbai nodes as well as other area but on plots allotted by CIDCO.

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

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

(**Source :** Compiled by using reports on Higher and Professional Education in Navi Mumbai and Primary and Secondary Schools in Navi Mumbai)

Graph 5.3 Educational Institutions in nodes and villages in CIDCO area.



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.

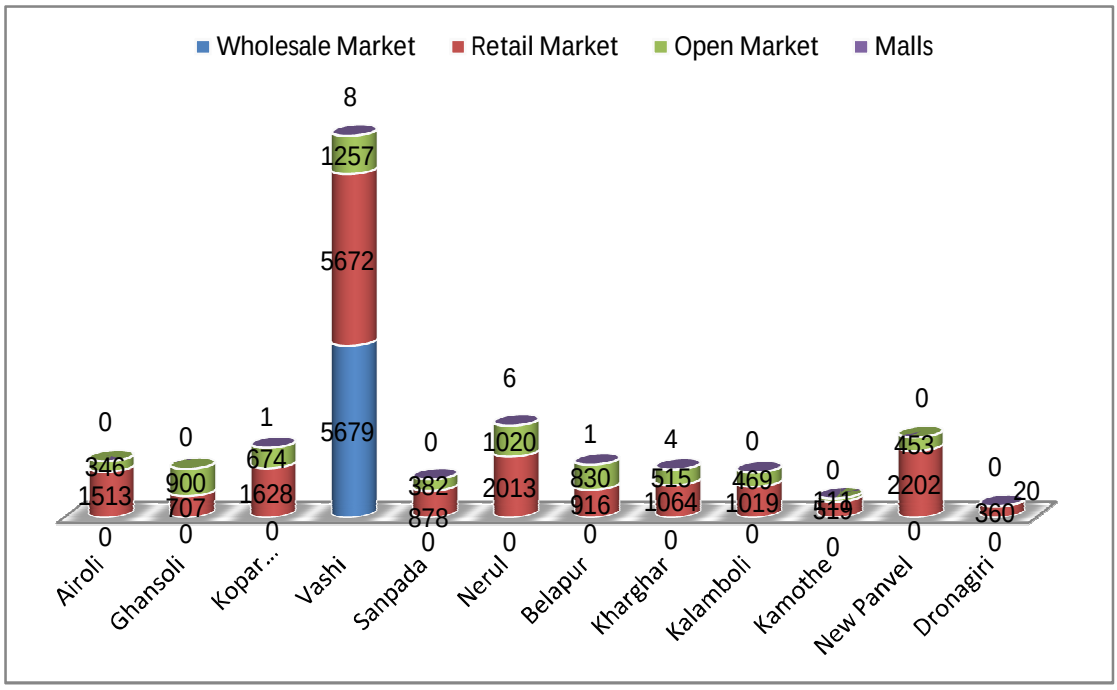
Table 5.5 Different Shopping Centres in Nodes of Navi Mumbai

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

(**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.

Graph 5.4 Node wise details of shopping centres



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

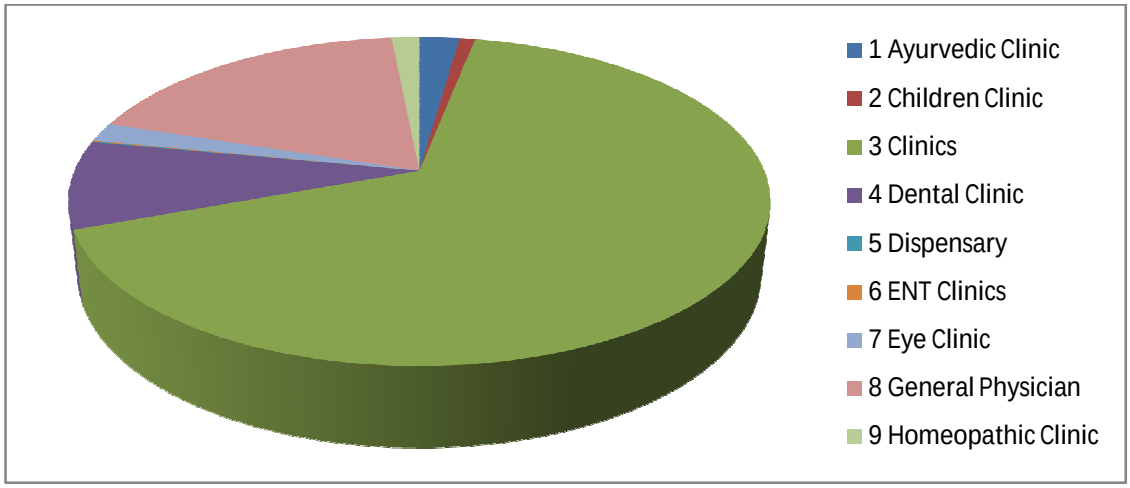
Clinics: In any Health system clinics plays vital role, generally patient approach to clinic located nearby during his illness and if advised by the doctor he goes to the hospital. There are approximately 1177 clinics in Navi Mumbai. These clinics comprise General Practitioners following different system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

Table 5.6 Types of Clinics in Navi Mumbai

Sr. No.	Type of Clinic	Nos.	Sr. No.	Type of Clinic	Nos.
1	Ayurvedic Clinic	26	6	ENT Clinics	1
2	Children Clinic	10	7	Eye Clinic	22
3	Clinics	780	8	General Physician	217
4	Dental Clinic	102	9	Homeopathic Clinic	18
5	Dispensary	1		**Total**	**1177**

(Source : Health Infrastructure, Facilities Personnel and Services in Navi Mumbai-2008)

Graph 5.5 Different types of clinics in Navi Mumbai.



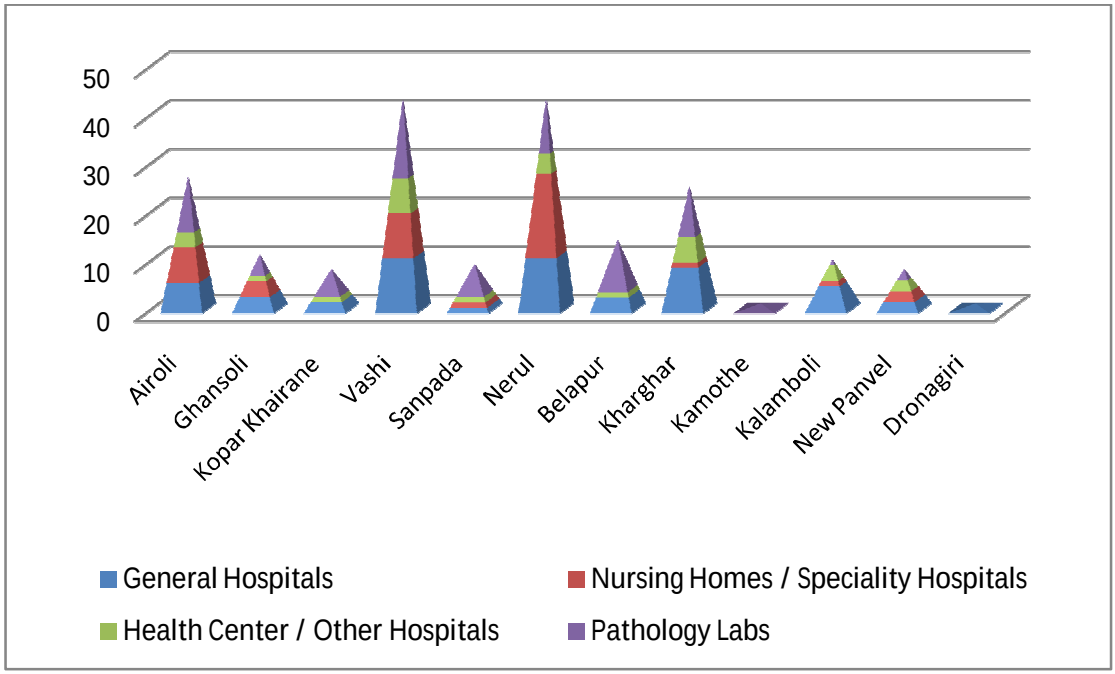
Above Table shows that allopathic clinics in Navi Mumbai followed by practicing General physicians. Other system of medicines such as Ayurvedic, Homeopathic and specialist clinics such as ENT, Dentist, Eye clinic are also present in the city.

Table 5.7 Hospitals and Pathology labs in Navi Mumbai

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

(Source : Health Infrastructure, Facilities Personnel and Services in Navi Mumbai-2008)

Graph 5.6 Node wise Hospitals and pathology labs in Navi Mumbai



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 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.

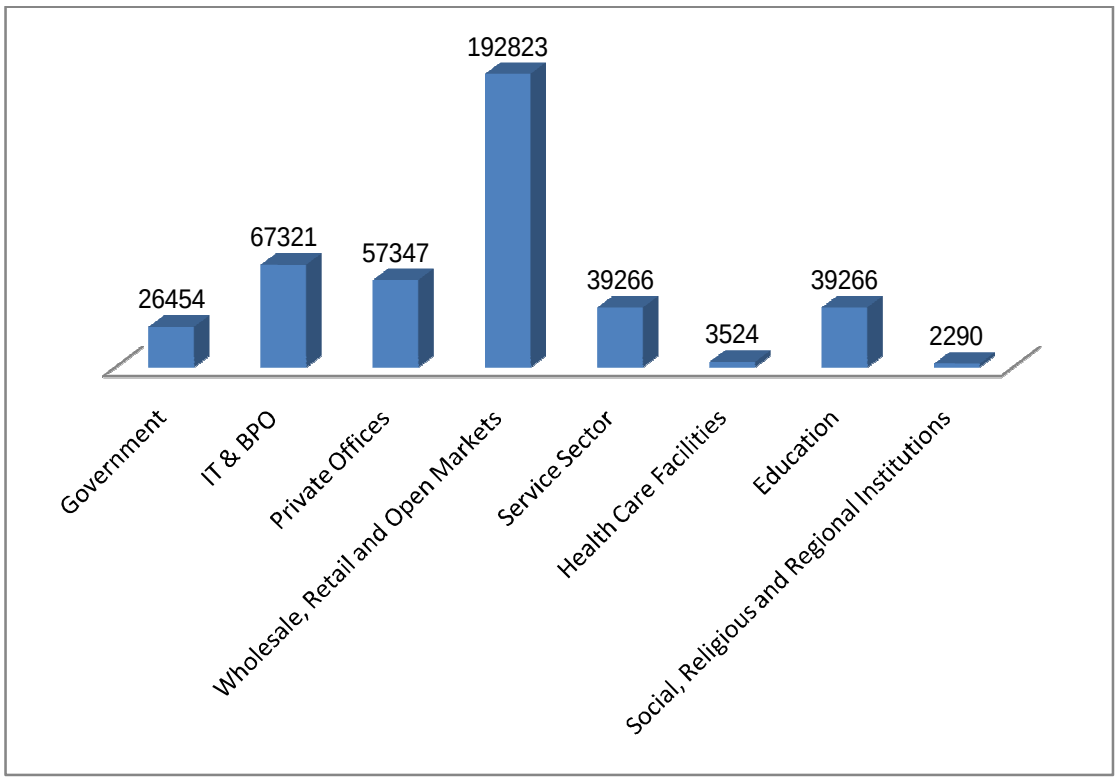
Table 5.8 Details of different offices and no of employees.

Type of Offices	Nos.	Employees
Government	456	26454
IT & BPO	716	67321
Private Offices	9684	57347
Wholesale, Retail and Open Markets	33224	192823*
Service Sector	7831	39266*
Health Care Facilities	1377	3524*
Education	369	39266*
Social, Religious and Regional Institutions	857	2290*
Total	**54514**	**428291**

(Source : Report on Employment in Service Sector in Navi Mumbai: Government and Private offices -2009, Healthcare facilities and education)

*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.)

Location	**Bridge Name**
Mankhurd – Belapur Line	1. Thane Creek Bridge
Belapur – Panvel Line	2. Taloja Creek Bridge, 3. Jui Creek Bridge
Thane – Vashi – Nerul Line	4. Thane Creek Bridge
Nerul – Seawoods – Belapur – Uran Line	5. Panvel Creek Bridge 6. Moho Creek Bridge 7. Seawoods RoB
Airoli – Mulund	8. Airoli Creek Bridge

(Source : CIDCO website)

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

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

(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.

a. upto Vashi in May 1992.
b. upto Nerul in Feb 1993.
c. Belapur in Jun 1993
d. Khandeshwar Jan 1995 and
e. Panvel in Jun 1998.

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. Manassarovar
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 Mnilkara 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 21st 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

a. Street lighting in every node
b. Drinking water pumping plant
c. Sewerage plant
d. Storm water Pumping plant
e. Commercial and residential complexes
f. Electrical and mechanical equipments of railway projects under CIDCO supervision.
g. 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 coastlines. 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 Manassarovar – 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:[23]

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**[24] **–**

- 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;

[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**[25]
   - **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**[26]

   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

[25] http://www.nmsez.com/locationadv.html
[26] 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 5.11 : Land use details of NMSEZ area.

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

(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:[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 asbeing 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:[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

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

(Source : CIDCO website)

[27] http://www.cidco.maharashtra.gov.in/NMM_Taking_The_First_Step.aspx
[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

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

(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[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 21st 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

[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 competion 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

[30] 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.[31]

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

[31] http://www.cidco.maharashtra.gov.in/NMIA_ConceptionstoClearance.aspx

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

7. Feb. 2007: CIDCO / GoM submitted Project Feasibility and Business Plan Report to MoCA / GoI.

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

9. Aug. 2007: Development of NMIA by CIDCO approved by its Board.

10. Aug. 2007: CIDCO made application to Ministry of Environment and Forests (MoEF) for approval of Terms of-Reference (TOR) for carrying out Environment Impact Assessment (EIA).

11. Sept. 2007: CIDCO appointed IIT Bombay, for Environment Impact Assessment (EIA) study and Central Water and Power Research Station (CW&PRS) Pune for conducting required hydraulic model studies.

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.

13. Feb. 2008: Maharashtra Coastal Zone Management Authority (MCZMA) recommended the proposal for amendment to CRZ Notification of 1991 for NMIA with compensatory forestation.

14. March 2008: CIDCO appointed consortium led by M/s. Louis Berger Group (LBG), Inc USA as Prime Consultant for the proposed Airport development.

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.

17. April 2009: Honorable Mumbai High Court allowed the Prayer of CIDCO / GoM for Amendment of CRZ Notification of 1991.

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.

19. June 2009: CIDCO submitted fresh application for approval of TOR for carrying out EIA Study to MoEF & MCZMA for CRZ clearance.

20. July 2009: MCZMA considered proposal of CRZ clearance for NMIA and recommended it to MoEF for approval.

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.

22. Dec. 2009: Expert Appraisal Committee (EAC), MoEF, visited the Navi Mumbai Airport site Feb. 2010: MoEF gave additional TOR for EIA study.

23. Mar. 2010: CIDCO submitted draft EIA report to Maharashtra Pollution Control Board (MPCB), for conducting Public Hearing.

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

25. June 2010: CIDCO submitted final EIA Report incorporating observations of Public Hearing 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.

28. Oct. 2010: Ministry of Defense (MoD), GoI granted Defense clearance to NMIA project.

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.

Chapter 6

Data Analysis – I (Node wise Analysis)

6.1 Introduction

6.2 Analysis of Airoli Node

6.3 Analysis of Ghansoli Node

6.4 Analysis of Kopar – Khairane Node

6.5 Analysis of Vashi Node

6.6 Analysis of Sanpada Node

6.7 Analysis of Nerul Node

6.8 Analysis of CBD Belapur Node

6.9 Analysis of Kharghar Node

6.10 Analysis of Kalamboli Node

6.11 Analysis of Kamothe Node

6.12 Analysis of New Panvel Node

6.13 Analysis of Dronagiri Node

6.14 Combine Analysis of All Nodes

6.15 Study on Satisfaction of Respondents on Quality of Physical and Social Infrastructure

6.16 Relation Analysis of Suggestions and Complaints

6.1 Introduction:

This chapter gives node wise analysis of questionnaires collected from respondents. Responses from 900 respondents with the help of well defined sample frame had been collected by the researcher from different nodes of Navi Mumbai. Population of planned nodes was 11,80,598 in 2010. The details of sample collected from each node are given in the following table.

Table 6.1: Node wise details of sample

Node	Population	Sample
Airoli	1,15,335	90
Ghansoli	65,593	50
Kopar Khairane	1,32,827	100
Vashi	1,39,573	105
Sanpada	79,894	60
Nerul	1,62,366	125
CBD Belapur	65,442	50
Kharghar	1,39,693	105
Kalamboli	62,073	50
Kamothe	74,249	55
New Panvel	1,23,171	95
Dronagiri	20,382	15
Total	**1180598**	**900**

The collected data was classified on the basis of period of residence, Age, Gender and occupation for further analysis. The researcher made an effort to find out answers for the following questions.

a. Why respondents chose Navi Mumbai as their place of their residence?
b. If civic facilities which were considered for research are provided by CIDCO / NMMC.
c. If elements of social infrastructure which were considered for the research are available in this Nodes?
d. Opinion of the respondents on “Whether CIDCO is successful in developing Navi Mumbai?”
e. Suggestions and recommendations of the respondents which shows lacunas in development and maintenance of different facilities provided by CIDCO.

6.2 Analysis of Airoli Node

Following is analysis of Airoli node. The sample size for this node is 90. Following is sample profile of this node.

Table 6.2 Profile of Sample Airoli Node

Gender	**Male**	**Female**	**Total**			
Nos.	55 (61%)	35 (39%)	90 (100%)			
Residence	**0 – 4 Yrs**	**5 -15 Yrs**	**15 Above**	**Total**		
Nos.	19 (21%)	39 (43%)	32 (36%)	90 (100%)		
Age group	**< 18**	**18 -45**	**45 Above**	**Total**		
Nos.	Nil (0%)	69 (77%)	21 (23%)	90 (100%)		
Occupation	**Student**	**Service**	**Bus / Prof**	**Housewife**	**Retired**	**Total**
Nos.	5 (6%)	55 (61%)	15 (16%)	10 (11%)	5 (6%)	90 (100%)

(**Source :** Primary Data)

(**Table Note :** Residence = Period of residence, Bus / Prof = Business and Profession)

The primary analysis includes classification of respondents on the basis of Gender, Period of residence, Age and occupation. It represents 55 males and 35 females. Classification on the basis of period of residence shows 19 residents in this node for less than 4 years, 39 are between 5 -15 years and 32 residents live here for more than 15 years. 69 respondents were in between 18-45 years and 21 are above 45 years. There were 5 Students, 55 Employees, 15 Businessmen / Professionals, 10 Housewives and 5 retired respondents.

It was observed by the researcher that majority of the population in this node is young and having earning source. It is further observed that most of the population is migrated to this node in last 15 years

Analysis of respondents in Airoli Node.

The researcher had made an effort to draw a conclusion by making analysis of respondents in Airoli Node to find out answer for following questions.

a. Why respondents chose Navi Mumbai as their place of their residence?
b. If civic facilities are provided by CIDCO in this area?
c. If elements of social infrastructure which are considered for the research are available in this node?

d. Opinion of the respondents on “Whether CIDCO is successful in developing Navi Mumbai?”
e. Suggestions and recommendations of the respondents which shows lacunas in development and maintenance of different facilities by CIDCO / NMMC.

The following is outcome of the analysis.

a. Why respondents chose Navi Mumbai as their place of their residence?

The combine analysis of all 90 respondents gives following outcome for this question

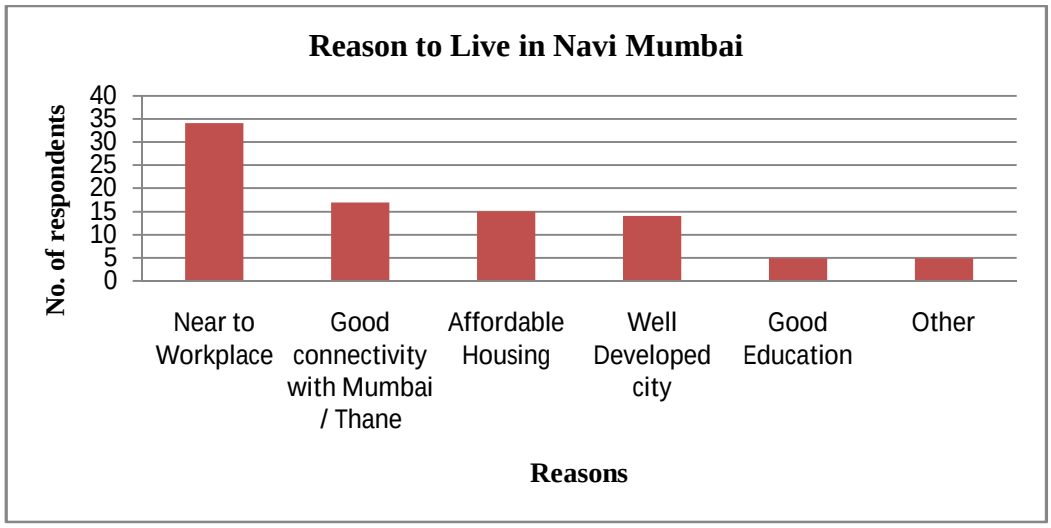
Table 6.3: Overall ranking of respondents in Airoli Node to live here.

Sr. No.	Reason	No. of Respondents	%	Rank
1	Near to Workplace	34	38 %	1
2	Good connectivity with Mumbai / Thane	17	19 %	2
3	Affordable Housing	15	16 %	3
4	Well Developed city	14	15 %	4
5	Good Education	5	6 %	5
6	Other	5	6 %	5
	Total	**90**	**100 %**	

(Source : Primary Data)

Researcher had found that ‘Near to workplace’ was the main reason of the respondents to live in Airoli node, followed by good connectivity with Mumbai / Thane, affordable housing, and well developed city. Good education and other reasons were the less important reasons for respondents and reasons like ancestral place and good quality of life was not at all a choice of respondents to live in this node of Navi Mumbai.

Graph 6.1 : Reason to live in Navi Mumbai (Airoli Node)



Above is a bar diagram of table 6.3, different reasons are on X axis and no. of respondents on Y axis. Researcher had concluded that 'Near to Workplace is the main reason for the residents of Airoli node to live in Navi Mumbai. Respondents are least concerned about good education and other reasons.

b. If civic facilities are provided by CIDCO in this area?

CIDCO had provided civic facilities in this node till NMMC took over the responsibility. The NMMC was incorporated in 1991. Following is the detail analysis regarding provision of civic services by CIDCO / NMMC.

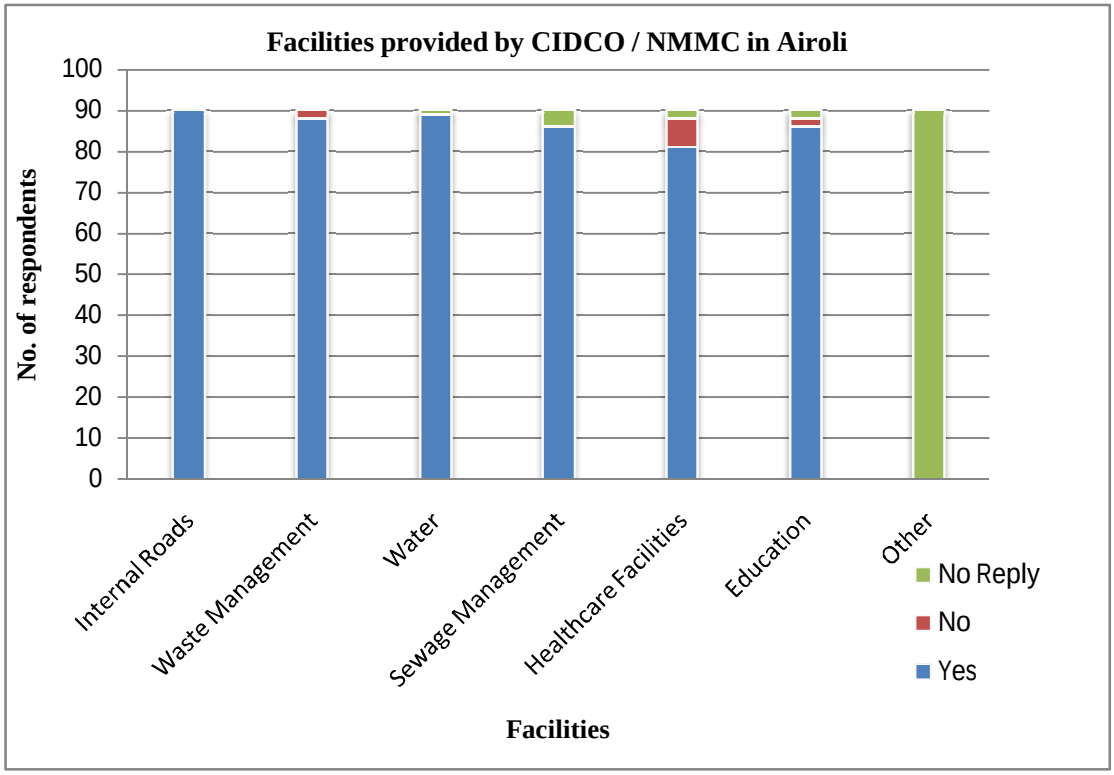
Table 6.4: Analysis for Provision of civic services by CIDCO / NMMC in Airoli node.

Facilities provided by CIDCO / NMMC	Yes	No	No Reply	Total
Internal Roads	90	Nil	Nil	90
Waste Management	88	2	Nil	90
Water	89	Nil	1	90
Sewage Management	86	Nil	4	90
Healthcare Facilities	81	7	2	90
Education	86	2	2	90
Other	Nil	Nil	90	90
%	**82 %**	**2 %**	**16 %**	**100 %**

(Source : Primary Data)

Responses of residents on availability of different civic services provided by NMMC / CIDCO are analysed in above table. The researcher had concluded that average 82% of the residents of this node confirmed availability of different civic services provided by CIDCO / NMMC, 2 % rejected it and 16% do not reply.

Graph 6.2 : Analysis of civic facilities provided by CIDCO / NMMC in Airoli node.



In the above graph different facilities are on X axis and no. of respondents on Y axis. Responses are plotted in different colours as mentioned in the graph. Researcher concluded that 'majority of the respondents had confirmed that civic facilities are provided by CIDCO / NMMC in Airoli Node'.

c. If elements of social infrastructure which are considered for the research are available in this node?

Researcher had tried to analyse availability of different elements of social infrastructure in Airoli node. It includes gardens, Playgrounds, schools, colleges etc. Following table present this analysis.

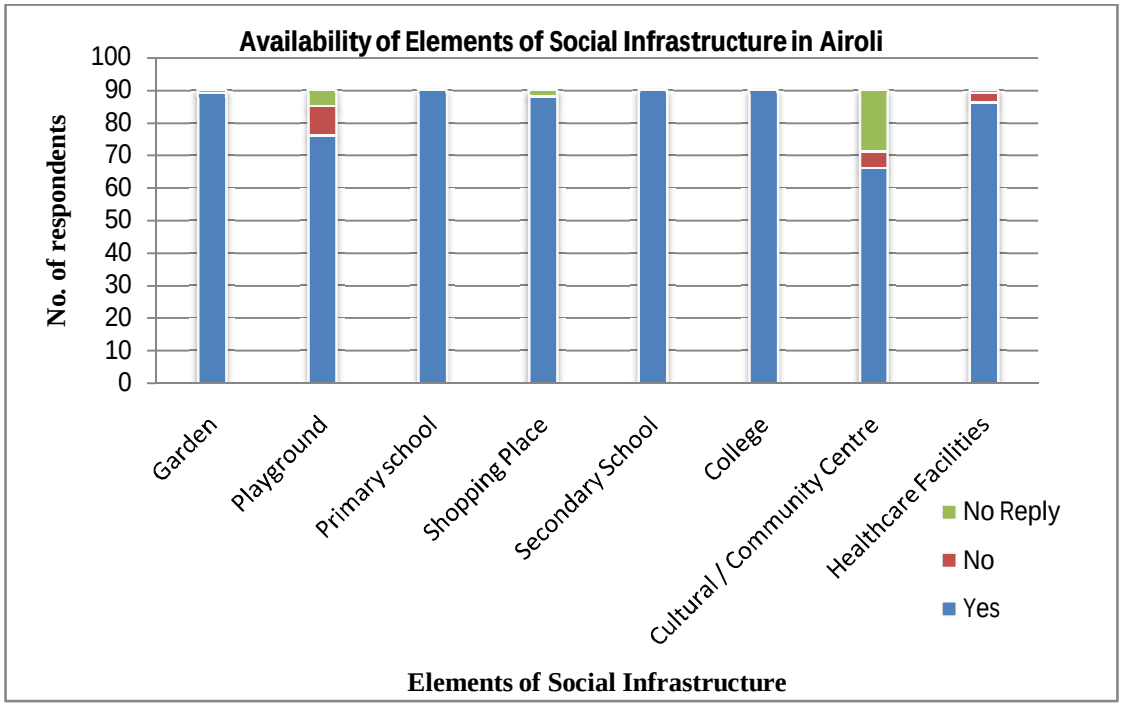
Table 6.5 : Analysis for availability of elements of social infrastructure in Airoli Node.

Elements of Social Infrastructure	Yes	No	No Reply	Total
Garden	89	Nil	1	90
Playground	76	9	5	90
Primary school	90	Nil	Nil	90
Shopping Place	88	Nil	2	90
Secondary School	90	Nil	Nil	90
College	90	Nil	Nil	90
Cultural / Community Centre	66	5	19	90
Healthcare Facilities	86	3	1	90
%	**94 %**	**2 %**	**4 %**	**100 %**

(Source : Primary Data)

The above table indicates that average 94% respondents had confirmed availability of all selected elements of social infrastructure, 2% respondents rejected it and 4% did not reply.

Graph 6.3 : Analysis for availability of elements of social infrastructure in Airoli Node.



In the above graph different elements of social infrastructure are on X axis and no. of respondents on Y axis. Responses are plotted in different colours as mentioned in the graph. The researcher concluded that 'majority of the respondents confirmed that elements of social infrastructure are available in Airoli Node'. However the major exception is availability of cultural and community centre, approx 27% respondents either reject it or remain silent.

d. Opinion of the respondents on "Whether CIDCO is successful in developing Navi Mumbai?"

This was the most important question of the analysis as actual beneficiaries of development had expressed their opinion on success of CIDCO in developing Navi Mumbai.

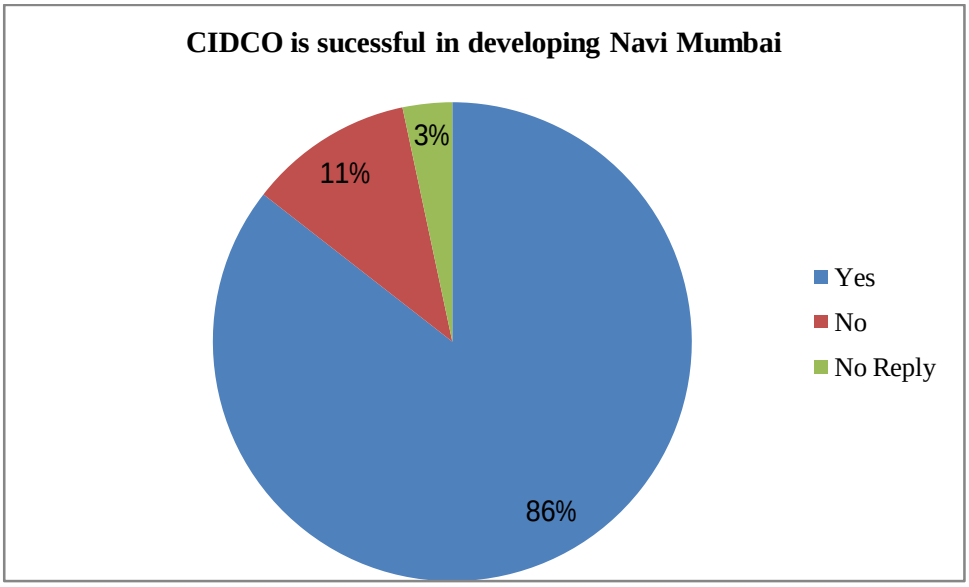
Table 6.6: Analysis for Whether CIDCO is successful in developing Navi Mumbai (Airoli Node)

	Yes	**No**	**No Reply**	**Total**
Nos.	77	10	3	**90**
%	**86 %**	**11 %**	**3 %**	**100 %**

(Source : Primary Data)

The above table had analysed responses on this question. Researcher had found that 86% of the respondents affirm success of CIDCO in developing Navi Mumbai, 11% considered it as failure and 3% did not reply.

Graph 6.4 : Analysis for Whether CIDCO is successful in developing Navi Mumbai (Airoli Node)



The researcher had concluded that 'majority of the residents in Airoli Node confirmed that CIDCO is successful in developing Navi Mumbai, with the help of above pie digram.

e. Suggestions and recommendations of the respondents which shows lacunas in development and maintenance of different facilities by CIDCO / NMMC.

Though 94% respondents of this node had affirmed success of CIDCO in developing Navi Mumbai following suggestions given by them reflect shortfalls in planning and maintenance of different facilities by CIDCO / NMMC.

Table 6.7: Overall Analysis of suggestions by respondents in Airoli Node

Respondents Suggestions	Respondent	%
Improve Cleanliness, sewage and waste management	18	20 %
Improve Public Transport system by increasing local railway and bus connectivity and proper maintenance of roads	12	13 %
Control over Traffic and Parking	6	7 %
Control on Encroachments	5	6 %
Advance and affordable medical facilities	22	24 %
Control over pollution	14	16 %
Development of modern Shopping facilities	5	6 %
Development of cultural / community centre	7	8 %
Development of playgrounds	10	11 %
Improve civic administration	5	6 %

(Source : Primary Data)

Analysis of suggestions given respondents on development of Airoli Node had been presented in above table. The researcher had found that majority of the residents require affordable medical facilities in their node, followed by improvement in cleanliness, sewage and waste management facilities. Other notable suggestions include control over pollution and improvement in public transport facilities.

6.3 Analysis of Ghansoli Node

Following is analysis of Ghansoli sample size for this node is 50. Following is sample profile of this node.

Table 6.8: Profile of Sample Ghansoli Node

Gender	**Male**	**Female**	**Total**			
Nos.	30 (60%)	20 (40%)	50 (100%)			
Residence	**0 – 4 Yrs**	**5 -15 Yrs**	**15 Above**	**Total**		
Nos.	10 (20%)	34 (68%)	6 (12%)	50 (100%)		
Age group	**< 18**	**18 -45**	**45 Above**	**Total**		
Nos.	Nil (0%)	42 (84%)	8 (16%)	50 (100%)		
Occupation	**Student**	**Service**	**Bus / Prof**	**Housewife**	**Retired**	**Total**
Nos.	3 (6%)	30 (60%)	7 (14%)	5 (10%)	5 (10%)	50 (100%)

(**Source :** Primary Data)

(**Table Note :** Residence = Period of residence, Bus / Prof = Business and Profession)

The primary analyses include classification of the respondents on the basis of Gender, Period of residence, Age and occupation. It represents 30 males and 20 females.10 residents are residing in this node for less than 5 years. 34 lived for 5 years or more but less than 15 years. 6 residents are residing for more than 15 years. 42 respondents are in between 18-45 years and 8 are above 45 years. There are 3 Students, 30 Employees, 7 Businessmen / Professionals, 5 Housewives and 5 retired respondents.

It was observed by the researcher that majority of the population in this node is young and having earning source. It was further observed that most of the population is migrated to this node in last 15 years.

Analysis of all respondents in Ghansoli Node.

The researcher made an effort to draw a conclusion by making combine analysis of all respondents to find out answer for following questions.

a. Why respondents chose Navi Mumbai as their place of their residence?
b. If civic facilities are provided by CIDCO in this area?

c. If elements of social infrastructure which are considered for the research are available in this node?
d. Opinion of the respondents on "Whether CIDCO is successful in developing Navi Mumbai?"
e. Suggestions and recommendations of the respondents which shows lacunas in development and maintenance of different facilities by CIDCO / NMMC.

The following is outcome of the analysis.

a. Why respondents chose Navi Mumbai as their place of their residence?

The outcome of combine analysis of all 50 respondents in this node done by the researcher is presented below.

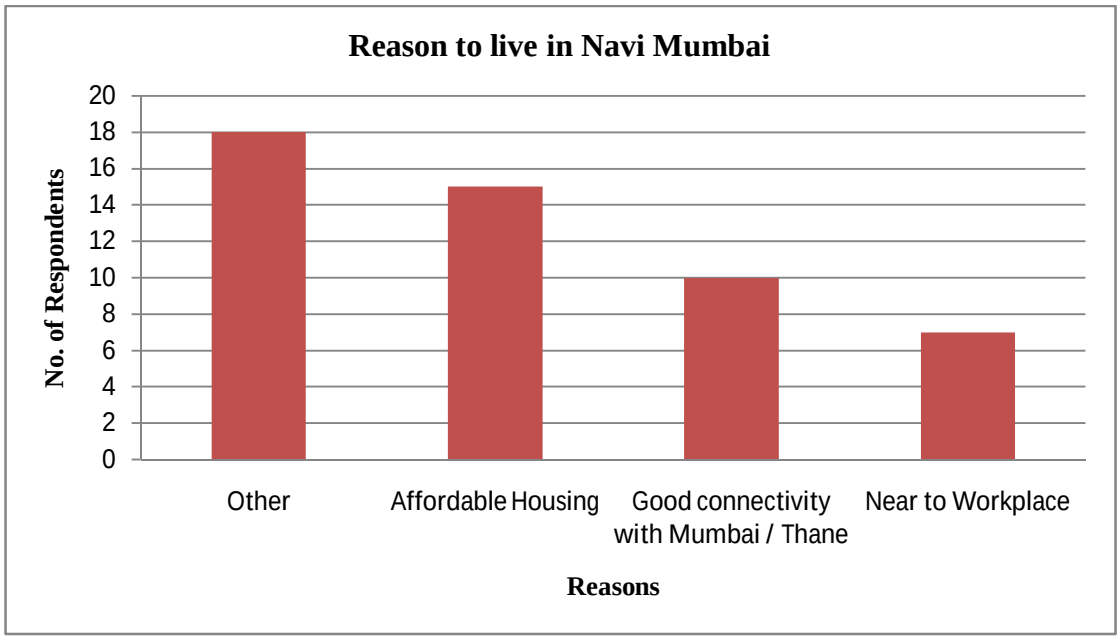
Table 6.9: Overall ranking of respondents in Ghansoli Node to live here.

Sr. No.	Reason	No. of Respondents	%	Rank
1	Other	18	36 %	1
2	Affordable Housing	15	30 %	2
3	Good connectivity with Mumbai / Thane	10	20 %	3
4	Near to Workplace	7	14 %	4
	Total	**50**	**100 %**	

(Source : Primary Data)

Researcher had found that 'Other' reasons such as living with children, settled after marriage were the main reasons of the respondents to live in Ghansoli node, followed by affordable housing. The lowest choice by the respondents was 'near to workplace'. It is observed that nobody chose 'Good Education', 'Well developed city', 'Good quality of life' etc.

Graph 6.5 : Reason to live in Navi Mumbai (Ghansoli Node)



Above is bar diagram of table 6.9, different reasons are on X axis and no. of respondents on Y axis. Researcher concluded that 'Other' is the main reason for the residents of Ghansoli node to live in Navi Mumbai, 'Other' includes settled after marriage, living with parents etc. Respondents were least concerned about good education, food quality of life and other reasons.

b] If civic facilities are provided by CIDCO / NMMC in this area?

CIDCO provide civic facilities in this node till NMMC took over the responsibility. The NMMC was incorporated in 1991.

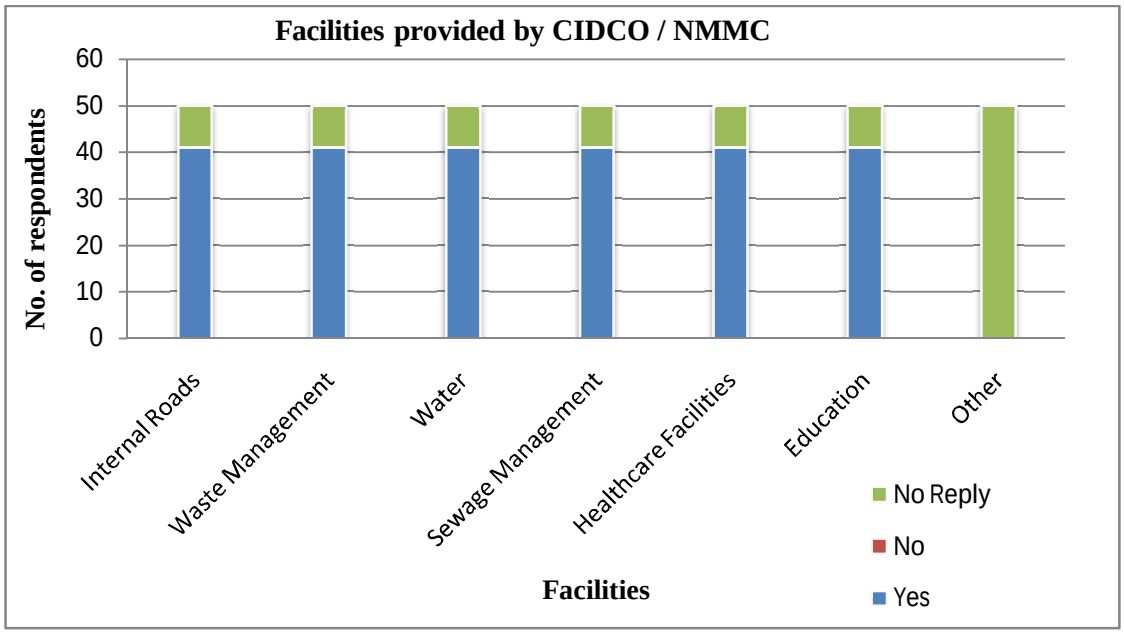
Table 6.10: Analysis for provision of civic services in Ghansoli Node.

Facilities provided by CIDCO / NMMC	Yes	No	No Reply	Total
Internal Roads	41	Nil	9	50
Waste Management	41	Nil	9	50
Water	41	Nil	9	50
Sewage Management	41	Nil	9	50
Healthcare Facilities	41	Nil	9	50
Education	41	Nil	9	50
Other	Nil	Nil	50	50
%	**70 %**	**Nil**	**30 %**	**100%**

(Source : Primary Data)

According to above table 70 % of respondents in this node had confirmed provision of civic services in this node by CIDCO/NMMC, remaining 30% respondents did not reply on the same. The researcher had also found that nobody denies provision of civic services in this node.

Graph 6.6 : Analysis of civic facilities provided by CIDCO / NMMC in Ghansoli node of Navi Mumbai



In the above graph different facilities are on X axis and no. of respondents on Y axis. Responses are plotted in different colours as mentioned in the graph. With the help of above diagram researcher had concluded that 'majority of the respondents had confirmed that civic facilities are provided by CIDCO / NMMC in Ghansoli Node'. An interesting fact had been found by researcher that nobody denies availability of any civic service.

c] If elements of social infrastructure which are considered for the research are available in this node?

Researcher had tried to analyse availability of different elements of social infrastructure in Ghansoli node. It includes availability of gardens, playgrounds, schools, colleges etc. Following table present this analysis.

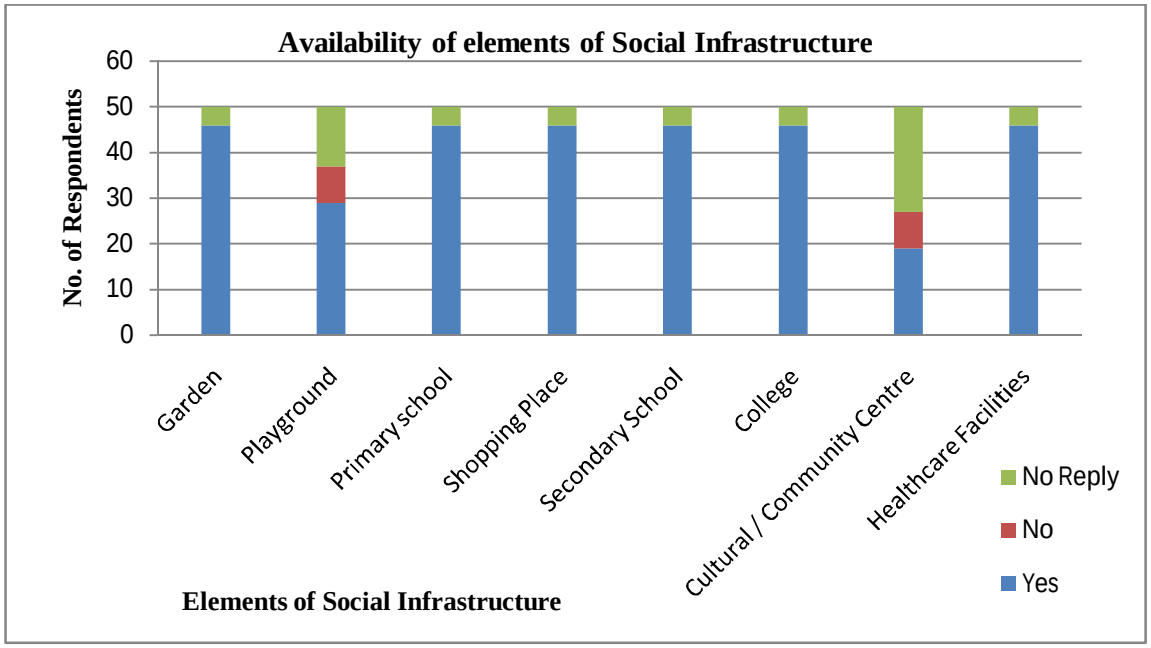
Table 6.11: Analysis for availability of elements of social infrastructure in Ghansoli Node.

Elements of Social Infrastructure	Yes	No	No Reply	Total
Garden	46	0	4	50
Playground	29	8	13	50
Primary school	46	0	4	50
Shopping Place	46	0	4	50
Secondary School	46	0	4	50
College	46	0	4	50
Cultural / Community Centre	19	8	23	50
Healthcare Facilities	46	0	4	50
%	**81 %**	**4 %**	**15 %**	**100%**

(Source : Primary Data)

81% respondents had confirmed availability of all elements of social infrastructure 4% had rejected its availability and 15% did not reply on the same. The major exception was availability of cultural/community centre, 62% respondents either denied or remain silent on its availability.

Graph 6.7 : Analysis of elements of social infrastructure in Ghansoli node of Navi Mumbai



In the above graph different elements of social infrastructure are on X axis and no. of respondents on Y axis. Responses are plotted in different colours as mentioned in the graph. The researcher concluded that 'majority of the respondents confirmed that elements of social infrastructure are available in Ghansoli Node'. However the major exception was availability of cultural and community centre, approx 62% respondents either rejected its availability or remain silent.

d] Opinion of the respondents on "Whether CIDCO is successful in developing Navi Mumbai?"

This was most important question of the analysis as the actual beneficiaries of development were asked to express their opinion on success of CIDCO in developing Navi Mumbai.

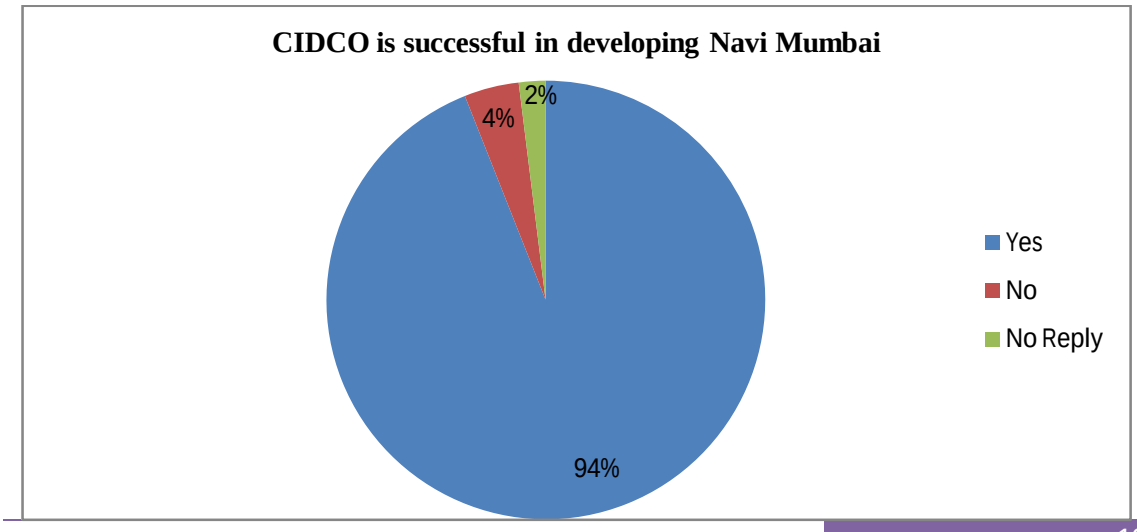
Table 6.12: Analysis for Whether CIDCO is successful in developing Navi Mumbai (Ghansoli Node)

	Yes	**No**	**No Reply**	**Total**
Nos.	47	2	1	50
%	**94%**	**4%**	**2%**	**100%**

(Source : Primary Data)

The above table clearly indicates that 94% of the respondents had affirmed success of CIDCO in developing Navi Mumbai, 4% respondents had considered it as failure and 2% respondents did not reply on the same.

Graph 6.8 : Analysis for responses of Ghansoli node residents on 'Whether CIDCO is successful in developing Navi Mumbai?'



Above pie diagram had helped the researcher to conclude that 'majority of the Ghansoli Node residents confirms that CIDCO is successful in developing Navi Mumbai.

e] Suggestions and recommendations of the respondents which shows lacunas in development and maintenance of different facilities by CIDCO / NMMC.

Researcher had collected suggestions / complaints from the respondents. 94% respondents of this node had affirmed success of CIDCO in developing Navi Mumbai. Following table includes suggestions given by them reflect shortfalls in planning and maintenance of different facilities by CIDCO / NMMC.

Table 6.13 : Suggestions of the respondents living in Ghansoli Node.

Sr. No.	Suggestion	Respondents	%
1	Control on Encroachments	15	30 %
2	Control over pollution	15	30 %
3	Development of cultural / community centre	13	26 %
4	Development of remaining land	5	10 %
5	Development of modern Shopping facilities	5	10 %
6	Improve Cleanliness, sewage and waste management	5	10 %
7	Development of playground	4	8 %
8	Advance and affordable medical facilities	5	10 %

(Source : Primary Data)

The researcher had analysed different suggestions / recommendations given by the respondents and its outcome is presented in above table. Residents were unhappy with control over encroachments and pollution followed by lack of cultural / community centre in the node.

6.4 Analysis of Kopar Khairane Node

Following is analysis of Kopar – Khairane node. Sample size for this node is 100. Following is sample profile of this node.

Table 6.14: Profile of sample of Kopar – Khairane Node

Gender	**Male**	**Female**	**Total**			
Nos.	50 (50%)	50 (50%)	100 (100%)			
Residence	**0 – 4 Yrs**	**5 -15 Yrs**	**15 Above**	**Total**		
Nos.	25 (25%)	45 (45%)	30 (30%)	100 (100%)		
Age group	**< 18**	**18 -45**	**45 Above**	**Total**		
Nos.	Nil (0%)	80 (80%)	20 (20%)	100 (100%)		
Occupation	**Student**	**Service**	**Bus / Prof**	**Housewife**	**Retired**	**Total**
Nos.	5 (5%)	60 (60%)	20 (20%)	10 (10%)	5 (5%)	100 (100%)

(Source : Primary Data)

(**Table Note :** Residence = Period of residence, Bus / Prof = Business and Profession)

The primary analysis reveals that there were 50 Male and 50 Female respondents, 25 respondents were living in the city for 0-4 years, 45 living for 5-15 years and 30 for more than 15 years. There was no any respondent whose age is less than 18 years, 80 respondents between 18-45 age group and were above 45 years. The occupation analysis shows that 5 were students, 60 employed, 20 businessmen, 10 housewives and 5 are retired.

It was observed by the researcher that majority of the population in this node is young and employed. It was further observed that most of the population was migrated to this node in last 15 years

Analysis of all respondents in Kopar Khairane Node.

Researcher made an effort to draw a conclusion by making combine analysis of all respondents to find out answers for following questions.

a. Why respondents chose Navi Mumbai as their place of their residence?
b. If civic facilities are provided by CIDCO in this area?
c. If elements of social infrastructure which are considered for the research are available in this node?

d. Opinion of the respondents on “Whether CIDCO is successful in developing Navi Mumbai?”
e. Suggestions and recommendations of the respondents which shows lacunas in development and maintenance of different facilities by CIDCO.

The following is outcome of the analysis.

a] Why respondents chose Navi Mumbai as their place of their residence?

The researcher had analysed responses of all 100 respondents in respect of their reason to select Navi Mumbai as their place of residence, The analysis gives following outcome.

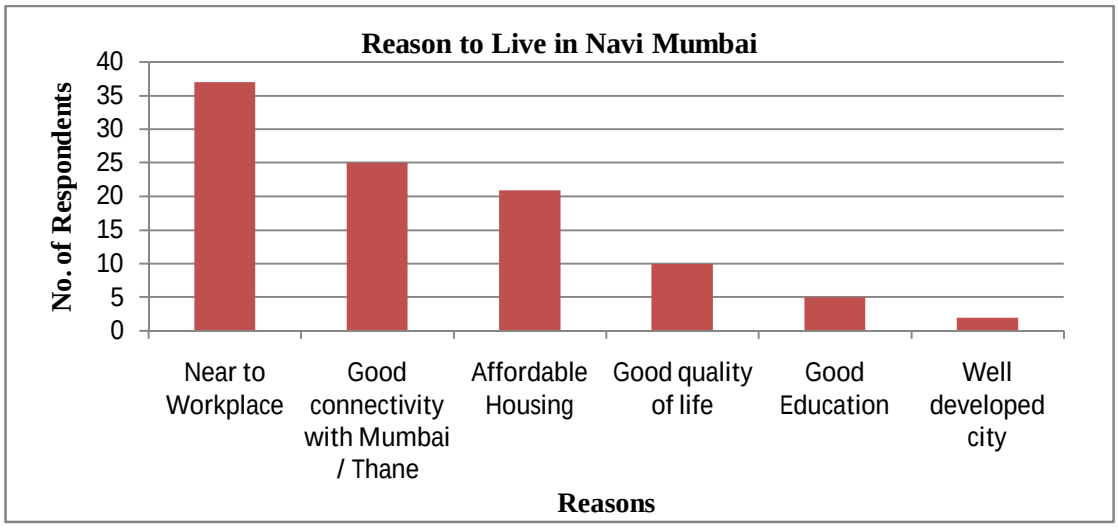
Table 6.15: Overall ranking of respondents in Kopar Khairane Node to live here.

Sr. No.	Reason	No. of Respondents	%	Rank
1	Near to Workplace	37	37 %	1
2	Good connectivity with Mumbai / Thane	25	25%	2
3	Affordable Housing	21	21 %	3
4	Good quality of life	10	10 %	4
5	Good Education	5	5 %	5
6	Well developed city	2	2 %	6
	Total	**100**	**100 %**	

(Source : Primary Data)

Highest i.e 37% respondents had chosen “Near to Workplace” as their reason to live in Kopar Khairane node, followed by good connectivity with Mumbai / Thane and affordable housing. Good education and well developed city were considered by only 5 % and 2 % of respondents, whereas reasons like Ancestral place and others were not at all considered by respondents

Graph 6.9 : Reason to live in Navi Mumbai (Kopar - Khairane Node)



Above is bar diagram of table 6.9, different reasons are on X axis and no. of respondents on Y axis. Researcher concluded that 'Near to Workplace is the main reason for the residents of Kopar - Khairane node to live in Navi Mumbai. Respondents were least concerned about good education and well developed city.

b] If civic facilities are provided by CIDCO/ NMMC in this area?

CIDCO had provided civic facilities in this node till NMMC took over the responsibility. The NMMC was incorporated in 1991. Following is the detail analysis regarding provision of civic services by CIDCO / NMMC.

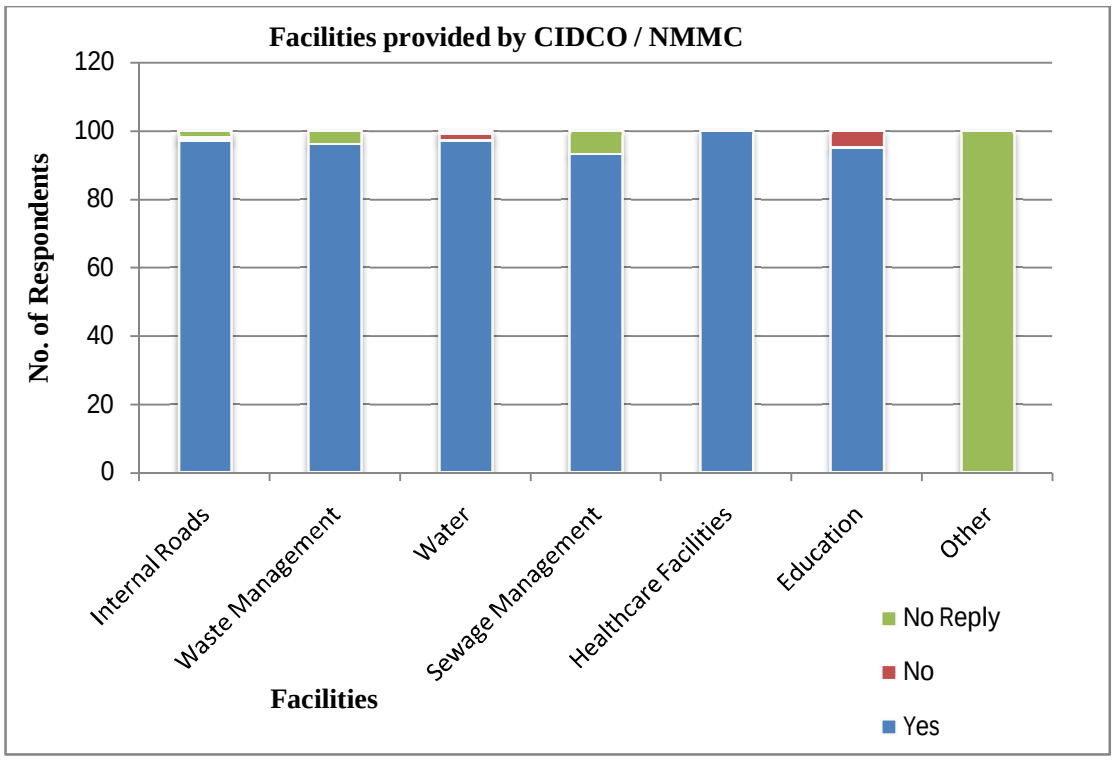
Table 6.16: Analysis for provision of civic facilities by CIDCO / NMMC in Kopar Khairane

Facilities provided by CIDCO / NMMC	Yes	No	No Reply	Total
Internal Roads	97	1	2	100
Waste Management	96	Nil	4	100
Water	97	2	1	100
Sewage Management	93	Nil	7	100
Healthcare Facilities	100	Nil	Nil	100
Education	95	5	Nil	100
Other	Nil	Nil	100	100
%	**83 %**	**1 %**	**16 %**	**100 %**

(Source : Primary Data)

The researcher concluded that average 83% respondents had confirmed provision of civic services by CIDCO / NMMC in this node, 1% had rejected it and 16% did not reply on the same.

Graph 6.10 : Analysis of civic facilities provided by CIDCO / NMMC in Kopar - Khairane node of Navi Mumbai



In the above graph different facilities are on X axis and no. of respondents on Y axis. Responses are plotted in different colours as mentioned in the graph. Researcher concluded that 'majority of the respondents confirmed that civic facilities are provided by CIDCO / NMMC in Kopar - Khairane Node'.

c] If elements of social infrastructure considered for the research are available in this node?

The researcher had tried to analyse availability of different elements of social infrastructure in Airoli node. It includes gardens, Playgrounds, schools, colleges etc. Following table present this analysis.

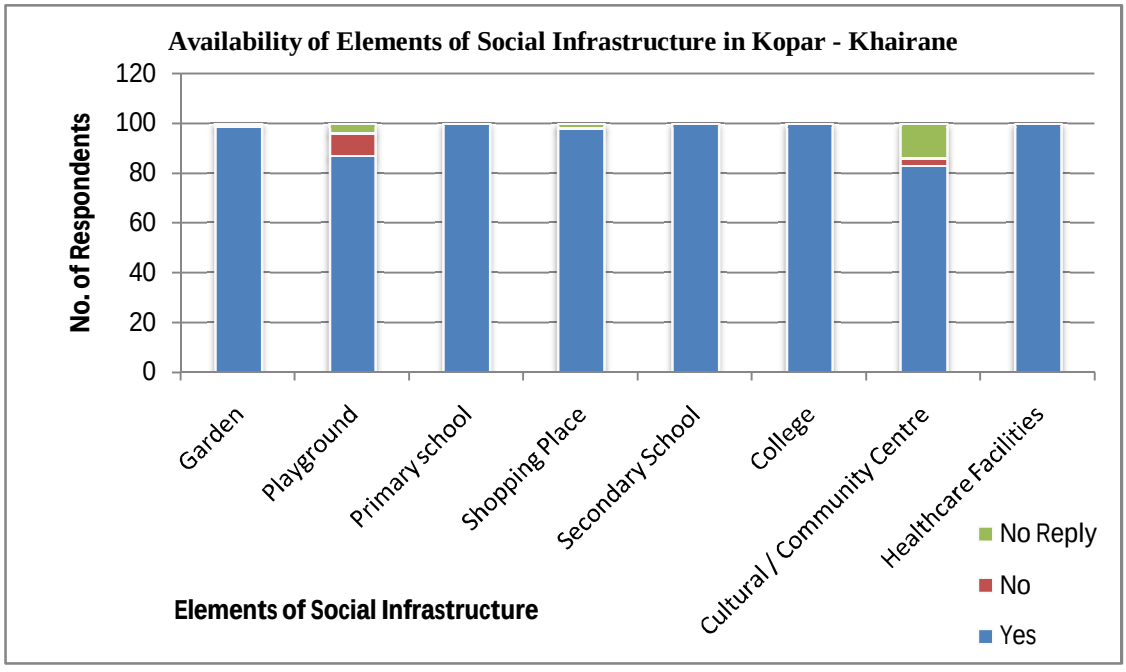
Table 6.17: Availability of social infrastructure in Kopar Khairane Node.

Elements of Social Infrastructure	Yes	No	No Reply	Total
Garden	99	Nil	1	100
Playground	87	9	4	100
Primary school	100	Nil	Nil	100
Shopping Place	98	Nil	2	100
Secondary School	100	Nil	Nil	100
College	100	Nil	Nil	100
Cultural / Community Centre	83	3	14	100
Healthcare Facilities	100	Nil	Nil	100
%	**96 %**	**1 %**	**3 %**	**100 %**

(Source : Primary Data)

From the above table researcher had found that average 96 % respondents confirm availability of all elements of social infrastructure in this node, 1 % had rejected it, and 3 % did not reply on the same. However play ground and cultural / community centre were the exceptions as only 87% and 83% respondents confirm it availability.

Graph 6.11 : Analysis for availability of elements of social infrastructure in Kopar - Khairane Node of Navi Mumbai.



In the above graph different elements of social infrastructure are on X axis and no. of respondents on Y axis. Responses are plotted in different colours as mentioned in the graph. Researcher concluded that 'majority of the respondents had confirmed that elements of social infrastructure are available in Kopar - Khairane Node'. However the major exception is availability of playground and cultural / community centre, only 87% and 83% respondents have confirm its availability.

d] Opinion of the respondents on "Whether CIDCO is successful in developing Navi Mumbai?"

This was most important question of the analysis as the actual beneficiaries of development had expresed their opinion on success of CIDCO in developing Navi Mumbai.

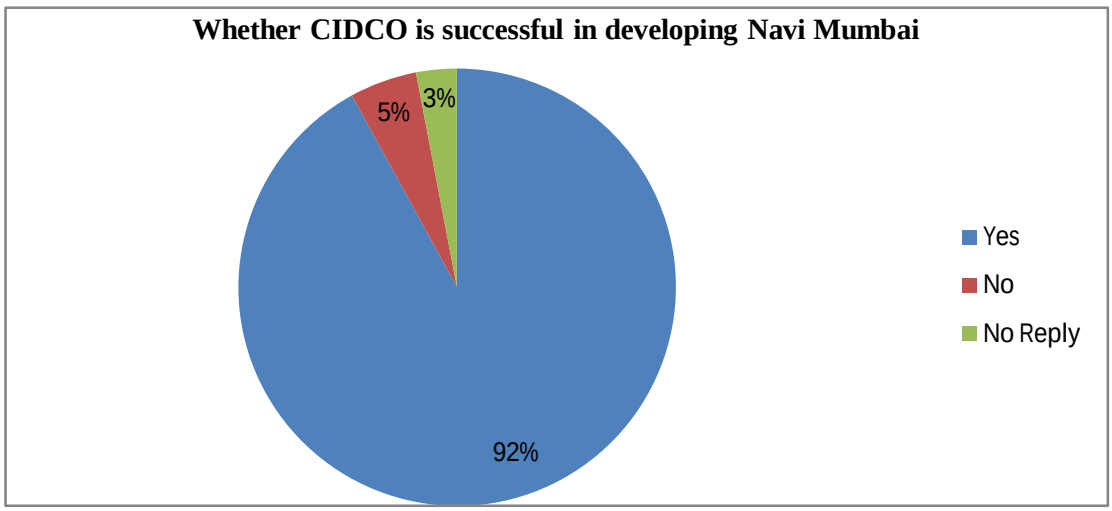
Table 6.18: CIDCO is successful in developing Navi Mumbai (Kopar Khairane Node)

	Yes	No	No Reply	Total
Nos.	92	5	3	100
%	92 %	5 %	3 %	100%

(Source : Primary Data)

The researcher had found that 92% of the respondents had affirmed success of CIDCO in developing Navi Mumbai, 5% had considered it as failure and 3 % did not reply on the same.

Graph 6.12 : Analysis for responses of Kopar - Khairane node residents on 'Whether CIDCO is successful in developing Navi Mumbai?'



Above pie diagram had helped the researcher to conclude that 'majority of the Kopar - Khairane Node residents confirms that CIDCO is successful in developing Navi Mumbai.

e] Suggestions and recommendations of the respondents which shows lacunas in development and maintenance of different facilities by CIDCO / NMMC.

Though 92% respondents of this node had affirmed success of CIDCO in developing Navi Mumbai following suggestions had been given by them which reflect shortfalls in planning and maintenance of different facilities by CIDCO / NMMC.

Table 6.19: Suggestions by Kopar Khairane residents

Suggestion	Respondent	%
Redevelopment of old CIDCO buildings	10	10 %
Control over pollution	5	5 %
Improve Cleanliness, sewage and waste management	15	15 %
Improve Public Transport system by increasing local railway and bus connectivity and also by proper development and maintenance of roads	17	17 %
Require good recreation centre	3	3 %
Advance and affordable medical facilities	5	5 %
Control on Encroachments	5	5 %
Improve quality of gardens.	10	10 %
Improve water management	10	10 %

(Source : Primary Data)

The reasearcher had found that improvement was required in different elements of physical and social infrastructure major improvement was required in public transport system, sewage and wastage management. Other notable suggestions include redevelopment of old CIDCO buildings, water management etc.

6.5 Analysis of Vashi Node

Following is analysis Vashi node. Sample size for this node is 105. Following is sample profile of this node.

Table 6.20 Profile of Sample Vashi Node

Gender	**Male**	**Female**	**Total**			
Nos.	40 (38%)	65 (62%)	105 (100%)			
Residence	**0 – 4 Yrs**	**5 -15 Yrs**	**15 Above**	**Total**		
Nos.	25 (24%)	37 (35%)	43 (41%)	105 (100%)		
Age group	**< 18**	**18 -45**	**45 Above**	**Total**		
Nos.	Nil (0%)	90 (86%)	15 (14%)	105 (100%)		
Occupation	**Student**	**Service**	**Bus / Prof**	**Housewife**	**Retired**	**Total**
Nos.	5 (5%)	65 (6%)	25 (24%)	5 (5%)	5 (5%)	105 (100%)

(Source : Primary Data)

(**Table Note :** Residence = Period of residence, Bus / Prof = Business and Profession)

The primary analysis reveals there were 40 Male and 65 Female respondents. The sample include 25 residents living in the city for less than 5 years, 37 for 5 - 15 years and 43 were residing for more than 15 years. There were 90 respondents between 18-45 age group and 15 are above 45 years. The occupation analysis shows there were 5 students, 65 employees, 25 businessmen, 5 housewives and 5 retired individuals.

It had been observed by the researcher that majority of the population in this node is young and having earning source. It was further observed that businessman prefers to live in this node

Analysis of all respondents in Vashi Node.

The researcher made an effort to draw a conclusion by making combine analysis of all respondents to find out answer for following questions.

a. Why respondents chose Navi Mumbai as their place of their residence?
b. If civic facilities are provided by CIDCO in this area?
c. If elements of social infrastructure which are considered for the research are available in this node?

d. Opinion of the respondents on “Whether CIDCO is successful in developing Navi Mumbai?”
e. Suggestions and recommendations of the respondents which shows lacunas in development and maintenance of different facilities by CIDCO.

a] Why respondents chose Navi Mumbai as their place of their residence?

The combine analysis of all 105 respondents had been done by researcher which gave following outcome for this question

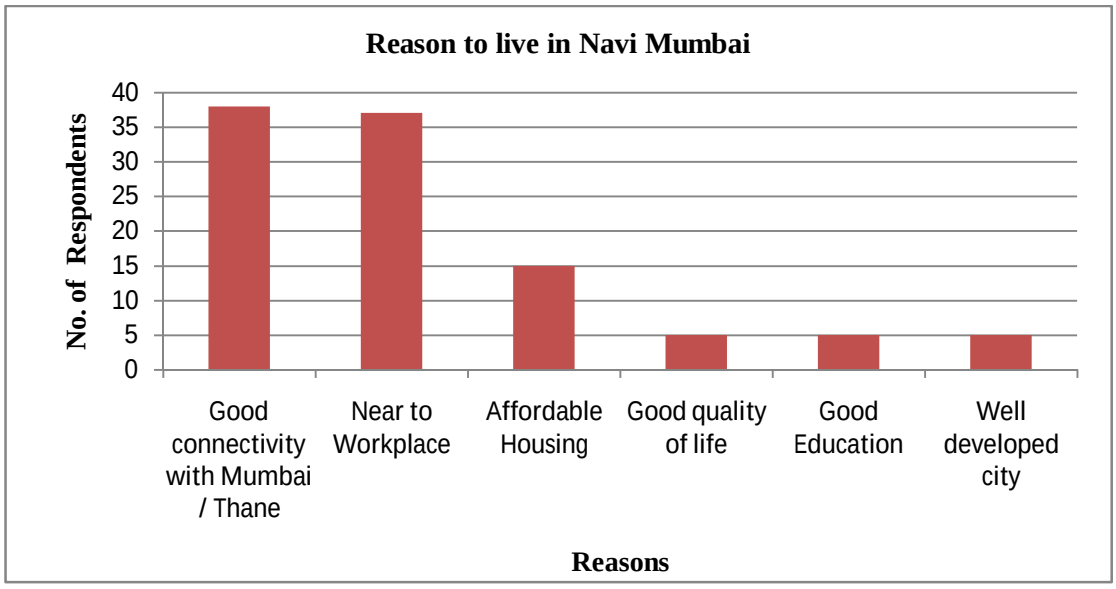
Table 6.21: Overall ranking of respondents in Vashi Node to live here.

Sr. No.	Reason	Respondents	%	Rank
1	Good connectivity with Mumbai / Thane	38	36 %	1
2	Near to Workplace	37	35 %	2
3	Affordable Housing	15	14 %	3
4	Good quality of life	5	5 %	4
5	Good Education	5	5%	4
6	Well developed city	5	5%	4
	Total	**105**	**100 %**	

(Source : Primary Data)

The researcher had found that maximum i.e. 36 % respondents of this node consider “Good connectivity with Mumbai / Thane” as the main reason to live in Vashi. Good education, Good quality of life and well developed city were the least considered reasons. Ancestral place and Other reasons were not at all considered by the respondents.

Graph 6.13 : Reason to live in Navi Mumbai (Vashi Node)



Above is bar diagram of table 6.21, different reasons are on X axis and no. of respondents on Y axis. Researcher concluded that 'Good connectivity with Mumbai / Thane' is the main reason for the residents of Vashi node to live in Navi Mumbai. Respondents were least concerned about good education, good quality of life and other reasons.

b] If civic facilities are provided by CIDCO / NMMC in this area?

The researched had analysed all 105 respondents that gives following outcome for this question

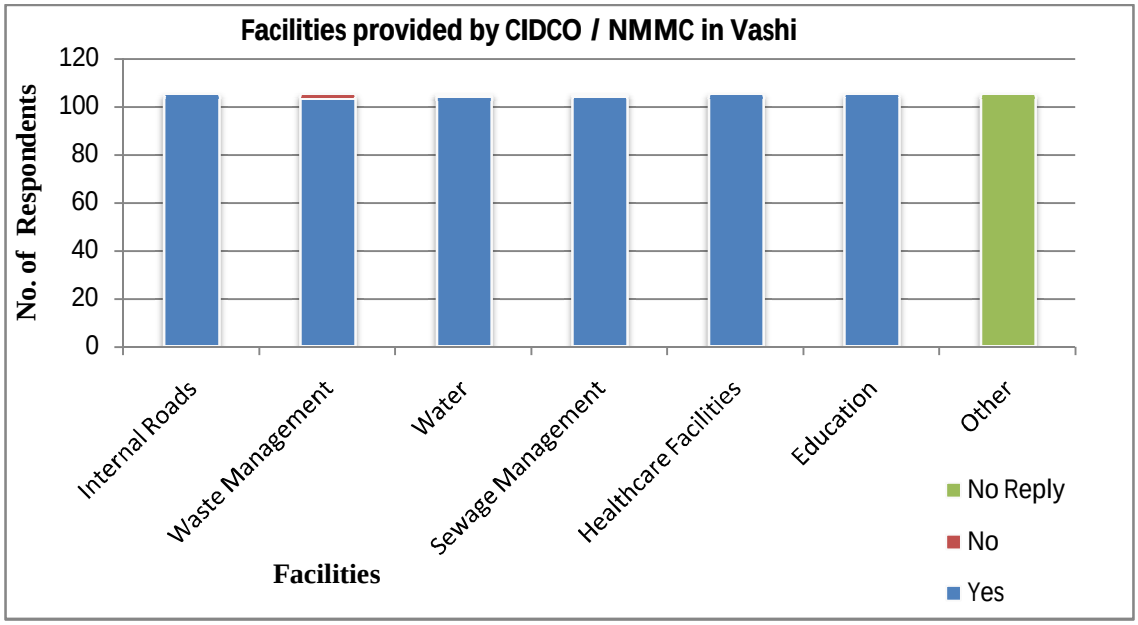
Table 6.22: Analysis for availability of civic facilities provided by CIDCO / NMMC in Vashi

Facilities provided by CIDCO	Yes	No	No Reply	Total
Internal Roads	105	Nil	Nil	105
Waste Management	103	2	Nil	105
Water	104	Nil	1	105
Sewage Management	104	Nil	1	105
Healthcare Facilities	105	Nil	Nil	105
Education	105	Nil	Nil	105
Other	Nil	Nil	105	105
%	**85.17 %**	**0.27 %**	**14.56 %**	**100 %**

(Source : Primary Data)

The analysis of responses of residents on availability of different civic services provided by NMMC / CIDCO had been done by the researcher. Average 85.17% respondents had confirmed provision of civic services by CIDCO in this node, 0.27 % had rejected it and 14.56 % did not reply on the same.

Graph 6.14 : Analysis of civic facilities provided by CIDCO / NMMC in Vashi node of Navi Mumbai



In the above graph different facilities are on X axis and no. of respondents on Y axis. Responses are plotted in different colours as mentioned in the graph. Researcher had concluded that 'majority of the respondents confirms that civic facilities are provided by CIDCO / NMMC in Vashi Node'.

c] If elements of social infrastructure considered for the research are available in this node?

The researcher had tried to analyse availability of different elements of social infrastructure in Vashi node. It includes gardens, Playgrounds, schools, colleges etc. Following table present this analysis.

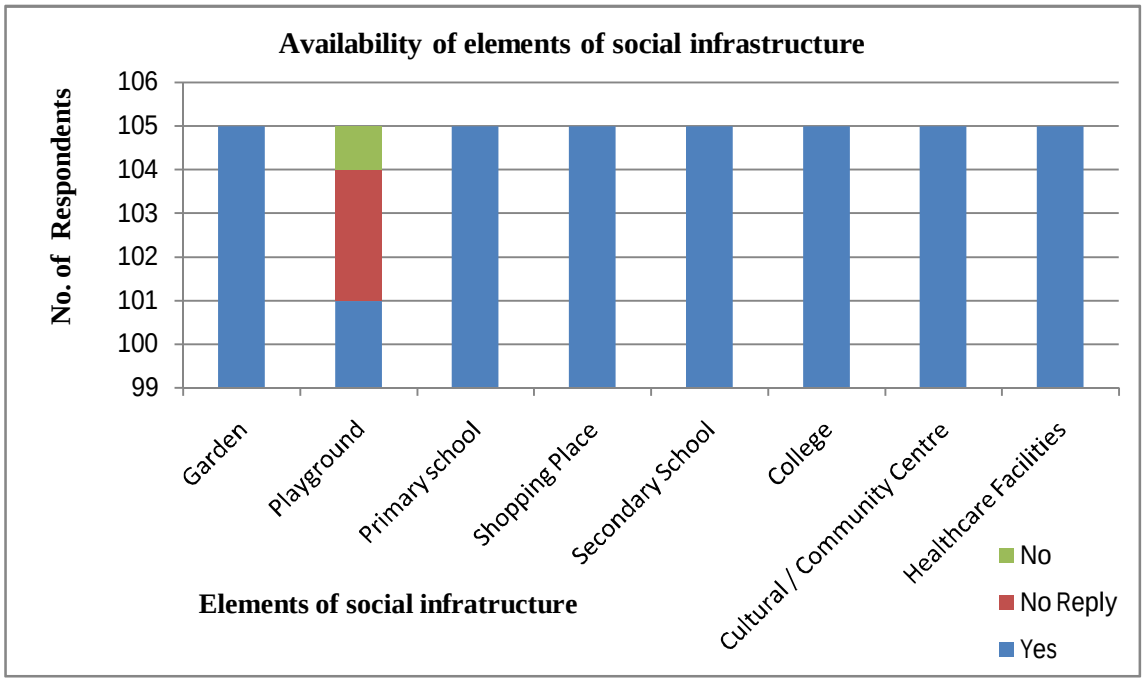
Table 6.23: Analysis for availability of elements of social infrastructure in Vashi Node.

Elements of Social Infrastructure	Yes	No	No Reply	Total
Garden	105	Nil	Nil	105
Playground	101	1	3	105
Primary school	105	Nil	Nil	105
Shopping Place	105	Nil	Nil	105
Secondary School	105	Nil	Nil	105
College	105	Nil	Nil	105
Cultural / Community Centre	105	Nil	Nil	105
Healthcare Facilities	105	Nil	Nil	105
%	**99.52 %**	**0.12 %**	**0.36 %**	**100 %**

(Source : Primary Data)

According to the above table 99.52% respondents had confirmed availability of all elements of social infrastructure in this node, 0.12 % had rejected its availability, and 0.36 % did not reply on the same.

Graph 6.15 : Analysis for availability of elements of social infrastructure in Vashi Node of Navi Mumbai.



In the above graph different elements of social infrastructure are on X axis and no. of respondents on Y axis. Responses are plotted in different colours as mentioned in the graph. The researcher concluded that 'majority of the respondents confirm that elements of social infrastructure are available in Vashi Node'.

d] Opinion of the respondents on "Whether CIDCO is successful in developing Navi Mumbai?"

This was most important question of the analysis as the actual beneficiaries of development were expressing their opinion on success of CIDCO in developing Navi Mumbai.

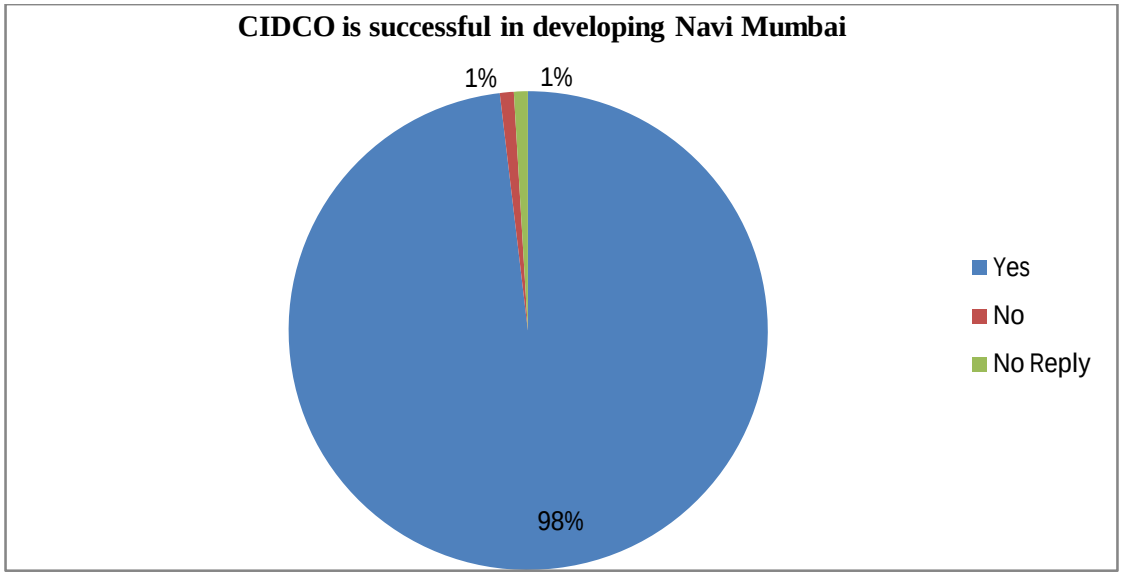
Table 6.24: Analysis for responses of Vashi node residents on 'Whether CIDCO is successful in developing Navi Mumbai?'

	Yes	**No**	**No Reply**	**Total**
Nos.	103	1	1	105
%	**98 %**	**1 %**	**1 %**	**100 %**

(Source : Primary Data)

The researcher had analysed the responses and it was found that 98% of the respondents affirmed success of CIDCO in developing Navi Mumbai, 1% considers it as failure and 1 % did not reply on the same.

Graph 6.16 : Analysis for responses of Vashi node residents on 'Whether CIDCO is successful in developing Navi Mumbai.



Above pie diagram had helped the researcher to conclude that 'majority of the Vashi Node residents confirms that CIDCO is successful in developing Navi Mumbai.

e] Suggestions and recommendations of the respondents which shows lacunas in development and maintenance of different facilities by CIDCO.

Though 98% respondents of this node had affirmed success of CIDCO in developing Navi Mumbai, following suggestions given by them reflect shortfalls in planning and maintenance of different facilities by CIDCO / NMMC.

Table 6.25: Analysis of suggestions by respondents in Vashi

Suggestion	Respondent	%
Development of playgrounds	2	1.90 %
Control over Traffic and Parking	16	15.24 %
Improve Cleanliness, sewage and waste management	22	20.95 %
Redevelopment of old CIDCO buildings	28	26.67 %
Control on Encroachment	12	11.43 %

(Source : Primary Data)

The researcher had found that residents of Vashi node required improvement in public transport, sewage and waste management, the research had also highlighted problem of redevelopment of old CIDCO buildings in this node.

6.6 Analysis of Sanpada Node

Following is analysis Sanpada node. Sample size for this node is 60. Following is sample profile of this node.

Table 6.26 : Profile of Sample Sanpada Node

Gender	**Male**	**Female**	**Total**			
Nos.	35 (58%)	25 (42%)	60 (100%)			
Residence	**0 – 4 Yrs**	**5 -15 Yrs**	**15 Above**	**Total**		
Nos.	Nil (0%)	19 (32%)	41 (68%)	60 (100%)		
Age group	**< 18**	**18 -45**	**45 Above**	**Total**		
Nos.	Nil (0%)	50 (83%)	10 (17%)	60 (100%)		
Occupation	**Student**	**Service**	**Bus / Prof**	**Housewife**	**Retired**	**Total**
Nos.	Nil (0%)	33 (55%)	20 (33%)	7 (12%)	Nil (0%)	60 (100%)

(Source : Primary Data)

(**Table Note :** Residence = Period of residence, Bus / Prof = Business and Profession)

The primary analysis reveals there were 35 Male and 25 Female respondents. 19 respondents were residing between 5-15 years and 41 are residing above 15 years. There were 50 respondents between 18-45 age group and 10 were above 45 years. The occupation analysis shows there were 33 employees, 20 businessmen and 7 housewives.

It had been observed by the researcher that majority of the population in this node is young and having earning source. It was further observed that most of the population is migrated to this node before 15 years

Analysis of all respondents in Sanpada Node.

Researcher makes an effort to draw a conclusion by making combine analysis of all respondents to find out answer for following questions.

a. Why respondents chose Navi Mumbai as their place of their residence?
b. If civic facilities are provided by CIDCO in this area?
c. If elements of social infrastructure which are considered for the research are available in this node?

d. Opinion of the respondents on “Whether CIDCO is successful in developing Navi Mumbai?”
e. Suggestions and recommendations of the respondents which shows lacunas in development and maintenance of different facilities by CIDCO.

The following is outcome of the analysis.

a] Why respondents chose Navi Mumbai as their place of their residence?

The had analysed responses of all 60 respondents that gives following outcome for this question

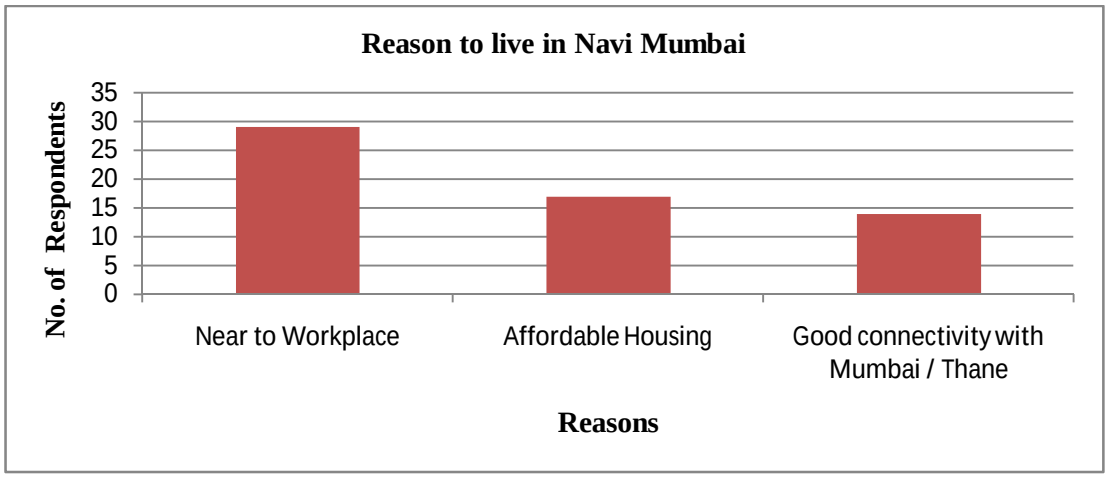
Table 6.27: Overall ranking of respondents in Sanpada Node to live here.

Sr. No.	Reason	No. of Respondents	%	Rank
1	Near to Workplace	29	48 %	1
3	Affordable Housing	17	28 %	2
2	Good connectivity with Mumbai / Thane	14	24 %	3
	Total	**60**	**100 %**	

(Source : Primary Data)

The researcher had found that maximum respondents i.e. 29 respondents which is 48 % of the sample collected from this node consider “Near to workplace” as the main reason to live in Sanpada node followed by affordable housing. Good connectivity with Mumbai / Thane was considered by only 24% of the respondents. However all other reasons such as good education, good quality of life, ancestral place etc. were not at all considered by the respondents.

Graph 6.17 : Reason to live in Navi Mumbai (Sanpada Node)



Above is bar diagram of table 6.27, different reasons are on X axis and no. of respondents on Y axis. 'Near to Workplace is the main reason for the residents of Sanpada node to live in Navi Mumbai. Respondents were least concerned about good connectivity with Mumbai / Thane. Other reasons such as good education, good quality of life are totally ignored by respondents

b] If civic facilities are provided by CIDCO / NMMC in this area?

CIDCO had provided civic facilities in this node till NMMC took over the responsibility. The NMMC was incorporated in 1991. Following is the detail analysis regarding provision of civic services by CIDCO / NMMC.

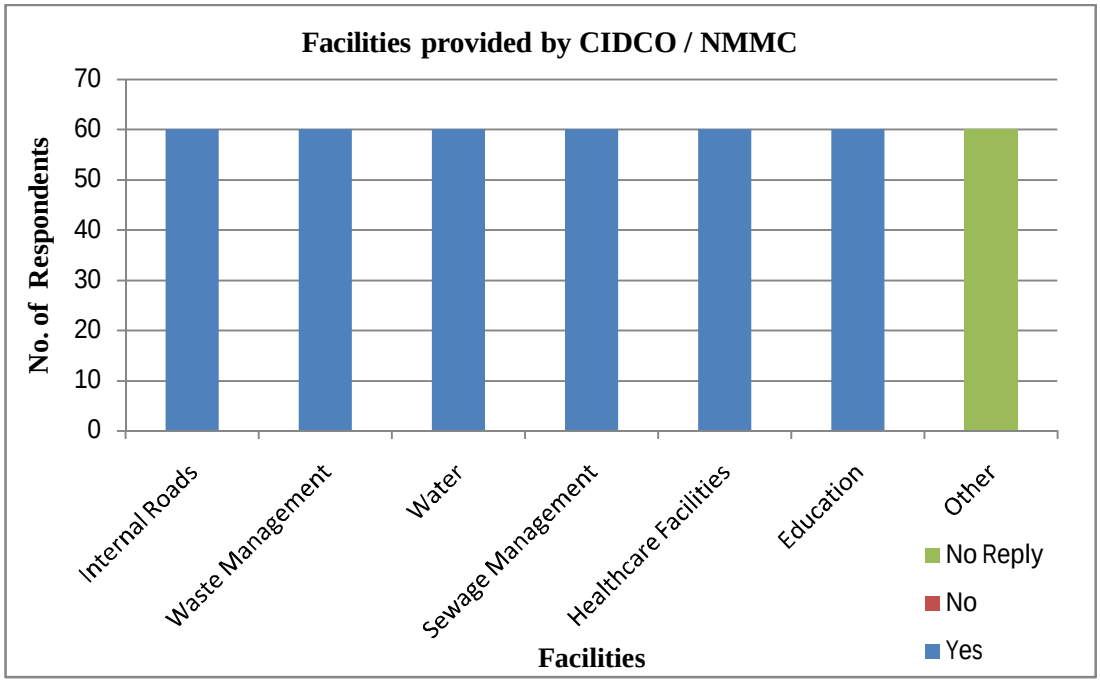
Table 6.28: Civic facilities provided by CIDCO / NMMC in Sanpada

Facilities provided by CIDCO / NMMC	Yes	No	No Reply	Total
Internal Roads	60	Nil	Nil	60
Waste Management	60	Nil	Nil	60
Water	60	Nil	Nil	60
Sewage Management	60	Nil	Nil	60
Healthcare Facilities	60	Nil	Nil	60
Education	60	Nil	Nil	60
Other	Nil	Nil	60	60
%	**86%**	**Nil**	**14 %**	**100 %**

(Source : Primary Data)

The above table had analysed responses of residents on availability of different civic services by NMMC / CIDCO. The above table clearly indicates that average 86% respondents had confirmed provision of civic services by CIDCO in this node, 0% had rejected it and 14 % did not reply on the same.

Graph 6.18 : Analysis of civic facilities provided by CIDCO / NMMC in Sanpada node of Navi Mumbai



In the above graph different facilities are on X axis and no. of respondents on Y axis. Responses are plotted in different colours as mentioned in the graph. The researcher had concluded that 'majority of the respondents confirmed that civic facilities are provided by CIDCO / NMMC in Sanpada Node'.

c] If elements of social infrastructure considered for the research are available in this node?

The researcher had tried to analyse availability of different elements of social infrastructure in Sanpada node. It includes gardens, Playgrounds, schools, colleges etc. Following table present this analysis.

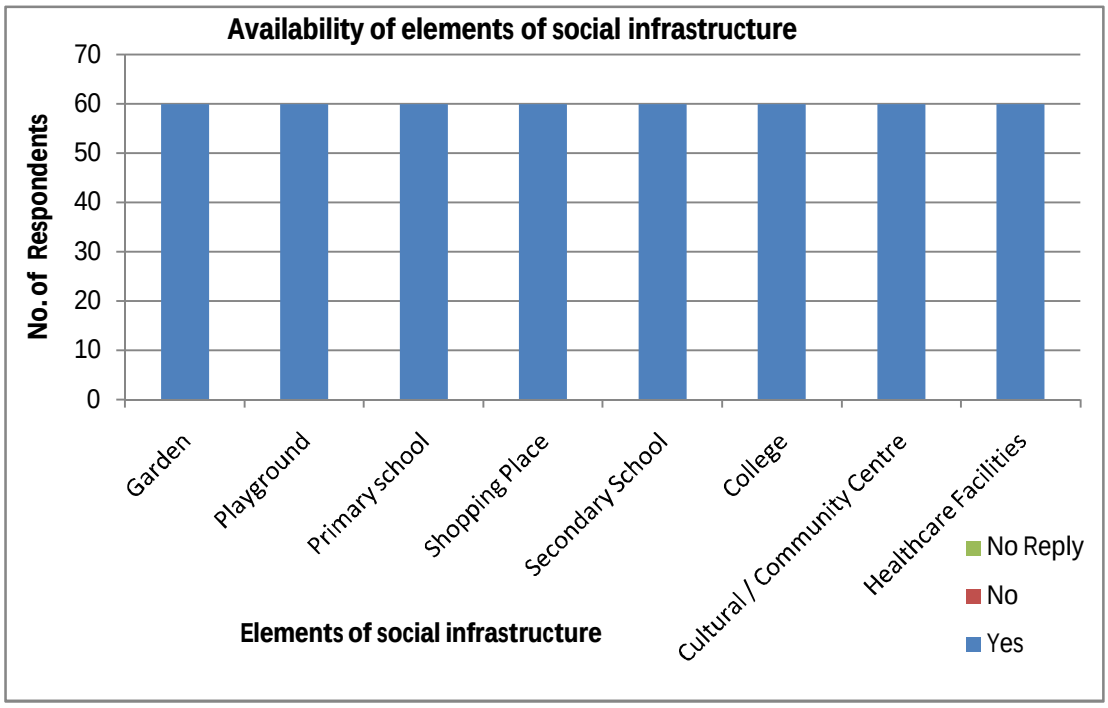
Table 6.29: Overall analysis of availability of social infrastructure in Sanpada Node.

Elements of Social Infrastructure	Yes	No	No Reply	Total
Garden	60	Nil	Nil	60
Playground	60	Nil	Nil	60
Primary school	60	Nil	Nil	60
Shopping Place	60	Nil	Nil	60
Secondary School	60	Nil	Nil	60
College	60	Nil	Nil	60
Cultural / Community Centre	60	Nil	Nil	60
Healthcare Facilities	60	Nil	Nil	60
%	**100 %**	**Nil**	**Nil**	**100 %**

(Source : Primary Data)

100% respondents had confirmed availability of all elements of social infrastructure in this node, 0% had rejected it, and 0 % did not reply on the same.

Graph 6.19 : Analysis for availability of elements of social infrastructure in Sanpada Node of Navi Mumbai.



d] Opinion of the respondents on "Whether CIDCO is successful in developing Navi Mumbai?"

This was the most important question of the analysis as actual beneficiaries of development had expresed their opinion on success of CIDCO in developing Navi Mumbai.

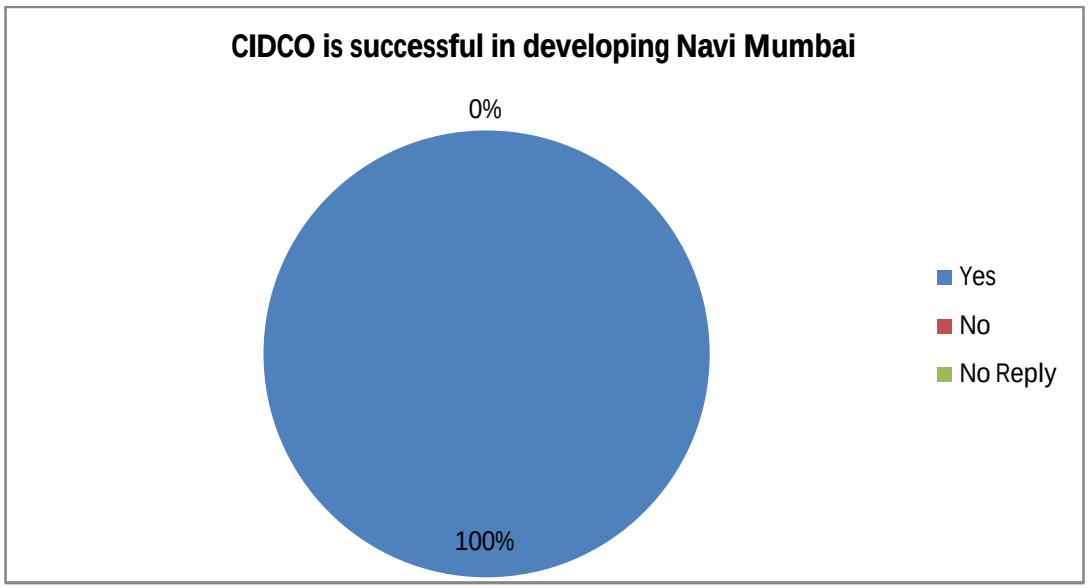
Table 6.30: Analysis for Success of CIDCO in developing Navi Mumbai (Sanpada Node)

	Yes	No	No Reply	Total
Nos.	60	Nil	Nil	60
%	100 %	Nil	Nil	100%

(Source : Primary Data)

100% of the respondents had affirmed success of CIDCO in developing Navi Mumbai, 0% considered it as failure and 0% did not reply on the same. Researcher found that the majority of respondents were in favour of success of CIDCO in developing Navi Mumbai

Graph 6.20 : Analysis for Success of CIDCO in developing Navi Mumbai (Sanpada Node)



Above pie diagram had helped the researcher to conclude that 'majority of the Sanpada Node residents confirmed that CIDCO is successful in developing Navi Mumbai.

e] Suggestions and recommendations of the respondents which shows lacunas in development and maintenance of different facilities by CIDCO.

100% respondents of this node had affirmed success of CIDCO in developing Navi Mumbai but following suggestions given by them reflect shortfalls in planning and maintenance of different facilities by CIDCO / NMMC.

Table 6.31: Suggestions given by residents of Sanpada Node)

Suggestion	Respondent	%
Control over Traffic and Parking	10	16.67 %
Redevelopment of old CIDCO buildings	5	8.33 %
Improve Public Transport system by increasing local railway and bus connectivity and also by proper development and maintenance of roads	4	6.66 %

(Source : Primary Data)

The researcher had evaluated the suggestions given by Sanpada residents that required improvement in parking and transportation, it also highlighted problem of redevelopment of old CIDCO buildings in this node.

6.7 Analysis of Nerul Node

Following is analysis Nerul node. Sample size for this node is 125. Following is sample profile of this node.

Table 6.32: Profile of Sample Nerul Node

Gender	**Male**	**Female**	**Total**			
Nos.	55 (44%)	70 (56%)	125 (100%)			
Residence	**0 – 4 Yrs**	**5 -15 Yrs**	**15 Above**	**Total**		
Nos.	26 (21%)	75 (60%)	24 (19%)	125 (100%)		
Age group	**< 18**	**18 -45**	**45 Above**	**Total**		
Nos.	Nil	95 (76%)	30 (24%)	125 (100%)		
Occupation	**Student**	**Service**	**Bus / Prof**	**Housewife**	**Retired**	**Total**
Nos.	5 (4%)	65 (52%)	12 (10%)	13 (10%)	30 (24%)	125 (100%)

(Source : Primary Data)

(**Table Note :** Residence = Period of residence, Bus / Prof = Business and Profession)

The primary analysis reveals there were 55 Male and 70 Female respondents. There were 26 respondents residing in Nerul for 0-4 years, 75 for 5-15 years and 24 for more than 15 years. There were 95 respondents between 18-45 age group and 30 who were above 45 years. The occupation analysis shows there were 5 students, 65 employees, 12 businessmen, 13 housewives and 30 retired individuals.

It had observed by the researcher that this was the most populace node in Navi Mumbai. It had a balance of young and elderly population. It is further observed that most of the population is migrated to this node in last 15 years

Overall analysis of all respondents in Nerul Node.

The researcher made an effort to draw a conclusion by making combine analysis of all respondents to find out answer for following questions.

a. Why respondents chose Navi Mumbai as their place of their residence?
b. If civic facilities are provided by CIDCO in this area?
c. If elements of social infrastructure which are considered for the research are available in this node?

d. Opinion of the respondents on “Whether CIDCO is successful in developing Navi Mumbai?”
e. Suggestions and recommendations of the respondents which shows lacunas in development and maintenance of different facilities by CIDCO.

The following was outcome of the analysis.

a] Why respondents chose Navi Mumbai as their place of their residence?

The researcher had analysed all 125 respondents gave following outcome for this question

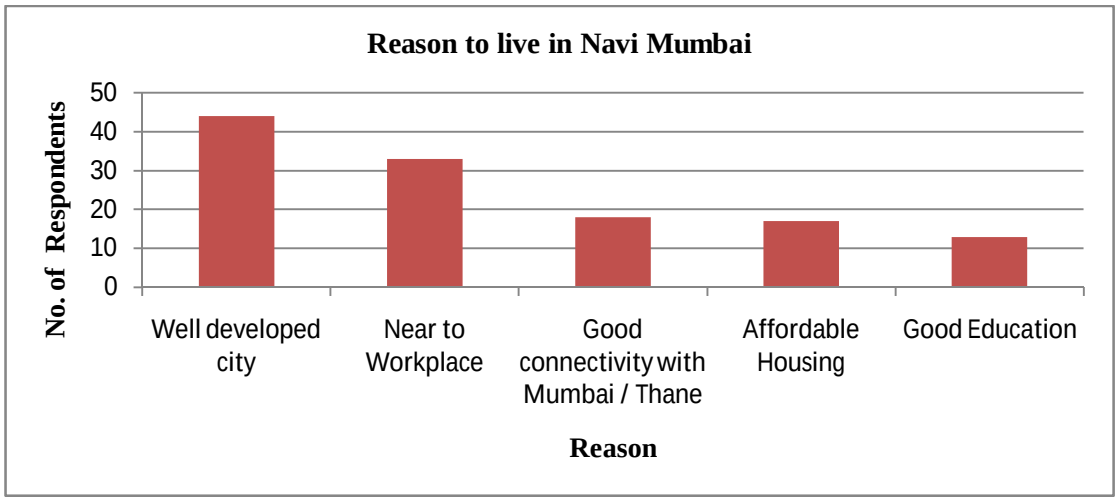
Table 6.33: Overall ranking of respondents in Nerul Node to live here.

Sr. No.	Reason	Respondents	%	Rank
1	Well developed city	44	35 %	1
2	Near to Workplace	33	26 %	2
3	Good connectivity with Mumbai / Thane	18	14 %	3
4	Affordable Housing	17	14 %	4
5	Good Education	13	11 %	5
	Total	**125**	**100 %**	

(Source : Primary Data)

The researcher had found that maximum respondents i.e. 44 respondents i.e. 35% of the sample collected from this node consider “Well developed city” as the main reason to live in Nerul node followed by near to workplace and good connectivity with Mumbai and Thane. Good education and affordable housing were least considered reasons. Respondents did not considered good quality of life, ancestral place as reason to live in Navi Mumbai.

Graph 6.21 : Reason to live in Navi Mumbai (Nerul Node)



Above is bar diagram of table 6.33, different reasons are on X axis and no. of respondents on Y axis. The researcher had concluded that 'Well developed city was the main reason for the residents of Nerul node to live in Navi Mumbai. Respondents were least concerned about good education and affordable housing.

b] If civic facilities are provided by CIDCO / NMMC in this area?

The analysis of all 125 respondents gave following outcome for this question

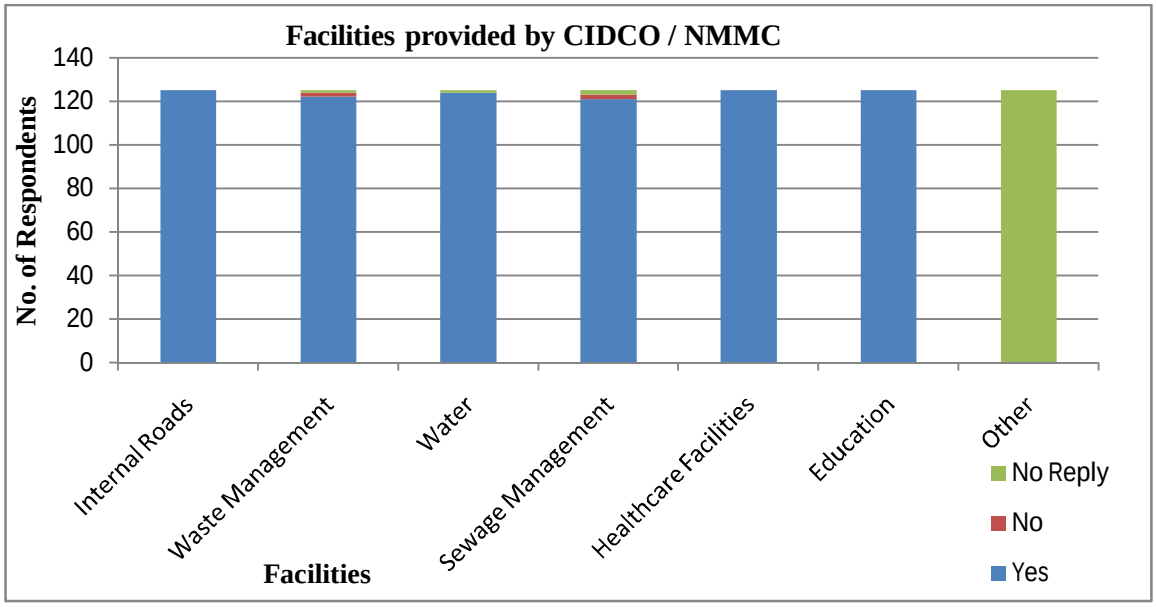
Table 6.34: Analysis for civic facilities provided by CIDCO / NMMC in Nerul

Facilities provided by CIDCO	Yes	No	No Reply	Total
Internal Roads	125	Nil	Nil	125
Waste Management	122	2	1	125
Water	124	Nil	1	125
Sewage Management	121	2	2	125
Healthcare Facilities	125	Nil	Nil	125
Education	125	Nil	Nil	125
Other	Nil	Nil	125	125
%	**84.80 %**	**0.46 %**	**14.74 %**	**100 %**

(Source : Primary Data)

The researcher had found that average 84.80% respondents confirmed provision of civic services by CIDCO / NMMC in this node, 0.46% rejected it and 14.74% did not reply on the same.

Graph 6.22 : Analysis of civic facilities provided by CIDCO / NMMC in Nerul node of Navi Mumbai



In the above graph different facilities are on X axis and no. of respondents on Y axis. Researcher concluded that 'majority of the respondents confirms that civic facilities are provided by CIDCO / NMMC in Nerul Node'.

c] If elements of social infrastructure considered for the research are available in this node?

Researcher had tried to analyse availability of different elements of social infrastructure in Nerul node. Following table present the analysis.

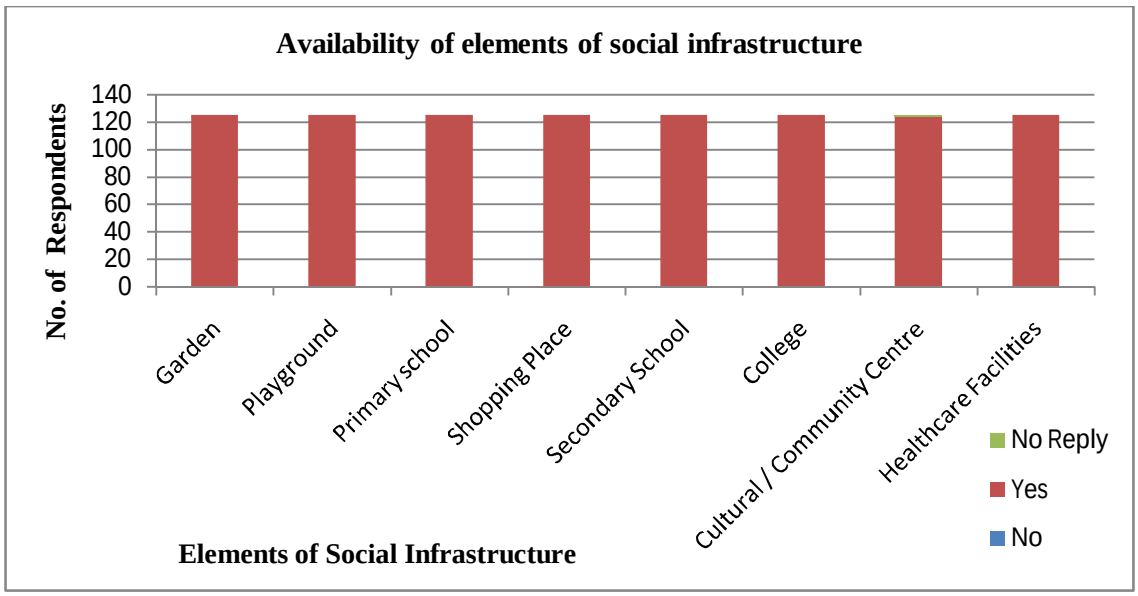
Table 6.35: Availability of elements of social infrastructure in Nerul Node.

Elements of Social Infrastrcture	Yes	No	No Reply	Total
Garden	125	Nil	Nil	125
Playground	125	Nil	Nil	125
Primary school	125	Nil	Nil	125
Shopping Place	125	Nil	Nil	125
Secondary School	125	Nil	Nil	125
College	125	Nil	Nil	125
Cultural / Community Centre	124	Nil	1	125
Healthcare Facilities	125	Nil	Nil	125
%	**99.90 %**	**Nil**	**0.10 %**	**100 %**

(Source : Primary Data)

The analysis had indicated that average 99.90% of respondents confirm availability of all elements of social infrastructure in this node, 0% rejected it, and 0.10 % did not reply on the same.

Graph 6.23 : Analysis for availability of elements of social infrastructure in Nerul Node of Navi Mumbai.



In the above graph different elements of social infrastructure are on X axis and no. of respondents on Y axis. Responses are plotted in different colours as mentioned in the graph. The above graph helped the researcher to conclude that 'majority of the respondents confirms that elements of social infrastructure are available in Nerul Node'.

d] Opinion of the respondents on "Whether CIDCO is successful in developing Navi Mumbai?"

This is most important question of the analysis as actual beneficiaries of development are expressing their opinion on success of CIDCO in developing Navi Mumbai.

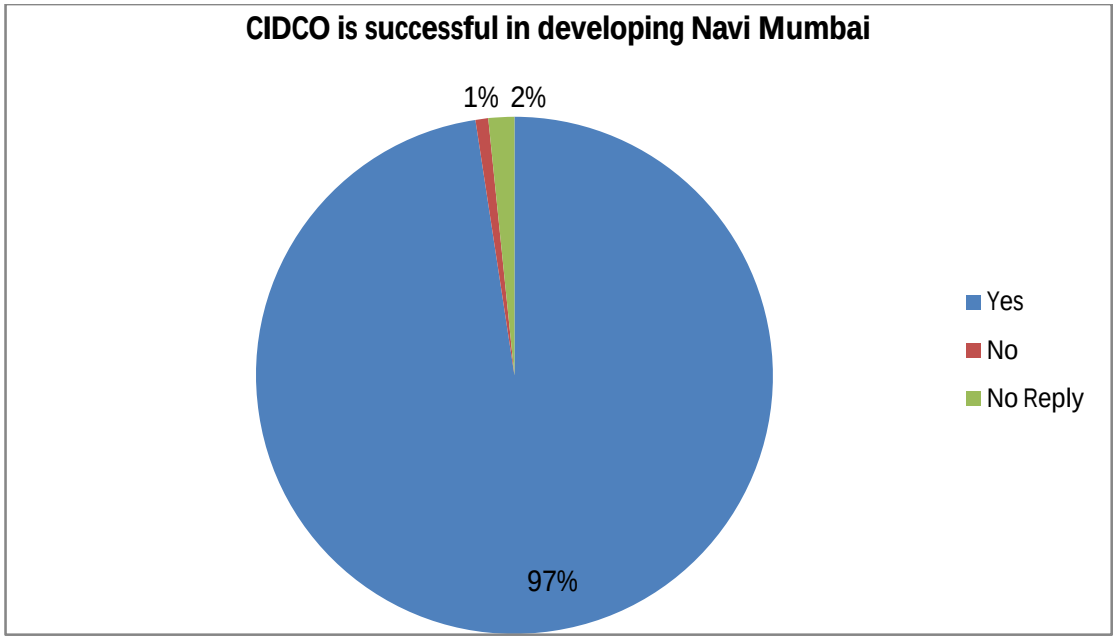
Table 6.36: Analysis for Success of CIDCO in developing Navi Mumbai (Nerul Node)

	Yes	No	No Reply	Total
Nos.	122	1	2	125
%	97.60 %	0.80 %	1.60 %	100 %

(Source : Primary Data)

The researcher had found that 97.60% of the respondents had affirmed success of CIDCO in developing Navi Mumbai, 0.80 % considered it as failure and 1.60 % did not reply on the same.

Graph 6.24 : Analysis for responses of Nerul node residents on 'Whether CIDCO is successful in developing Navi Mumbai?'



The researcher had concluded that 'majority of the Nerul Node residents confirms that CIDCO is successful in developing Navi Mumbai with the help of above pie digram.

e] Suggestions and recommendations of the respondents which shows lacunas in development and maintenance of different facilities by CIDCO.

Though 97% respondents of this node had affirmed success of CIDCO in developing Navi Mumbai following suggestions given by them reflect shortfalls in planning and maintenance of different facilities by CIDCO / NMMC.

Table 6.37: Analysis of suggestions by respondents in Nerul node

Suggestion	Respondent	%
Improve Public Transport system by increasing local railway and bus connectivity and also by proper development and maintenance of roads	5	4 %
Improve Cleanliness, sewage and waste management	48	38.40 %
Redevelopment of old CIDCO buildings	30	24 %

(Source : Primary Data)

The researcher had found that residents Nerul node required improvement in public transport, sewage and waste management. The research also highlighted problem of redevelopment of old CIDCO buildings in this node.

6.8 Analysis of CBD Belapur Node

Following is analysis of CBD Belapur node. Sample size for this node is 50. Following is sample profile of this node.

Table 6.38: Profile of Sample CBD Belapur Node

Gender	**Male**	**Female**	**Total**		
Nos.	25 (50%)	25 (50%)	50 (100%)		
Residence	**0 – 4 Yrs**	**5 -15 Yrs**	**15 Above**	**Total**	
Nos.	9 (18%)	28 (56%)	13 (26%)	50 (100%)	
Age group	**< 18**	**18 -45**	**45 Above**	**Total**	
Nos.	Nil (0%)	47 (94%)	3 (6%)	50 (100%)	
Occupation	**Student**	**Service**	**Bus/ Prof**	**Housewife**	**Total**
Nos.	5 (10%)	30 (60%)	12 (24%)	3 (6%)	50 (100%)

(Source : Primary Data)

(**Table Note :** Residence = Period of residence, Bus / Prof = Business and Profession)

The primary analysis reveals there were 25 Male and 25 Female respondents. 9 respondents live here for 0-4 years, 28 for 5-15 years and 13 for more than 15 years. There were no any respondents whose age is less than 18 years, 47 respondents between 18-45 age group i.e. 94 % of the sample collected from this node and 3 who were above 45 years i.e. 6 % of this node. The occupation analysis shows that 5 were students, 30 employees, 12 businessmen and 3 housewives.

This node had developed as CBD by CIDCO, most of the respondents in this node were young and having earning source.

Analysis of all respondents in CBD Belapur Node.

Researcher made an effort to draw a conclusion by making combine analysis of all respondents to find out answer for following questions.

a. Why respondents chose Navi Mumbai as place of their residence?
b. If civic facilities are provided by CIDCO in this area?

c. If elements of social infrastructure which are considered for the research are available in this node?
d. Opinion of the respondents on "Whether CIDCO is successful in developing Navi Mumbai?"
e. Suggestions and recommendations of the respondents which shows lacunas in development and maintenance of different facilities by CIDCO.

The following is outcome of the analysis.

a] Why respondents chose Navi Mumbai as their place of their residence?

The researcher had analysed responses of all 50 respondents and the analysis is presented below.

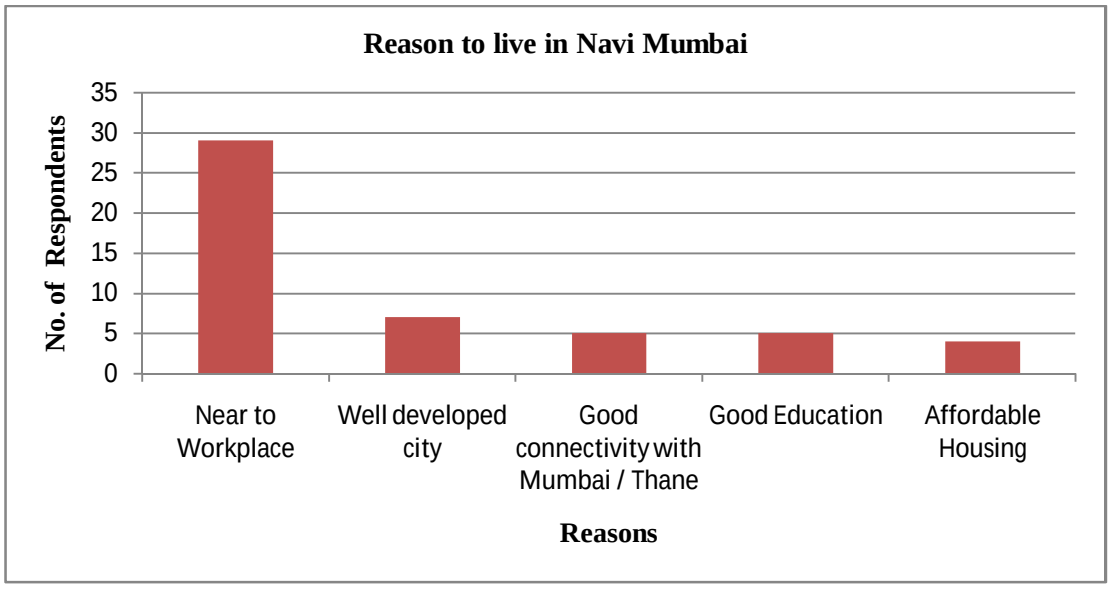
Table 6.39: Overall ranking of respondents in CBD Belapur Node to live here.

Sr. No.	Reason	No. of Respondents	%	Rank
1	Near to Workplace	29	58 %	1
2	Well developed city	7	14 %	2
3	Good connectivity with Mumbai / Thane	5	10 %	3.5
4	Good Education	5	10 %	3.5
5	Affordable Housing	4	8 %	4
	Total	**50**	**100 %**	

(Source : Primary Data)

The analaysis had revealed that "Near to Workplace" was main reason of the respondents to live in CBD Belapur node followed by Good education and Good connectivity with Mumbai / Thane. Affordable housing was least considered by the respondents and other reasons such as good quality of life, ancestral place etc. were ignored by the respondents.

Graph 6.25 : Reason to live in Navi Mumbai (CBD Belapur Node)



Above is bar diagram of table 6.25, different reasons are on X axis and no. of respondents on Y axis. Researcher concluded that 'Near to Workplace is the main reason for the residents of Airoli node to live in Navi Mumbai. Respondents were least concerned about good education and affordable housing.

b] If civic facilities are provided by CIDCO/ NMMC in this area?

CIDCO had provided civic facilities in this node till NMMC took over the responsibility. The NMMC was incorporated in 1991. Following is the detail analysis regarding provision of civic services by CIDCO / NMMC.

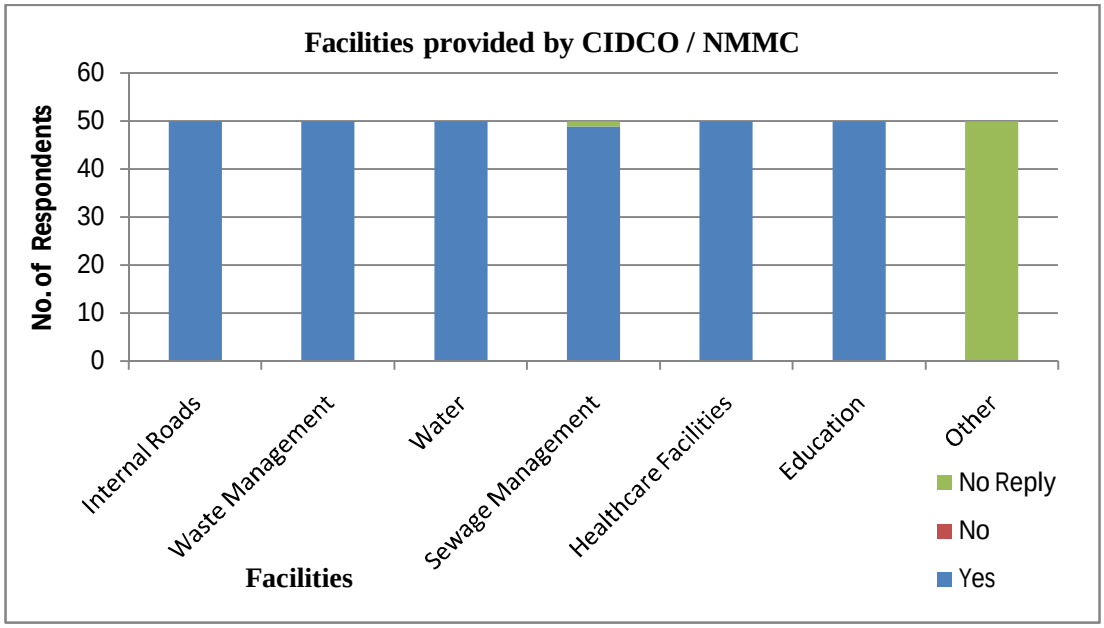
Table 6.40: Overall Analysis for civic facilities provided by CIDCO / NMMC in CBD Belapur

Facilities provided by CIDCO	Yes	No	No Reply	Total
Internal Roads	50	Nil	Nil	50
Waste Management	50	Nil	Nil	50
Water	50	Nil	Nil	50
Sewage Management	49	Nil	1	50
Healthcare Facilities	50	Nil	Nil	50
Education	50	Nil	Nil	50
Other	Nil	Nil	50	50
%	**85 %**	**Nil**	**15 %**	**100 %**

(Source : Primary Data)

The researcher had found that average 85% respondents confirmed provision of civic services by CIDCO / NMMC in this node, 0 % rejected it and 15 % did not reply on the same.

Graph 6.26 : Analysis of civic facilities provided by CIDCO / NMMC in CBD Belapur node of Navi Mumbai



In the above graph different facilities are on X axis and no. of respondents on Y axis. Responses are plotted in different colours as mentioned in the graph. The researcher concluded that 'majority of the respondents confirms that civic facilities are provided by CIDCO / NMMC in CBD Belapur Node'.

c] If elements of social infrastructure considered for the research are available in this node?

Researcher had analysed the availability of different elements of social infrastructure in CBD Belapur node. It includes gardens, Playgrounds, schools, colleges etc. Following table present this analysis.

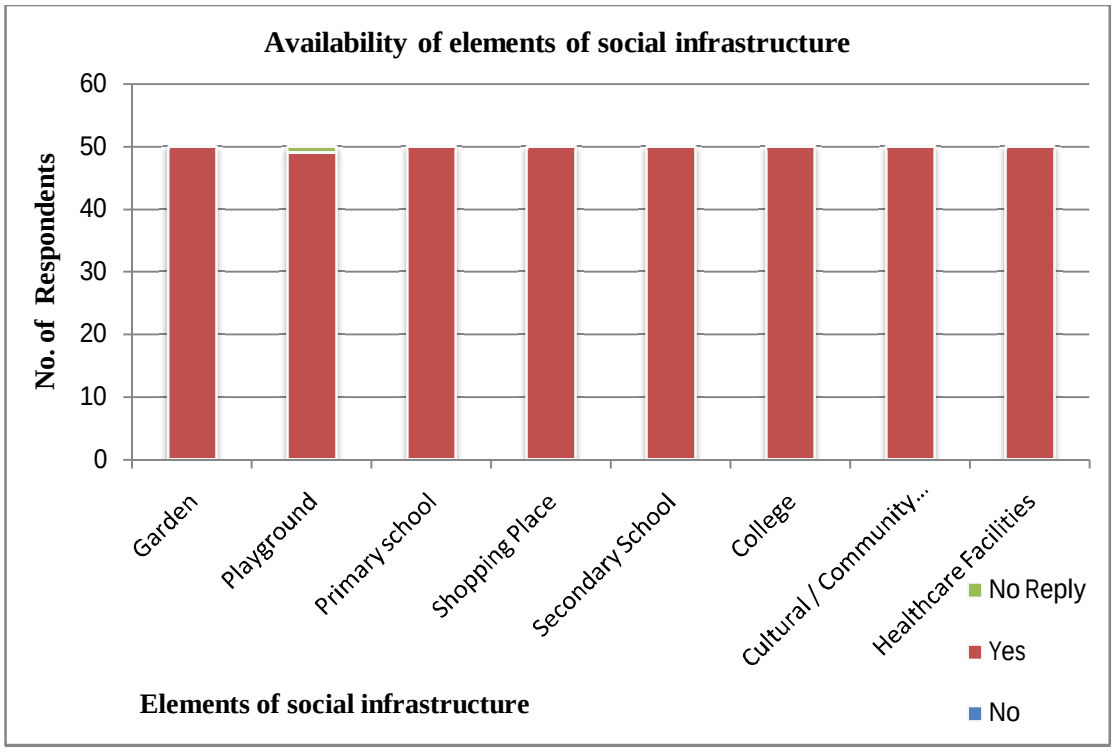
Table 6.41: Overall analysis of availability of social infrastructure in CBD Belapur Node.

Elements of Social Infrastructure	Yes	No	No Reply	Total
Garden	50	Nil	Nil	50
Playground	49	Nil	1	50
Primary school	50	Nil	Nil	50
Shopping Place	50	Nil	Nil	50
Secondary School	50	Nil	Nil	50
College	50	Nil	Nil	50
Cultural / Community Centre	50	Nil	Nil	50
Healthcare Facilities	50	Nil	Nil	50
%	**99.75 %**	**Nil**	**0.25 %**	**100 %**

(Source : Primary Data)

The above table indicated that average 99.75% respondents confirmed availability of all elements of social infrastructure in this node, 0% rejected it, and 0.25 % did not reply on the same.

Graph 6.27 : Analysis for availability of elements of social infrastructure in CBD Belapur Node of Navi Mumbai.



In the above graph different elements of social infrastructure are on X axis and no. of respondents on Y axis. Responses are plotted in different colours as mentioned in the graph. The researcher had concluded that 'majority of the respondents confirms that elements of social infrastructure are available in CBD Belapur Node'.

d] Opinion of the respondents on "Whether CIDCO is successful in developing Navi Mumbai?"

This was the most important question of the analysis as actual beneficiaries of development had been expressing their opinion on success of CIDCO in developing Navi Mumbai.

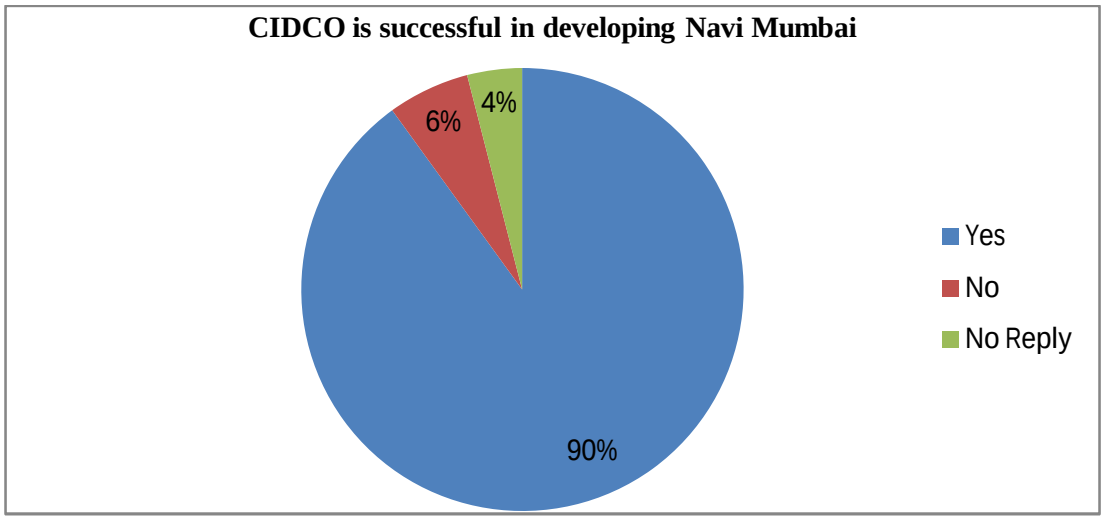
Table 6.42: Overall analysis for Success of CIDCO in developing Navi Mumbai CBD Belapur

	Yes	No	No Reply	Total
Nos.	45	3	2	50
%	90 %	6 %	4 %	100 %

(Source : Primary Data)

The researcher found that average 90 % of the respondents affirmed success of CIDCO in developing Navi Mumbai, 6% considered it was a failure and 4% did not reply on the same

Graph 6.28 : Analysis for responses of CBD Belapur node residents on 'Whether CIDCO is successful in developing Navi Mumbai?'



Above pie diagram had helped the researcher to conclude that 'majority of the CBD Belapur Node residents confirmed that CIDCO is successful in developing Navi Mumbai.

e] Suggestions and recommendations of the respondents which shows lacunas in development and maintenance of different facilities by CIDCO / NMMC.

90% respondents of this node had affirmed success of CIDCO in developing Navi Mumbai however following suggestions given by them reflected shortfalls in planning and maintenance of different facilities by CIDCO / NMMC.

Table 6.43: overall analysis of suggestions by respondents in CBD Belapur

Suggestion	Respondent	%
Efforts should be taken to attract more offices in the Node.	8	16 %
Poor quality of CIDCO construction	3	6 %
Control over Traffic and Parking.	11	22 %

(Source : Primary Data)

The researcher had found that improvement is required in respect of parking facilities and growth is required in commercial activities by the residents of CBD Belapur node.

6.9 Analysis of Kharghar Node

Following is analysis Kharghar node. Sample size for this node is 105. Following is sample profile of this node.

Table 6.44 Profile of Sample Kharghar Node

Gender	**Male**	**Female**	**Total**		
Nos.	60 (57%)	45 (43%)	105 (105%)		
Residence	**0 – 4 Yrs**	**5 -15 Yrs**	**15 Above**	**Total**	
Nos.	44 (42%)	61 (58%)	Nil (0%)	105 (105%)	
Age group	**< 18**	**18 -45**	**45 Above**	**Total**	
Nos.	Nil (0%)	91 (87%)	14 (13%)	105 (105%)	
Occupation	**Student**	**Service**	**Bus / Prof**	**Housewife**	**Total**
Nos.	10 (10%)	70 (66%)	15 (14%)	10 (10%)	105 (105%)

(Source : Primary Data)

(**Table Note :** Residence = Period of residence, Bus / Prof = Business and Profession)

The primary analyses include division of respondents on the basis of Gender, Age and occupation. It represents 60 males and 45 females which is 57.14% and 42.86% of the sample from this node. 91 respondents were in between 18-45 years and 14 were above 45 years, which was 86.67% and 13.33% of respondents. There were 10 Students, 70 Employees, 15 Businessmen / Professionals and 10 Housewives.

Researcher had found that this is a young node as most of the respondents were between 18-45 age group. It was also found that this is a developing node and CIDCO is considering it as a model township. Most of its residents were migrated recently in this node.

Overall analysis of all respondents in Kharghar Node.

The researcher made an effort to draw a conclusion by making analysis of all respondents to find out answer for following questions.

a. Why respondents chose Navi Mumbai as place of their residence?
b. If civic facilities are provided by CIDCO in this area?

c. If elements of social infrastructure which are considered for the research are available in this node?
d. Opinion of the respondents on "Whether CIDCO is successful in developing Navi Mumbai?"
e. Suggestions and recommendations of the respondents which shows lacunas in development and maintenance of different facilities by CIDCO.

The following is outcome of the analysis.

a] Why respondents chose Navi Mumbai as their place of their residence?

Following outcome for this question had been obtained from analysis of all 105 respondents by the researcher.

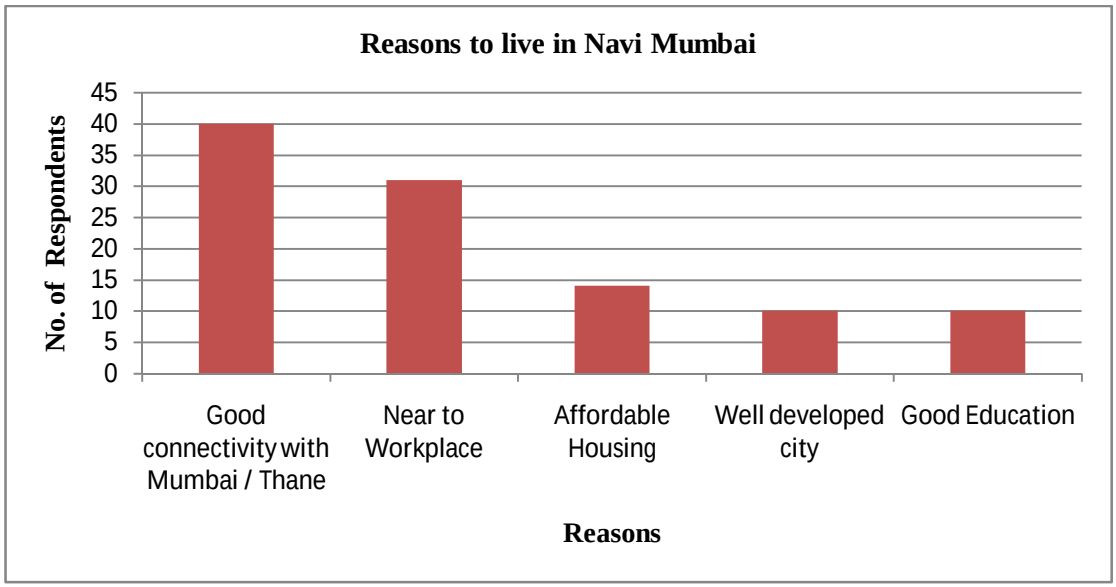
Table 6.45: Overall ranking of respondents in Kharghar Node to live here.

Sr. No.	Reason	No. of Respondents	%	Rank
1	Good connectivity with Mumbai / Thane	40	38 %	1
2	Near to Workplace	31	29 %	2
3	Affordable Housing	14	13 %	3
4	Well developed city	10	10 %	4.5
5	Good Education	10	10 %	4.5
	Total	**105**	**100 %**	

(Source : Primary Data)

The researcher found that "Good connectivity with Mumbai / Thane was main reason to live in Kharghar node, followed by Near to workplace, affordable housing, The researcher had found that reasons like good education facilities and well developed city were least considered by the respondents and good quality of life, ancestral place etc were not at all considered by the respondents

Graph 6.29 : Reason to live in Navi Mumbai (Kharghar Node)



Above is bar diagram of table 6.45, different reasons are on X axis and no. of respondents on Y axis. Researcher concluded that 'Good connectivity with Mumbai / Thane' is the main reason for the residents of Kharghar node to live in Navi Mumbai. Respondents were least concerned about good education, well developed city and other reasons.

b] If civic facilities are provided by CIDCO in this area?

The researcher had found that CIDCO provides civic facilities in this node as any civic body for this node was not established.

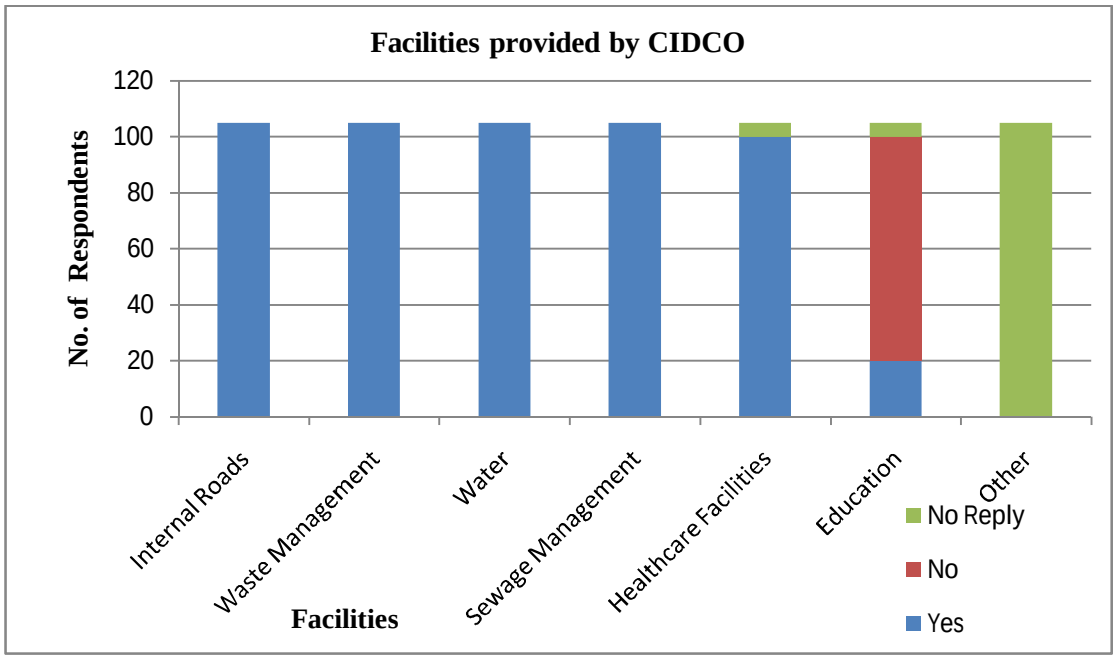
Table 6.46: Analysis for facilities provided by CIDCO in Kharghar

Facilities provided by CIDCO	Yes	No	No Reply	Total
Internal Roads	105	Nil	Nil	105
Waste Management	105	Nil	Nil	105
Water	105	Nil	Nil	105
Sewage Management	105	Nil	Nil	105
Healthcare Facilities	100	Nil	5	105
Education	20	80	5	105
Other	Nil	Nil	105	105
%	**73 %**	**11 %**	**16 %**	**100 %**

(Source : Primary Data)

The analysis had revealed that average 73% of the respondents in this node confirmed provision of civic services in this node by CIDCO. 11% gave negative response and remaining 16 % respondents did not reply on the same. The most interesting fact of the research was nobody denies provision of civic services. The researcher found education facilities are the major exception as approx 80% of respondents deny provision of educational facilities by CIDCO.

Graph 6.30 : Analysis of civic facilities provided by CIDCO in Kharghar Node of Navi Mumbai



In the above graph different facilities are on X axis and no. of respondents on Y axis. Responses are plotted in different colours as mentioned in the graph. The researcher had concluded that 'majority of the respondents confirms that civic facilities are provided by CIDCO in Kharghar Node'. However major exception is education approx 80% respondents deny provision of education by CIDCO.

c] If elements of social infrastructure which are considered for the research are available in this node?

Researcher had tried to analyse availability of different elements of social infrastructure in Kharghar node. It includes gardens, Playgrounds, schools, colleges etc. Following table present this analysis.

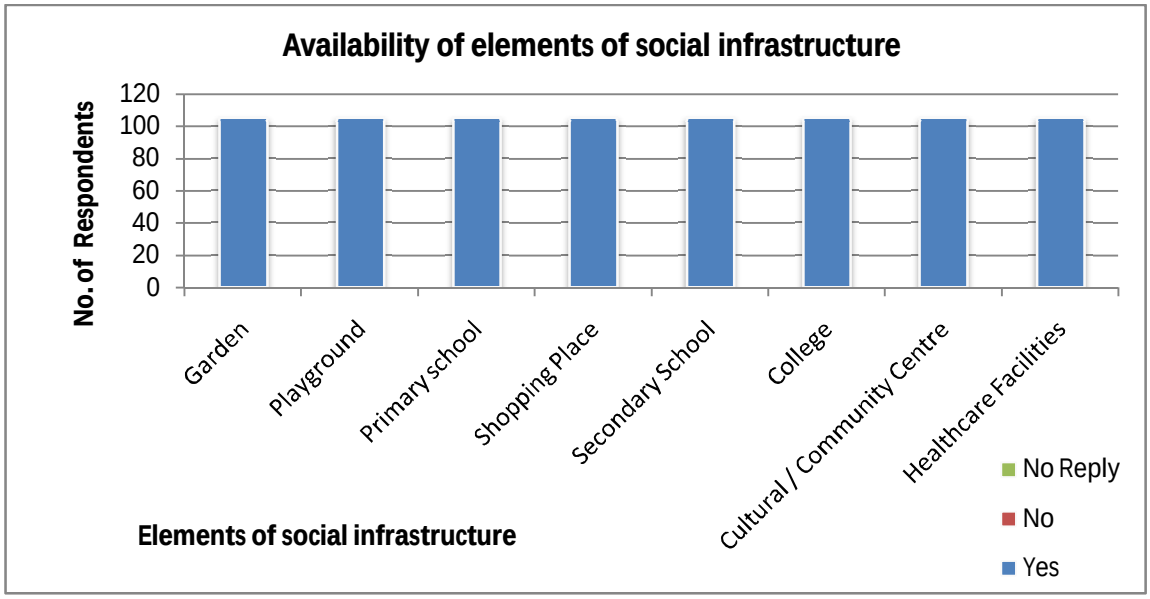
Table 6.47: Availability of elements of social infrastructure in Kharghar.

Elements of social infrastructure	Yes	No	No Reply	Total
Garden	105	Nil	Nil	105
Playground	105	Nil	Nil	105
Primary school	105	Nil	Nil	105
Shopping Place	105	Nil	Nil	105
Secondary School	105	Nil	Nil	105
College	105	Nil	Nil	105
Cultural / Community Centre	105	Nil	Nil	105
Healthcare Facilities	105	Nil	Nil	105
%	**100 %**	**Nil**	**Nil**	**100 %**

(Source : Primary Data)

The researcher had found that all 100% respondents of Kharghar Node confirmed availability of all elements of social infrastructure in this node.

Graph 6.31 : Analysis for availability of elements of social infrastructure in Kharghar node of Navi Mumbai



In the above graph different elements of social infrastructure are on X axis and no. of respondents on Y axis. Responses are plotted in different colours as mentioned in the graph. The researcher had concluded that 'majority of the respondents confirms that elements of social infrastructure are available in Kharghari Node'.

d] Opinion of the respondents on "Whether CIDCO is successful in developing Navi Mumbai?"

This is most important question of the analysis as actual beneficiaries of development had expressed their opinion on success of CIDCO in developing Navi Mumbai.

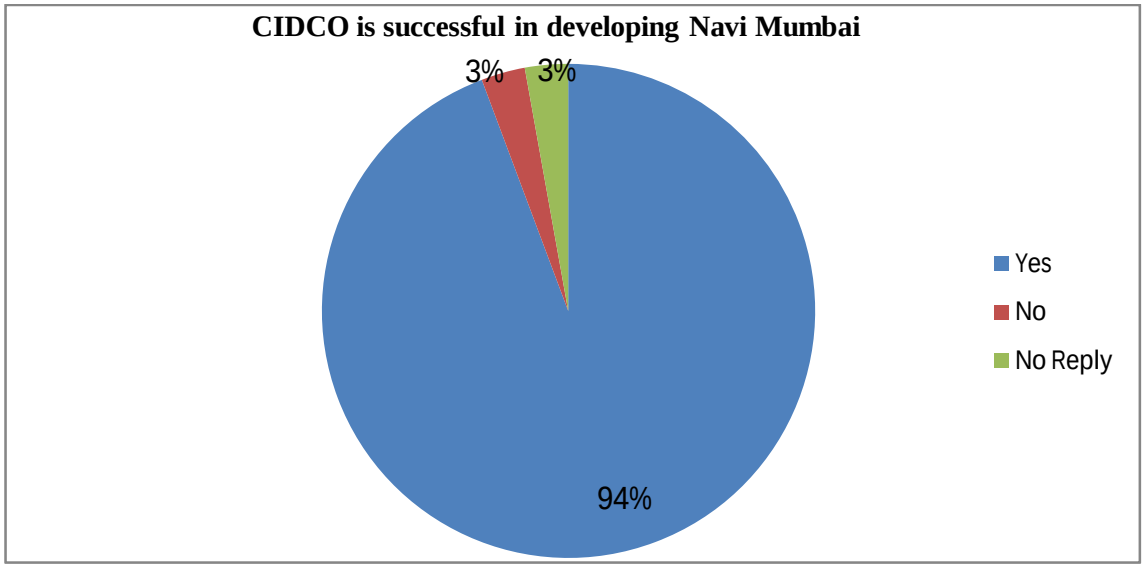
Table 6.48: Analysis for Success of CIDCO in developing Navi Mumbai (Kharghar Node)

	Yes	No	No Reply	Total
Nos.	99	3	3	105
%	**94 %**	**3 %**	**3 %**	**100 %**

(Source : Primary Data)

The analysis presented in above table clearly indicates that 94% of the respondents had affirmed success of CIDCO in developing Navi Mumbai, 3% considered it as failure and 3% did not reply on the same.

Graph 6.32 : Analysis for responses of Kharghar node residents on "Whether CIDCO is successful in developing Navi Mumbai?"



Above pie diagram helped the researcher to conclude that 'majority of the Kharghar Node residents confirms that CIDCO is successful in developing Navi Mumbai.

e] Suggestions and recommendations of the respondents which shows lacunas in development and maintenance of different facilities by CIDCO.

Though 94% respondents of this node had affirmed success of CIDCO in developing Navi Mumbai following suggestions given by them reflect shortfalls in planning and maintenance of different facilities by CIDCO.

Table 6.49: Analysis of suggestions given by Kharghar residents

Suggestion	Respondent	%
Improve Public Transport system by increasing local railway and bus connectivity and also by proper development and maintenance of roads	49	47 %
Development of more affordable houses	14	13 %
Advance and affordable medical facilities	18	17 %

(Source : Primary Data)

The above analysis had pointed out requirement of improvement in public transport system, affordable houses and affordable medical facilities. CIDCO had been developing Kharghar as a model township hence it should find out solutions for these lacunas immediately

6.10 Analysis of Kalamboli Node

Following is analysis Kalamboli node. Sample size for this node is 50. Following is sample profile of this node.

Table 6.50: Profile of Sample Kalamboli Node

Gender	**Male**	**Female**	**Total**		
Nos.	30 (60%)	20 (40%)	50 (100%)		
Residence	**0 – 4 Yrs**	**5 -15 Yrs**	**15 Above**	**Total**	
Nos.	8 (16%)	42 (84%)	Nil (0%)	50 (100%)	
Age group	**< 18**	**18 -45**	**45 Above**	**Total**	
Nos.	Nil (0%)	35 (70%)	15 (30%)	50 (100%)	
Occupation	**Student**	**Service**	**Bus / Prof**	**Housewife**	**Total**
Nos.	Nil (0%)	30 (60%)	10 (20%)	10 (20%)	50 (100%)

(Source : Primary Data)

(**Table Note :** Residence = Period of residence, Bus / Prof = Business and Profession)

The primary analyses include division of respondents on the basis of Gender, Period of residence, Age and occupation. It represents 30 males and 20 females. 8 respondents were in Kalamboli between 0-4 years, 42 between 5-15 years. These respondents were divided between 2 age groups 18-45 years and above 45 years. Further respondents were divided on the basis of occupation as mentioned in above table.

It was observed by the researcher that majority of the population in this node is youngand having earning source. The researcher also found that most of the population was migrated to this node in last 15 years

Overall analysis of all respondents in Kalamboli Node.

The researcher made an effort to draw a conclusion by analyzing responses of all respondents to find out answer for following questions.

a. Why respondents chose Navi Mumbai as their place of residence?
b. If civic facilities are provided by CIDCO in this area?
c. If elements of social infrastructure which are considered for the research are available in this node?
d. Opinion of the respondents on “Whether CIDCO is successful in developing Navi Mumbai?”

e. Suggestions and recommendations of the respondents which shows lacunas in development and maintenance of different facilities by CIDCO.

The following is outcome of the analysis.

a] Why respondents chose Navi Mumbai as their place of residence?

The outcome of analysis of responses is presented below

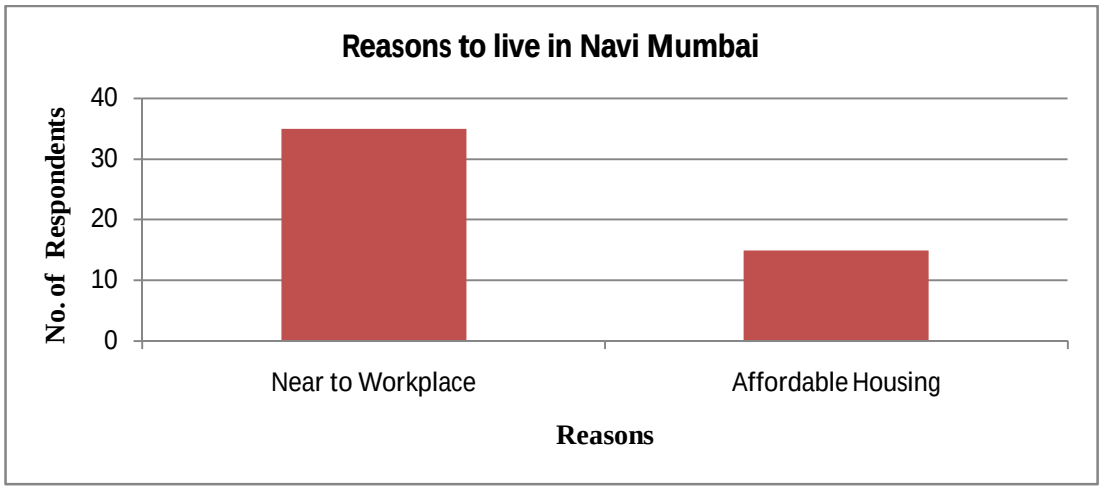
Table 6.51: Ranking of respondents in Kalamboli Node to live here.

Sr. No.	Reason	Respondents	%	Rank
1	Near to Workplace	35	70 %	2
2	Affordable Housing	15	30 %	3
	Total	**50**	**100 %**	

(Source : Primary Data)

The researcher found that "Near to Workplace" was main reason of the respondents to live in Kalamboli node, followed by well developed city, good quality of life and good education facilities. All other reasons such as good connectivity with Mumbai / Thane, Good education, good quality of life etc. were ignored by the residents.

Graph 6.33 : Reason to live in Navi Mumbai (Kalamboli Node)



Above is bar diagram of table 6.9, different reasons are on X axis and no. of respondents on Y axis. Researcher concluded that 'Near to workplace' is the main reason for the residents of Kalamboli node to live in Navi Mumbai.

Respondents were least concerned about good education, good quality of life and other reasons.

b] If civic facilities are provided by CIDCO in this area?

CIDCO had been providing civic facilities in this node as any civic body for this node not yet established.

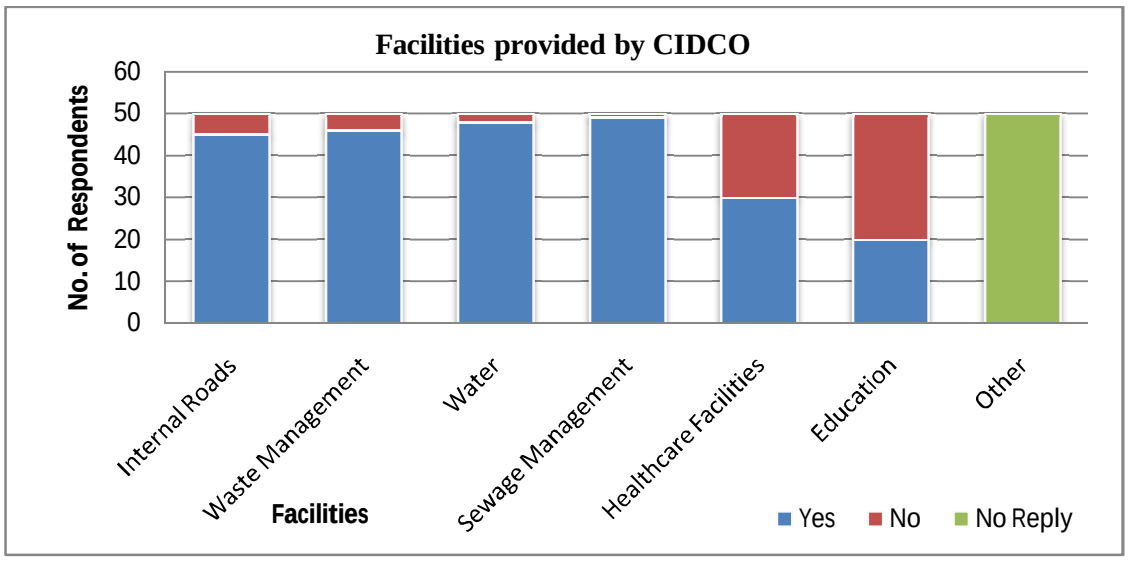
Table 6.52: Analysis for facilities provided by CIDCO in Kalamboli Node

Facilities provided by CIDCO	Yes	No	No Reply	Total
Internal Roads	45	5	Nil	50
Waste Management	46	4	Nil	50
Water	48	2	Nil	50
Sewage Management	49	1	Nil	50
Healthcare Facilities	30	20	Nil	50
Education	20	30	Nil	50
Other	Nil	Nil	50	50
%	**68 %**	**18 %**	**14 %**	**100 %**

(Source : Primary Data)

Average 68% respondents had confirmed provision of civic services by CIDCO in this node, 18% rejected it and 14% did not reply on the same. The analysis pointed out the major lacuna in this node is lack of educational and healthcare facilities.

Graph 6.34 : Civic facilities provided by CIDCO in Kalamboli node.



In the above graph different facilities are on X axis and no. of respondents on Y axis. Responses are plotted in different colours as mentioned in the graph. Researcher had concluded that 'majority of the respondents confirms that civic facilities are provided by CIDCO / NMMC in Kalamboli Node'. However respondents also point out lack of provision educational and medical facilities by CIDCO.

c] If elements of social infrastructure which are considered for the research are available in this node?

Researcher had tried to analyse availability of different elements of social infrastructure in Kalamboli node. It includes gardens, Playgrounds, schools, colleges etc. Following table present this analysis.

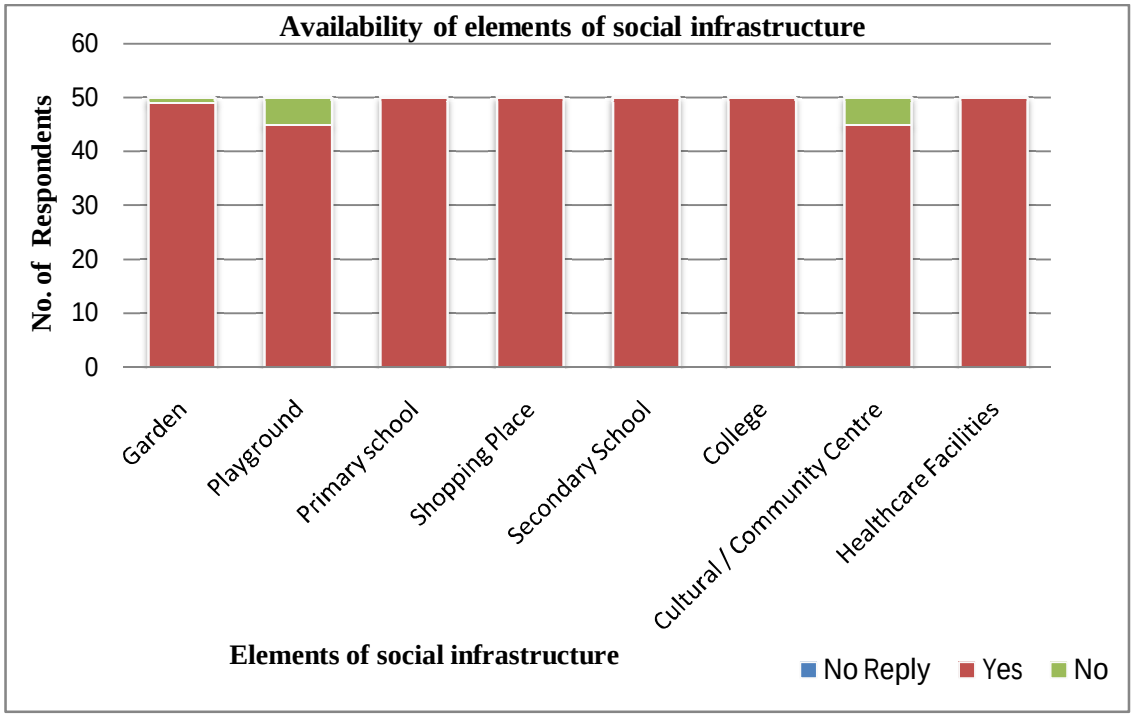
Table 6.53: Analysis on availability of elements of social infrastructure in Kalamboli Node.

Elements of Social Infrastructure	Yes	No	No Reply	Total
Garden	49	1	Nil	50
Playground	45	5	Nil	50
Primary school	50	Nil	Nil	50
Shopping Place	50	Nil	Nil	50
Secondary School	50	Nil	Nil	50
College	50	Nil	Nil	50
Cultural / Community Centre	45	5	Nil	50
Healthcare Facilities	50	Nil	Nil	50
%	**97 %**	**3 %**	**Nil**	**100 %**

(Source : Primary Data)

The analysis presented in above table indicated that average 97% respondents of Kalamboli Node confirmed availability of different elements of social infrastructure in this node and 3 % rejected it.

Graph 6.35 : Analysis of elements of social infrastructure in Kalamboli node of Navi Mumbai



In the above graph different elements of social infrastructure are on X axis and no. of respondents on Y axis. Responses are plotted in different colours as mentioned in the graph. Researcher concluded that 'majority of the respondents confirms that elements of social infrastructure are available in Kalamboli Node'.

d] Opinion of the respondents on "Whether CIDCO is successful in developing Navi Mumbai?"

This was most important question of the analysis as actual beneficiaries of development had asked to express their opinion on success of CIDCO in developing Navi Mumbai.

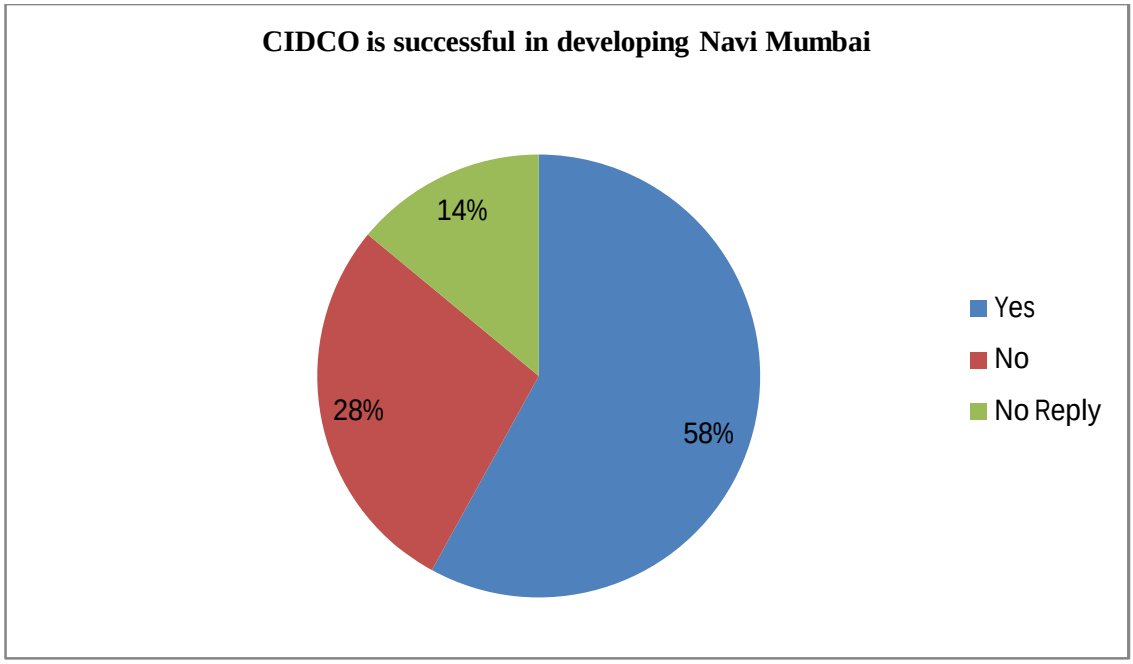
Table 6.54: Analysis for Success of CIDCO in developing Navi Mumbai (Kalamboli Node)

	Yes	**No**	**No Reply**	**Total**
Nos.	29	14	7	50
%	58 %	28 %	14 %	100 %

(Source : Primary Data)

The researcher had found that 58% of the respondents affirmed success of CIDCO in developing Navi Mumbai, 28% considered it as failure and 14% did not reply on the same.

Graph 6.36 : Analysis for responses of Kalamboli node residents on "Whether CIDCO is successful in developing Navi Mumbai?"



Above pie diagram helped the researcher to conclude that 'majority of the Kalamboli Node residents confirms that CIDCO is successful in developing Navi Mumbai.

e] Suggestions and recommendations of the respondents which shows lacunas in development and maintenance of different facilities by CIDCO.

Though 58% respondents of this node had affirmed success of CIDCO in developing Navi Mumbai, following suggestions given by them reflects shortfalls in planning and maintenance of different facilities by CIDCO.

Table 6.55: Suggestions given by residents of Kalamboli Node

Suggestion	Respondent	%
Improve Public Transport system by increasing local railway and bus connectivity and also by proper development and maintenance of roads	30	60 %
Improve Cleanliness, sewage and waste management	10	20 %
Control over Traffic and Parking	10	20 %
Require good educational facilities	5	10 %
Require good recreation facilities	5	10 %

(Source : Primary Data)

Lack of local railway connectivity and bad condition of roads due to traffic of heavy vehicles, these lacunas had been reported by majority of the respondents. Other suggestion includes improvement in sewage and waste management, good education facilities and recreation facilities.

6.11 Analysis of Kamothe Node

Following is analysis Kamothe node. Sample size for this node is 55. Following is sample profile of this node.

Table 6.56: Profile of Sample Kamothe Node

Gender	**Male**	**Female**	**Total**		
Nos.	30 (55%)	25 (45%)	55 (100%)		
Residence	**0 – 4 Yrs**	**5 -15 Yrs**	**15 Above**	**Total**	
Nos.	13 (24%)	42 (76%)	Nil (0%)	55 (100%)	
Age group	**< 18**	**18 -45**	**45 Above**	**Total**	
Nos.	Nil (0%)	45 (82%)	10 (18%)	55 (100%)	
Occupation	**Student**	**Service**	**Bus / Prof**	**Housewife**	**Total**
Nos.	5 (10%)	30 (54%)	10 (18%)	10 (18%)	55 (100%)

(Source : Primary Data)

(**Table Note :** Residence = Period of residence, Bus / Prof = Business and Profession)

The primary analysis includes division of respondents on the basis of Gender, Period of residence, Age and occupation. It represents 30 males and 25 females. Sample includes 13 residents residing for 0-4 years, 42 for 5-15 years. 45 respondents were in between 18-45 years and 10 were above 45 years, which is 81.82 % and 18.18 % of respondents. There were 5 Students, 30 Employees, 10 Businessmen / Professionals and 10 Housewives.

The researcher found that Kamothe is a developing node hence most of the population in this node was migrated in last 15 years. The majority of the population in this node is young i.e below 45 years.

Overall analysis of all respondents in Kamothe Node.

Least the researcher makes an effort to draw a conclusion by making combine analysis of all respondents to find out answer for following questions.

a. Why respondents chose Navi Mumbai as their place of residence?
b. If civic facilities are provided by CIDCO in this area?
c. If elements of social infrastructure which are considered for the research are available in this node?
d. Opinion of the respondents on "Whether CIDCO is successful in developing Navi Mumbai?"
e. Suggestions and recommendations of the respondents which shows lacunas in development and maintenance of different facilities by CIDCO.

The following is outcome of the analysis.

a] Why respondents chose Navi Mumbai as their place of residence?

The combine analysis of all 61 respondents gives following outcome for this question.

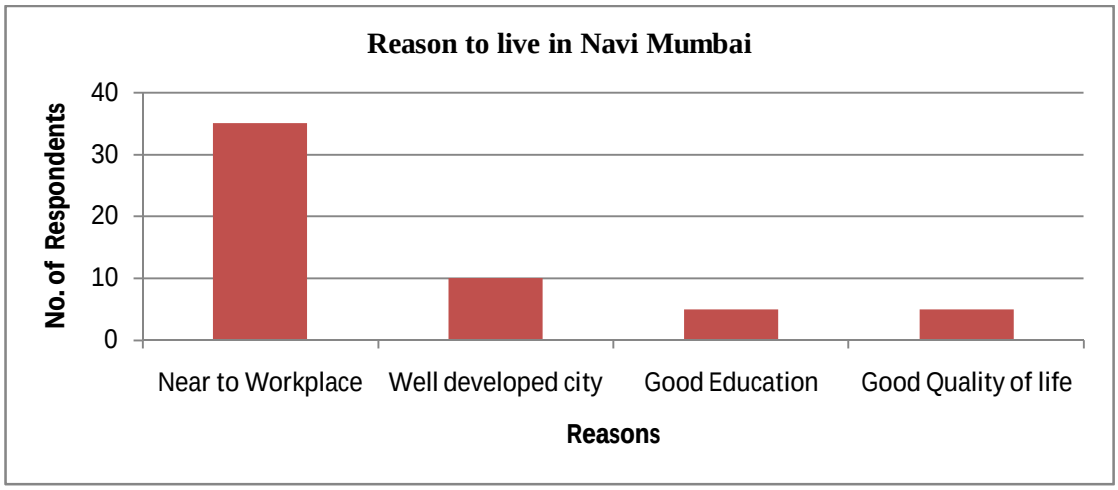
Table 6.57: Overall ranking of respondents in Kamothe Node to live here.

Sr. No.	Reason	Respondents	%	Rank
1	Near to Workplace	35	64 %	1
2	Well developed city	10	18 %	2
3	Good Education	5	9 %	3.5
4	Good Quality of life	5	9 %	3.5
	Total	**55**	**100 %**	

(Source : Primary Data)

By analyzing the above table researcher had found that "Near to Workplace" is main reason of the respondents to live in Kamothe node, followed by well developed city. Good quality of life and good education facilities are least considered. Respondents do not consider reasons like good connectivity, ancestral place etc.

Graph 6.37 : Reason to live in Navi Mumbai (Kamothe Node)



Above is bar diagram of table 6.57, different reasons are on X axis and no. of respondents on Y axis. The researcher concluded that 'Near to Workplace is the main reason for the residents of Kamothe node to live in Navi Mumbai. Respondents are least concerned about good education, good quality of life and other reasons.

b] If civic facilities are provided by CIDCO in this area?

CIDCO provide civic facilities in this node as any civic body for this node is not yet established.

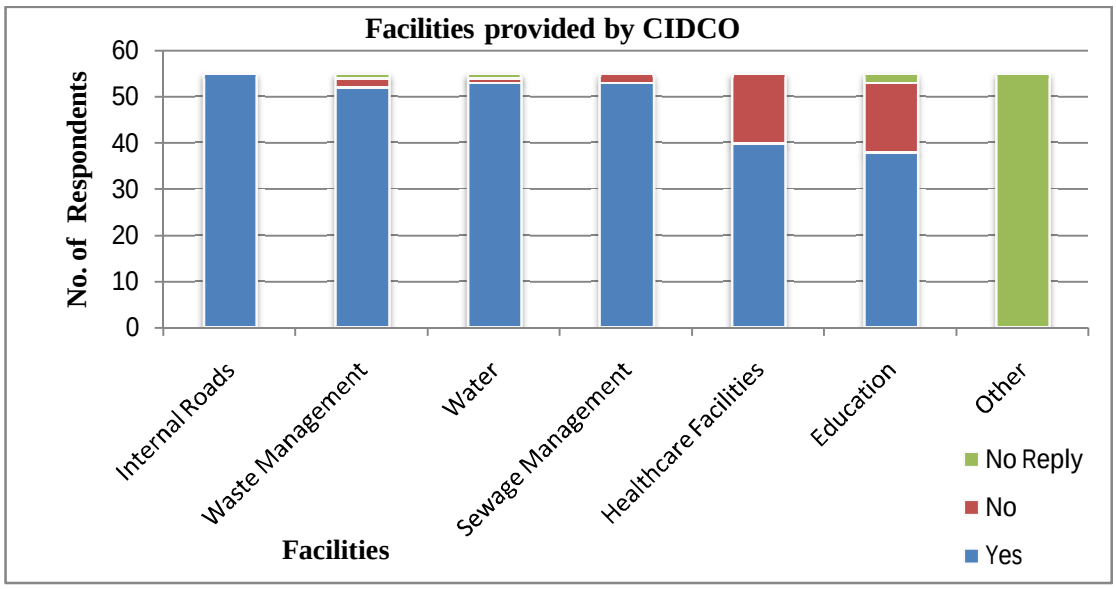
Table 6.58: Analysis for Civic facilities provided by CIDCO in Kamothe Node

Facilities provided by CIDCO	Yes	No	No Reply	Total
Internal Roads	55	Nil	Nil	55
Waste Management	52	2	1	55
Water	53	1	1	55
Sewage Management	53	2	Nil	55
Healthcare Facilities	40	15	Nil	55
Education	38	15	2	55
Other	Nil	Nil	55	55
%	**76 %**	**9 %**	**15 %**	**100 %**

(Source : Primary Data)

The researcher had found that average 76% respondents had confirmed provision of civic services by CIDCO in this node, 9% rejected it and 15% did not reply on the same. The respondents pointed out the major lacuna in this node i.e lack of educational facilities and healthcare facilities as approx. 27% respondents rejected provision of both services by CIDCO.

Graph 6.38: Analysis of civic facilities provided by CIDCO in Kamothe node of Navi Mumbai



In the above graph different facilities are on X axis and no. of respondents on Y axis. Responses are plotted in different colours as mentioned in the graph. Researcher concluded that 'majority of the respondents confirms that civic facilities are provided by CIDCO in Kamothe Node'.

c] If elements of social infrastructure which are considered for the research are available in this node?

Researcher had tried to analyse availability of different elements of social infrastructure in Kamothe node. It includes gardens, Playgrounds, schools, colleges etc. Following table present this analysis.

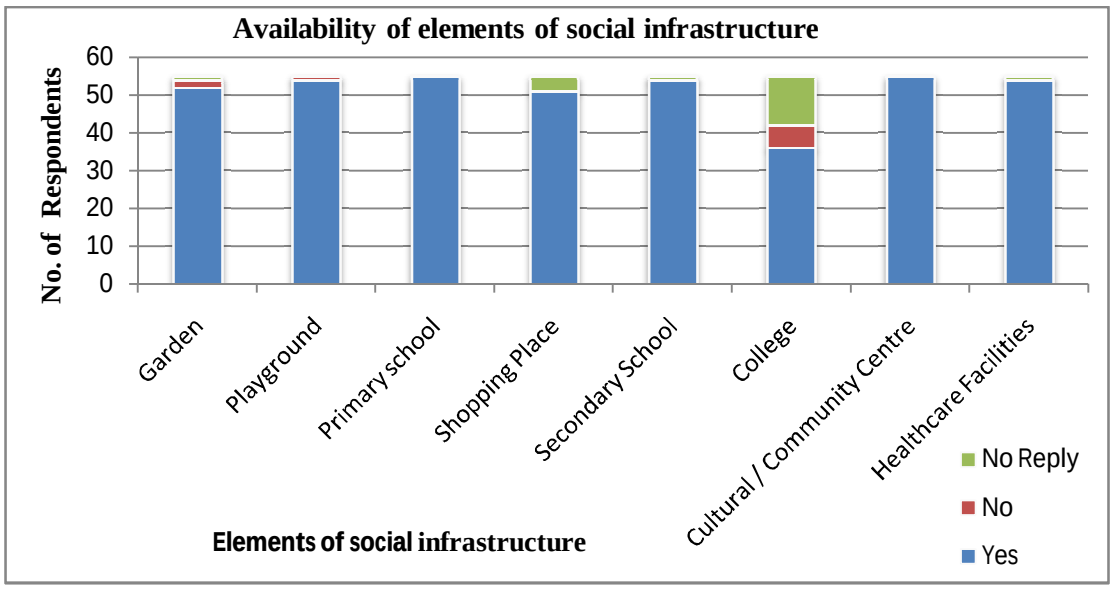
Table 6.59: Overall analysis on availability of elements of social infrastructure in Kamothe Node.

Elements of Social Infrastrcture	Yes	No	No Reply	Total
Garden	52	2	1	55
Playground	54	1	Nil	55
Primary school	55	Nil	Nil	55
Shopping Place	51	Nil	4	55
Secondary School	54	Nil	1	55
College	36	6	13	55
Cultural / Community Centre	55	Nil	Nil	55
Healthcare Facilities	54	Nil	1	55
%	**93 %**	**2 %**	**5 %**	**100 %**

(Source : Primary Data)

The above table indicates that 93% respondents of Kamothe Node had confirmed availability of all elements of social infrastructure in this node, 2% rejected it and 5 % did not reply. Exception was colleges approx. 35% respondents either rejected the availability or remain silent on the same.

Graph 6.39 : Analysis for availability of elements of social infrastructure in Kamothe Node of Navi Mumbai.



In the above graph different elements of social infrastructure are on X axis and no. of respondents on Y axis. Responses are plotted in different colours as mentioned in the graph. Researcher concluded that 'majority of the respondents confirms that elements of social infrastructure are available in Kamothe Node'. However the major exception was availability of colleges, approx 35% respondents either reject it or remain silent.

d] Opinion of the respondents on "Whether CIDCO is successful in developing Navi Mumbai?"

This was most important question of the analysis as the actual beneficiaries of development had asked to express their opinion on success of CIDCO in developing Navi Mumbai.

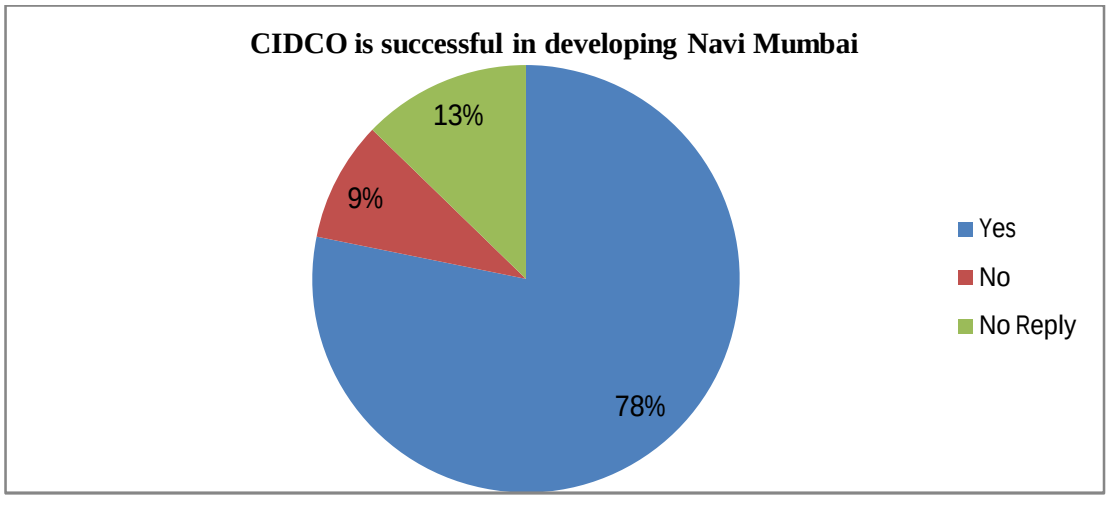
Table 6.60: Analysis for Success of CIDCO in developing Navi Mumbai (Kamothe Node)

	Yes	**No**	**No Reply**	**Total**
Nos.	43	5	7	55
%	78 %	9 %	13 %	100 %

(Source : Primary Data)

The researcher found that 78% of the respondents had affirmed success of CIDCO in developing Navi Mumbai, 9% considered it as failure and 13% did not reply on the same.

Graph 6.40 : Analysis for responses of Kamothe node residents on "Whether CIDCO is successful in developing Navi Mumbai?"



Above pie diagram helped the researcher to conclude that 'majority of the Kamothe Node residents confirms that CIDCO is successful in developing Navi Mumbai.

e] Suggestions and recommendations of the respondents which shows lacunas in development and maintenance of different facilities by CIDCO.

Though 78% respondents of this node had affirmed success of CIDCO in developing Navi Mumbai, however following suggestions given by them had reflected the shortfalls in planning and maintenance of different facilities by CIDCO.

Table 6.61: Analysis of suggestions / complaints given by residents of Kamothe Node

Suggestion	Respondent	%
Improve Public Transport system by increasing local railway and bus connectivity and also by proper development and maintenance of roads	40	72 %
Require Good educational facilities	13	24 %
Improve Cleanliness, sewage and waste management	10	18 %
Development of modern Shopping facilities	8	15 %
Improve water management	7	13 %
Advance and affordable medical facilities	7	13 %

(Source : Primary Data)

Residents of Kamothe node had reported for improvement in public transportation system followed by lack of colleges and higher education facilities in this node. Other notable shortcomings include improper waste management and shopping facilities in this node.

6.12 Analysis of New Panvel Node

Following is analysis New Panvel node. Sample size for this node is 95. Following is sample profile of this node.

Table 6.62: Profile of Sample New Panvel Node

Gender	**Male**	**Female**	**Total**		
Nos.	40 (42%)	55 (48%)	95 (100%)		
Residence	**0 – 4 Yrs**	**5 -15 Yrs**	**15 Above**	**Total**	
Nos.	29	49	17	95 (100%)	
%	31 %	51 %	18 %	100 %	
Age group	**< 18**	**18 -45**	**45 Above**	**Total**	
Nos.	15 (16%)	60 (63%)	20 (21%)	95 (100%)	
Occupation	**Student**	**Service**	**Bus / Prof**	**Housewife**	**Total**
Nos.	15	43	10	27	95 (100%)

(Source : Primary Data)

(**Table Note :** Residence = Period of residence, Bus / Prof = Business and Profession)

The primary analysis reveals that there are 40 Male and 55 Female respondents, 29 respondents are living in New Panvel for 0-4 years, 49 for 5-15 years and 17 for more than 15 years. There are 15 respondents whose age is less than 18 years, 60 respondents between 18-45 age group and 20 who are above 45 years, which is 15.79%, 63.169 % and 21.05% respectively. The occupation analysis shows that 15 are students, 43 employed, 10 businessmen, and 27 housewives.

The researcher observed that New Panvel is one of the earlier nodes taken up for development by CIDCO, it is still under development. It was further observed by researcher that residents in this node are young and its population grows in last 15 years.

Analysis of New Panvel Node

The researcher analysed the responses to find out answer for the following questions

a. Why respondents chose Navi Mumbai as their place of residence?
b. If civic facilities are provided by CIDCO in this area?

c. If elements of social infrastructure which are considered for the research are available in this node?
d. Opinion of the respondents on “Whether CIDCO is successful in developing Navi Mumbai?”
e. Suggestions and recommendations of the respondents which shows lacunas in development and maintenance of different facilities by CIDCO.

The following is outcome of the analysis.

a] Why respondents chose Navi Mumbai as their place of residence?

The researcher had analyses responses of all 95 respondents that gives following outcome for this question

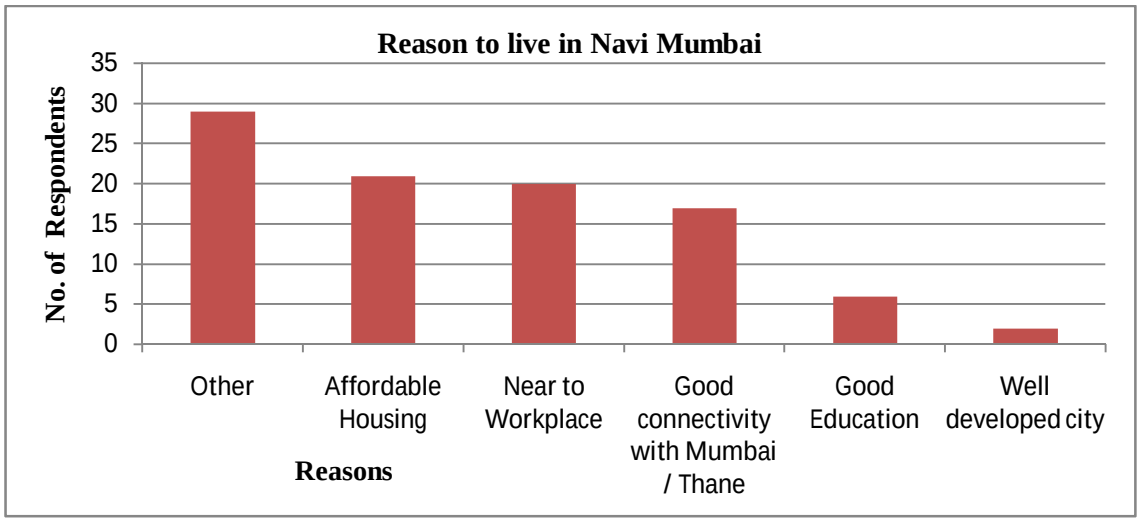
Table 6.63: Overall ranking of respondents in New Panvel Node to live here.

Sr. No.	Reason	Respondents	%	Rank
1	Other	29	31 %	1
2	Affordable Housing	21	22 %	2
3	Near to Workplace	20	21 %	3
4	Good connectivity with Mumbai / Thane	17	18 %	4
5	Good Education	6	6 %	5
6	Well developed city	2	2 %	6
	Total	**95**	**100 %**	

(Source : Primary Data)

The researcher had found that “Other” was main reason of the respondents to live in New Panvel node, ‘Other’ was selected by students less than 18 years and females 18-45 and 45 above age group In case of students they are living here with their parents since birth and in case of females they were settled here after marriage. It was followed by affordable housing and near to workplace. Good education and well developed city were least considered by respondents and other reasons like good quality of life, ancestral place were not at all considered by respondents.

Graph 6.41 : Reason to live in Navi Mumbai (New Panvel Node)



Above is a bar diagram of table 6.63, different reasons are on X axis and no. of respondents on Y axis. Researcher concluded that 'Other' is the main reason for the residents of New Panvel node to live in Navi Mumbai. The 'Other' includes students living here with their parents since birth and housewives which were settled here after marriage. Respondents were least concerned about good education, well developed city etc.

b] If civic facilities are provided by CIDCO in this area?

This node is maintained by CIDCO and it provides different civic services. Following analysis confirms availability of those services

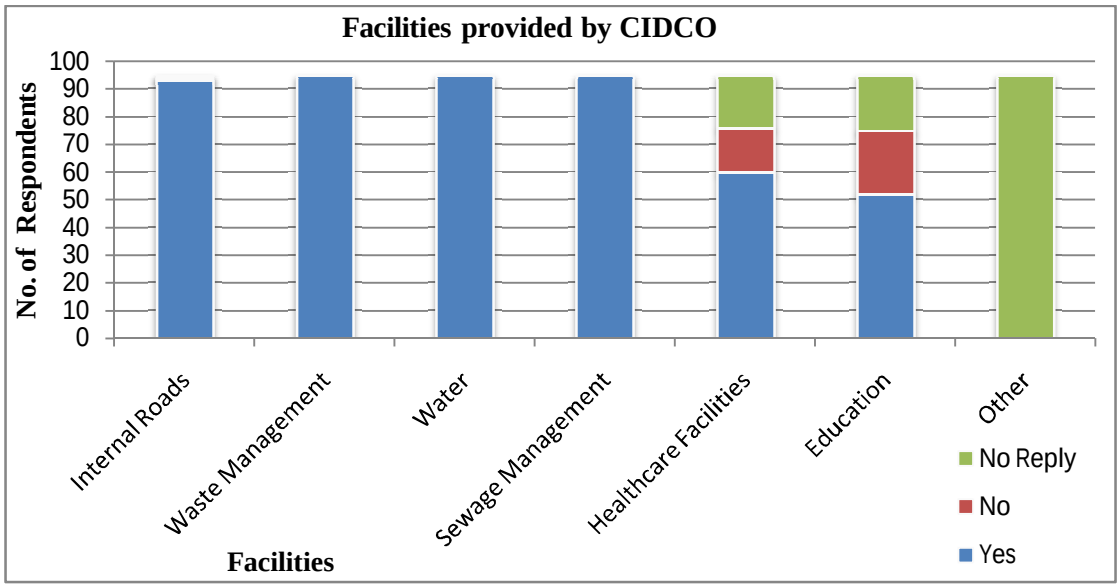
Table 6.64: Analysis for civic facilities provided by CIDCO in New Panvel

Facilities provided by CIDCO	Yes	No	No Reply
Internal Roads	93	1	1
Waste Management	95	Nil	Nil
Water	95	Nil	Nil
Sewage Management	95	Nil	Nil
Healthcare Facilities	60	16	19
Education	52	23	20
Other	Nil	Nil	95
%	**74 %**	**6 %**	**20 %**

(Source : Primary Data)

The analysis made by researcher had revealed that average 74% respondents confirmed provision of civic services by CIDCO in this node, 6% rejected it and 20 % did not reply on the same. Major exception includes provision of healthcare facilities and education by CIDCO.

Graph 6.42: Analysis for Provision of civic services by CIDCO in New Panvel node.



In the above graph different facilities are on X axis and no. of respondents on Y axis. Responses are plotted in different colours as mentioned in the graph. Researcher concluded that 'majority of the respondents confirms that civic facilities are provided by CIDCO in New Panvel Node'. The major exceptions were education and healthcare facilities.

c] If elements of social infrastructure considered for the research are available in this node?

Researcher had tried to analyse availability of different elements of social infrastructure in New Panvel node. It includes gardens, Playgrounds, schools, colleges etc. Following table present this analysis.

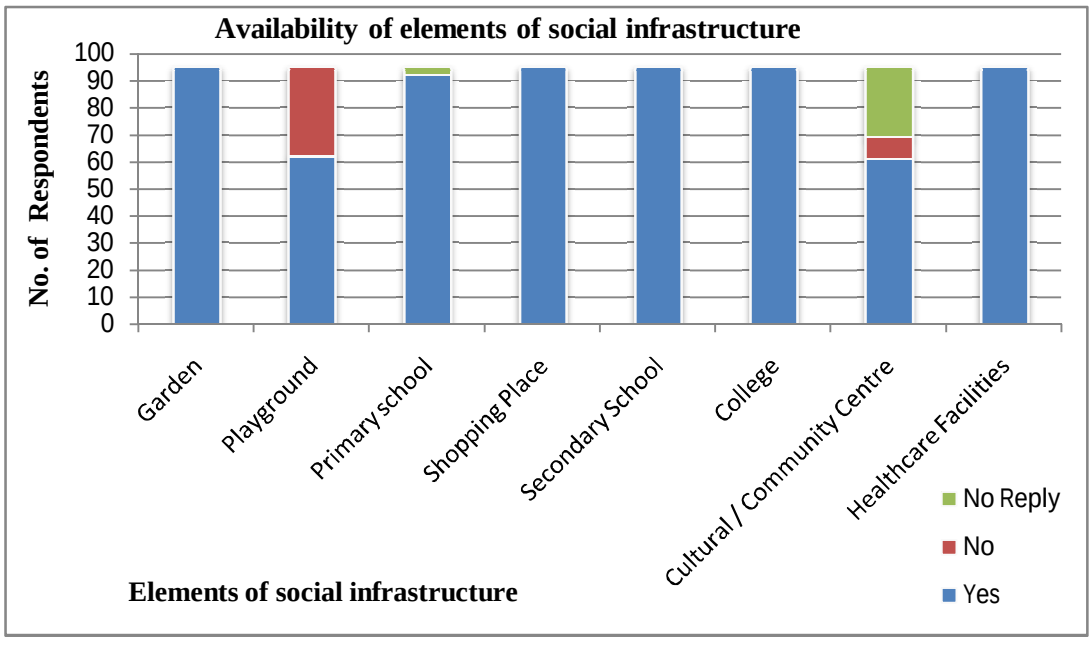
Table 6.65: Overall analysis of availability of social infrastructure in New Panvel Node.

Elements of Social Infrastructure	Yes	No	No Reply	Total
Garden	95	Nil	Nil	95
Playground	62	33	Nil	95
Primary school	92	Nil	3	95
Shopping Place	95	Nil	Nil	95
Secondary School	95	Nil	Nil	95
College	95	Nil	Nil	95
Cultural / Community Centre	61	8	26	95
Healthcare Facilities	95	Nil	Nil	95
%	**91 %**	**5%**	**4 %**	**100 %**

(Source : Primary Data)

Average 91% respondents had confirmed availability of all elements of social infrastructure in this node, 5% had rejected it, and 4% did not reply on the same. Major exception was availability of Cultural / Community centre approx 36% respondents either rejected its availability or remain silent.

Graph 6.43 : Analysis for availability of elements of social infrastructure in New Panvel Node of Navi Mumbai.



In the above graph different elements of social infrastructure are on X axis and no. of respondents on Y axis. Responses are plotted in different colours as mentioned in the graph. Researcher concluded that 'majority of the respondents confirms that elements of social infrastructure are available in New Panvel Node'. However the major exception is availability of cultural and community centre, approx 36% respondents either rejected it or remain silent.

d] Opinion of the respondents on "Whether CIDCO is successful in developing Navi Mumbai?"

This was the most important question of the analysis as actual beneficiaries of development were asked to express their opinion on success of CIDCO in developing Navi Mumbai.

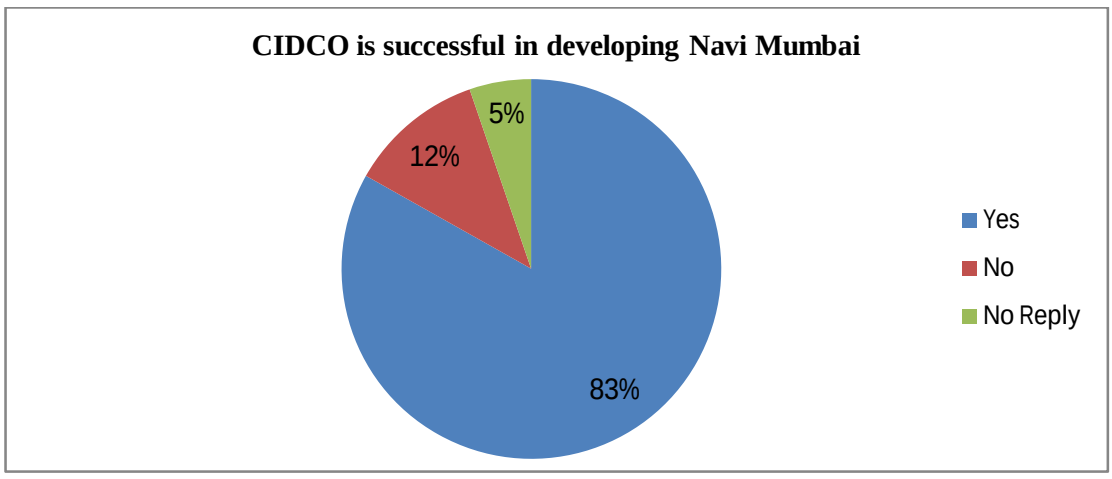
Table 6.66: Analysis for Success of CIDCO in developing Navi Mumbai (New Panvel Node)

	Yes	No	No Reply	Total
Nos.	79	11	5	95
%	83 %	12 %	5 %	100 %

(Source : Primary Data)

The analysis had revealed that 83% of the respondents had affirmed success of CIDCO in developing Navi Mumbai, 12% considered it as failure and 5% did not reply on the same.

Graph 6.44 : Analysis for responses of New Panvel node residents on "Whether CIDCO is successful in developing Navi Mumbai?"



Above pie diagram helped the researcher to conclude that 'majority of the New Panvel Node residents had confirmed that CIDCO is successful in developing Navi Mumbai.

e] Suggestions and recommendations of the respondents which shows lacunas in development and maintenance of different facilities by CIDCO.

Though 83% respondents of this node had affirmed success of CIDCO in developing Navi Mumbai following suggestions given by them reflect shortfalls in planning and maintenance of different facilities by CIDCO / NMMC.

Table 6.67: Analysis of suggestions by respondents in New Panvel (5-15 Years)

Suggestion	Respondent	%
Control over Traffic and Parking	41	43 %
Improve Public Transport system by increasing local railway and bus connectivity and also by proper development and maintenance of roads	13	14 %
Improve Cleanliness, sewage and waste management	46	48 %
Control over encroachments	23	24 %
Development of modern Shopping facilities	5	5 %
Redevelopment of old CIDCO buildings	3	3 %

(Source : Primary Data)

The analysis of suggestions had revealed that New Panvel residents required improvement in traffic conditions, parking places, sewage and waste management. It also highlight problem of encroachment in this node.

6.13 Analysis of Dronagiri Node

Following is analysis Dronagiri node. Sample size for this node is 15. Following is sample profile of this node.

Table 6.68: Sample profile Dronagiri Node

Gender	**Male**	**Female**	**Total**		
Nos.	15 (100%)	Nil (0%)	15 (100%)		
Residence	**0 – 4 Yrs**	**5 -15 Yrs**	**15 Above**	**Total**	
Nos.	Nil (0%)	15 (100%)	Nil (0%)	15 (100%)	
Age group	**< 18**	**18 -45**	**45 Above**	**Total**	
Nos.	Nil (0%)	15 (100%)	Nil (0%)	15 (100%)	
Occupation	**Student**	**Service**	**Bus / Prof**	**Housewife**	**Total**
Nos.	Nil (0%)	15 (100%)	Nil (0%)	Nil (0%)	15 (100%)

(Source : Primary Data)

(**Table Note :** Residence = Period of residence, Bus / Prof = Business and Profession)

The primary analysis reveals that there are 15 male respondents. All these respondents are living in Navi Mumbai for 5-15 years and all are between 18-45 years and employed in Navi Mumbai.

The researcher had observed that this node was specifically designed for residents who are employed in port based industries; it is most underdeveloped node of Navi Mumbai. The researcher further observed that most of residents living here are either unmarried or do not live with the family due to their employment.

Overall analysis of all respondents in Dronagiri Node.

The researcher made an effort to draw a conclusion by making analysis of all respondents to find out answer for following questions.

a. Why respondents chose Navi Mumbai as place of their residence?
b. If civic facilities are provided by CIDCO in this area?
c. If elements of social infrastructure which are considered for the research are available in this node?
d. Opinion of the respondents on “Whether CIDCO is successful in developing Navi Mumbai?”

e. Suggestions and recommendations of the respondents which shows lacunas in development and maintenance of different facilities by CIDCO.

a] Why respondents chose Navi Mumbai as place of their residence?

Researcher took efforts to identify why these respondents chosen Navi Mumbai as their place of residence by analyzing their responses

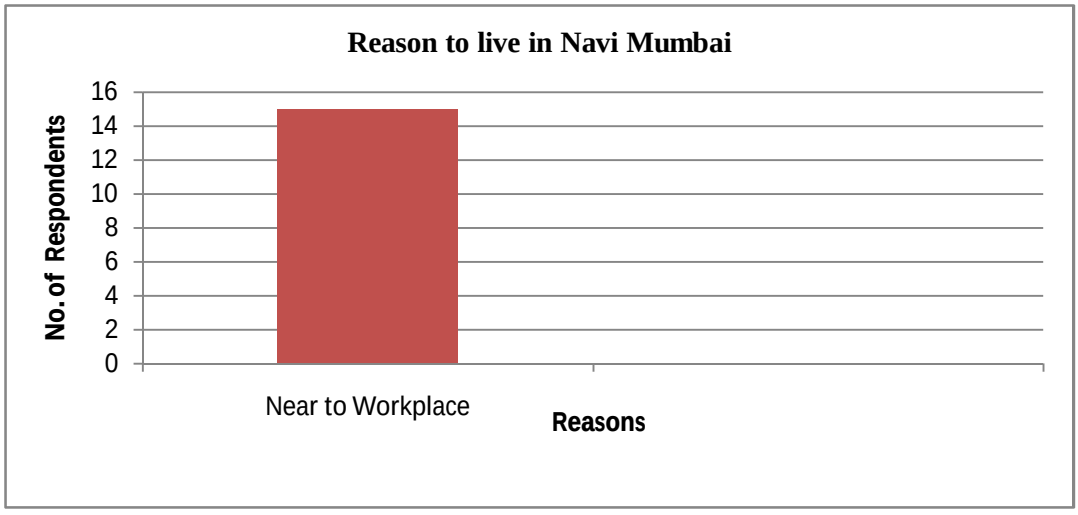
Table 6.69: Analysis of reasons of residents for living in Dronagiri Node

Sr. No.	Reason	No. of Respondents	%	Rank
1	Near to Workplace	15	100 %	1
	Total	15	100 %	

(Source : Primary Data)

The researcher had found that all respondents in this node are living here as it is 'near to workplace'. Researcher concluded that 100% respondents consider 'Near to Workplace' as the main reason to live in Navi Mumbai. All other reasons were ignored by the respondents

Graph 6.45 : Reason to live in Navi Mumbai (Dronagiri Node)



Above is a bar diagram which clearly indicates that all respondents this node prefer to live in this node as it is near to workplace. The researcher concluded that 100% of the respondents consider 'Near to Workplace' as the main reason to live in Navi Mumbai. All other reasons were ignored by the respondents.

B] If civic facilities are provided by CIDCO in this area ?

CIDCO had been providing civic services in this node as it is not transferred to any civic body. Following table present the analysis that includes responses in respect of provision civic services by CIDCO in this node.

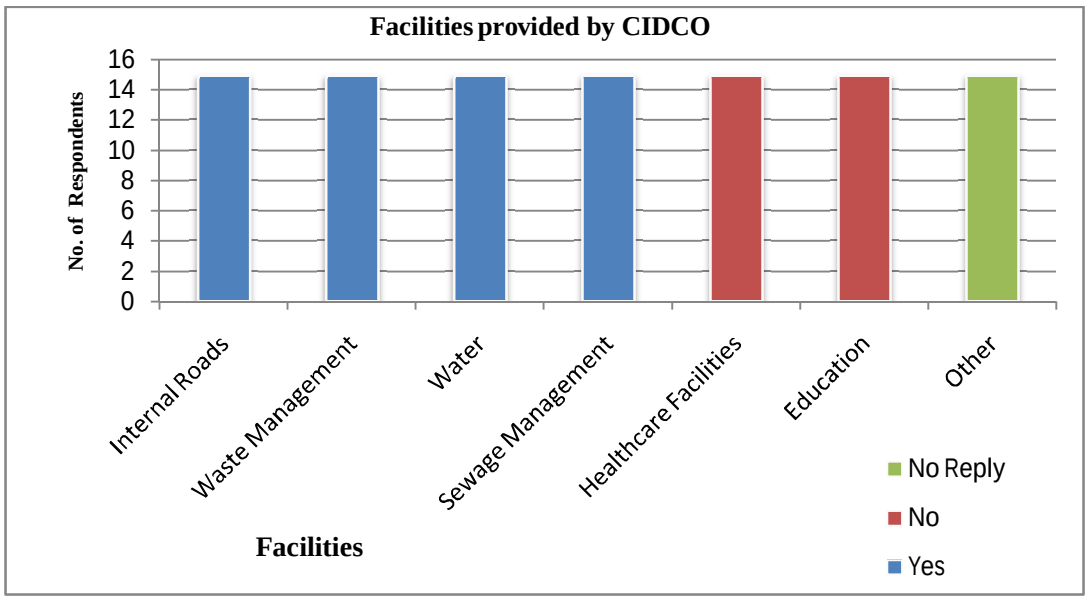
Table 6.70: Analysis for provision of civic facilities by CIDCO in Dronagiri Node

Facilities provided by CIDCO	Yes	No	No Reply	Total
Internal Roads	15	Nil	Nil	15
Waste Management	15	Nil	Nil	15
Water	15	Nil	Nil	15
Sewage Management	15	Nil	Nil	15
Healthcare Facilities	Nil	15	Nil	15
Education	Nil	15	Nil	15
Other	Nil	Nil	15	15
%	**57 %**	**29 %**	**14 %**	**100 %**

(Source : Primary Data)

Analysis of respondents had revealed that average 57% respondents confirm provision of civic services 29% rejected it and 14% remain silent on the same. Major exceptions were education and healthcare facilities, all respondents rejected provision of these services by CIDCO.

Graph 6.46: Analysis for Provision of civic services by CIDCO in Dronagiri



In the above graph different facilities are on X axis and no. of respondents on Y axis. Responses are plotted in different colours as mentioned in the graph. Researcher concluded that 'majority of the respondents confirms that civic facilities are provided by CIDCO in Dronagiri Node'.

c] If elements of social infrastructure which are considered for the research are available in this node?

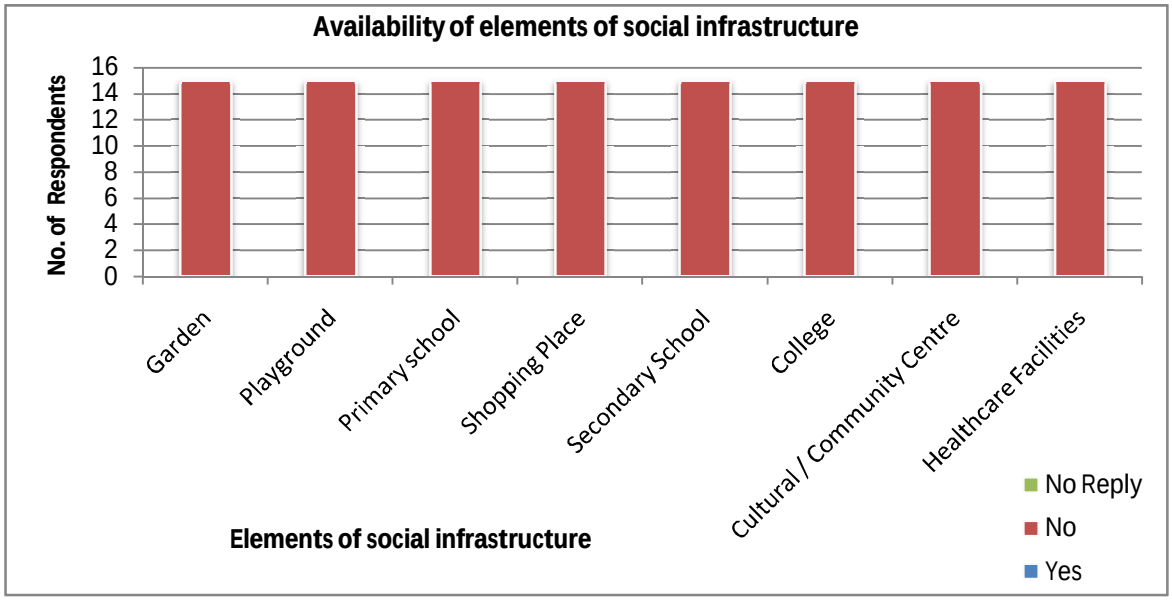
Analysis of social infrastructure includes responses from all 15 respondents on availability of different elements of social infrastructure

Table 6.71: Analysis for availability of elements in social infrastructure in Dronagiri node of Navi Mumbai

Elements of Social Infrastructure	Yes	No	No Reply
Garden	Nil	15	Nil
Playground	Nil	15	Nil
Primary school	Nil	15	Nil
Shopping Place	Nil	15	Nil
Secondary School	Nil	15	Nil
College	Nil	15	Nil
Cultural / Community Centre	Nil	15	Nil
Healthcare Facilities	Nil	15	Nil
%	**Nil**	**100 %**	**Nil**

(Source : Primary Data)

Graph 6.47: Analysis for availability of elements of social infrastructure in Dronagiri Node of Navi Mumbai.



Analysis of this category revealed that 0% respondents in this category had confirmed availability of elements social infrastructure 100% rejected the availability of any social infrastructure element and nobody remain silent on the same.

d] Opinion of the respondents on Whether CIDCO is successful in developing Navi Mumbai?

This is most important analysis as it is focused on main question of the research. Researcher had taken efforts to find out answer of this question from respondents and its outcome is presented below.

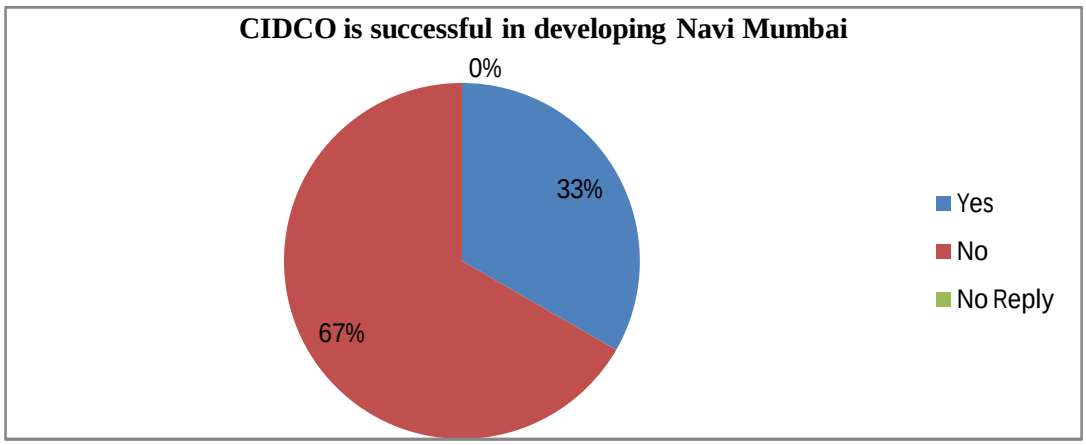
Table 6.72: Analysis for Success of CIDCO in developing Navi Mumbai (Dronagiri Node)

	Yes	**No**	**No Reply**	**Total**
Nos.	5	10	Nil	15
%	**33%**	**67 %**	**Nil**	**100 %**

(Source : Primary Data)

The analysis shows that 5 out of respondents in this category think that CIDCO is successful in developing Navi Mumbai. Whereas 10 respondents gave negative response and confirm that CIDCO is not successful in developing Navi Mumbai.

Graph 6.48 : Analysis for responses of Dronagiri node residents on "Whether CIDCO is successful in developing Navi Mumbai?"



Above pie diagram helps the researcher to conclude that 'majority of the Dronagiri Node residents confirms that CIDCO is not successful in developing Navi Mumbai.

e] Suggestions on further development and maintenance:

This is most important part of analysis as it looks into problems faced by residents, lacunas in development as well as maintenance of different facilities provided by CIDCO. Following are different suggestions given by respondents.

Table 6.73: Analysis of suggestions by respondents in Dronagiri

Suggestion	**Respondent**	**%**
Require overall development of node	15	100 %

(Source : Primary Data)

The analysis clearly indicates residents are not at all satisfied with development of this node by CIDCO and require overall development of this node.

6.14 Combine Analysis for All Nodes

The researcher had made a combine analysis of responses collected from all 900 respondents residing in different nodes of Navi Mumbai. The researcher made an effort to draw a conclusion and to find out answers for following questions. Researcher applied z-test to validate inferences drawn from the analysis.

- Why respondents chose Navi Mumbai as place of their residence?
- If civic facilities which are considered for research are provided by CIDCO / NMMC.
- If elements of social infrastructure which are considered for the research are available in this Nodes?
- Opinion of the respondents on “Whether CIDCO is successful in developing Navi Mumbai?”
- Suggestions and recommendations of the respondents which shows lacunas in development and maintenance of different facilities by CIDCO.

While making combine analysis researcher classified the respondents on the basis of Period of residence, Gender, Age and then by Occupation, efforts are made to find out answers of above question after considering each characteristic of the respondents such as period of residence, gender, age and occupation. This enables the researcher to find out satisfaction level of different respondents. Results derived from the analysis are further tested by applying co-relation and Z- test.

Table 6.74: Profile of sample collected from all nodes.

Gender	Male	Female	Total			
Nos.	465 (52%)	435 (48%)	900 (100%)			
Residence	0 – 4 Yrs	5 -15 Yrs	15 Above	Total		
Nos.	208 (23%)	486 (54%)	206 (23%)	900 (100%)		
Age Group	< 18	18 – 45	45 Above	Total		
Nos.	15 (2%)	719 (80%)	166 (18%)	900 (100%)		
Occupation	Student	Service	Bus / Prof	Retired	Housewife	Total
Nos.	58 (7%)	526 (58%)	156 (17%)	50 (6%)	110 (12%)	900 (100%)

(Source : Primary Data)

(**Table Note :** Residence = Period of residence, Bus / Prof = Business and Profession)

a. Why respondents chose Navi Mumbai as place of their residence?

The researcher had analysed responses to find out why respondents choose Navi Mumbai as their place of residence. Node wise details analysis is already done hence collective analysis is presented below.

I] Category I (0-4 Years):

This category belongs to newcomers. There are 208 respondents in this category these respondents are recently migrated into the Navi Mumbai. It was important to analyse these respondents for 2 reasons

1 To find out which factor is attracting these respondents to live in Navi Mumbai

2. To find out scope of improvements in other factors which fail to attract migrants and to strengthen those factors which are already attracting the migrants.

Following table presents details of the migrants classified on the basis of Gender, Age Group, occupation and workplace.

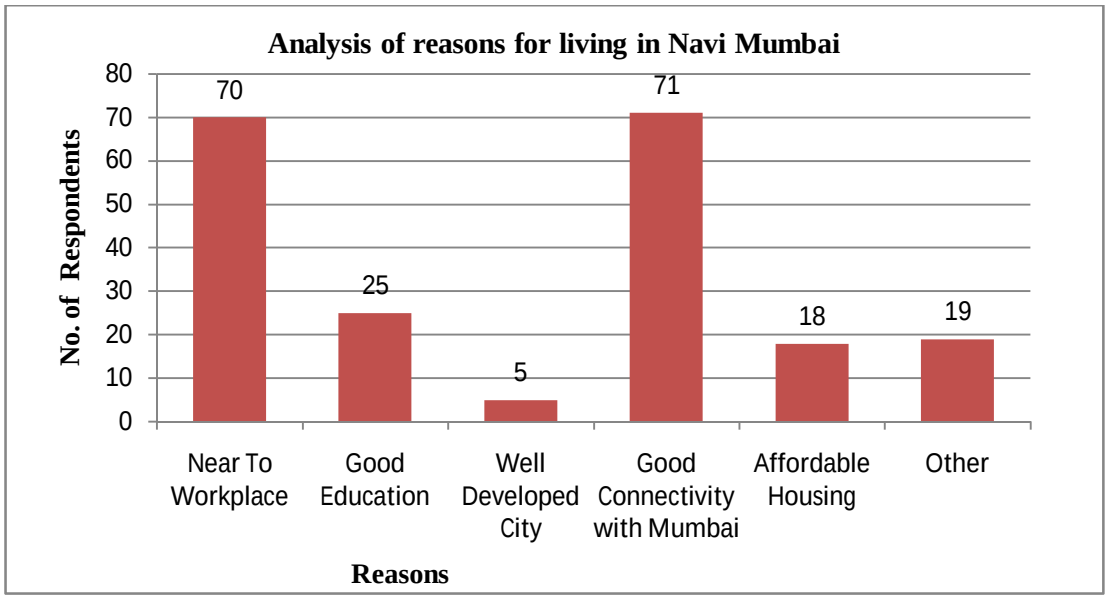
Table 6.75: Combine analysis of reasons to live in Navi Mumbai (0-4 Years)

	Near To Workplace	Good Education	Well Developed City	Good Connectivity with Mumbai/ Thane	Affordable Housing	Other
Male						
Less Than 18						
Student		5				
18 - 45 Years						
Student		5				5
Employed in Navi Mumbai	20					
Employed in Mumbai / Thane				31		
Business in Navi Mumbai	4					
Female						
18 - 45 Years						
Student		15				
Employed in Navi Mumbai	46					8
Employed in Mumbai / Thane				40	13	
Housewife			5		5	6
Total	**70**	**25**	**5**	**71**	**18**	**19**
%	**34 %**	**12 %**	**2 %**	**34 %**	**9 %**	**9 %**
Rank	**2**	**3**	**6**	**1**	**5**	**4**

(Source : Primary Data)

The researcher had found that 'Good Connectivity with Mumbai / Thane' and "Near to Workplace' were the main reasons for respondents to live in Navi Mumbai. Well developed city, affordable housing were not major reasons for the respondents. The questionnaire also contains an option 'Ancestral place' and 'Good quality of life' which were ignored by respondents.

Graph6.49: Reason to live in Navi Mumbai (0-4 Years)



With the help of analysis presented in above table and graph the researcher had concluded that "Good connectivity with Mumbai is the main reason to live in Navi Mumbai for the respondents in this category. Well developed city and affordable housing were least considered reasons by the respondents.

II] Category II (5 - 15 Years):

This category belongs to old residents. There are 486 respondents in this category. These respondents were migrated into the Navi Mumbai long ago i.e. between 1990 – 2005. In this period there was tremendous growth in Navi Mumbai. It was important to analyse these respondents for 2 reasons

1 To find out which factor had attracted these respondents to live in Navi Mumbai and 2. To find out scope of improvements in other factors which fail to attract migrants and to strengthen those factors which are already attracting the migrants.

Following table presents details of the migrants classified on the basis of Gender, Age Group, occupation and workplace.

Table 6.76: Combine Analysis of reasons to live in Navi Mumbai (5 - 15 Years)

Particulars	R 1	R 2	R 3	R 4	R 5	R 6	R 7
Male							
Less Than 18							
Student							5
18-45 Years							
Student		15					
Employed in Navi Mumbai	59		4			20	
Employed in Mumbai / Thane			5	28		16	
Business in Navi Mumbai	53		2			10	
45 Above Years							
Employed in Navi Mumbai	10		4			3	
Employed in Mumbai / Thane							
Business in Navi Mumbai	5					4	
Retired			20		10		5
Female							
Less Than 18							
Student							5
18-45 Years							
Employed in Navi Mumbai	50	8	1	2		7	5
Employed in Mumbai / Thane			6	55			
Housewife	3	6	9		5	6	5
45 Above Years							
Housewife			15			5	
Retired			15				
Total :	**180**	**29**	**81**	**85**	**15**	**71**	**25**
%	**37.04%**	**5.97%**	**16.67%**	**17.49%**	**3.09%**	**14.61%**	**5.14%**
Rank	**1**	**5**	**3**	**2**	**7**	**4**	**6**

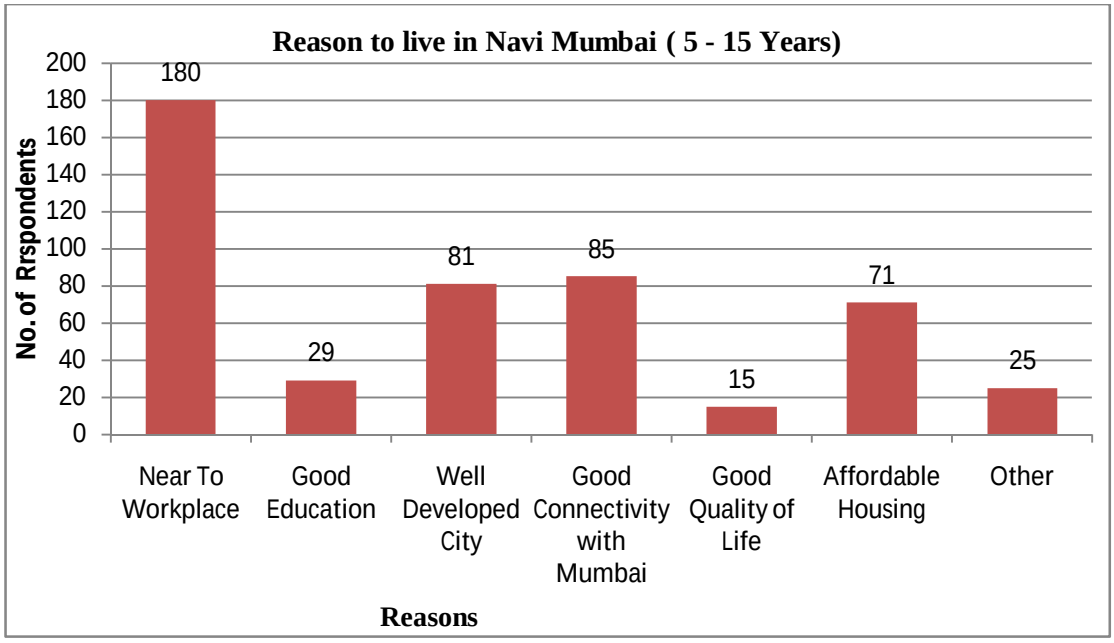
(Source : Primary Data)

(Table Note – R1 = Near to workplace, R2 = Good education, R3 = Well developed city, R4 = Good connectivity with Mumbai / Thane, R5 = Good quality of life, R6 = Affordable housing and R7 = other)

The analysis presented above indicates that 'Near to workplace' was the main reason to migrate in Navi Mumbai. Followed by 'Good connectivity with Mumbai / Thane and 'Well developed city' very few respondents had

selected good quality of life and other as their reason to live in Navi Mumbai.

Graph 6.50: Reason to live in Navi Mumbai (5 – 15 Years)



The researcher had coccluded that 'Near to workplace' was the main reason of this category of respondents to migrate into Navi Mumbai. It was followed by 'Good connectivity with Mumbai / Thane and 'Well developed city'. Respondents were least concerned about good quality of life and other reasons.

III] Category III above 15 Years:

This category belongs to Navi Mumbaikars. There are 206 respondents in this category. These respondents had migrated into the Navi Mumbai long ago i.e. before 1990. These respondents witnessed growth of Navi Mumbai for more that last 15 years. It was important to analyse these respondents for 2 reasons

1 To find out which factor had attracted these respondents to live in Navi Mumbai. 2. To find out scope of improvements in other factors which failed to attract migrants and to strengthen those factors which are already attracting the migrants.

Following table presents details of the migrants classified on the basis of Gender, Age Group, occupation and workplace.

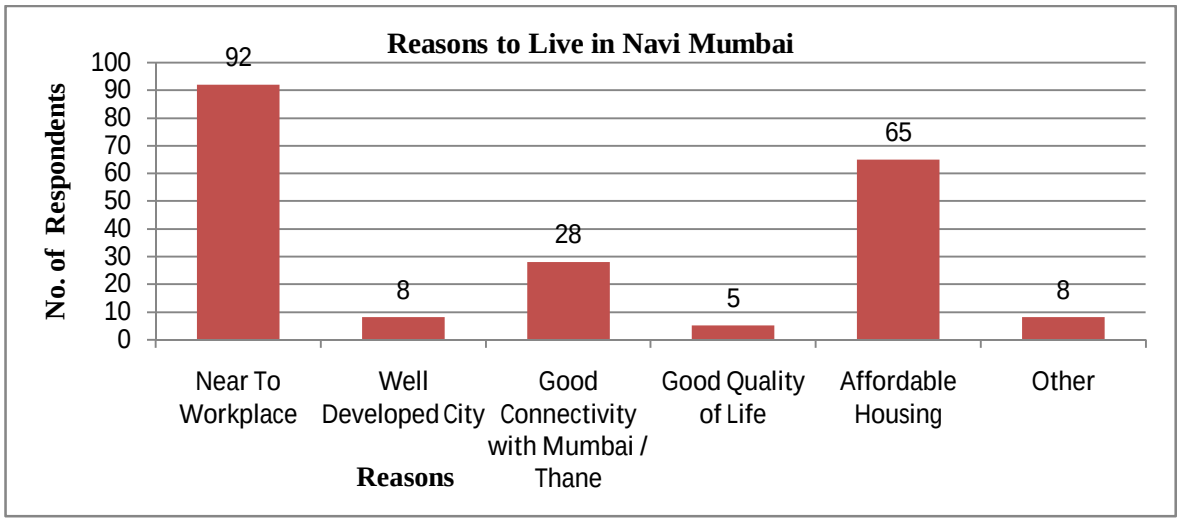
Table 6.77: Analysis of reason to live in Navi Mumbai above 15 Years

Particulars	Near To Workplace	Well Developed City	Good Connectivity with Mumbai / Thane	Good Quality of Life	Affordable Housing	Other
Male						
18-45 Years						
Student						3
Employed in Navi Mumbai	12				5	
Employed in Mumbai / Thane			10		9	
Business in Navi Mumbai	34				7	
45 Above Years						
Business in Navi Mumbai	20				17	
Female						
18-45 Years						
Employed in Navi Mumbai	26			5		
Employed in Mumbai / Thane			18			
Housewife					7	
45 Above Years						
Housewife		8			20	5
Total	**92**	**8**	**28**	**5**	**65**	**8**
%	**45%**	**4%**	**14%**	**2%**	**31%**	**4%**
Rank	**1**	**4.5**	**3**	**6**	**2**	**4.5**

(Source : Primary Data)

The researcher had concluded that 'Near to workplace' was the main reason to live in Navi Mumbai as it was selected by 45% respondents in this category, followed by 'Affordable housing'. Well developed city, good quality of life and other reasons were least considered by respondents.

Graph 6.51: Analysis of reason to live in Navi Mumbai above 15 Years



The analysis for reasons is presented in above table and graph. The researcher concluded that 'Near to Workplace' was main reason to live in this city for residents of this category. Very less no. of respondents had selected good quality of life, well developed city and other reasons.

IV] Combine analysis for all respondents

The researcher analysed responses of all 900 respondents to find out reason to live in Navi Mumbai. This analysis reveals why Navi Mumbai is getting popular destination to live and doing business.

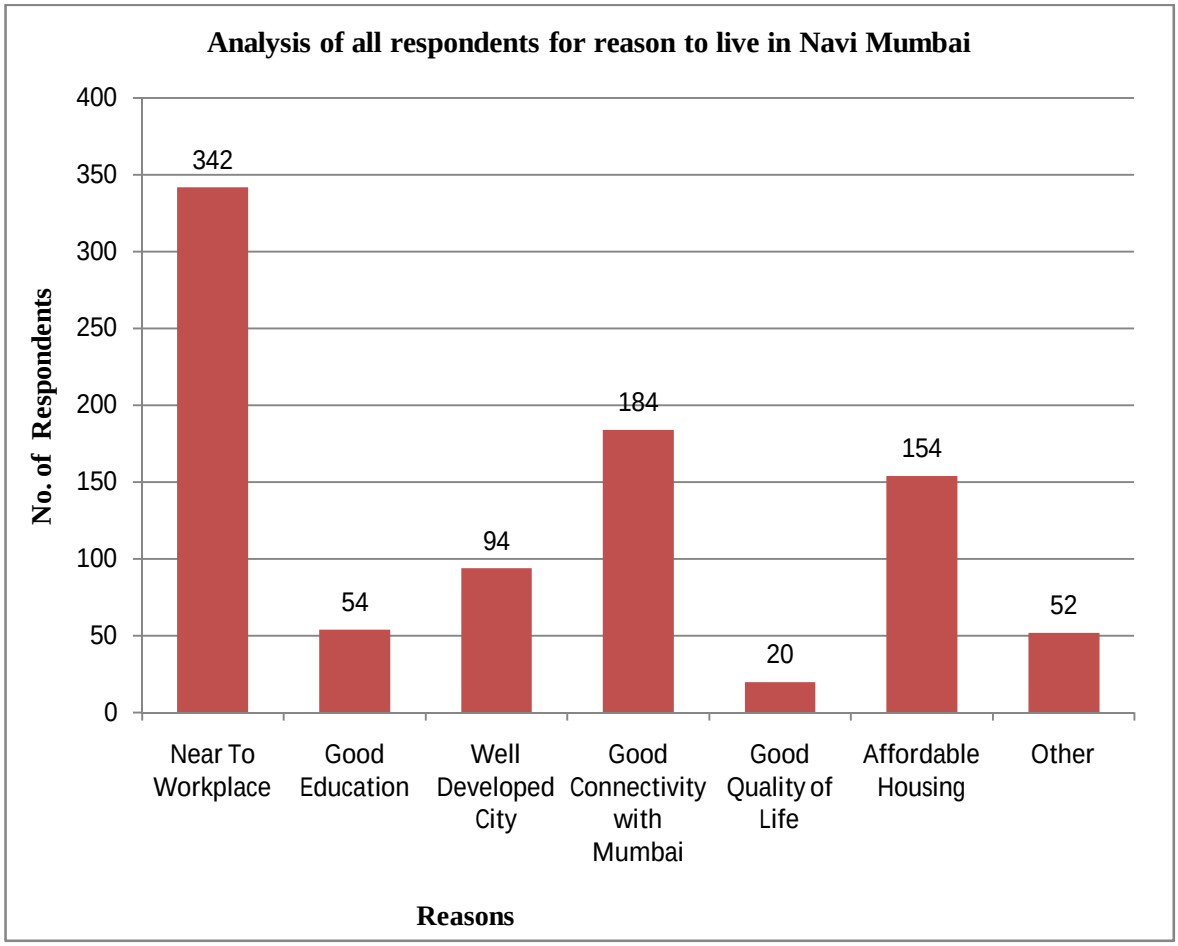
Table 6.78: Analysis of Reason to live in Navi Mumbai of all respondents

Sr. No.	Particular	No. of Respondents	%	Rank
1	Near To Workplace	342	38%	1
2	Good Connectivity with Mumbai / Thane	184	20%	2
3	Affordable Housing	154	17%	3
4	Well Developed City	94	10%	4
5	Good Education	54	6%	5
6	Other	52	6%	6
7	Good Quality of Life	20	3%	7
	Total	**900**	**100%**	

(Sourece : Primary Data)

Analysis of all respondents confirmed that 'Near to workplace' was the main reason to live in Navi Mumbai followed by 'Good connectivity with Mumbai / Thane' and 'Affordable housing'. Good quality of life and other were least considered reasons by the respondents.

Graph 6.52: Combine Analysis of reasons to live in Navi Mumbai



After analyzing the responses from all 900 respondents the researcher concluded that 'Near to workplace' was the main reason to live in Navi Mumbai. It was selected by 342 respondents which is 38% of the sample. It was followed by 'Good connectivity with Mumbai / Thane' selected by 184 respondents which is 20.44 % of sample and 'Affordable housing' which was selected by 154 respondents i.e. 17.11% of sample. Respondents were least concerned about good quality of life, affordable housing and other reasons.

b. If civic facilities are provided by CIDCO / NMMC in this area?

It was important to analyse this as availability of different civic services such as internal roads, sewage and waste management, water supply, healthcare facilities are must to live in the city. Normally civic services are provided by the governing body of the city. In case of Navi Mumbai till 1991 CIDCO was the governing body of all nodes hence all civic services were provided by CIDCO. However in 1991 Navi Mumbai Municipal Corporation was formed and Airoli, Ghansoli, Kopar – Khairane, Vashi, Sanpada, Nerul an Belapur nodes were transferred to from CIDCO to NMMC since then the civic services were provided by NMMC in these nodes and CIDCO provides civic services in remaining nodes.

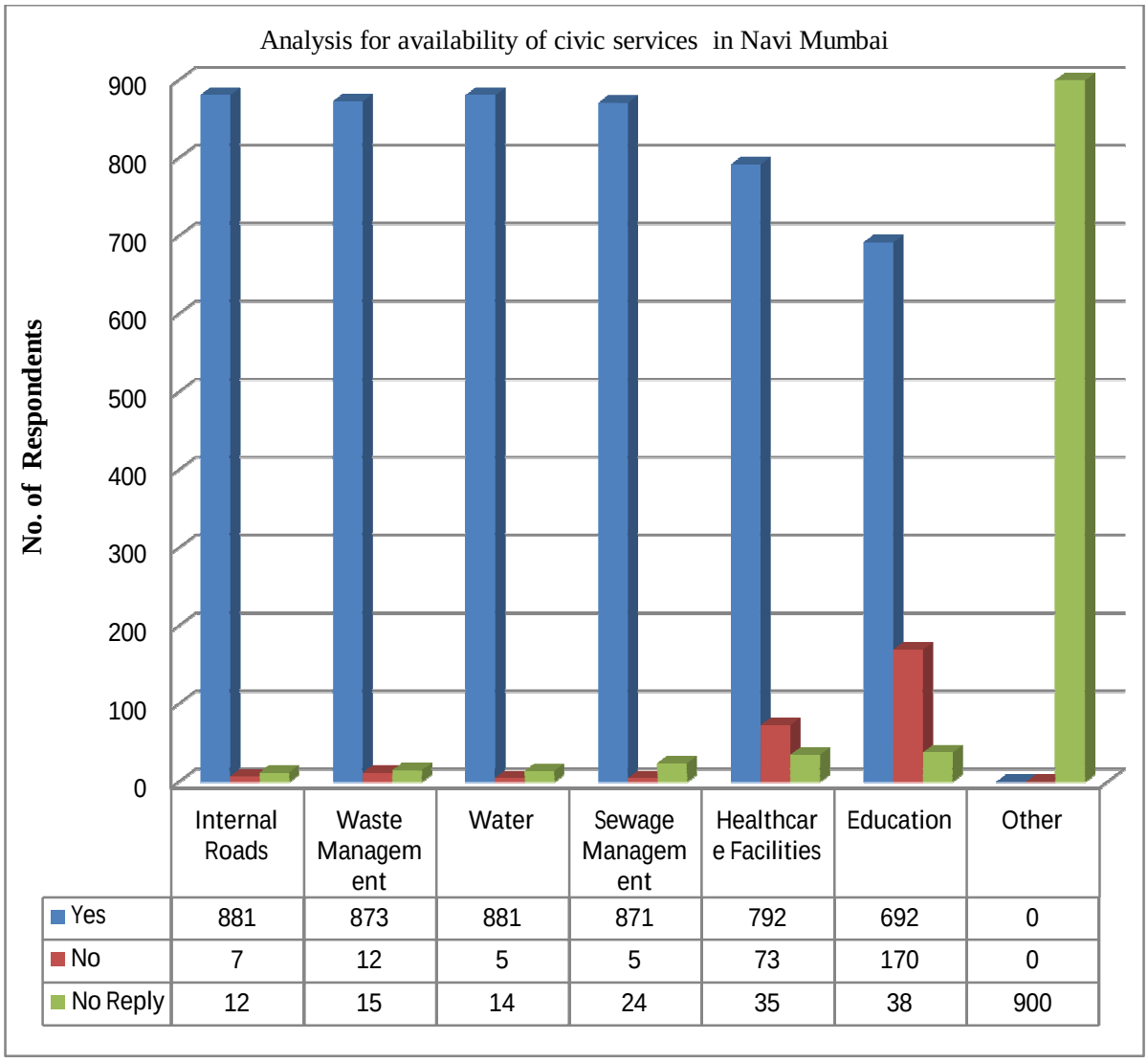
Table 6.79: Availability of civic services provided by CIDCO / NMMC

Civic Services	Yes	No	No Reply	Total
Internal Roads	881	7	12	900
Waste Management	873	12	15	900
Water	881	5	14	900
Sewage Management	871	5	24	900
Healthcare Facilities	792	73	35	900
Education	692	170	38	900
Other	0	0	900	900
%	**79%**	**4%**	**17%**	**100 %**

(Sourece : Primary Data)

The researcher had analysed availability of civic services, it had observed that provision of healthcare facilities and education were not satisfactory. Overall analysis indicates that average 79% of total respondents confirm availability of civic services provided by CIDCO / NMMC, 4 % respondents rejects the availability and 17 % do not respond on the question.

Graph 6.53: Availability of Civic services provided by CIDCO / NMMC



	Internal Roads	Waste Management	Water	Sewage Management	Healthcare Facilities	Education	Other
Yes	881	873	881	871	792	692	0
No	7	12	5	5	73	170	0
No Reply	12	15	14	24	35	38	900

The above graph had helped the researcher to conclud that most of the respondents i.e. average 79 % respondents had affirmed provision of civic services by CIDCO / NMMC, few rejected it or remain silent on its availability. The rejection or silence of respondents was an exception hence separate analyses for respondents denied the availability or remain silent on availability of services is given below.

Analyses for respondents denied availability or remain silent on availability of civic services

Researcher had found that total 272 negative responses were received from respondents on availability of different civic services in the nodes of Navi Mumbai. 1038 respondents did not replied on availability of civic services during the survey. Researcher tried to analyse these responses on the basis of period of residence in Navi Mumbai

Category I (0 -4 Years)

This is a category of newcomers; there are 208 respondents in this category. These respondents are living in Navi Mumbai for less than 5 years and following is analysis for 'Negative' responses as well as 'No responses' from the respondent.

Table 6.80: Combine analysis of Category 1 (0-4 years) for 'No' and 'No reply' on civic services

Civic Service	No	No Reply	Total	%
Education	48	22	70	34 %
Healthcare Facilities	11	23	34	16 %
Sewage Management	Nil	1	1	0.004 %
Water	Nil	3	3	0.014 %
Internal Roads	1	Nil	1	0.004 %
Other	Nil	208	208	100 %
Total	**60**	**257**	**318**	

(Source : Primary Data)

The researcher had analysed which revels that 70 respondents either denied or remain silent on provision of 'Education' which is 33.65% respondents in this category. 34 had said No or No Reply on healthcare services which is 16.35% of respondents and 100 % respondents in this category did not reply on provision of other services by CIDCO / NMMC. The researcher had observed that new residents were either unhappy or unaware about healthcare and educational facilities provided by CIDCO / NMMC

Category II (5 – 15 Years)

This category included 486 respondents living in Navi Mumbai for more than 5 years but less than 15 years. All these respondents gave 194 negatives responses and 556 'No replies' for all civic services.

Table 6.81: Combine analysis of Category 2 (5-15 years) for 'No' and 'No reply' on civic services

Civic Service	No	No Reply	Total	%
Education	118	14	132	27 %
Healthcare Facilities	55	10	67	14 %
Sewage Management	3	13	16	3 %
Waste Management	8	11	19	4 %
Water	4	10	14	3 %
Internal Roads	6	12	6	1 %
Other	Nil	486	486	100 %
Total	**194**	**556**	**750**	

(Source : Primary Data)

The analysis had revealed that 27% respondents said no or did not reply for provision of education, 14% had rejected or did not replied on healthcare facilities, 3% had said no or remain silent on waste management, 4% rejected or kept silence on water supply, 1% had said no for internal roads and 100% respondents in this category did not reply on provision of other services by CIDCO and NMMC. The researcher observed that these residents were either unhappy or unaware about healthcare and educational facilities provided by CIDCO / NMMC

Category III (Above 15 Years)

There are 206 respondents in this category. These respondents are living in Navi Mumbai for than 15 years. There are 18 negative responses and 225 No replies received from this category on provision of various civic services by CIDCO / NMMC

Table 6.82: Combine analysis of category 3 (above 15 Years) for 'No' and 'No Reply' on civic services

Civic Service	No	No Reply	Total	%
Education	4	2	6	3 %
Healthcare Facilities	7	2	9	4 %
Sewage Management	2	10	12	6 %
Waste Management	4	4	8	4 %
Water	1	1	2	1 %
Other	Nil	206	206	100 %
Total	**18**	**225**	**243**	

(Source : Primary Data)

The above table shows 6 respondents i.e. 3% of respondents in this category had either said no or did not reply on education, 9 respondent i.e. 4% said no or did not respond on healthcare facilities, 12 respondents which is 6% gave negative response or remain silent on sewage management, 8 respondents i.e. 4% of respondents in this category denied or not responded for waste management., 2 i.e. 1% said no or not replied on provision of water by CIDCO / NMMC. All respondents i.e. 100% respondents of this category did not reply on other services provided by CIDCO / NMMC.

Analysis of all three categories reveals that residents living in Navi Mumbai for more than 15 years are aware about availability of civic services in their node. Category 1 and category 2 residents have more problems in terms of availability of civic services. Particularly education and healthcare received more no. of negative responses or more respondents remain silent on the same. Overall 20.79 % of all 900 respondents do not confirm availability of civic services provided by CIDCO / NMMC.

c. If elements of social infrastructure which are considered for the research are available in this Nodes?

Social infrastructure is responsible for good quality of life; here researcher had analysed the responses find out availability of different elements of social infrastructure in Navi Mumbai. These elements were Garden, playground, primary school, secondary school, college, cultural / community centre, healthcare facilities and shopping place etc. Following table shows responses received on availability of all elements of social infrastructure in Navi Mumbai.

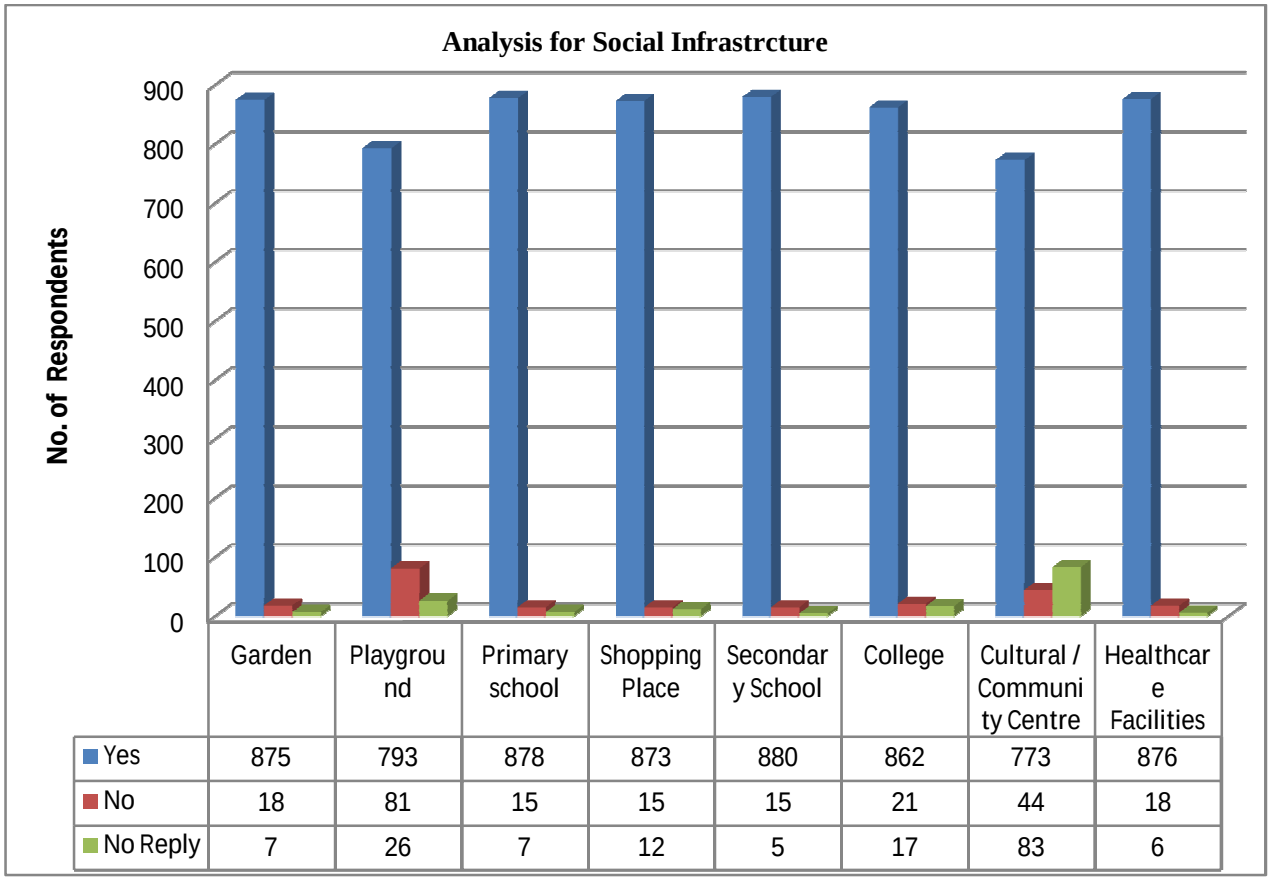
Table 6.83: Analysis of availability of social infrastructure in Navi Mumbai

Elements of social infrastructure	Yes	No	No Reply	Total
Garden	875	18	7	900
Playground	793	81	26	900
Primary school	878	15	7	900
Shopping Place	873	15	12	900
Secondary School	880	15	5	900
College	862	21	17	900
Cultural / Community Centre	773	44	83	900
Healthcare Facilities	876	18	6	900
%	**95%**	**3%**	**2%**	**100%**

(Source : Primary Data)

The researcher had found that there was a high score for availability of most of the elements of social infrastructure; however it was also observed that availability of playgrounds and healthcare facilities while comparing it to other elements of social infrastructure. Overall analysis indicates that average 95% of total respondents confirm availability of different elements of social infrastructure, 3% rejected the availability and 2% do not respond on the question.

Graph 6.54: Analysis for availability of social infrastructure in Navi Mumbai



	Garden	Playground	Primary school	Shopping Place	Secondary School	College	Cultural / Community Centre	Healthcare Facilities
Yes	875	793	878	873	880	862	773	876
No	18	81	15	15	15	21	44	18
No Reply	7	26	7	12	5	17	83	6

With the help of above graph researcher concluded that average 95% respondents affirm provision of civic services by CIDCO / NMMC, few rejected it or remain silent on its availability. The rejection or silence of respondents is an exception; hence a separate analysis for respondents denied the availability or remain silent on availability of elements of social infrastructure is given below.

Analyses for respondents denied availability or remain silent on availability of civic services

The researcher found that total 227 negative responses were received from respondents on availability of different elements of social infrastructure in the nodes of Navi Mumbai. 163 respondents do not replied on availability of different elements of social infrastructure during the survey. Researcher had tried to analyse these responses on the basis of period of residence in Navi Mumbai

Category I (0 – 4 Years)

Respondents in this category are residing in Navi Mumbai for less than 5 years. There are 208 respondents in this category and the researcher had 78 No, and No Reply on availability of elements of social infrastructure in this category.

Table 6.84: Combine analysis of Category 1 (0-4 years) for 'No' and 'No reply' on elements of social infrastructure.

Elements of social infrastructure	No	No Reply	Total	%
Garden	Nil	1	1	0.5 %
Playground	23	9	11	5 %
Shopping Place	Nil	3	3	1.5 %
College	Nil	3	3	1.5 %
Cultural / Community Centre	2	37	60	29 %
Total	**25**	**59**	**78**	

(Source : Primary Data)

The research had revealed that there were 23 negative responses and 37 no replies on availability of cultural / community centre. 2 negative and 9 no replies had been received for playground. Both college and shopping centre got 3 no replies each

Category II (5 – 15 Years)

This category represents 486 respondents of the sample. There are 186 negative responses and 90 no replies from respondents of this category. Following is analysis of 'Negative' responses and 'No Reply' given by these respondents on availability of elements of social infrastructure.

Table 6.85: Combine analysis of Category 2 (5-15 years) for 'No' and 'No reply' on elements of social infrastructure.

Elements of social infrastructure	No	No Reply	Total	%
Garden	18	5	23	5 %
Playground	51	16	67	14 %
Primary school	15	7	22	5 %
Shopping Place	15	7	22	5 %
Secondary School	15	5	20	4 %
College	21	14	35	7 %
Cultural / Community Centre	36	31	67	14 %
Healthcare Facilities	15	5	20	4 %
Total	**186**	**90**	**276**	

(Source : Primary Data)

The analysis had revealed that 5% respondents said no or did not reply for availability of gardens primary school as well as shopping place, 14% rejected or not replied on playground, 4% rejected or kept silence on secondary school and healthcare facilities, 7% said no or do not reply on colleges and 14% respondents denied or remain silent on availability of cultural / community centre. in this category

Category III (15 above Years)

These respondents are in Navi Mumbai for more than 15 years. There are 206 respondents in this category. Following is detail analysis of those who denied availability of social infrastructure, or do not reply on it.

Table 6.86: Combine analysis of Category 3 (15 Above years) for 'No' and 'No reply' on elements of social infrastructure.

Elements of social infrastructure	No	No Reply	Total	%
Garden	Nil	1	1	0.5 %
Playground	7	1	8	4 %
Shopping Place	Nil	2	2	1 %
Cultural / Community Centre	6	15	21	10 %
Healthcare Facilities	3	1	4	2 %
Total	**16**	**20**	**36**	

(Source : Primary Data)

The analysis presented in above table had revealed that 1 respondent i.e. 0.5% of respondents in this category either said no or did not reply on garden, 8 respondent i.e. 4% said no or did not respond on playground, 2 respondents which is 1% gave negative response or remain silent on shopping place, 21 respondents i.e. 10 % of respondents in this category denied or not responded for cultural / community centre and 4 respondents i.e 2 % respondents of this category denied or do not reply on health care facilities.

After analyzing all categories researcher had concluded that residents living in Navi Mumbai for more than 15 years are comfortable with availability of social infrastructure in their node. Category 1 and category 2 residents have more problems in terms of availability of social infrastructure. Particularly playground and cultural / community centre received more negative responses or more respondents remain silent on the same. Overall 5% of all 900 respondents did not confirm availability of elements of social infrastructure provided by CIDCO / NMMC.

d. Opinion of the respondents on "Whether CIDCO is successful in developing Navi Mumbai?"

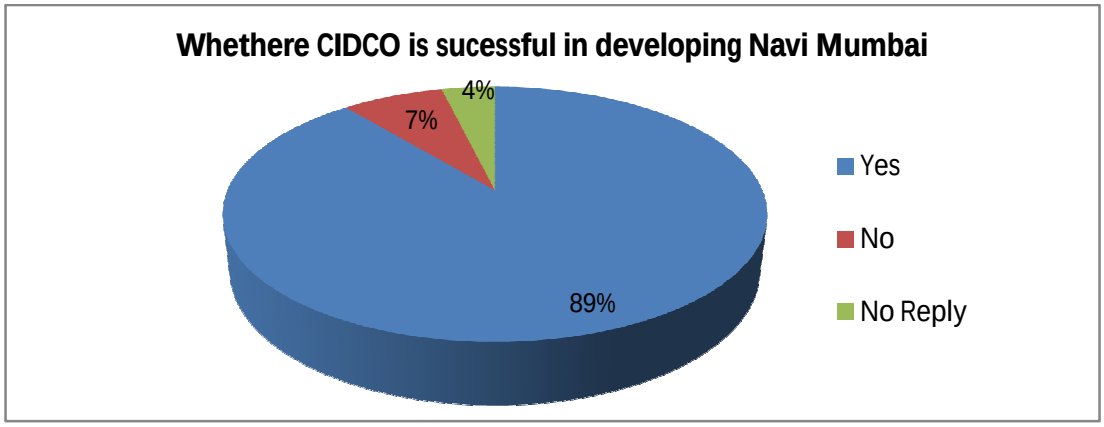
This was the most important question of the research as it was focused to find out opinion of all 900 respondents that whether CIDCO is successful in developing Navi Mumbai or not. Analysis of responses received from respondent is as follows

Table 6.87: Whether CIDCO is successful in developing Navi Mumbai?

	Yes	**No**	**No Reply**
Nos.	801	65	34
%	**88.44 %**	**7.78 %**	**3.78 %**

(Source : Primary Data)

Graph 6.55: Analysis for "Whether CIDCO is successful in developing Navi Mumbai?"



The researcher had analysed the responses and concluded that CIDCO is successful in developing Navi Mumbai as approx 88% of the respondents gave positive response to the question, 8% of all respondents believe that CIDCO is not successful in developing Navi Mumbai and 4% of the respondents did not reply on this question.

Following is category wise analysis of this question

Category I (0-4 Years)

Table 6.88: Analysis of Reason to live in Navi Mumbai (0 – 4 Year)

Sub – Category	Yes	No	No Reply
Male			
Less Than 18			
Student	5		
18-45 Years			
Student	10		
Employed in Navi Mumbai	17	1	2
Employed in Mumbai / Thane	24	5	2
Business in Navi Mumbai	4		
Female			
18-45 Years			
Student	15		
Employed in Navi Mumbai	49	2	3
Employed in Mumbai / Thane	47	4	2
Housewife	16		
Total :	**187**	**12**	**9**

(Source : Primary Data)

Above table show presents preference given by 208 respondents in this category to live in Navi Mumbai. 187 i.e 90% of respondents in this category had said 'Yes' 12 i.e. 6% had denied it and 9 respondents i.e 4 % did not replied on it.

Category II (5 – 15 Years)

Table 6.89: Analysis of reason to live in Navi Mumbai (5 – 15 Years)

Sub – Category	Yes	No	No Reply
Male			
Less Than 18			
Student	5		
18-45 Years			
Student	12	2	1
Employed in Navi Mumbai	65	13	5
Employed in Mumbai / Thane	43	6	
Business in Navi Mumbai	57	5	3
45 Above Years			
Employed in Navi Mumbai	11	4	2
Business in Navi Mumbai	9		
Retired	35		
Female			
Less Than 18			
Student	2	3	
18-45 Years			
Employed in Navi Mumbai	65	4	4
Employed in Mumbai / Thane	59		2
Housewife	30	2	2
45 Above Years			
Housewife	19	1	
Retired	15		
Total :	**427**	**40**	**19**

(Source : Primary Data)

This category includes 486 respondents. 427 i.e. 88 % respondents of this category had confirmed that CIDCO is successful in developing Navi Mumbai. 40 respondents i.e. 8% rejected it and 19 respondents i.e. 4% did not reply on the same.

Category III (Above 15 years)

Table 6.90: Analysis of reason to live in Navi Mumbai (Above 15 Years)

Sub – Category	Yes	No	No Reply
Male			
18-45 Years			
Student	3		
Employed in Navi Mumbai	17		
Employed in Mumbai / Thane	17	2	
Business in Navi Mumbai	36	3	2
45 Above Years			
Business in Navi Mumbai	35	2	
Female			
18-45 Years			
Employed in Navi Mumbai	30	1	
Employed in Mumbai / Thane	18		
Housewife	7		
45 Above Years			
Housewife	24	5	4
Total :	**187**	**13**	**6**

(Source : Primary Data)

This category includes 206 respondents, 187 i.e. 91% respondents of this category had confirmed that CIDCO is successful in developing Navi Mumbai. 13 respondents i.e. 6% had rejected it and 6 i.e. 3% respondents of this category did not reply on the same.

e. Suggestions and recommendations of the respondents.

Researcher had collected recommendations and suggestions from respondents, these suggestions and recommendations are indicators of successful development. As a basic rule human wants are unlimited and social scenario is always evolving things which sound correct 10 years before may have become junk today, hence these suggestions and recommendations provide base for further development of Navi Mumbai.

Table 6.91: List of suggestions

	Suggestions	Respondents	%
1	Improve Cleanliness, sewage and waste management	174	19.33
2	Improve Public Transport system by increasing local railway and bus connectivity and also by proper development and maintenance of roads	170	18.89
3	Control over Traffic and Parking	94	10.44
4	Redevelopment of old CIDCO buildings	76	8.44
5	Control on Encroachments	60	6.67
6	Advance and affordable medical facilities	57	6.33
7	Control over pollution	34	3.78
8	Development of modern Shopping facilities	23	2.56
9	Development of cultural / community centre	20	2.22
10	Require Good educational facilities	18	2.00
11	Improve water management	17	1.89
12	Development of playgrounds	16	1.78
13	Require overall development of node	15	1.67
14	Development of more affordable houses	14	1.56
15	Improve quality of gardens.	10	1.11
	Other Suggestions	29	3.22

(Source : Primary Data)

Table 6.92: List of other suggestions

	Other suggestion	Respondents	%
16	Efforts should be taken to attract more offices in the Node	8	0.89
17	Require good recreation facilities	8	0.89
18	Development of remaining land	5	0.56
19	Improve civic administration	5	0.56
20	Poor quality of CIDCO construction	3	0.33

(Source : Primary Data)

6.15 Study on Satisfaction of Respondents on Quality of Physical and Social Infrastructure

Quality: Quality can be defined as a distinctive attribute or characteristic possessed by something. Quality is a relative term; it can be used in different contexts with different perspectives. Quality has many dimensions of which important are Durability, Aesthetics, Serviceability and Perceived Quality. It can be measured in quantitative terms for

scientific assessment of the subject matter. However measurement of quality in terms of satisfaction is tricky because satisfaction cannot be quantified in numerical values.

In this study the researcher had collected suggestions / complaints from respondents in respect of development and maintenance of city. These complaints and suggestions reveal most important dimensions of quality that are Durability, Aesthetics, Serviceability and Perceived Quality of infrastructure.

All these infrastructure facilities are adequately designed and developed by CIDCO with well drafted development plan which is based on scientific study of environment, population growth etc.

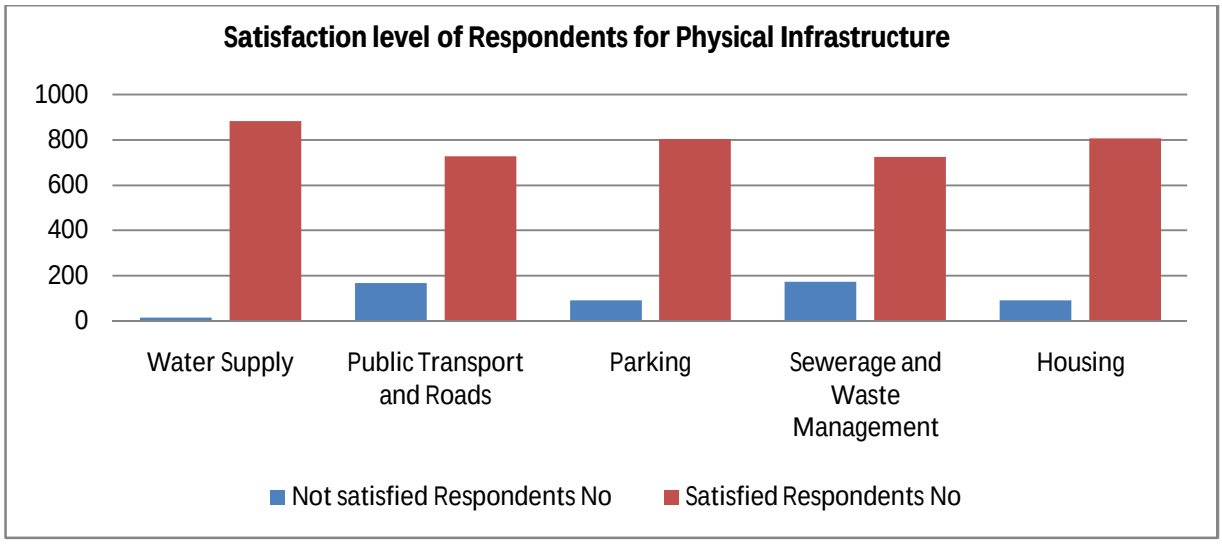
The collected complaints and suggestions in respect of development and maintenance of the city enable the researcher to find out satisfaction of respondents towards these facilities. Researcher had drawn inference that if a person is not complaining about the facilities or do not suggest any improvements that means he is satisfied with the quality of facilities provided to him.

Physical Infrastructure: Physical Infrastructure includes water supply, housing, roads and public transportation facilities, parking facilities, Sewerage and waste management. Following table provide information on satisfied and not satisfied respondents in respect of physical infrastructure.

Table 6.93: Satisfaction Level for Physical Infrastructure

Item	Not satisfied Respondents		Satisfied Respondents	
	Nos.	%	Nos.	%
Water Supply	17	1.89	883	98.11
Public Transport and Roads	170	18.89	730	81.11
Parking	94	10.44	806	89.56
Sewerage and Waste Management	174	19.33	726	80.67
Housing	93	10.33	807	89.67

Graph 6.56: Satisfaction Level of for Physical Infrastructure



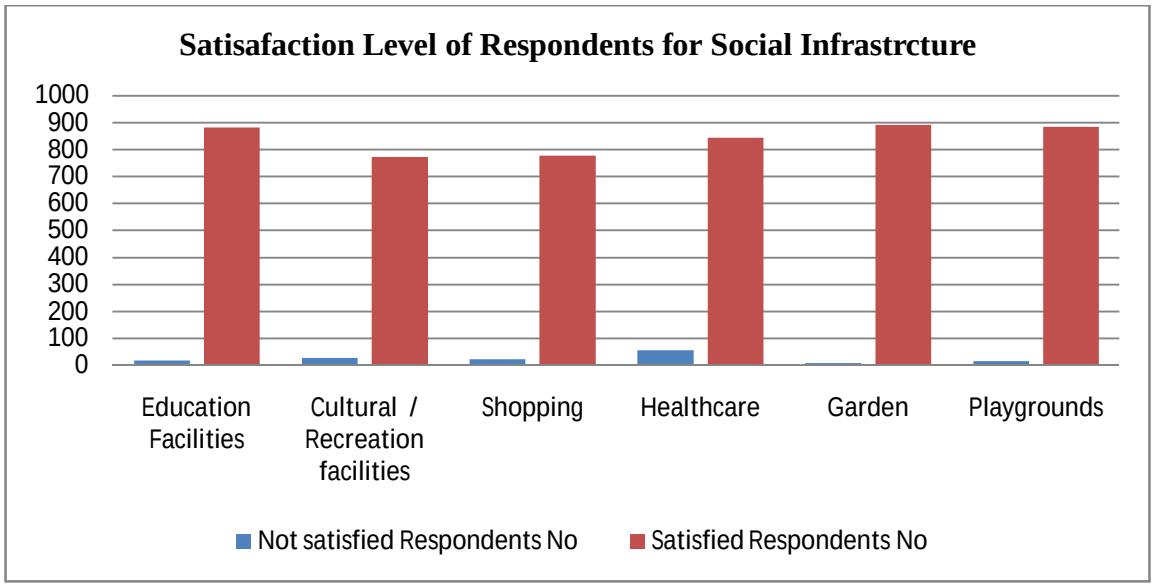
Above table and graph clearly indicates satisfaction level of respondents towards quality of different elements of physical infrastructure developed and provided by CIDCO / NMMC. Here researcher had concluded that most of the respondents are satisfied with the quality of Physical Infrastructure provided to them.

Social Infrastructure Social Infrastructure includes Education, Cultural/Recreation facilities, Shopping, Healthcare, Garden and Playgrounds. Following table provides details of satisfied and not satisfied respondents towards social infrastructure.

Table 6.94 : Satisfaction Level for Social Infrastructure

Item	Not satisfied Respondents		Satisfied Respondents	
	No	%	No	%
Education Facilities	18	2	882	98.00
Cultural / Recreation facilities	28	3.11	772	96.89
Shopping	23	2.55	777	97.45
Healthcare	57	6.33	843	93.67
Garden	10	1.11	890	98.89
Playgrounds	16	1.77	884	98.27

Graph 6.57: Satisfaction Level for Social Infrastructure



Above table and graph clearly indicates satisfaction level of respondents towards quality of different elements of Social Infrastructure developed and provided by CIDCO / NMMC. Here researcher had concluded that most of the respondents are satisfied with the quality of Social Infrastructure provided to them.

6.16 Relation Analysis of Suggestions and Complaints

Suggestions / complaints given by respondents are important as it gives an idea about satisfaction of respondents towards development of Navi Mumbai and availability of different facilities to the respondents in their area. Considering satisfaction is a relative concept researcher tried to analyse these suggestions on the basis of age, gender and node in which the respondent live. Researcher applied correlation technique to find out relation between suggestions / complaints with age, gender and location of the respondent, further z test is applied to validate existence of correlation. If value of Z < 1.96 researcher rejects that there is positive / negative correlation between the variables. Following are details of different codes used for analysis.

Table 6.95: Details of codes used for Node

Sr. No.	Node	Year of commencement	Node Code
1	Vashi	1972	1
2	Sanpada	1972	2
3	New Panvel	1975	3
4	Belapur	1975	4
5	Kalamboli	1979	5
6	Nerul	1981	6
7	Airoli	1983	7
8	Kopar – Khairane	1986	8
9	Kharghar	1988	9
10	Dronagiri	1989	10
11	Ghansoli	1993	11
12	Kamothe	2000	12

Table 6.96: Details of codes used for Gender

Sr. No.	Gender	Gender Code
1	Male	1
2	Female	2

Table 6.97: Details of codes used for age group

Sr. No.	Age Group	Age Group Code
1	Less Than 18	1
2	18 – 45	2
3	45 Above	3

Table 6.98: Details of Complaint / Suggestion Code

Sr. No.	Suggestions	Code
1	Improve Cleanliness, sewage and waste management	C1
2	Improve Public Transport system by increasing local railway and bus connectivity and also by proper development and maintenance of roads	C2
3	Control over Traffic and Parking	C3
4	Redevelopment of old CIDCO buildings	C4
5	Control on Encroachments	C5
6	Advance and affordable medical facilities	
7	Control over pollution	C7
8	Development of modern Shopping facilities	C8
9	Development of cultural / community centre	C9

10	Require Good educational facilities	C10
11	Improve water management	C11
12	Development of playgrounds	C12
13	Require overall development of node	C13
14	Development of more affordable houses	C14
15	Improve quality of gardens.	C15
16	Efforts should be taken to attract more offices in the Node	C16
17	Require good recreation facilities	C17
18	Development of remaining land	C18
19	Improve civic administration	C19
20	Poor quality of CIDCO construction	C20

Calculation of Co-relation Coefficient

A] Age wise correlation:

Researcher had tried to find out whether there is any correlation between age of respondents and complaints / suggestions. Following results were obtained from calculation of correlation coefficient and application of z-test.

Table 6.99A: Calculation of correlation coefficient and Z values (Age and Suggestions)

Age Group	**Suggestion / Complaint Code**									
Code	**C1**	**C2**	**C3**	**C4**	**C5**	**C6**	**C7**	**C8**	**C9**	**C10**
1	15	0	0	0	0	0	0	5	0	0
2	125	133	86	45	44	42	29	18	14	8
3	34	37	8	31	16	15	5	0	6	10
TOTAL	**174**	**170**	**94**	**76**	**60**	**57**	**34**	**23**	**20**	**18**
Correlation Coefficient	**0.16**	**0.99**	**0.98**	**0.79**	**0.93**	**1**	**0.98**	**0.91**	**0.76**	**0.70**
Z Value	**2.13**	**90.96**	**47.24**	**11.08**	**19.27**	∞	**27.86**	**10.06**	**4.96**	**3.92**

Table 6.99B: Calculation of correlation coefficient and Z values (Age and Suggestions)

Age Group	**Suggestion / Complaint Code**									
Code	**C11**	**C12**	**C13**	**C14**	**C15**	**C16**	**C17**	**C18**	**C19**	**C20**
1	0	0	0	0	0	0	0	0	0	0
2	17	16	15	14	10	8	8	5	5	3
3	0	0	0	0	0	0	0	0	0	0
TOTAL	**17**	**16**	**15**	**14**	**10**	**8**	**8**	**5**	**5**	**3**
Correlation Coefficient	**0.33**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**
Z Value	**1.35**	∞	∞	∞	∞	∞	∞	∞	∞	∞

Observations

The application of correlation analysis and z-test gives following results.

a] No correlation : Correlation analysis shows that complaint / suggestion regarding water supply (C11) shows insignificant positive correlation with age but its $z < 1.96$ hence it is concluded that there is no any correlation in this complaint and age of respondents.

b] Significantly positive. Relation: Several suggestions have significant positive relationship with age. It includes Improvement in transport system (C2), Traffic and parking issues (C3), Redevelopment of CIDCO buildings (C4), Encroachments (C5), Pollution (C7), Modern shopping facilities (C8), Development of cultural / community centre (C9) and requirement of good educational facilities (C10). It shows that with the increase in age of sample these suggestions will also significantly increase.

c] Positive but insignificant relation: Complaint code C1 has such relation with age, which shows suggestions' regarding cleanliness (C1) has insignificant relation with age.

d] Perfect Positive relation:- Some suggestions has perfect positive relation with age of respondents it includes Advance and affordable medical facilities (C6), Development of playground (C12), Overall development (C13), Development of more affordable houses (C14), Improve quality of gardens (C15), Efforts to be taken for attract more offices (C16), Require good recreation facilities (C17), development of remaining land (C18), improvement in civic administration (C19) and poor quality of CIDCO construction (C20). It shows that with the increase in age of sample no. of these suggestions will definitely increase.

B] Gender wise Correlation:

Researcher had tried to find out whether there is any correlation between gender of respondents and complaints / suggestions. Following results were obtained from calculation of correlation coefficient and application of z-test.

Table 6.100A: Calculation of correlation coefficient and Z value (Gender and suggestion)

Gender	**Suggestion / Complaint Code**									
Code	**C1**	**C2**	**C3**	**C4**	**C5**	**C6**	**C7**	**C8**	**C9**	**C10**
1	97	96	59	59	32	40	19	0	20	10
2	77	74	35	17	28	17	15	23	0	8
TOTAL	174	170	94	76	60	57	34	23	20	18
Correlation Coefficient	-1	-1	-1	-1	-1	-1	-1	1	-1	-1
Z value	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞

Table 6.100B: Calculation of correlation coefficient and Z value (Gender and suggestion)

Gender	**Suggestion / Complaint Code**									
Code	**C11**	**C12**	**C13**	**C14**	**C15**	**C16**	**C17**	**C18**	**C19**	**C20**
1	0	4	15	14	0	4	8	5	5	3
2	17	12	0	0	10	4	0	0	0	0
TOTAL	17	16	15	14	10	8	8	5	5	3
Correlation Coefficient	1	1	-1	-1	1	0	-1	-1	-1	-1
Z value	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞

Observations

The application of correlation analysis and z-test gives following results.

a] No relation: Efforts should be taken to attract more offices (C16) has no linear correlation with any Gender. Both male as female equally give this particular suggestion.

b] Perfect Positive relation: - Some suggestions / complaints are perfectly related with gender. It includes Development of modern shopping facilities (C8), Water Management (C11), Development of playground (C12) and improve quality of Gardens (C15) has perfect relation with gender. If no of female respondents are increased these suggestions will also increase.

c] Negative relation: All other suggestions i.e. C1, C2, C3, C4, C5, C6, C7, C9, C10, C13, C14, C17, C18, C19 and C20 have negative relation with the gender. It shows that though female sample is increased it will not have major impact on these suggestions.

C] Node wise Correlation:

In this case researcher had tried to identify relation of former developed nodes and latter developed nodes with suggestion / complaints of the

respondents. Following are the results obtained from calculation of correlation coefficient and application of z-test.

Table 6.101A: Correlation coefficient and Z value (Node and Suggestion)

Node	**Complaint / Suggestion Code**									
Code	**C1**	**C2**	**C3**	**C4**	**C5**	**C6**	**C7**	**C8**	**C9**	**C10**
1	22	0	16	28	12	0	0	0	0	0
2	0	4	10	5	0	0	0	0	0	0
3	46	13	41	3	23	0	0	5	0	0
4	10	30	10	0	0	0	0	0	0	5
5	0	0	11	0	0	0	0	0	0	0
6	48	5	0	30	0	0	0	0	0	0
7	18	12	6	0	5	22	14	5	7	0
8	15	17	0	10	5	5	5	0	0	0
9	0	49	0	0	0	18	0	0	0	0
10	0	0	0	0	0	0	0	0	0	0
11	5	0	0	0	15	5	15	5	13	0
12	10	40	0	0	0	7	0	8	0	13
TOTAL	174	170	94	76	60	57	34	23	20	18
Correlation Coefficient	-0.33	-0.14	-0.17	0.02	0.08	-0.12	0.52	0.44	0.47	-0.17
Z value	4.58	1.83	1.65	0.15	0.62	0.90	3.47	2.23	2.23	0.69

Table 6.101B: Correlation coefficient and Z value (Node and Suggestion)

Node	**Complaint / Suggestion Code**									
Code	**C11**	**C12**	**C13**	**C14**	**C15**	**C16**	**C17**	**C18**	**C19**	**C20**
1	0	2	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	5	0	0	0
5	0	0	0	0	0	8	0	0	0	3
6	0	0	0	0	0	0	0	0	0	0
7	0	10	0	0	0	0	0	0	5	0
8	10	0	0	0	10	0	3	0	0	0
9	0	0	0	14	0	0	0	0	0	0
10	0	0	15	0	0	0	0	0	0	0
11	0	4	0	0	0	0	0	5	0	0
12	7	0	0	0	0	0	0	0	0	0
TOTAL	17	16	15	14	10	8	8	5	5	3
Correlation Coefficient	0.45	-0.20	-0.14	-0.09	-0.09	-0.09	-0.13	-0.13	-0.09	-0.09
Z value	1.97	0.76	0.51	0.31	0.26	0.22	0.32	0.23	0.16	0.09

Observations: The application of correlation analysis and z-test gives following results.

Application of z-test shows most of the suggestions and nodes do not have any correlation as their $z < 1.96$. The researcher tried to identify suggestions / complaints that occur due to development and change in the lifestyle of the respondents over the period of time. The study shows that there is no any perfect positive or negative relation, the details are as follows

a] Significantly Positive relation: Following suggestions / complaints shows significantly positive relation, Pollution control (C7), Development of shopping facilities (C8), Development of cultural / community centre (C9) and water management (C11) has significantly positive relation with development of nodes.

It shows that respondents from recently developed or developing nodes are worried about these factors and no of suggestions could increase if respondents from newly developed / developing nodes are increased.

b] Significantly negative relation: There is only one suggestion / complaint which has significantly negative correlation and that is Improve cleanliness, Sewage and Waste management (C1). It indicates respondents from older nodes has this problem hence increase in respondents from old nodes will have significant impact on suggestions related to cleanliness, sewage and waste management.

c] No Correlation:- All other suggestions does not have any correlation with development of node.

Conclusion: This chapter was focused on study of responses collected from respondents on various aspects of development of Navi MumbainIt basically it study availability of different physical and social infrastructural facilities in different nodes of Navi Mumbai. The further chapter studies adequacy of these facilities in Navi Mumbai.

Chapter: 7

Data Analysis – II (Projected and Actual development)

7.1 Analysis of proposed land usage and actual land usage in Navi Mumbai.

7.2 Analysis of achievements of primary objectives in terms of population and employment.

7.3 Analysis of housing.

7.4 Analysis of healthcare facilities.

7.5 Analysis of transportation fscilities

7.6 Analysis of education facilities.

7.7 General reasons for gaps in development. / Obstacles in further development of Navi Mumbai

7.8 Benefits and limitations of the projects.

In this chapter researcher had made an attempt to analyse projected and actual development of Navi Mumbai by CIDCO.

7.1 Analysis of proposed land usage and actual land usage of Navi Mumbai

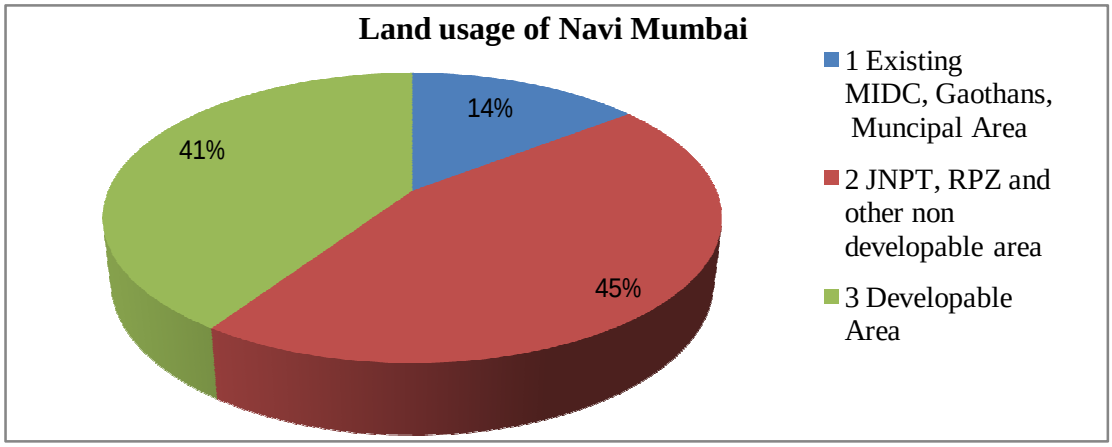
Navi Mumbai project is spread over 343.70 Sq. Kms. CIDCO had to develop Navi Mumbai by using land as a major source of development. CIDCO was allowed to acquire land for development of Navi Mumbai from its previous owners and to recover expenditure incurred on acquisition and development of land by collecting service charges and sell of constructed buildings or developed plot of land. It was important to analyse usage of land by CIDCO to ascertain effective and efficient utilisation of acquired land. Following table provide details of land usage.

Table 7.1 : Proposed Land Usage Plan of Navi Mumbai

Sr. No.	Details	Area Sq. Km.
1	Existing MIDC, Gaothans, Municipal Area	50.00
2	JNPT, RPZ and other non developable area	154.21
3	Developable Area	139.49
	Total Area	**343.70**

(Source: CIDCO website)

Graph 7.1: Distribution of proposed land



Navi Mumbai project area was spread over 343.70 Sq. Kms. its proposed land usage is mentioned in above table and graph. Developable area after excluding existing gaothans, municipal, MIDC area, and other non developable area was reported to be approximately 139.49 Square Kilometers, hence developable area was only 41% of earmarked land available for development of Navi Mumbai. Researcher concluded that total 13949 Hectares (1Sq Kms. = 100 Ha) developable land was available for development of Navi Mumbai.

Comparison of gross and actual developable land in Navi Mumbai

Researcher had compared gross developable area and developed area its outcome is presented below.

Table 7.2: Analysis of proposed and actual developable land.

Particulars	Area in Hectares
Proposed Gross Developable Area	13949
Actual Gross Developable Area reported	11100.49
Difference	2848.51
% of Difference	20.42 %

(Source: Primary Data)

Researcher had enquired about difference between proposed gross developable area and actual developable area and found following reasons

1. Plan for Pushpak Node is not finalised which estimated at approx 2000 hectares
2. Introduction of CRZ regulations in 1991 and amendments therein had caused loss of developable area near sea cost.
3. Other government regulations in respect of environment protection and pollution control.
4. Proposed developable land includes water bodies, Security zone, hill slops which are non developable areas.
5. Land was found unsuitable for development after conducting contour and other surveys.

Analysis of land usage

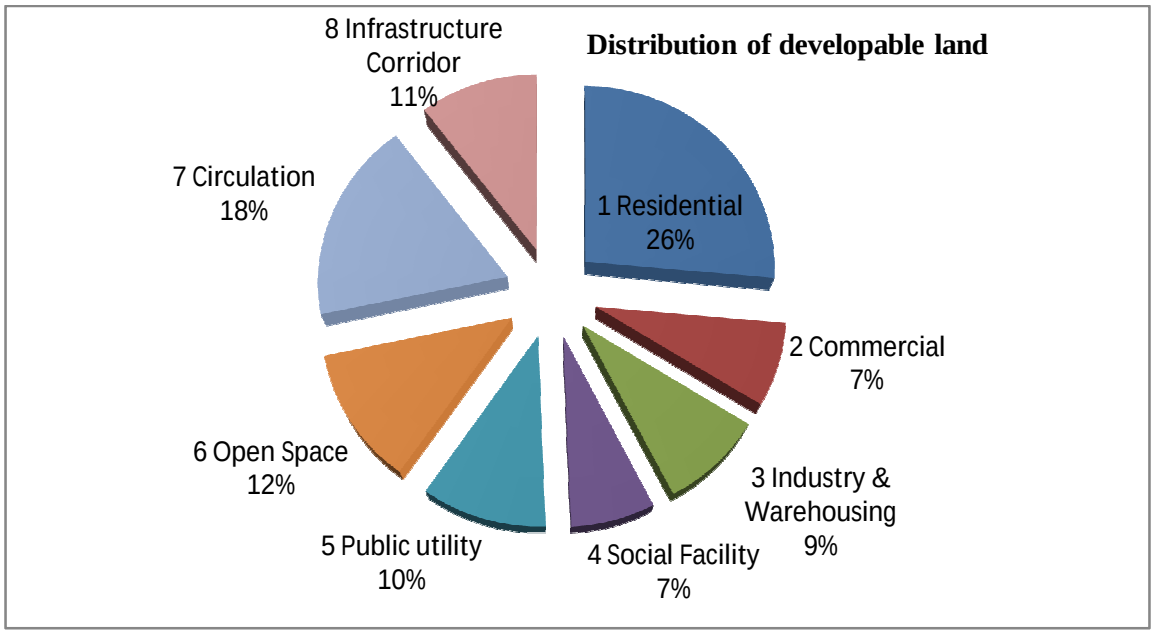
CIDCO had prepared detailed nodal plans for development of each node. While preparing the nodal plans it had earmarked land plots for specific usage according to physical condition of the land and other projected development in that node. The nodal plan gives important details of development such as 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 etc. Following table present analysis of combine planned usage of developable land in nodes of Navi Mumbai (excluding Pushpak Node)

Table 7.3: Table showing planned usage of developable land.

Sr. No.	Particular	Area in Ha.	Percentage
1	Residential	2930.74	26%
2	Commercial	819.98	7%
3	Industry & Warehousing	959.09	9%
4	Social Facility	771.01	7%
5	Public utility	1148.37	10%
6	Open Space	1329.25	12%
7	Circulation	1986.92	18%
8	Infrastructure Corridor	1155.13	11%
	Developable Area	**11100.49**	**100%**

(Source: Primary data**)**

Graph 7.2 Distribution of Developable land according to actual use



Researcher found that developable land had been divided in following 9 different categories

1. **Residential:** - CIDCO earmarked land for residential uses which include land for CIDCO constructed buildings, residential plots for societies and bungalow plots.
2. **Commercial:** - This includes land required for Shops, Offices, Hotel and Restaurants, Commercial complexes, market places and other commercial activities. It also includes land required for composite i.e. residential + commercial usage.
3. **Industry and Warehousing:** - CIDCO reserves land for development of industries and warehouses in Dronagiri node as it is near to JNPT port area, Kalamboli and Vashi node as it is nearby APMC and steel market.
4. **Social Facility:** - This includes land earmarked for Schools, colleges, hospitals, religious centres, Auditorium, Museum, hostels etc.
5. **Public Utility:** - This includes land required for water reservoirs, electric sub stations, Sewerage treatment plant, Fire station, Police Station, Post offices etc.
6. **Open Space:** - This include land under playgrounds, Gardens, Tree belt etc.

7. **Circulation: -** This includes land required for different Roads, pathways, Railway station area etc.
8. **Infrastructure Corridor:** This includes land required for High Tension Line for electricity. It also includes land for railway corridor, City level roads, Channels etc.

Analysis of planed development and actual development in Navi Mumbai by CIDCO:

The researcher had tried to compare proposed utilisation and actual utilisation of land for development of different nodes. The analysis reveals certain deviations in planed and actual development which are as follows.

Table 7.4: Details in undeveloped land in Planned Nodes (Area in Ha)

Node	Residential & Commercial	Social & Public Utilities	Open Space	Circulation
Airoli	20	1.5		
Ghansoli	60	2		
Nerul	2			
Belapur	4			
Kharghar	250		100	20
Kamothe	100			
New Panvel	20			
Dronagiri		45		
Total	**456**	**48.5**	**100**	**20**

(Source : Personal Interview)

The researcher had found following reasons for deviations in planed and actual development of land in Navi Mumbai.

1. Development of some nodes is going on hence land remain unused.
2. Problems in implementation of 12.5% scheme in some nodes due to which land had remain unused.
3. Land had become unsuitable for development due to delay in development.

7.2 Analysis of achievements of primary objectives in terms of population and employment.

The Navi Mumbai was established by CIDCO with an objective to decongest Mumbai by accommodating population of 21,00,000 peoples and to provide 7,50,000 jobs in Navi Mumbai.
(Source : CIDCO website)

7.2.1 Analysis of population of Navi Mumbai

The researcher considers population of entire Navi Mumbai Project area for this analysis which includes,

- 14 planned nodes,
- 95 villages and
- Two Municipal Councils of Panvel and Uran.

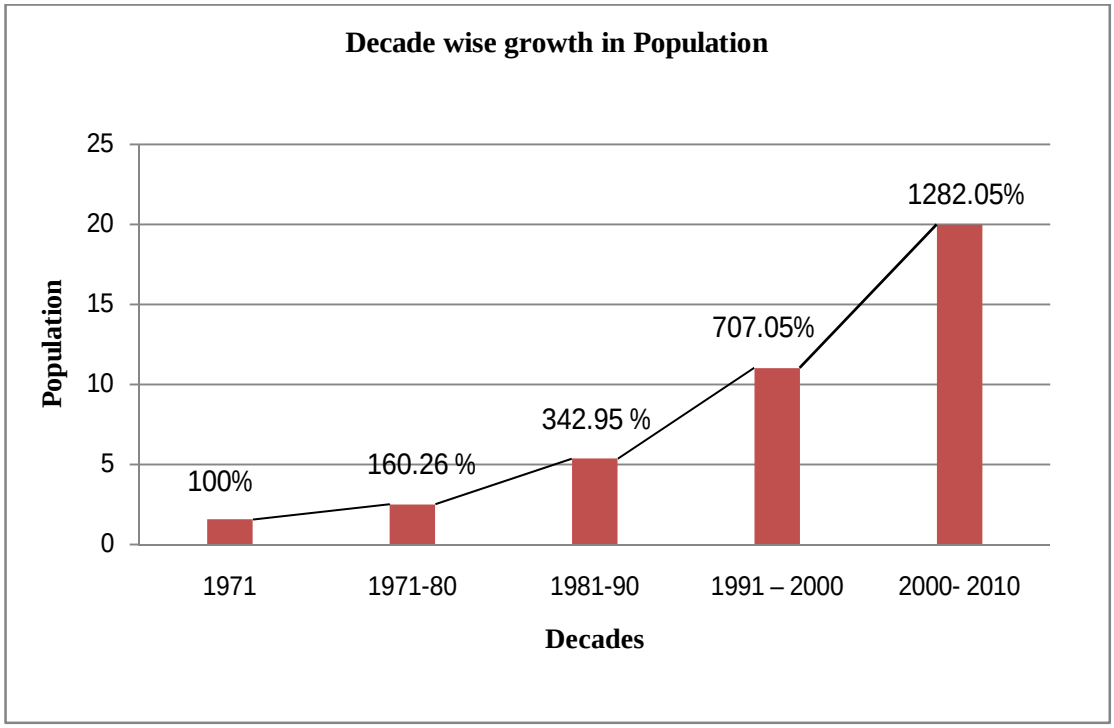
Reason for inclusion of non CIDCO area in this analysis is impact of development is wide spread and noticed in entire Navi Mumbai project area as well as adjacent area. The following table reveals population of every decade since beginning in Navi Mumbai project area.

Table 7.5 Analysis of population in Navi Mumbai project area.

Year	**Population (in lakhs)**	**Trend %**	**% increase from last survey**
1971	1.56	100	-
1971-80	2.5	160.26	60.26
1981-90	5.35	342.95	114.00
1991 – 2000	11.03	707.05	106.17
2000- 2010	20	1282.05	81.32

(Source: Socio Economic Profile of Households in Planned Nodes in Navi Mumbai - 2010**.)**

Graph 7.3: Population in Navi Mumbai



From above table and graph researcher concluded that there was a continuous growth of population in Navi Mumbai project area. During the span of 40 years population had increased from1.56 lakhs to 20 lakhs which is 1282% increase in population. During the research period i.e. (1980 – 2010) population was increased by 800% i.e. from 2.5 lakhs to 20 lakhs. Researcher further observed that there was a sudden growth in population during 1991 – 2010 i.e from 5.56 laks to 20 laks this was due to starting of suburban railway in Navi Mumbai which connects Navi Mumbai to Mumbai and Thane

Analysis of population in planned nodes of Navi Mumbai

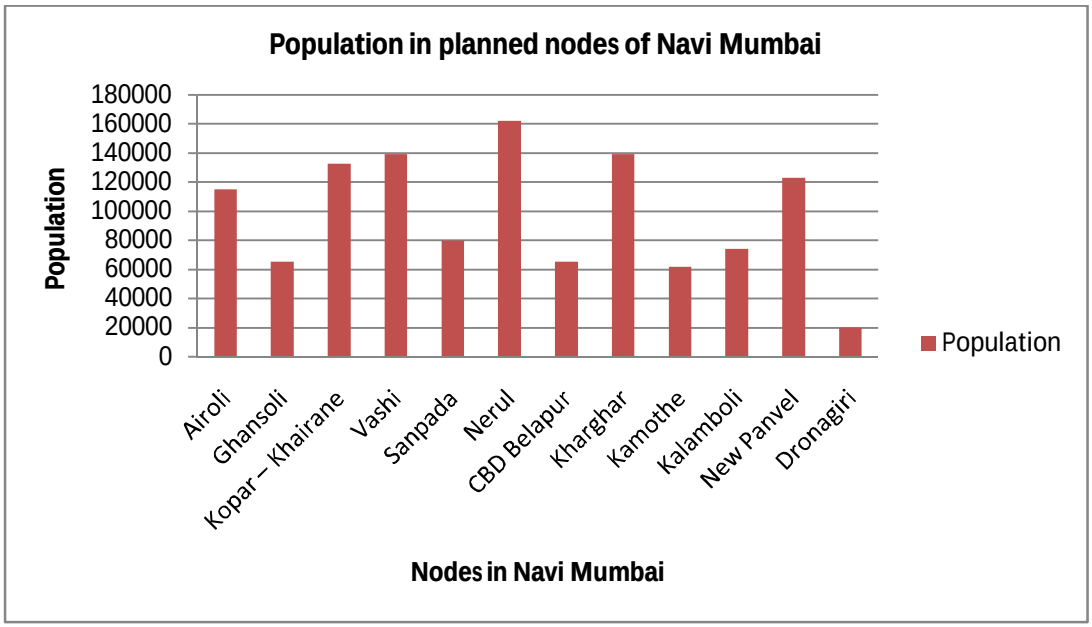
CIDCO is responsible for development of planned nodes in Navi Mumbai hence analysis of population in planned nodes is highly important as it shows whether CIDCO is successful in archiving its objective to attract migrants in Navi Mumbai by offering good infrastructure because CIDCO's role in development of Navi Mumbai is restricted to planned nodes only. Following table shows node wise population as on 2010 excluding Ulwe and Pushpak node.

Table 7.6: Node wise population of Navi Mumbai

Sr. No.	Node	Population	% of total population
1	Airoli	115335	10 %
2	Ghansoli	65593	6 %
3	Kopar – Khairane	132827	11 %
4	Vashi	139573	12 %
5	Sanpada	79894	7 %
6	Nerul	162366	14 %
7	CBD Belapur	65442	5 %
8	Kharghar	139693	12 %
9	Kamothe	62073	5 %
10	Kalamboli	74249	6 %
11	New Panvel	123171	10 %
12	Dronagiri	20382	2 %
	Total :-	**1180598**	**100.00**

(Source: Socio Economic Profile of Households in Planned Nodes in Navi Mumbai - 2010.**)**

Graph 7.4: Node wise population of Navi Mumbai



The analysis presented above shows that Nerul, Kharghar, Kopar – Khairane, Airoli, New Panvel and Vashi are most populated nodes, whereas Dronagiri, Kamothe are least populated nodes. The researcher had concluded that nodes which were fully developed or fairly developed attracted more migrants and less developed nodes had failed to attract migrants.

Analysis of anticipated population and actual population.

The Navi Mumbai had planned to accommodate 2100000 peoples in its project area. The Navi Mumbai project area is spread over 343.70 Sq. Kms. of which 154.21 Sq. Kms. area was non developable area remaining 189.49 Sq. Kms. area was developable area which was divided in CIDCO area 136.49 Sq. Kms. and existing MIDC, villages and municipal corporations amountint to approx 50 Sq. Kms, so prportinate anticipated population in CIDCO area i.e. planned nodes is assumed to be 15,46,000 persons.

Table 7.7: Analysis of projected and actual population in planned nodes

Anticipated Population in all Planned Nodes	Population in Planned Nodes as on 2010	Difference
15,46,000	11,80,598	3,65,402

Researcher had found a huge gap in proportionate anticipated population and actual population in planned nodes of Navi Mumbai. This fact pointed out that objective of CIDCO in terms of population is yet to be achived. The researcher had tried to find out reasons which are listed below.

Migration of population from Mumbai to Navi Mumbai:

Navi Mumbai had been established with an aim to decongest Mumbai. It was expected that after shifting APMC, steel markets and establishing a suburban railway link residents of Mumbai would shift to Navi Mumbai for better infrastructure and good quality of life. Following table shows analysis of migration from Mumbai to Navi Mumbai based on socio – economic surveys conducted by CIDCO.

Table 7.8: % of household migrated from Mumbai to Navi Mumbai.

Last place of Residence	1987 survey	1995 survey	2000 survey	2005 survey	2010 Survey
Mumbai Island (main city)	21	12.48	11	30	34.6
Suburbs of Mumbai and MMR	40	29.28	39.6	18.2	20.9

(Source: CIDCO website)

Researcher had drawn following conclusions on the basis of analysis in respect of puplation of Navi Mumbai.

1. Nerul, Vashi, Airoli, Kopar - Khairane and Kharghar has highest population which indicates better development of civic amenities such as housing, education, health care and other facilities in these nodes.
2. Dronagiri, Kalamboli and Ghansoli are least populated nodes; though they are located near industrial area it indicates lack of adequate civic facilities in these nodes.
3. There is imbalance in development of nodes due to which population is concentrated in few nodes.
4. Development all nodes is not yet completed, so population remain low in less developed nodes.
5. Lack of employment opportunities restricts population growth in Navi Mumbai
6. Lack of civic and transportation facilities in Navi Mumbai.
7. Development of Suburban areas of Mumbai.

7.2.2 Analysis of Employment

CIDCO had established Navi Mumbai with an objective to create 7,50,000 jobs in the city. Researcher had analysed employment opportunities in entire Navi Mumbai project area. It includes 14 planned nodes, 95 villages, and 2 Municipal corporations. Researcher had considered entire project area because development in planned nodes also contributed development of villages and Municipal corporations. Researcher consider employment opportunities in Wholesale and Retail markets, Government and private offices, Health care facilities, Educational institutions, Social, regional and religious institutions. In initial years MIDC and JNPT are major employment generating institutions both have created approx 200000 employment opportunities in Navi Mumbai.

Following table gives details of employment and it is compiled with the help of different reports including, **'**Report on Employment in Service sector in Navi Mumbai, Government & Private Offices', 'Report on Health Infrastructure, Facilities, Personnel & Services in Navi Mumbai', 'Report on Primary & Secondary Schools in Navi Mumbai', 'Report on Higher & Professional Education in Navi Mumbai', 'Report on Social, 'Religious and

Regional Institutions in Navi Mumbai', 'Report on Wholesale, Retail, Service Industry & Open Markets in Navi Mumbai Employment, Investment and Turnover'.

Table 7.9 Details of different offices and no of employees**.**

Type of Offices	No. of Employees
Government	26454
IT & BPO	67321
Private Offices	57347
Wholesale, Retail and Open Markets	192823
Service Sector	39266
Health Care Facilities	3524
Education	39266
Social, Religious and Regional Institutions	2290
MIDC and JNPT (approximate figure)	200000
Total	**628291**

(Source : Different reports mentioned above in the paragraph)

The above table indicates that there are diverse job opportunities available in the in the city. Government as well as private offices had created office jobs in Navi Mumbai at the same time companies in MIDC and JNPT as well as port based industries also created different employment opportunities.

Table 7.10: Comparison of projected and actual job opportunities

Projected Job Opportunities	Actual Job opportunities
7,50,000	6,28,291

Analysis of job opportunities presented in the above table enable the the researcher to conclude that Navi Mumbai is yet to achieve its target in terms of employment opportunities.

Researcher had tried to find out reasons for this difference and following are the facts which point out reasons for low level of employment opportunities in the city.

1. Development of Bandra - Kurla complex along with Navi Mumbai.
2. Lack of inter and intra connectivity in Navi Mumbai.
3. Recession during 90's and late in 2010.
4. Mismatch in required skills for employment and available skills among residents of Navi Mumbai.

7.3 Analysis of Housing.

Researcher had analyzed development of housing in planned nodes of Navi Mumbai. CIDCO's role in housing was restricted to planned nodes only. Following table presents node wise development of housing by CIDCO as well as private developers.

Table 7.11: Node wise development of houses by CIDCO and Private Developer

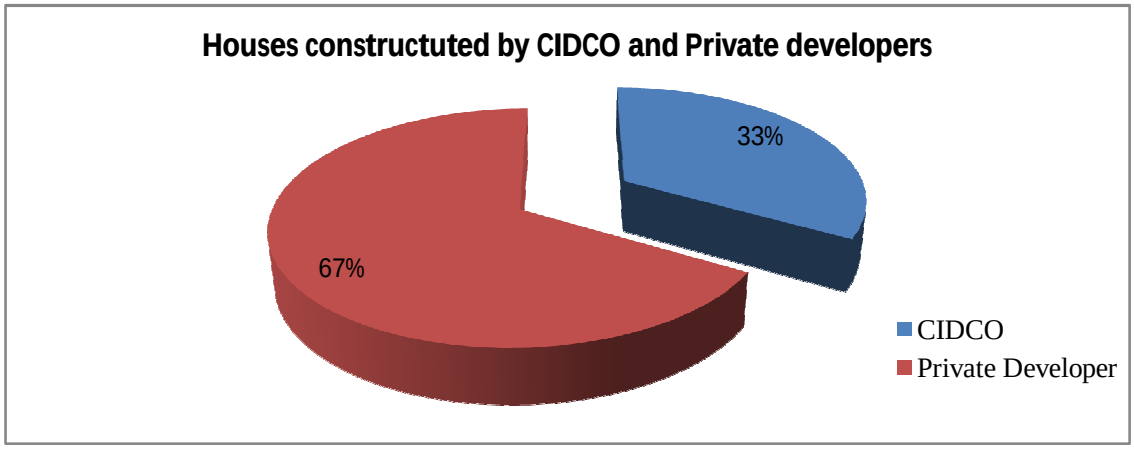
Sr. No.	Node	CIDCO Nos.	% of total	Private Developer Nos.	% of total	Total Nos.
1	Airoli	12,583	39.88	18,967	60.12	31,550
2	Ghansoli	9,499	52.19	8,703	47.81	18,202
3	Kopar Khairane	13,835	37.42	23,142	62.58	36,977
4	Vashi	18,198	44.48	22,716	55.52	40,914
5	Sanpada	8,683	36.12	15,358	63.88	24,041
6	Nerul	22,461	46.97	25,359	53.03	47,820
7	Belapur	8,226	38.69	13,037	61.31	21,263
8	Kharghar	8,069	15.30	44,661	84.70	52,730
9	Kamothe	0	0.00	29,029	100.00	29,029
10	Kalamboli	10,495	49.65	10,643	50.35	21,138
11	New Panvel	9,656	27.11	25,967	72.89	35,623
12	Dronagiri	528	7.11	6,903	92.89	7,431
	Total	**122233**		**244485**		**366718**

(Source : 'Socio Economic Profile of Households in Navi Mumbai – 2010)

The analysis of node wise development of housing by CIDCO and private developers in Navi Mumbai had been presented in above table. CIDCO was highly involved in Ghansoli, Kalamboli, Nerul and Vashi nodes for development of houses. In these nodes almost 50% of total houses were

developed by CIDCO. On other hand private sector was aggressively involved in developing houses at Kamothe, New Panvel, Kharghar and Dronagiri.

Graph 7.5: Development of houses by CIDCO and Private Developers.



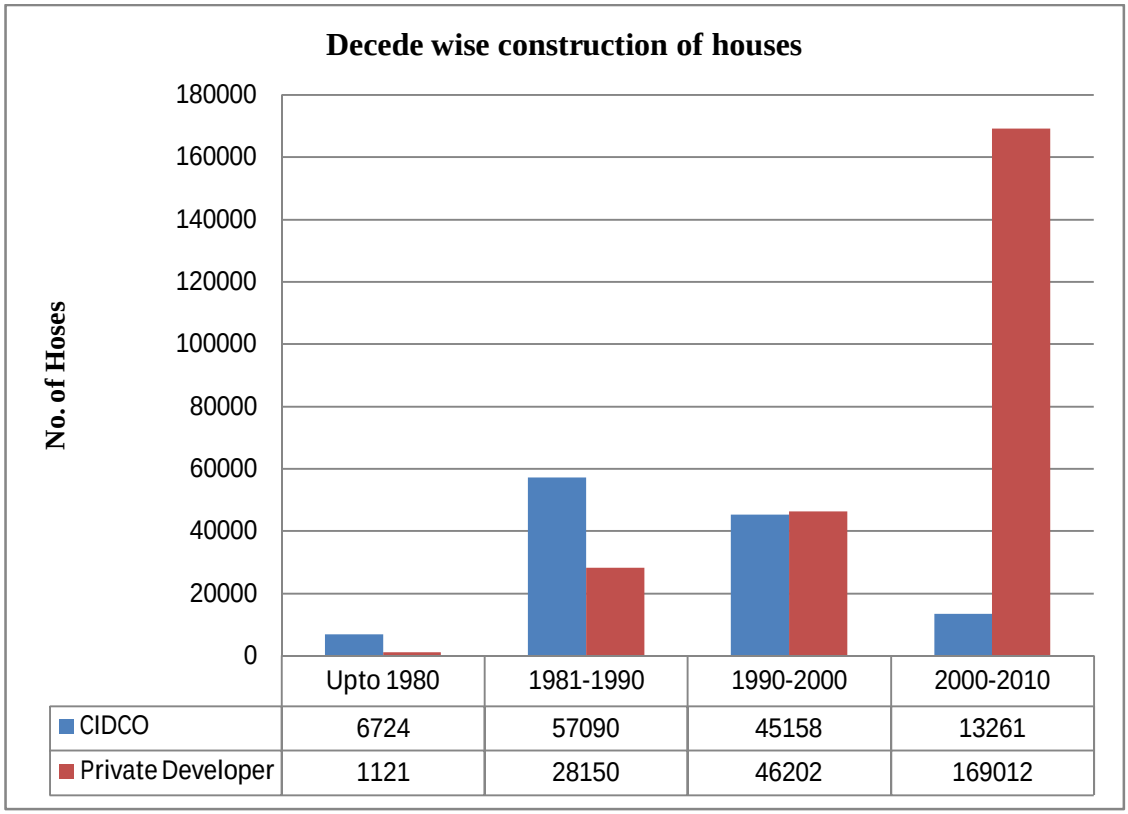
Contribution of CIDCO as well as private developers in development of housing facility in Navi Mumbai had been presented in above table. CIDCO had constructed 1,22,233 units i.e. 33.33% of total units constructed in Navi Mumbai. At the same time CIDCO had alloted land plots to private developers and these private developers had constructed 2,44,485 units which accounts to 66.67% of total units.

Table 7.12: Decade wise development of housing in Navi Mumbai by CIDCO and Private Developer

Year	CIDCO Nos.	%	Private Developer Nos.	%	Total	%
Upto 1980	6724	85.70	1121	14.30	7845	2.14
1981-1990	57090	67.00	28150	33.00	85240	23.24
1990-2000	45158	49.42	46202	50.48	91360	24.91
2000-2010	13261	7.28	169011	92.72	182272	49.70
Total	122233	33.33	244485	66.67	366718	100.00

(Source : CIDCO website and Socio Economic Profile of Households in Navi Mumbai – 2010)

Graph 7.6: Decade wise development of houses by CIDCO and private developer



	Upto 1980	1981-1990	1990-2000	2000-2010
CIDCO	6724	57090	45158	13261
Private Developer	1121	28150	46202	169012

Above table analysed that major development in housing was started after 1980, during 1980-2000 50% of total houses in Navi Mumbai were constructed in this decade. During this period CIDCO constructed 102248 houses and private developers construct 74352 houses. In last decade 2000-2010 CIDCO's involvement in developing housing was insignificant it constructed only 13261 units and at the same time private developers constructed 169012 units.

Node wise and Type wise Analysis of houses in Navi Mumbai

CIDCO and Private Sector develop houses for all income groups in Navi Mumbai, Houses of area upto 25 Sq. Mtr. for LIG / EWS, 26 – 75 Sq. Mtr. for MIG and above 75 Sq. Mtr. for HIG.

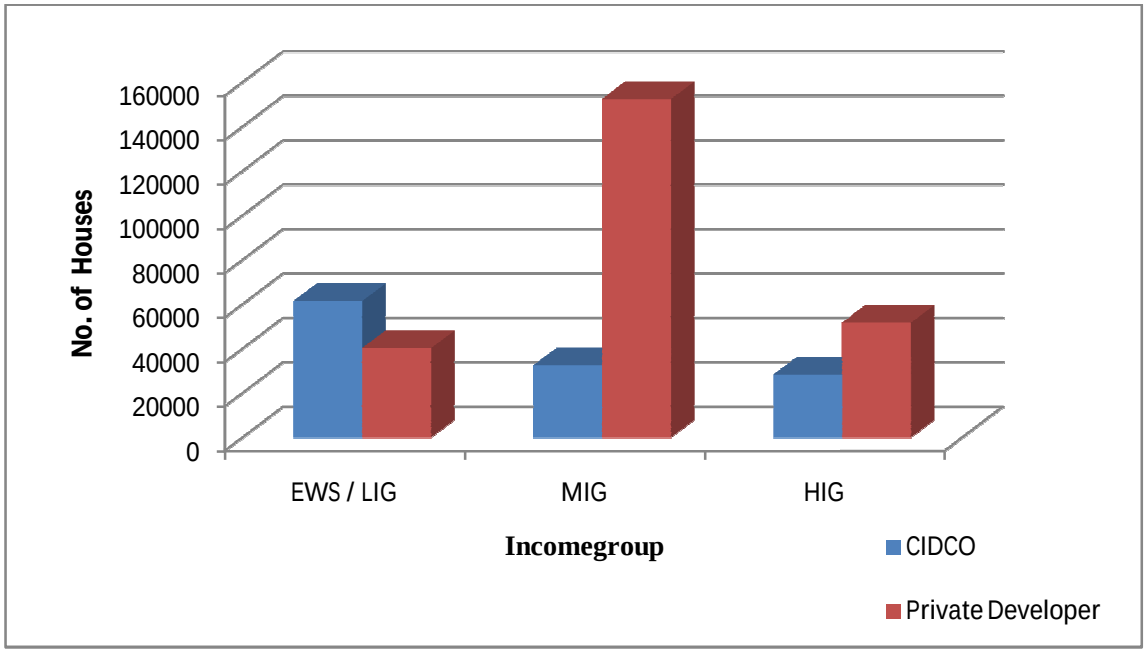
Table 7.13 Details of houses constructed by CIDCO and Private Developers

Sr. No.	Node	EWS / LIG		MIG		HIG		Total
		CIDCO	Private	CIDCO	Private	CIDCO	Private	
1	Airoli	7163	949	2410	15173	3010	2845	31550
2	Ghansoli	9499	5309	0	3133	0	261	18202
3	Kopar - Khairane	11827	10183	1442	9951	566	3008	36977
4	Vashi	9367	2726	5560	14765	3271	5225	40914
5	Sanpada	1816	1075	3089	12286	3778	1997	24041
6	Nerul	7282	2535	7888	16737	7291	6087	47820
7	Belapur	946	1695	3881	7170	3407	4172	21271
8	Kharghar	4741	6699	1451	27690	1877	10272	52730
9	Kamothe	0	3773	0	15966	0	9290	29029
10	Kalamboli	5223	3406	3296	5002	1976	2235	21138
11	New Panvel	3533	1558	3390	23630	2733	779	35623
12	Dronagiri	80	414	76	966	372	5523	7431
	Total	**61477**	**40322**	**32483**	**152469**	**28281**	**51694**	**366726**
	Total	**101799**		**184952**		**79975**		

(Source : 'Socio Economic Profile of Households in Navi Mumbai – 2010)

The above table had helped the researcher conclude that Navi Mumbai has highest no. of houses for MIG followed by LIG and then by HIG.

Graph 7.7 Analysis of houses constructed by CIDCO and Private Developers



Above table and graph present composition of houses constructed by CIDCO as well as Private Sector. Researcher concluded that CIDCO was mostly involved in development of EWS/LIG houses, whereas private sector was aggressively involved in development of MIG and HIG houses.

Analysis for demand and supply of houses in planned nodes

Researcher had analysed demand and supply of houses in Navi Mumbai. This was an important analysis as it identifies growth of city in terms of population and also provide basis for development of civic facilities in the city. Requirement of no. of houses was determined by dividing population of the node by family size. Family size was considered as 4 persons in a family. Details for actual constructed houses in each node and population of that node was derived from 'Socio Economic Profile of Households in Planned Nodes in Navi Mumbai – 2010'

Table 7.14: Estimated Demand and actual construction of houses

Sr. No.	Node	Population	Expected Demand	Constructed Houses	Difference
1	Airoli	115335	28834	31550	2716
2	Ghansoli	65593	16398	18202	1804
3	Kopar - Khairane	132827	33207	36977	3770
4	Vashi	139573	34893	40914	6021
5	Sanpada	79894	19974	24041	4067
6	Nerul	162366	40592	47820	7228
7	CBD Belapur	65442	16361	21263	4902
8	Kharghar	139693	34923	52730	17807
9	Kamothe	62073	15518	29029	13511
10	Kalamboli	74249	18562	21138	2576
11	New Panvel	123171	30793	35623	4830
12	Dronagiri	20382	5095	7431	2336
		1180598	**295150**	**366718**	**71568**

(**Source** : compiled by researcher as mentioned above)

Following facts had been observed by the researcher

1. CIDCO was aggressively involved in development of housing till 1990.
2. After 1990 role of private sector in development of housing was dramatically increased, this reflects change in housing policy of CIDCO.
3. CIDCO had developed EWS / LIG type of houses and Private sector mainly involves in development of MIG and HIG type houses.
4. Researcher had found excessive supply of housing in some nodes of Navi Mumbai.
5. The excessive supply of houses had resulted into unoccupied houses in Navi Mumbai.
6. Development of housing had concentrated in specific nodes, this had created imbalance in development.

7.4 Analysis of Health Care Facilities

A good health care system is one of the basic needs of the society. CIDCO had 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. In Navi Mumbai CIDCO encouraged all accepted system of medicines such as allopathic, Ayurveda, Homeopathic etc.Different medical services available to the residents include burns, gynecology, surgery, cardiac, neurology, urology, pediatrics, orthopedic, dental, ENT, leprosy, AIDS, Oncology, Nephrology, and services related to respiratory diseases.

The Navi Mumbai project area i.e. planned nodes of Navi Mumbai, 95 villages, 2 Municipal Corporations and MIDC area has 1177 Private Clinics, 176 Hospitals and 97 Pathology labs. There are only 2 public hospitals found in city 1 General Hospital, Vashi operated by NMMC and 2 Rural Health Centre, Panvel operated by Panvel Municipal Corporation other establishments are owned and managed by private individuals or trusts.

CIDCO's role is summarised in 2 points.

1. CIDCO developed clinics in different nodes,

2. Allotment of land plots to the individuals and trusts

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. The researcher had found that approximately 1177 private clinics in Navi Mumbai. These clinics comprise General Practitioners following different system of medicines such as Ayurvedic, Homeopathy, Dentist, ENT, Eye specialist, Pediatrics etc.

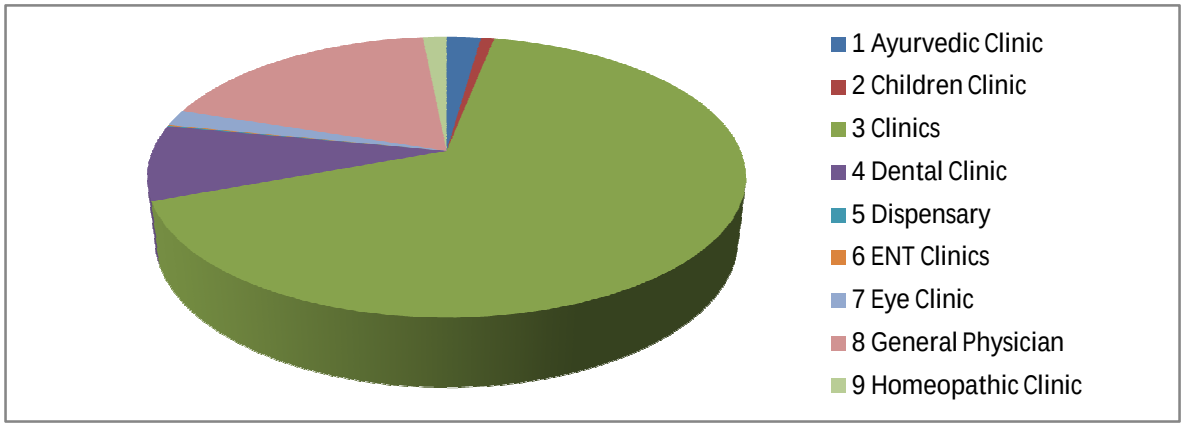
CIDCO had developed urban health centres in New Panvel, Kalamboli, Kamothe, Kharghar and Ulwe to provide primary medical health to the residents. It also had elementary pathology labs at these centres.

Table 7.15: Types of Clinics in Navi Mumbai

Sr. No.	Type of Clinic	Nos.
1	Ayurvedic Clinic	26
2	Children Clinic	10
3	Clinics	780
4	Dental Clinic	102
5	Dispensary	1
6	ENT Clinics	1
7	Eye Clinic	22
8	General Physician	217
9	Homeopathic Clinic	18
	Total	1177

(Source: Report on 'Health Infrastructure, Facilities, Personnel and Services in Navi Mumbai'.)

Graph 7.8: Different types of clinics in Navi Mumbai.



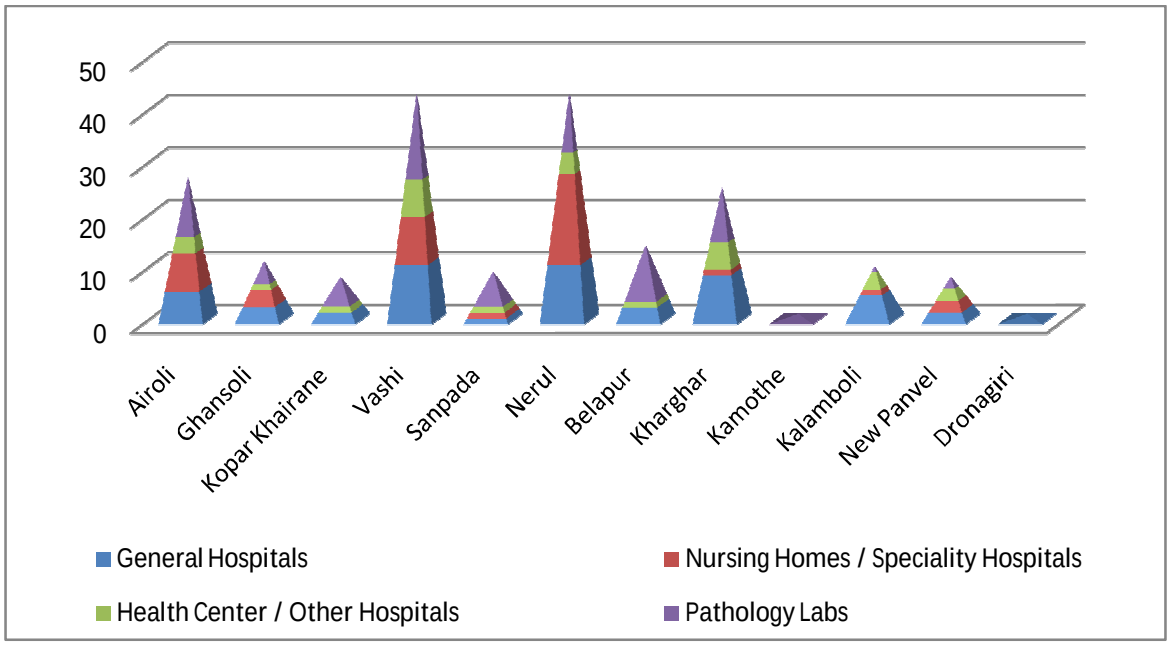
Above table and graph is an outcome of the research. It was found that there was highest no. of allopathic clinics in Navi Mumbai followed by practicing General physicians. Other system of medicines such as Ayurvedic, Homeopathic and specialist clinics such as ENT, Dentist, Eye clinic are also present in the city.

Table 7.16: Hospitals and Pathology labs in Navi Mumbai

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

(Source: Report on 'Health Infrastructure, Facilities, Personnel and Services in Navi Mumbai'.)

Graph 7.9: Node wise Hospitals and pathology labs in Navi Mumbai



The table and graph revealed that Vashi, Nerul, Airoli and Kharghar had 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.

Following facts were found by the researcher afther analyzing healthcare services in planned nodes of Navi Mumbai.

1. According to High Level Expert Group Report on Universal Health Coverage for India expected doctor to population ratio is 1:1000 and actual ratio in Navi Mumbai is calculated at 1.1:1000. Here researcher had concluded that there is sufficient no. of physicians for current population in Navi Mumbai. It indicates sufficient availability of primary medical aid.
2. There is only one public hospital in Vashi, Navi Mumbai. This indicate majority hospitals in Navi Mumbai are private hospitals so people in LIG and EWS suffer due to high medical treatment cost and need to rely on public hospitals of Mumbai.
3. There are very few hospitals providing advanced medical treatment. This indicates requirement for advanced medical treatment people need to visit Mumbai.

7.5 Analysis of Transportation facilities

A good transportation system is key requirement for development. Transportation system includes public transportation by road, railways, water and air. Following table shows availability of different modes available in planned nodes of Navi Mumbai.

Table 7.17: Analysis for Node wise transport facilities in Navi Mumbai

Sr. No.	Nodes	Roads	Suburban Railways	Water & Air
1	Airoli	Yes	Yes	No
2	Ghansoli	Yes	Yes	No
3	Kopar - Khairane	Yes	Yes	No
4	Vashi	Yes	Yes	No
5	Sanpada	Yes	Yes	No
6	Nerul	Yes	Yes	No
7	CBD – Belapur	Yes	Yes	No
8	Kharghar	Yes	Yes	No
9	Kamothe	Yes	Yes	No
10	Kalamboli	Yes	No	No
11	New Panvel	Yes	Yes	No
12	Dronagiri	Yes	No	No

Following findings had been revealed from the analysis of transportation facilities in Navi Mumbai.

1. All nodes are connected by road.
2. All nodes are yet to be connected by a suburban railway network.
3. Water transport link is yet to develop.

7.6 Analysis of Education Facilities

Education is one of the basic needs of the society. CIDCO gave priority for schools and colleges while planning social facilities in Navi Mumbai. CIDCO designed nodes to provide education facilities depending upon population of the node.

Following policy was followed by CIDCO while planning and allotting plots for educational institutions to make the nodes self sufficient in terms of providing quality education.

1. One primary school population of 5,000
2. One high school for population of 12,500
3. One college for population of 50,000

The policy doesn't provide details regarding type of college or medium and board of schools.

For analysis researcher had considered primary, secondary, higher secondary schools, colleges and institutes providing professional education in entire Navi Mumbai project area. The Navi Mumbai project area includes educational institutions in 14 planned nodes, 95 villages, 2 Municipal Corporations and MIDC area. These schools are categorised as NMMC schools, Private Schools and Zila Parishad School. Survey in 2008-09 indicates 361212 students were enrolled in these schools.

CIDCO's role in education can be summarised in 2 points,

1. Construction of school buildings and provide them to suitable educational institutions for operation,

2. Allotment of land plots to educational institutions at free of cost or at concessional rates as per social service policy of CIDCO.

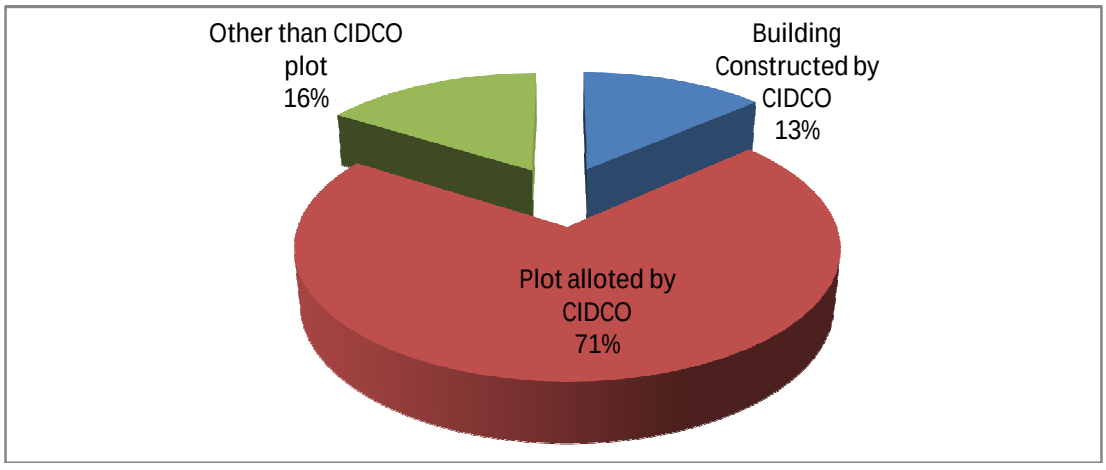
Following table shows details in respect of primary, secondary, higher secondary high school.

Table 7.18: Details of Primary, Secondary and Higher Secondary Schools

Node	Building Constructed by CIDCO	Constructed on CIDCO plot	Constructed Other than CIDCO plot	Total
Planned Nodes of Navi Mumbai				
Airoli	9	21	1	31
Ghansoli	1	22	1	24
Kopar Khairane	5	22	0	27
Vashi	13	26	3	42
Sanpada	0	8	0	8
Nerul	14	40	0	54
CBD Belapur	5	8	1	14
Kharghar	1	14	0	15
Kamothe	0	10	0	10
Kalamboli	4	9	0	13
New Panvel	4	12	0	16
Total of Planned Nodes	**56**	**192**	**6**	**254**
Area other than Planned Nodes of Navi Mumbai				
Villages in Panvel Taluka	1	48	51	100
Villages in Uran Taluka	0	47	3	50
MIDC Area	1	17	9	27
Total of other Area	**2**	**112**	**63**	**177**
Grand Total	**58**	**304**	**69**	**431**

Source: Report on Primary & Secondary Schools in Navi Mumbai, Facilities, Student Enrolment & Performance and Staff Profile – 2010.

Graph 7.10: Distribution of Schools according to CIDCO's contribution



Above table and graph indicated that CIDCO had constructed 58 schools in Navi Mumbai project area and alloted plots to 304 schools according to its social service policy. In case of remaining 63 schools located outside planned nodes CIDCO neither constructs building nor allot plot for the same.

Analysis for availability of schools in planned nodes:

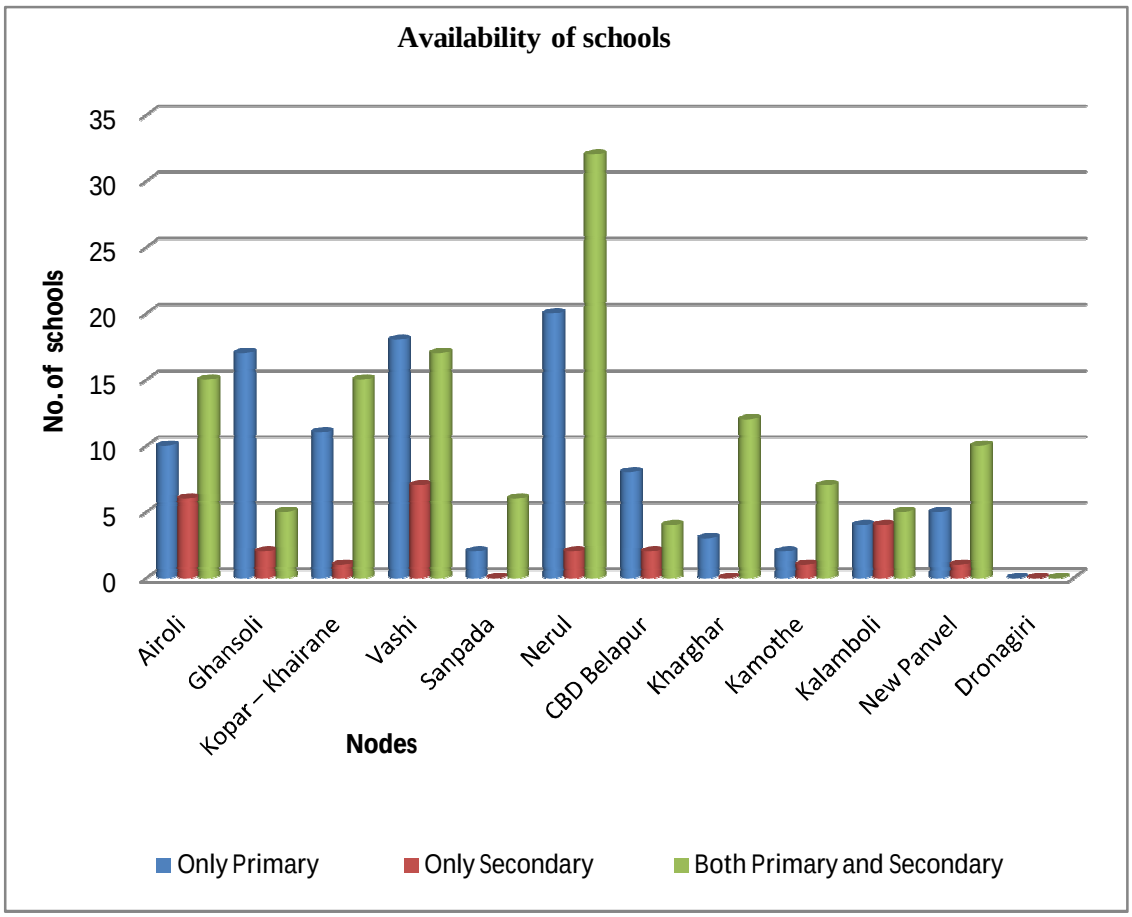
The researcher had made effort to find out whether CIDCO follows its policy for development of schools or not and its outcome is presented below. Analysis for actual availability of schools reveals that there are 254 schools in planned nodes of Navi Mumbai, they are divided in three types. 1. Only Primary (imparting education for 1 to 4 or 1 to 7 standard), 2. Only Secondary (imparting education for 5 – 12 standard), 3. Combine primary and secondary (1 – 12 Standards). Planned Nodes in Navi Mumbai has highest no. of schools imparting both primary and secondary education followed by only primary schools and at last only secondary schools.

Table 7.19: Actual Schools available in planned nodes of Navi Mumbai.

Sr. No.	Node	Only Primary 1-4 or 1-7	Only Secondary 5-10 or 5-12	Primary and Secondary 1-10 or 1-12	Total
1	Airoli	10	6	15	31
2	Ghansoli	17	2	5	24
3	Kopar – Khairane	11	1	15	27
4	Vashi	18	7	17	42
5	Sanpada	2	0	6	8
6	Nerul	20	2	32	54
7	CBD Belapur	8	2	4	14
8	Kharghar	3	0	12	15
9	Kamothe	2	1	7	10
10	Kalamboli	4	4	5	13
11	New Panvel	5	1	10	16
12	Dronagiri	-	0	0	Nil
	Total:	**100**	**26**	**128**	**254**

(Source: Report on Primary & Secondary Schools in Navi Mumbai, Facilities, Student Enrolment & Performance and Staff Profile – 2010.)

Graph 7.11: Primary and Secondary Schools in Planned Nodes.



Above table and graph helped the researcher to conclude that Nerul had maximum no. of schools and Sanpada had lowest no. of schools. According to survey made by CIDCO Dronagiri node did not have school till 2010.

Analysis for required and actual no. of schools in planned node of Navi Mumbai.

Researcher had tried to compare required no of schools in planned nodes of Navi Mumbai and actual schools available in Navi Mumbai. Following table presented the analysis based on population of 2010, to find out required no. of primary schools population is divided by 5000 and for secondary school population is divided by 12500 as per policy of CIDCO mentioned on page no. 231. Availability of actual no. of schools is taken from above table

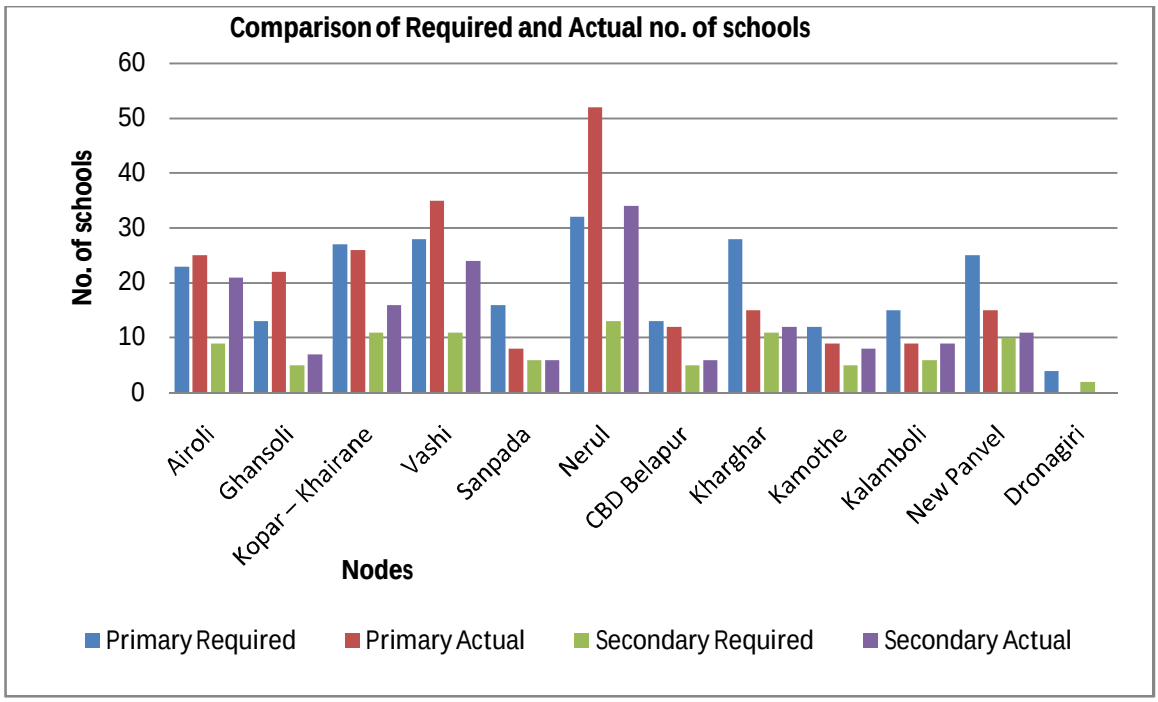
Table 7.20: Comparison of required and actual schools available in planned nodes of Navi Mumbai.

Sr. No.	Node	Primary			Secondary		
		Required	Actual	Difference	Required	Actual	Difference
1	Airoli	23	25	2	9	21	12
2	Ghansoli	13	22	9	5	7	2
3	Kopar – Khairane	27	26	(1)	11	16	5
4	Vashi	28	35	7	11	24	13
5	Sanpada	16	8	(8)	6	6	Nil
6	Nerul	32	52	20	13	34	21
7	CBD Belapur	13	12	(1)	5	6	1
8	Kharghar	28	15	(13)	11	12	1
9	Kamothe	12	9	(3)	5	8	3
10	Kalamboli	15	9	(6)	6	9	3
11	New Panvel	25	15	(10)	10	11	1
12	Dronagiri	4	Nil	(4)	2	Nil	(2)
	Total	**236**	**228**	**(8)**	**94**	**154**	**60**

(Source: Compiled with the help of Report on Primary & Secondary Schools in Navi Mumbai, Facilities, Student Enrolment & Performance and Staff Profile – 2010.)

Analysis for required and available schools revealed that there was shortage of primary schools in planned nodes of Navi Mumbai, overall deficiency was 8 primary schools in Navi Mumbai. Nerul, Ghansoli, Vashi and Airoli had excessive no. of primary schools whereas all other nodes suffered from deficiency. In case of secondary schools there were 60 extra secondary schools in Navi Mumbai. All nodes had excessive no. of secondary schools but there was deficiency in Dronagiri node and Sanpada had exact no. of required schools.

Graph 7.12 : Comparison of required no. of primary and secondary schools in planned nodes of Navi Mumbai



The analysis for required no. of schools and actual schools available is presented in above table graph. The researcher concluded that there is a marginal shortage of primary schools and excessive availability of secondary schools.

Analysis of Schools in Navi Mumbai gives following findings

1. CIDCO had applied a plan strategy for development of schools in Navi Mumbai.
2. No. of schools established in Navi Mumbai during the research period had an increasing trend.
3. An imbalance had found in development of schools in Navi Mumbai.
4. It had found that there is a difference in required and actual no. of schools in Navi Mumbai.
5. Considering future growth of population CIDCO / NMMC should try to establish more no. of schools in planned nodes of Navi Mumbai.

Analysis of Colleges and Professional Education institutes in Navi Mumbai

Colleges and Institutes providing professional education is important part of education system. Researcher had undertaken research on colleges and professional education institutes in Navi Mumbai project area. The Navi Mumbai project area includes planned nodes, 95 villages, 2 Municipal corporations and MIDC area. Colleges and institutes of professional studies include General Colleges, Engineering, Management, Polytechnic, Vocational, College of Education and Medical colleges. Following is the table showing No. of colleges and professional institutions in Navi Mumbai.

Table 7.21: Colleges and Professional institutes in Navi Mumbai

Sr. No.	**Node**	**Nos.**	**Sr. No.**	**Node**	**Nos.**
1	Airoli	5	9	Kamothe	6
2	Ghansoli	0	10	Kalamboli	2
3	Kopar – Khairane	8	11	New Panvel	13
4	Vashi	17	12	Dronagiri	0
5	Sanpada	3	13	UMC	5
6	Nerul	24	14	PMC	3
7	CBD Belapur	24	15	MIDC	1
8	Kharghar	13	9	Kamothe	6
				Total	124

(Source: 'Report on Higher & Professional Education in Navi Mumbai Educational Streams, Infrastructure, Sports Facilities, Student Enrolments, and Staff Profile – 2010'.)

Comparison of required and actual no. of Colleges and Professional Education institutes in planned Nodes of Navi Mumbai.

CIDCO's policy for educational institutes depicts that there should be 1 college for population 50,000 residents. Population of planned nodes is 11,80,598 residents. This indicated need of 24 colleges in all planned nodes. On other hand there are 124 colleges and institutes of professional education. Researcher concluded that there are more than required no. of colleges in Navi Mumbai.

Followings findings were obtained from analysis of colleges and professional education institutes.

1. There was excessive no. of colleges in Navi Mumbai.
2. Beside NIFT other reputed institutes like IIM, IIT, and AIMS are not established in Navi Mumbai.
3. Considering diverse educational and professional institutes in Navi Mumbai, it can be positioned as a new education hub.

7.7 General reasons for gaps in development / Obstacles in further development

Researcher had found that major projects undertaken by CIDCO during last decade including Navi Mumbai International Airport, Navi Mumbai SEZ, Nerul – Uran railway line, Navi Mumbai Metro were delayed due to various reasons. A gist of difficulties faced by CIDCO in development is listed below.

a. **Non availability of developable land:**
   Researcher had found that most of available developable land was either reserved or allotted for development hence land was not readily available for any new project.

b. **Lack of co-operation and resistance by local peoples:**
   CIDCO had been facing several difficulties in acquisition of land and development of new projects due to lack of co-operation and resistance from local peoples. The researcher had found that this lack of co-operation and resistance of local peoples was the main reason for delay in development of Navi Mumbai International Airport and other projects.

c. **Problem of red tapism:**
   Researcher found that slow and lengthy approval procedure of government was also responsible for delay of important projects like Navi Mumbai International Airport and Navi Mumbai SEZ.

d. **Many administrative authorities in Navi Mumbai:**
   Navi Mumbai project area had many administrative authorities such as JNPT for port area, MIDC for industrial area, Village Panchayats, and

Municipal corporations for Panvel and Uran towns, NMMC and CIDCO.

Majority of the area of Navi Mumbai is governed by NMMC and CIDCO both. In 1992 State Government established Navi Mumbai Municipal Corporation and nodes in Thane district i.e. Airoli, Ghansoli, Kopar Khairane, Vashi, Sanpada, Nerul, CBD Belapur were transferred from CIDCO to NMMC. However Nodes in Raigad district i.e. Kharghar, Kamothe, Kalamboli, New Panvel, Ulwe, Dronagiri and Pushpak remain with CIDCO for development and maintenance.

Existence of many authorities in the region always creates disturbances. Special efforts are required for proper dialogue between CIDCO and these different authorities which will improve coordination between authorities and it will positively affect further development of the city.

e. **Undue political influence on operations of CIDCO**:

Influence and pressure of political leaders for wrong reasons had been a major hurdle in further development. CIDCO had been facing such problem while fixing compensation for acquisition of land for projects like Navi Mumbai International Airport, removal of illegal constructions in the city. Allotment of land plots etc.

f. **Lack of efficient and transparent performance appraisal system:** The researcher had observed that there is a lack of efficient and transparent performance appraisal system which reviews the completion of project and suggests suitable amendments for future.

7.8 Benefits and limitations of Projects

CIDCO had undertook different projects for development of Navi Mumbai, major objective of all such projects was to provide functional services to the residents of Navi Mumbai which improves quality of life and enable CIDCO to achieve its objectives. CIDCO undertake many projects in different areas. All projects are integrated and its effects are correlated with each other.

Benefits of projects:-

Benefits of the project can be simply stated as it makes city livable and helps it flourish. A nice article is published in Mumbai Mirror written by Mr. Sanjay Banerjee on 11/11/2011 the article identify 11 reasons to live in Navi Mumbai. These reasons are nothing but the collective benefits derived from the different projects undertaken by CIDCO in Navi Mumbai. The article is given below.

1. Walk to Work :

A strong sense of belonging spans about 68 % of the workforce who work in Navi Mumbai with 8.5 % of them walking to their work places, according to the recent socio-economic survey of households conducted by CIDCO (2010 data). With 60,000 people walking to work, the broad footpaths that line the planned nodes serve a well. The principal mode of transport shows that the most frequent mode of transport is walk (30.4%).

2. Green Cover:

The gardens provide the green acres to relax (there are 175 gardens covering an area of 6.93 lakhs sq m area in NMMC). The bigger gardens are a great draw with those taking a walk or jog. The city streets spell an enviable tree to human ratio with around one tree for every two persons. Although the ideal ratio is 1:1, but going by the neighboring choked cities, the nodes with the green cover means better ecology.

3. Clear Air:

Navi Mumbaikars have another reason to smile about: True, dust pollution is on the rise in some areas, as pointed out in the environmental status report of NMMC, but it is still under the standard norms. The oxides of nitrogen that have increased due to a rise in vehicular population has to be taken note of, but overall, the ambient air quality is better than most cities.

4. Will Travel:

The transport network by way of direct train to CST and Thane for the working population is also another boon for Navi Mumbaikars. While 68% of

the population actually working in the city, only 32% of the workforce has their jobs in Mumbai and elsewhere. The bus service to Thane and Kalyan is considered good and Thane is also connected by the suburban trains.

5. Fly Easy:

Transport network would only get better with two future projects--the international airport in Panvel that is on the cards pending land acquisition that would reduce travel time for frequent fliers instead of having to worry to reach Mumbai airport through traffic jams.

6. Well-Linked:

This project promises better connectivity with Mumbai once the Mumbai trans-harbor link is taken up. The good news is that MMRDA has initiated steps to make a feasibility study and refer it to the state government. Those metro rail projects would provide better connectivity from Belapur to Pendhar in the first phase of the project.

7. Well Housed:

Those who decided to settle down and could do so only because houses were available. Initially they were cheaper with I BHK flats made by CIDCO of 34 sq m available for about five lakhs in the mid-1990 as part of second hand transaction. Prices have risen but are still within reach.

8. Healthy and Wise

With good hospitals promising better healthcare facilities and schools and colleges, the city has only opened the gates for a better future with children assured of quality education.

9. Quality Counts:

The environmental status report (2010--2011) states: The city scores 78.24 % as urban infrastructure index (UII). The city scores 66.77 % as EQI (environmental quality index). The quality of life index (QoLI) for the city works out as 72.51 %. The QoLI has increased by 1.45 % in 2010-2011 compared to last year.

10. Shop Cheap:

Those staying in the satellite city can buy their vegetables and groceries cheap at the wholesale market (APMC) that offer a wide range of markets. The grain market of rice, wheat, pulses and kitchenware too are available at a discount and many throng the markets for their monthly purchases.

11. Water Relief:

The report on assessment of domestic water samples published by the environmental status report (2010-2011) states that only 3.76% samples were non potable in the last fiscal year. The report states, ``complaints of water supply have dropped by 90 % last year.'' According to the recent CIDCO survey, 66 per cent residents are satisfied with the quality of potable water.

Limitations of projects

It is very difficult to find out limitations of project undertaken by CIDCO because Navi Mumbai a young city and it is still under development. It requires some time to identify limitations of the projects. However researcher makes an attempt to identify the limitations of the projects undertaken by CIDCO, following are points assessed by the researcher.

1. Project delays :

Planning and implementation of project has a huge time gap, this delay makes that project unviable because development is made based on the plan which is prepared long ago and does not suit to current or future requirement of the city.

2. Cost Escalation:

Delays in implementing project automatically results in cost escalations of the project. Nerul – Uran railway, Navi Mumbai Airport and several other are good examples within Navi Mumbai for such cost escalation.

3. Irrelevant Projects:

Golf course developed in Kharghar is one of such example. If population of Navi Mumbai its lifestyle and the sport is considered then this question

always comes into mind was it really require to utilize so much money and space for this project. There could be better utilization of these resources.

4. Resistance for Change:

The study identified that Navi Mumbai needs to achieve its employment and population target. Originally it was assumed that Mumbai residents will relocate their place of residence and commercial activities to Navi Mumbai. However a strong resistance is noticed for shifting business and residence from Mumbai to Navi Mumbai.

5. Residential suburban area:

Navi Mumbai was to be developed as a self sufficient city, however still a major percentage of residents are employed in Mumbai / Thane or other neighboring areas. Over the years Navi Mumbai developed itself as a better residential place but still it has to develop itself as a better commercial place.

6. Where is the beneficiary:

The survey made by CIDCO shows that there are 48081 houses are vacant in Navi Mumbai. This means development of housing and other related facilities are not utilized by approx one lakh peoples. It also indicate either people are not buying residential units are they have bought it for investment.

Other limitations and lacunas of the projects undertaken by CIDCO are already identified in earlier chapter in the form of suggestions / complaints given by respondents in respect of development of Navi Mumbai in earlier chapter.

Chapter - 8
Findings, Conclusion and Recommendations

8.1 Findings and Conclusions

8.2 Validation of Hypotheses

8.3 Recommendations

8.1 Findings and Conclusions

A] FINDINGS IN RESPECT OF OBJECTIVES OF STUDY

1. DEVELOPMENT OF NAVI MUMBAI

Development of Navi Mumbai was a mega project undertaken by state government of Maharshtra. Navi Mumbai project area had different authorities such as JNPT, MIDC, Grampanchayats of 95 villages, Panvel and Uran Municipal Corporations. The researcher had elaborated development of Navi Mumbai in Chapter – 5 of this thesis.

The researcher had concluded and summarized following as role of CIDCO in development of Navi Mumbai.

i. CIDCO acquired land for development excluding existing MIDC, Panvel and Uran Municipal Corporations, JNPT and gaothan area of 95 villages in Navi Mumbai project area.
ii. CIDCO had prepared city development plan for Navi Mumbai. It had divided the project area in different nodes. It had drawn and executed development plan of each node.
iii. CIDCO had developed physical infrastructure including housing, electricity distribution network, water supply, roads, railways, railway station complexes, sewage, storm water drainage etc.
iv. CIDCO had also developed social infrastructure that include schools, colleges, healthcare facilities, recreation facilities etc.
v. CIDCO had tried to improve employment opportunities by developing APMC, Steel Market, Navi Mumbai SEZ and allotting land plots for port based industries near JNPT in Dronagiri Node.

CIDCO had to develop Navi Mumbai by using land as a major resource; CIDCO was allowed by state government to construct and sell properties or to sell developed plots of land to recover development expenses.

2] Study of Management Strategies of CIDCO and its functions

The researcher had undertaken study on management of CIDCO. CIDCO is a registered company under Indian Companies Act, 1956. CIDCO functions through its departments. Detail study in respect of organisation strcture, management of CIDCO and details of its departments are provided in Chapter – 3 in the thesis.

3] Study of City Development Plans of Navi Mumbai.

CIDCO had followed polycentric approach for development of Navi Mumbai. CIDCO divided Navi Mumbai in 14 nodes and prepare development plan for each node. A detail study of city development plan and its nodes is presented in Chapter – 4 of the thesis. Following table presents proposed land usage of developable land.

Table 8.1: Proposed land usage of developable area

Sr. No.	Particular	Area in Ha	%
1	Residential	2930.74	26.41
2	Commercial	819.98	7.39
3	Industry & Warehousing	959.09	8.64
4	Social Facility	771.01	6.95
5	Public utility	1148.37	10.35
6	Open Space	1329.25	11.98
7	Circulation	1986.92	17.90
8	Infrastructure Corridor	1152.44	10.38
	Total Developable Area	**11097.8**	100.00

(Source : Primary Data)

On the basis of above table helped the researcher had concluded that approx 43% of developable area had been used for residential, commercial and industrial purposes rest of the area is used for purposes such as transportation infrastructure, gardens social and public utilities etc.

CIDCO had followed a fair land usage plan while developing Navi Mumbai, URDPFI guidelines 2014, issued by Ministry of Urban Development had approved 49% to 57% usage of developable land for residential, commercial and industrial purposes. It shows that planners of Navi Mumbai had taken serious efforts to keep Navi Mumbai congestion free and able to provide good quality of life to its residents by providing more than adequate space for transportation infrastructure, public and social utilities.

4] Status of various projects undertaken by CIDCO in Navi Mumbai:

Entire development of Navi Mumbai is an outcome of various projects which were undertaken by CIDCO. Researcher had found that some important mega projects such as Navi Mumbai International Airport, Navi Mumbai SEZ, Navi Mumbai Metro and expansion of sub-urban railway network were under development during research period. All these projects had missed their deadlines. Part-B of Chapter – 5 provides status of these important projects at the end of research period i.e. 2010.

5] Benefits and Limitations of the Projects

The researcher had found that identifying benefits and limitations of a project is very difficult, because all projects are targeted for development of city and development of a city is a result of all projects undertaken. Limitations of the project may not be noticed immediately but may arise in future.

Researcher had analyzed benefits and limitations of some important projects undertaken by CIDCO. Following table represents analysis of benefits and limitations.

Table 8.2: Benefits and Limitations of Projects

Project	Benefits	Limitations
Housing Schemes	CIDCO's involvement in construction of houses ensured development of housing facilities for all income groups i.e. LIG / EWS, MIG and HIG	Inferior quality of construction leads to accidents and requirement of early redevelopment of buildings.
Sub-urban Railway Network	It connects Navi Mumbai with Mumbai and Thane. It leads to development of Navi Mumbai at a fast rate.	It defeats basic objective of establishing Navi Mumbai. The Navi Mumbai was established as an independent self contained city which should act as a counter magnet to Mumbai and reduce no. of immigrants getting into Mumbai, but now due to this railway connectivity people live in Navi Mumbai and travel daily to Mumbai for their employment, which again increases congestion at Mumbai.
Navi Mumbai International Airport	It is the most ambitious project. This airport is necessary as Mumbai Airport is congested so there is a requirement of airport in nearby area. The project also fits in surrounding due its proximity with JNPT and Navi Mumbai SEZ	This project required acquisition of land which will result in displacement of some villages. This project had created unrest in the region and a main reason for agitation.

Golf Course	CIDCO developed a golf course at Kharghar. This golf course provides a unique identity to the city. It also helps Navi Mumbai to have international recognition.	CIDCO had spent approx. Rs. 38 crores for developing golf course. Golf is not a common man's sport and very few sportsmen took golf as their career so developing such facility by spending such huge amount is total wastage of money.
Education Facilities	CIDCO had drawn an education policy and followed it. It had resulted in development of sufficient no. of schools, colleges and institutions for higher and professional studies.	Education policy needs to be integrated with needs of surrounding industrial and commercial activities. The education policy of CIDCO provide quantitative details regarding no. of schools, colleges and institutes for higher education required for given population but it ignore qualitative aspect regarding integration of education with the needs of employers. It means that though theses educational institutions are created they may not be able to provide skilled labour and trained personnel to the industry.

Apart from above mentioned table researcher had observed general benefits and limitations of projects undertaken by CIDCO. Details of which are given in Chapter – 7 of this thesis.

6] Gaps in development of City

The researcher had undertaken a study to find out gaps in projected and actual development of Navi Mumbai. Following are such gaps found by the researcher

1. CIDCO had divided Navi Mumbai in 14 nodes, but till end of research period development of all nodes was not completed New Panvel, Kamothe, Kharghar, Kalmboli and Dronagiri nodes were under development and development of Ulwe and Pushpak node was not started.
2. A gap was found in projected land usage and actual land usage in some nodes (Ref Table 7.4 on page No. - 228)
3. A detail study in respect of gaps in projected and actual development in respect of housing, employment, education, transportation infrastructure, healthcare etc is presented in Chapter – 7 of thesis.

B] FINDINGS IN RESPECT OF OBJECTIVES OF CIDCO

CIDCO had established Navi Mumbai by following certain objectives that are as follows. Researcher had tried to find out whether these objectives were fulfilled or not.

1. Basic objective of CIDCO for establishing Navi Mumbai was to prevent population influx into Mumbai by diverting it to the new town by providing the migrants another urban alternative and to allure residents of Mumbai to migrate to Navi Mumbai for better quality of life and standard of living.

   The researcher had found that population of planned nodes was nil in the beginning and as on 2010 population of planned nodes was 11,80,000. The migration pattern as per survey made by CIDCO in 2010 shows that,

Table 8.3: Migration pattern of residents

Last place of residence	% of Population of Navi Mumbai
Mumbai Island(%)	34.6
Mumbai Suburbs (%)	20.9
Other districts of Maharashtra (%)	7.1
Outside Maharashtra (%)	5.7
Total	**68.3**

(Source : CIDCO website)

Virtually entire population in planned nodes of Navi Mumbai is migrated from some other location, as per above table 68.3% were migrated as per above details and remaining population was migrated within Navi Mumbai project area. Researcher had concluded that this objective was successful to the extent of 11,80,000 people as it had either successfully arrested this population from entering into Mumbai or relocate it from Mumbai to Navi Mumbai.

2. To provide basic civic amenities to all to elevate standards of living of all social and economic strata.

   CIDCO was responsible for development of social infrastructure and providing civic facilities to all planned nodes in Navi Mumbai. In 1992 NMMC was incorporated and CIDCO had transfered Airoli, Ghansoli, Kopar-khairane, Vashi, Sanpada, Nerul, CBD Belapur to NMMC. The NMMC had assumed responsibility of providing civic services and maintenance of social infrastructure for these nodes. Now CIDCO provides civic services and maintain social infrastructure in remaining nodes.

   Researcher had tried to find out whether CIDCO / NMMC provide selected civic services to residents and whether different elements of social infrastructure are available in planned nodes its outcome is as follows.

1. The researcher had found and concluded that average 79% residents confirm availability of different civic services provided by CIDCO / NMMC (Ref Table No. 6.79 on page no. – 201).
2. The researcher had found and concluded that average 95% (Ref. Table No. 6.83, Page No. 206) residents confirm availability of social infrastructure.
3. While developing Navi Mumbai CIDCO had set 2 target for entire Navi Mumbai Project area.
    a. Population of the city aimed 21,00,000 and
    b. 7,50,000 job opportunities i.e. for nearly 1/3 of expected population.

Researcher had evaluated achievement of both these targets and following table presents the evaluation done by researcher. A detail analysis in this respect is provided in Chapter – 7 of thesis.

Table 8.4 : Evaluation for Achievement of Target

Objective	Target for Navi Mumbai Project Area	Proportionate Target for CIDCO area	Actual Achievement of CIDCO Area	% Achived
Population	21,00,000	15,46,000	11,80,598	76.36 %
Jobs	7,50,000	5,15,333	4,28,291	73.10 %

Researcher concluded that targeted population and employment opportunities in planned nodes are not achieved yet. Above table presents approx 75% achievement of both targets which is also a fair achievement.

C] In Respect of Navi Mumbai

Researcher had undertaken a survey in planned nodes of Navi Mumbai a detail analysis of the survey is presented in Chapter – 6 of thesis. Gist of findings is presented below.

1. **Why resident live in Navi Mumbai:-**

   The researcher had tried to find out why residents of Navi Mumbai had chosen this city as place of residence. The outcome of the study is as follows.

Table 8.5: Ranking for reason to live in Navi Mumbai

Sr. No.	Reason	%	Rank
1	Near to Workplace	38%	1
2	Good connectivity with Mumbai / Thane	20%	2
3	Affordable Housing	17%	3
4	Well developed city	10%	4
5	Good Education Facilities	6%	5
6	Other	6%	6
7	Good Quality of Life	3%	7

2. **Provision of Civic Services in planned nodes of Navi Mumbai by CIDCO / NMMC**

   The researcher had tried to find out whether civic services are provided by CIDCO/NMMC in planned nodes of Navi Mumbai. Researcher had concluded that average 79% residents confirm availability of different civic services provided by CIDCO / NMMC (Ref Table No. 6.79 on page no. – 201).

3. **Availability of different elements of Social Infrastrcture :-**

   The researcher had tried to analyse availability of selected elements of social infrastructure in planned nodes of Navi Mumbai. Researcher had found and concluded that average 95% (Ref. Table No. 6.83, Page No. 206) residents confirm availability of social infrastructure elements in planned nodes.

4. **Opinion of residents on "Whether CIDCO is successful in developing Navi Mumbai:-**

   The researcher had made an attempt to find out opinion of residents on "Whether CIDCO is successful in developing Navi Mumbai?" Researcher had found and concluded that average 88.44% residents had confirmed that CIDCO is successful in development of Navi

Mumbai. 7.78% residents confirm that CIDCO is not successful in development of Navi Mumbai and there was no response from 3.78 % residents (Ref Table No. 6.87 on page no. – 210).

5. Suggetion / complaints of residents in respect of development and maintenance:-

Researcher had collected complaints / suggestions from the respondents to find out satisfaction level of respondents and scope of improvement. The researcher had obtained 20 different suggestions / complaints from the respondents, those complaints reveal lacunas and scope of further improvement in Navi Mumbai. Researcher had undertaken a relation analysis for suggestions / complaints given by residents with Age and Gender of residents as well as year of development of node. Following table presents its outcome. A detail analysis is given in Chapter – 6 of thesis.

Table 8.6: Relation Analysis of Suggestions

Sr. No.	Suggestions	Age	Gender	Year of Development
1	Improve Cleanliness, sewage and waste management	Positive but Insignificant relation	Negative correlation	Significantly Negative Relation
2	Improve Public Transport system by increasing local railway and bus connectivity and also by proper development and maintenance of roads	Significantly positive Relation	Negative correlation	No Correlation
3	Control over Traffic and Parking	Significantly positive Relation	Negative correlation	No Correlation
4	Redevelopment of old CIDCO buildings	Significantly positive Relation	Negative correlation	No Correlation

5	Control on Encroachments	Significantly positive Relation	Negative correlation	No Correlation
6	Advance and affordable medical facilities	Perfectly positive Relation	Negative correlation	No Correlation
7	Control over pollution	Significantly positive Relation	Negative correlation	Significantly positive Relation
8	Development of modern Shopping facilities	Significantly positive Relation	Perfectly positive Relation	Significantly positive Relation
9	Development of cultural / community centre	Significantly positive Relation	Negative correlation	Significantly positive Relation
10	Require Good educational facilities	Significantly positive Relation	Negative correlation	No Correlation
11	Improve water management	No Correlation	Perfectly positive Relation	Significantly positive Relation
12	Development of playgrounds	Perfectly positive Relation	Perfectly positive Relation	No Correlation
13	Require overall development of node	Perfectly positive Relation	Negative correlation	No Correlation
14	Development of more affordable houses	Perfectly positive Relation	Negative correlation	No Correlation
15	Improve quality of gardens.	Perfectly positive Relation	Perfectly positive Relation	No Correlation

16	Efforts should be taken to attract more offices in the Node	Perfectly positive Relation	No Correlation	No Correlation
17	Require good recreation facilities	Perfectly positive Relation	Negative correlation	No Correlation
18	Development of remaining land	Perfectly positive Relation	Negative correlation	No Correlation
19	Improve civic administration	Perfectly positive Relation	Negative correlation	No Correlation
20	Poor quality of CIDCO construction	Perfectly positive Relation	Negative correlation	No Correlation

6. Imbalance in development:-

Researcher had found that CIDCO did not develop all the nodes simultaneously which had created imbalance in development of Navi Mumbai.

7. Interconnectivity of Nods :-

Researcher had found and concluded that all nodes were interconnected by roads but not properly connected with sub-urban railway network.

8. Findings in respect of healthcare facilities :

CIDCO had developed urban health centers in few nodes but did not develop and operate general hospital. Researcher had found that Navi Mumbai had decent Doctor to Population ratio. According to recommendation of High Level Expert Group Report on Universal health coverage for India, Planning commission of India New Delhi had fixed a minimum ratio of doctor to population as 1:1000.

According to CIDCO website this ratio is 11:10000 or 1.1: 1000 in Navi Mumbai.

It was found by the researcher that Navi Mumbai had hospitals having a combine capacity of 6036 beds and provide medical services in different fields. According to guidelines given for district hospitals by Indian Public Health Standards a hospital of 300 beds is required for population of 10,00,000, and Navi Mumbai has 2 Municipal hospitals 1 is operated by NMMC at Vashi and another is operated by Panvel Municipal Corporation at Panvel.

9. Development of Physical Infrastcture:-

Researcher had found and concluded that CIDCO successfully developed physical infrastructure such as water supply, sewerage, electricity and storm water drainage.

10. Education:-

Researcher had found and concluded that CIDCO successfully implemented its policy for development of education institutions. Today Navi Mumbai is emerging as a new educational hub. There is marginal shortage for availability of primary schools.

11. Delay in development of Navi Mumbai :-

Researcher had found and concluded that there was delay in completion of various projects due to various difficulties. It ultimately had caused delay in development of Navi Mumbai.

12. Internal Apprisal system:-

In the personal interview CIDCO officer admits that CIDCO has an internal appraisal system for comparing targeted and achieved development but does not provide any further details of the same. It clearly indicates lack of transparency in the system and partial achievement of objectives indicates inefficiency of the system.

8.2 Validation of Hypotheses

The researcher had undertaken an in-depth study on Role of CIDCO in development of Navi Mumbai in planned manner for fulfillment of the objectives mentioned in the research plan. Earlier chapters gave details of facts obtained by the researcher from the research. The researcher made an effort to validate hypotheses with the help of facts obtained from research.

The research plan submitted by researcher included 3 hypotheses of the study which are tested by the researcher and conclusions are drawn on the basis of study conducted, which is as follows.

1. **"CIDCO has been successful in development of Navi Mumbai"**

CIDCO has target of developing Navi Mumbai as 'City of 21st Century' on self financing basis. In the span of 40 years 1970 – 2010 and particularly in 1980 – 2010 CIDCO undertake serious efforts to convert this barren, marshy, salt pane into a thriving city, these efforts resulted into Navi Mumbai.

However following is gist of important findings that should be considered for validation of this hypothesis

1. Out of 14 nodes development of 7 nodes is completed and these nodes are handed over to Navi Mumbai Municipal Corporation which includes Airoli, Kopar – Khairane, Vashi, Sanpada, Nerul and CBD Belapur.
2. Today Navi Mumbai has almost everything required for a successful city, it accommodates and provides housing facilities to peoples from all income groups, it provides employment opportunities in diverse fields, it has sufficient and decent education facilities and it also has a good physical and social infrastructure for its residents. Environment status report on Navi Mumbai 2010 – 11 shows fair performance of key indices such as Urban Infrastructure Index, Environmental Quality Index and Quality of Life Index.

Table 8.7: Different Indices Indicating Development of Navi Mumbai

Index	Score
Urban Infrastructure Index	78.24 %
Environmental Quality Index	66.77 %
Quality of Life Index	72.51 %

(Source: Article in Mumbai Mirror on 11/11/2011 by Sanjay Banergee)

3. The researcher had concluded that 79% respondents had confirmed provision of different civic services by CIDCO/NMMC in their area (Ref Table No. 6.79 on page no. – 201).

4. The researcher had concluded that average 95% respondents confirmed availability of different factors of social infrastructure in their respective nodes (Ref. Table No. 6.83, Page No. 206)

5. The researcher had also concluded that average 88.44% respondents had confirmed that CIDCO is successful in developing Navi Mumbai (Ref Table No. 6.87 on page no. – 210).

6. Navi Mumbai was established by CIDCO with following targets
   a) Population of the city aimed 21,00,000 and
   b) 7,50,000 job opportunities for nearly 1/3 of expected population.
   Following table presents extent of achievement of these targets.

Table 8.8: Comparison of population and employment

Objective	Target for Navi Mumbai Project Area	Proportionate Target for CIDCO area	Actual Achievement of CIDCO Area	% Achived
Population	21,00,000	15,46,000	11,80,598	76.36 %
Jobs	7,50,000	5,15,333	4,28,291	73.10 %

7. Researcher had obtained 20 suggestions / complaints from the respondents which reveal lacunas in development of Navi Mumbai. These suggestions / complaints are discussed in earlier chapter No. – 6

Considering these facts and percentage of actual achievement it can be concluded that "CIDCO has been successful in developing Navi Mumbai subject to the lacunas mentioned above." Hence the hypothesis is proved positive.

2. "There are gaps in projected development plan and actual development of Navi Mumbai."

Navi Mumbai was established by CIDCO as a counter magnate which was intended to stop / reduce influx of population in Mumbai and also to relocate population and industries from Mumbai to Navi Mumbai. CIDCO is responsible to develop required physical, commercial and social infrastructure in Navi Mumbai. CIDCO is developing Navi Mumbai for last 40 years, this period is sufficient for execution of planned development. The analysis for projected and actual development of physical and social infrastructure identified gaps in development. Following is gist of facts obtained from the research.

a. CIDCO partially developed land allotted for development. Out of 14 nodes development of 8 nodes which includes Kharghar, Kamothe, Kalamboli, New Panvel, Dronagiri and Ulwe are still developing. Pushpak node is in planning stage hence planned development of Navi Mumbai is yet to be completed.

b. CIDCO had developed housing facilities for peoples of all income groups and now private sector is also aggressively engaged in developing housing facilities; however projected target for population in planned nodes of CIDCO is yet to be achieved.

c. CIDCO took serious efforts for development of employment opportunities in Navi Mumbai. It successfully relocated APMC and still market from Mumbai to Vashi and Kalamboli respectively. It develops Belapur Node as Central Business District of the city. CIDCO also develop railway stations in Navi Mumbai as commercial place which is a very innovative concept adopted first time in India. It reserves land in Dronagiri node for port based activity and upcoming Navi Mumbai SEZ in spite of these entire efforts employment target in planned nodes is yet to be achieved.

d. Several important projects such as Navi Mumbai International Airport, Navi Mumbai Metro, Nerul – Uran railway line and Navi Mumbai SEZ are yet to be completed.

e. Study also revealed 20 suggestions / complaints from the respondents in respect of development of Navi Mumbai which are discussed in earlier chapter.

Considering the above facts it is concluded that "There are gaps in projected development plan and actual development." Hence this hypothesis is proved positive

8.3 Recommendations

In accordance to the rigorous study of the subject the researcher desires to recommend following.

A] <u>RECOMONDATIONS TO GOVERNMENT</u>

1. **Government should reduce undue political influence on CIDCO**:- CIDCO is a victim of undue political influence, its day to day operations are also affected by political leaders. The worst influence is noticed in case of removal of unauthorised constructions. Political leaders are resisting removal of unauthorised constructions and at the same time they are also trying to regularize these constructions. This undue influence may create slum areas and unplanned growth of the city which will result into Mumbai like situation, hence considering these long term evil effects government should reduce political influence on CIDCO and let it function freely and execute its plans.

2. **Reduce red tapism and evolve a system for speedy approval and completion of the projects :-**

   All the mega projects in Navi Mumbai like NMSEZ, NMIA, Navi Mumbai Metro are delayed due to red tapism and slow process of approvals. Growth of Navi Mumbai is badly affected due to this red tapism and slow process of approval and development. Delay in completion of such big projects results in escalation of its cost. Government should evolve a system for speedy approval and completion for this project.

B RECOMMENDATIONS TO CIDCO / NMMC

1. **Speed up planned development of Navi Mumbai :-**

   The city is under development since 1970. 40 years period is sufficient for overall development of a planned city. The research shows that only 6 out of 14 nodes are fully developed and development process of remaining nodes is still going on. This is a failure of implementation of development plan hence researcher recommends that CIDCO should speed up planned development of the Navi Mumbai

2. **CIDCO should try to generate more employment opportunities in Navi Mumbai:-**

   The research shows that target for job opportunities is yet to be achieved hence CIDCO should try to attract industries to set up their business in Navi Mumbai, for this speedy development Special Economic Zone is essential. CIDCO should also consider other alternatives to boost the employment opportunities in Navi Mumbai.

3. **Improvement of Public Road Transport facilities:-**

   The research shows that residents in Navi Mumbai are not satisfied road transport facilities. CIDCO / NMMC should improve availability of public road transport facilities and it should also improve quality of the service. CIDCO should encourage other modes like car pools, mini buses etc.

4. **Authorities must ensure speedy completion of planned and underdeveloped railway lines**: -

   18.89% respondents are craving for improvement in public transportation system. At present all nodes in Navi Mumbai are not connected by sub-urban railway network. Belapur / Nerul – Uran line is yet to be completed. CIDCO also has planned Manassarovar – Taloja and Panvel – Uran lines but development of these lines is not started. Navi Mumbai Metro is also under construction; hence authorities must ensure speedy completion of these planned and underdeveloped railway lines.

5. **Development of water transport facilities:-**

Navi Mumbai has approx 150 kms of sea cost CIDCO should consider developing water transportation facilities which will connect nodes of Navi Mumbai such facility can be used to connect Navi Mumbai with other locations.

6. **CIDCO should take leading role in construction of affordable houses and commercial properties:-**

During last decade CIDCO's role in construction of residential and commercial properties was negligible. Properties developed by private builders are not affordable. Due to non availability of affordable housing LIG and MIG individuals are unable to migrate into this city, hence CIDCO should take leading role in construction of affordable housing and commercial properties.

7. **Authorities must improve public healthcare facilities** :-

Navi Mumbai has a decent medical infrastructure but it lacks public health care facilities. CIDCO maintains urban health centres in some nodes but there is only one general hospital maintained by NMMC at Vashi. Considering the difficulties faced by residents researcher recommends that, there must be one small public hospital in each node.

8. **Control over encroachments :-**

This is a controversial and complex issue. Unauthorised construction is just like cancer for a city. These unauthorised constructions are responsible for unplanned growth of the city and create undue pressure on its infrastructure. CIDCO and other responsible authorities should act fast on this issue to save Navi Mumbai from this cancer, otherwise Navi Mumbai will also face problems such as inadequate infrastructure, heavy crimes etc.

9. **Redevelopment of Old CIDCO buildings :-**

This is going to be a major problem in future. According to article published in Times of India on 1st Oct. 2013 written by Mr. Sanjay Bannerjee total 750 buildings in NMMC area are dangerous. Out of those 750 buildings 200 were constructed by CIDCO. These aging

buildings are becoming dangerous structures. Researcher had observed frequent accidents related to these buildings. Considering this CIDCO and NMMC both should decide on policy for redevelopment of such buildings.

10. Improvement in cleanliness, waste management and sewerage :-

Researcher had found that respondents were not happy with these systems approx 19% respondents are not happy with it. CIDCO and NMMC should act immediately on this issue and take necessary steps for improvements in cleanliness, waste management and sewerage.

11. Development of Sports complex :-

CIDCO should develop an integrated sports complex, this complex should include facilities for indoor as well as outdoor games. This sports complex could provide opportunity to upcoming talented sportsmen to develop skill. It should encourage of local sports like kabaddi, kho kho, archery, mallakhamb, wrestling and other sports like badminton, table tennis, hockey, football, gymnastics etc.

12. Green City :-

CIDCO and other government authorities should try to develop Navi Mumbai as green city, Efforts should be taken to reduce carbon footprint of the city. CIDCO should prepare guideline for generation of solar energy by using rooftops of buildings, railway stations, skywalks and other suitable places. It should also consider developing tidal energy plant to cater future need of energy.

13. Water Conservation:-

Navi Mumbai has rich water resources and these resources are sufficient to cater requirement of the city, however demand for water is ever increasing hence efforts should be taken for water conservation CIDCO should draw guideline for rain water harvesting, conservation of traditional water resources like ponds, wells etc.

14. Development of Zoo, Museum, science centre in Navi Mumbai:-

Navi Mumbai has a decent basic social infrastructure in the form grounds, playgrounds recreational facilities but city does not have anything to attract tourists.

CIDCO should try to develop zoo, museum and science centre like Nehru planetarium in Navi Mumbai. This development is very essential because development of such places will enhance social infrastructure of the city and at the same time it also boost tourism in the city.

15. CIDCO should make efforts to make Navi Mumbai a smart city:-

Future urban development is all about development of smart cities. The Central government had announced for development of 100 smart cities in the country. Navi Mumbai is already selected as a city to be developed as a smart city. CIDCO should try to provide smart solutions as mentioned in the guidelines of smart city issued by ministry of urban development. Those smart solutions are as follows.

Smart Solutions for Smart City



(Source: Smart cities mission and guidelines)

C] RECOMONDATIONS TO CITIZENS

1. Citizens should establish strong Citizen Forum :-

Navi Mumbai needs a strong non government body to keep check on CIDCO / NMMC. A citizen forum consisting of intellectuals is required. A strong citizen forum can raise concerns over decision made by CIDCO / NMMC in respect of development of city or its day to day operations.

2. Need to create an emotional bond with the city:

Researcher had observed that residents of the city do not have a strong emotional bond with the city. Efforts are required to develop such strong emotional bond which will help to reduce several problems faced by the city.

3. Need to be self disciplined and participating :-

Citizens must realize that CIDCO / NMMC could develop the facilities and citizens are the one who actually uses it, hence while using the facilities citizens must use it prudently. Citizen must become self disciplined which will help to reduce problems faced by city for eg if citizens litter less or dump the garbage properly then cleanliness will be automatically maintained, if a citizen prefer to walk instead of driving pollution will be reduced hence citizen must be self disciplined. Citizens should participate more in managing various aspects of city which affects their life. Citizens should raise their voice in respect of problem faced by them and make sure it is heard by the authority.

-------XOX-------

Bibliography

a] Books

b] Project Report of Nodes

c] Annual Report of CIDCO

d] Different Reports by CIDCO

e] Websites

f] Personal Interview

g] News Paper Articles

a] <u>Books</u>

1. B. Bhattacharya, (2006). *Urban Development in India.* New Delhi : Concept Publishing Company.

2. B. Bhattacharya, (2010). *Urbanization, Urban Sustainability and Future of Cities.* New Delhi : Concept Publishing Company.

3. Bhujangrao Aditham (2009). *Research Methodology for Management and Social Sciences.* New Delhi : Excel Books.

4. Dhaliwal S.S. (2004). *Urban Infrastructure Development in Small and Medium Towns.* New Delhi : Deep and Deep Publications.

5. Gyan Prakash, (2011) *Mumbai Fabbles.*New Jersy, USA. Princeton University Press

6. Jain, A.K., (1990). *The Making of a Metropolis.* New Delhi : NBO.

7. Jain, A.K. (1996) *The Indian Megacity & Economics Reforms.* New Delhi: Management Publishing Company

8. Jain, A.K., (2003). *'Actioning new partnerships for Indian Cities'*, Cities Journal (UK) Vol. 20, No.5, 2003.

9. Kothari C. R. (1990). *Research Methodology Methods and Techniques*, New Delhi : New Age International (P) Limited.

10. Sharma R. N. and K. Sita, (2001) *Issues in Urban Development – A Case of Navi Mumbai*. Jaipur : Rawat Publication.

11. Shaw Annapurna (2004), *The Making of Navi Mumbai*, Hyderabad : Orient Longman

12. Kochhar Sameer and M. Ramchanran (2010) *Building from the Bottom Infrastructure and Poverty Alleviation*. New Delhi : Academic Foundation.

13. Shastri Paromita, (2011) *How India's Small Towns Live or Die*. New Delhi : Academic Foundation.

14. Thirmurty A. M., (1992) *Environmental Facilities and Urban Development in India*. New Delhi : Academic Foundation.

15. Vaz Michael, Kalkoti G. K. and Nair Madhu (2013) *Research Methodology in Commerce*, Mumbai Manan Prakashan.

b] Project Report of Nodes

16. Economics Department, *Revised Project Report of Airoli Node in Navi Mumbai-1997-1998*. CIDCO, Navi Mumbai

17. Economics Department, *Revised Project Report of CBD Belapur Node in Navi Mumbai- 2001*. CIDCO, Navi Mumbai

18. Economics Department, *Revised Project Report of Dronagiri Node in Navi Mumbai- 1994*. CIDCO, Navi Mumbai

19. Economics Department, *Revised Project Report of Ghansoli Node in Navi Mumbai- 1993*. CIDCO, Navi Mumbai

20. Economics Department, *Revised Project Report of Kalamboli Node in Navi Mumbai- 2001*. CIDCO, Navi Mumbai

21. Economics Department, *Revised Project Report of Kopar - Khairane Node in Navi Mumbai- 2001*. CIDCO, Navi Mumbai

22. Economics Department, *Revised Project Report of Nerul Node in Navi Mumbai- 1996*. CIDCO, Navi Mumbai

23. Economics Department, *Revised Project Report of New Panvel Node in Navi Mumbai- 1994*. CIDCO, Navi Mumbai

24. Economics Department, *Revised Project Report of Vashi Sanpada Node in Navi Mumbai- 1997-98*. CIDCO, Navi Mumbai

c] Annual Reports of CIDCO

25. CIDCO, *Annual Reports from 1980-1981 to 2010 – 2011*. CIDCO, Navi Mumbai.

d] Different Reports by CIDCO

26. New Bombay an Outline of Progress : Published by Chief Public Relation Officer, CIDCO Ltd.

27. CIDCO – A Performance Profile ; 1st March, 1989 CIDCO, Navi Mumbai.

28. Economics Department, *A Report on Socio Economics Survey of Households and Establishments in Vashi Node in Navi Mumbai* February 1984: CIDCO, Navi Mumbai

29. Statistics Department *Impact of 12.5% scheme on Socio Demographic and Economics Profile of PAPs under the Navi Mumbai Project*- 2009, CIDCO, Navi Mumbai.

30. Kirlosakar Consultants Ltd. *Socio Economics Profile of Households in Planned Nodes in Navi Mumbai-2010*. CIDCO, Navi Mumbai.

31. Statistics Department, *Wholesale, Retail, Service Industry and Open Markets in Navi Mumbai: Employment, Investment and Turnover – 2009*. CIDCO, Navi Mumbai.

32. Statics Department, *Health Infrastructure, Facilities Personnel and Services in Navi Mumbai-2008* CIDCO, Navi Mumbai.

33. An Overview of Financial Performance of CIDCO since 1970. CIDCO, Navi Mumbai.

34. Statistics Department, *Employment in Service Sector in Navi Mumbai: Government and Private offices -2009* CIDCO, Navi Mumbai.

35. Statistics Department, *Higher and Professional Education in Navi Mumbai- Educational Streams, Infrastructure, Sport Facilities, Student Enrolments and Staff Profile-2010* CIDCO, Navi Mumbai.

36. Statistics Department, *Primary and Secondary Schools in Navi Mumbai: Facilities, Student Enrolments and Performance and Staff Profile- 2010* CIDCO, Navi Mumbai.

37. Economics Section, *Salient Features of Nodes in Navi Mumbai- February 2007* CIDCO, Navi Mumbai.

38. Stastics Department, *Social, Religious and Regional Institutions in Navi Mumbai -2012* CIDCO, Navi Mumbai.

39. Economics Department and Dr. R. N. Sharma, *Socio Economics Survey of Households in Planned Nodes in Navi Mumbai (2000)* CIDCO, Navi Mumbai.

40. Economics Section *A report on The Survey of Industries in New Bombay (1990)* CIDCO, Navi Mumbai.

41. Statistics Department, *Report on Socio – Economic Survey of Households at Vashi Node New Bombay – April 1980* CIDCO, Navi Mumbai.

42. Economics Department, *Project Report on Development of Agricultural Product Markets at Vashi in New Bombay- March 1984.* CIDCO, Navi Mumbai.

43. Dr. P. K. Muttagi (1983) *Workshop on Development plan for Grater Bombay (1981-2001)*

44. Final Report of the Study Group on restructuring Bombay- Bombay Metropolitan Regional Planning Board.

45. Statistics department, *Survey of Industries in Navi Mumbai Region 2007* CIDCO, Navi Mumbai.

e] Websites

46. www.cidco.maharashtra.gov.in

47. www.wikipedia.com

48. www.nmsez.com

f] Personal Interview

49. Dr. Mohan Ninave, Public Relation Officer, CIDCO

50. Mr. Suhas Joshi, Development officer, CIDCO

51. Mr. M. D. Lele, Chief planner, CIDCO

52. Ms. Rita Abbi, Sr. Statistician, CIDCO

53. Dr. L. S. Shaikh, Jr. Statistician, CIDCO

54. Mr. Suhas Gokhale, Ex. Associate Planner CIDCO.

g] News Paper Articles

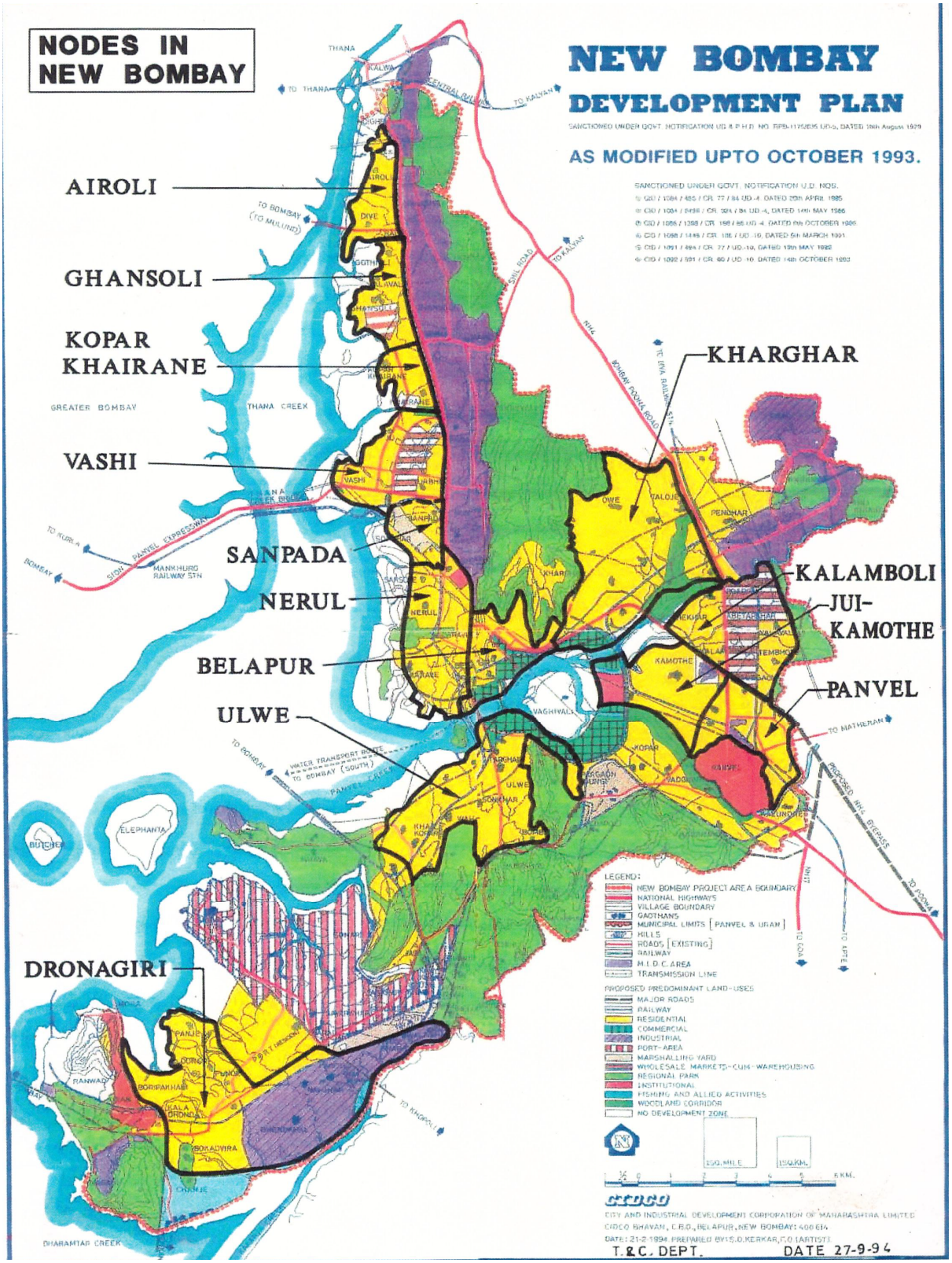
55. Articles in DNA

56. Articles in Navi Mumbai today, supplement of Sakal

57. Articles in Business Standerd

58. Articles in Times of India

Annexure 1


NODES IN NEW BOMBAY
NEW BOMBAY
DEVELOPMENT PLAN
AS MODIFIED UPTO OCTOBER 1993.
AIROLI
GHANSOLI
KOPAR KHAIRANE
VASHI
SANPADA
NERUL
BELAPUR
ULWE
DRONAGIRI
KHARGHAR
KALAMBOLI
JUI-KAMOTHE
PANVEL
THANA
GREATER BOMBAY
THANA CREEK
PANVEL CREEK
ELEPHANTA
DHARAMTAR CREEK
LEGEND:
NEW BOMBAY PROJECT AREA BOUNDARY
NATIONAL HIGHWAYS
VILLAGE BOUNDARY
GAOTHANS
MUNICIPAL LIMITS [PANVEL & URAN]
HILLS
ROADS [EXISTING]
RAILWAY
M.I.D.C.AREA
TRANSMISSION LINE
PROPOSED PREDOMINANT LAND-USES
MAJOR ROADS
RAILWAY
RESIDENTIAL
COMMERCIAL
INDUSTRIAL
PORT-AREA
MARSHALLING YARD
WHOLESALE MARKETS-CUM-WAREHOUSING
REGIONAL PARK
INSTITUTIONAL
FISHING AND ALLIED ACTIVITIES
WOODLAND CORRIDOR
NO DEVELOPMENT ZONE
SQ.MILE
SQ.KM.
CIDCO
CITY AND INDUSTRIAL DEVELOPMENT CORPORATION OF MAHARASHTRA LIMITED
CIDCO BHAVAN, C.B.D., BELAPUR, NEW BOMBAY: 400 614
DATE: 21-2-1994 PREPARED BY: S.D.KERKAR, C.O. (ARTIST)
T.&C. DEPT.
DATE 27-9-94

Airoli Node

1:8,000

Legend

- Railway
- Sector Boundary

Plots

Land_Use

- RES
- RES (12.5%
- SOC
- COMM
- R+C
- SF/ INSTN
- HT-CORRIDO
- OS/G/PG
- PARKING
- PU
- SCHOOL
- SI/WH
- UNDEVL
- OTHER

AIROLI VILLAGE

THANE - BELAPUR ROAD

MULUND - AIROLI BRIDGE

DIVE VILLAGE

1A 1 2 3 4 5 6 7 8 8A 9 10 10A 11 12 13 14 15 16 17 18 19 20

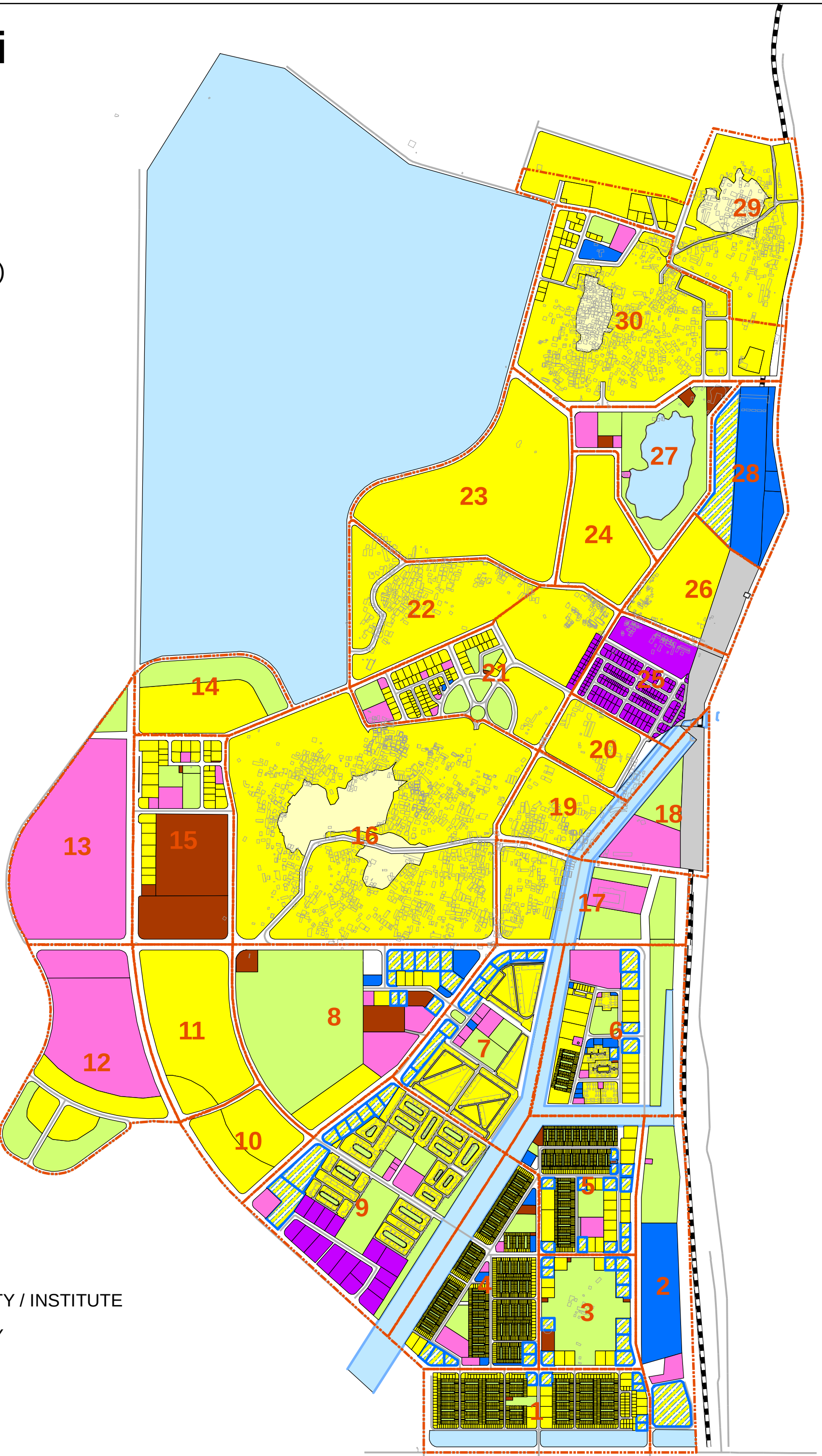
Land Uses shown int his plan are only indicative. For details, please contact Planning Department, CIDCO.

Ghansoli

1:10,000

CIDCO

Planning (DP&GIS)



Legend

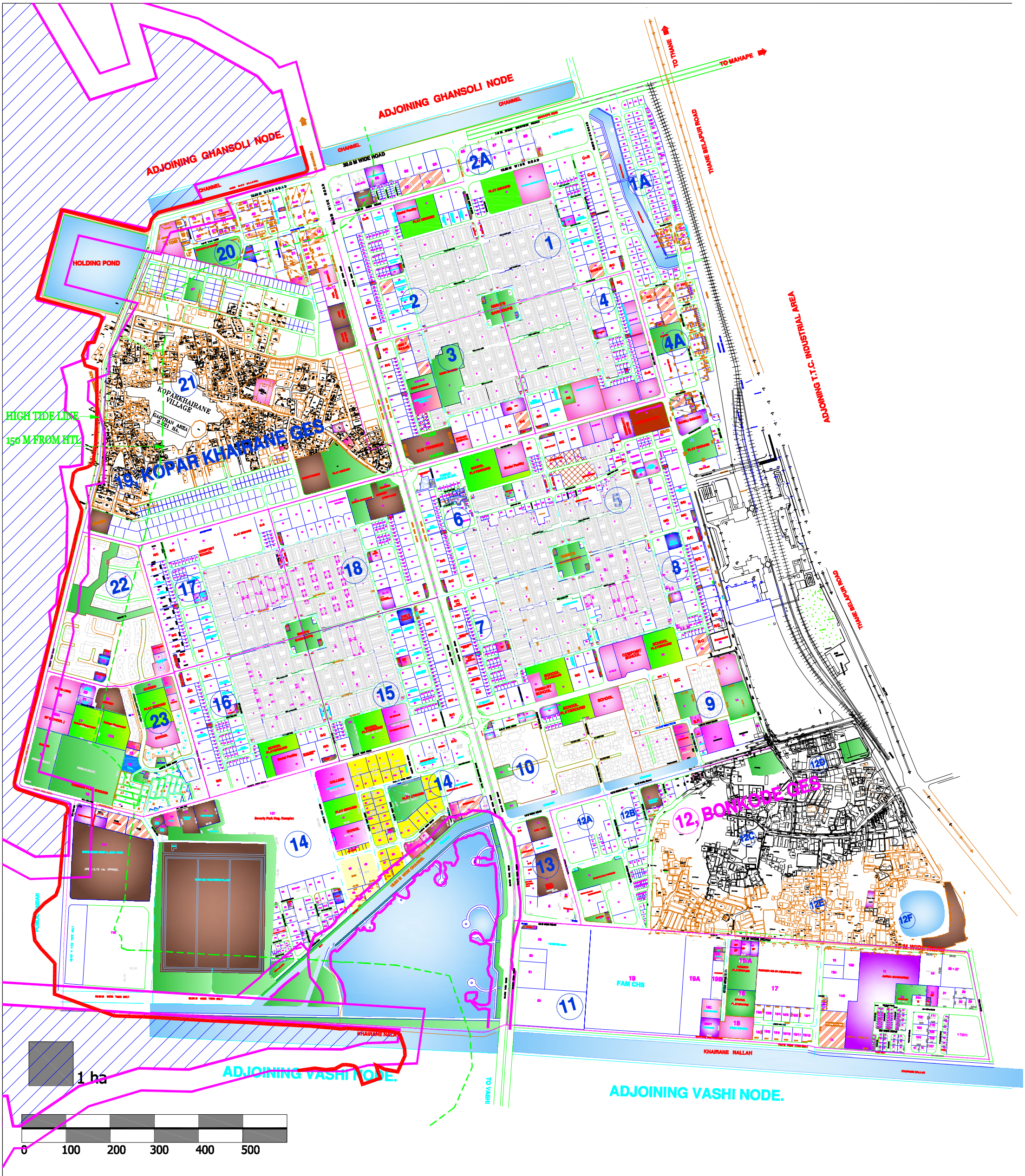
- WaterBody
- Channel
- Railway_Line
- Roads
- Sector_Boundry

Plots

Landuse

- VILLAGE AREA
- RESIDENTIAL
- COMMERCIAL
- RESI+COMM
- SOCIAL FACILITY / INSTITUTE
- PUBLIC UTILITY
- OS/G/PG
- SI/WH
- Railway Corridor

Land Uses shoiwn in this plan are only indicative. For details, please contact Planning Department, CIDCO.



KOPARKHAIRANE NODE

NOTE:-

1. This Plan shall not be used as legal document for any purpose.
2. The features like roads, services, plots etc. are indicative in nature and they are subject to change as per site conditions and requirements.
3. The plots are earmarked with landuses and these are not `RESERVATIONS' as defined in MR & TP Act 1966. In context of permissible landuses within a given *Zone* approved in NMDP, CIDCO has powers to change the landuses as and when required, without attracting any procedure under MR & TP Act 1966. Therefore CIDCO reserves right to modify any feature of the plan accordingly.
4. Final boundary of plots and surrounding features of the plots shall be as per agreement drawing of plots. Only indicative boundaries are marked on plan.
5. Any discrepancy observed in terms of location, plot number, area may be brought to the notice of Planning Department.
6. For this node, CIDCO is NOT the Planning Authority as defined in MR & TP Act 1966. This Plan is as per CIDCO's records only.

N

CIDCO
PLANNING (NORTH)

Vashi

1:13,000

CIDCO

Planning (DP&GIS)

Legend

plot

landuse

- Residential
- Row House
- Bungalow Plot
- Society Plot
- Guest House
- Commercial
- Resi.+Comm.
- Shop cum Godowns
- Storage Plot
- Social Facilities
- School
- College
- Nursing Home
- Health
- Religious Facilities
- Institutions
- Public Utilities
- Open Space
- Service Industries
- Water Bodies

Land Uses shown in this plan are only indicative. For details, please contact Planning Department, CIDCO.

Sanpada

Legend

- Railway Lines
- Roads
- Sector Boundary

Plots

Landuse

- <Null>
- Residential
- Commercial
- Resi/Comm
- S.F
- P.U
- Open Space
- Service Industry

1:8,000

CIDCO

Planning (DP&GIS)

Land Uses shown in this plan are only indicative. For details, please contact Planning Department, CIDCO.

Nerul

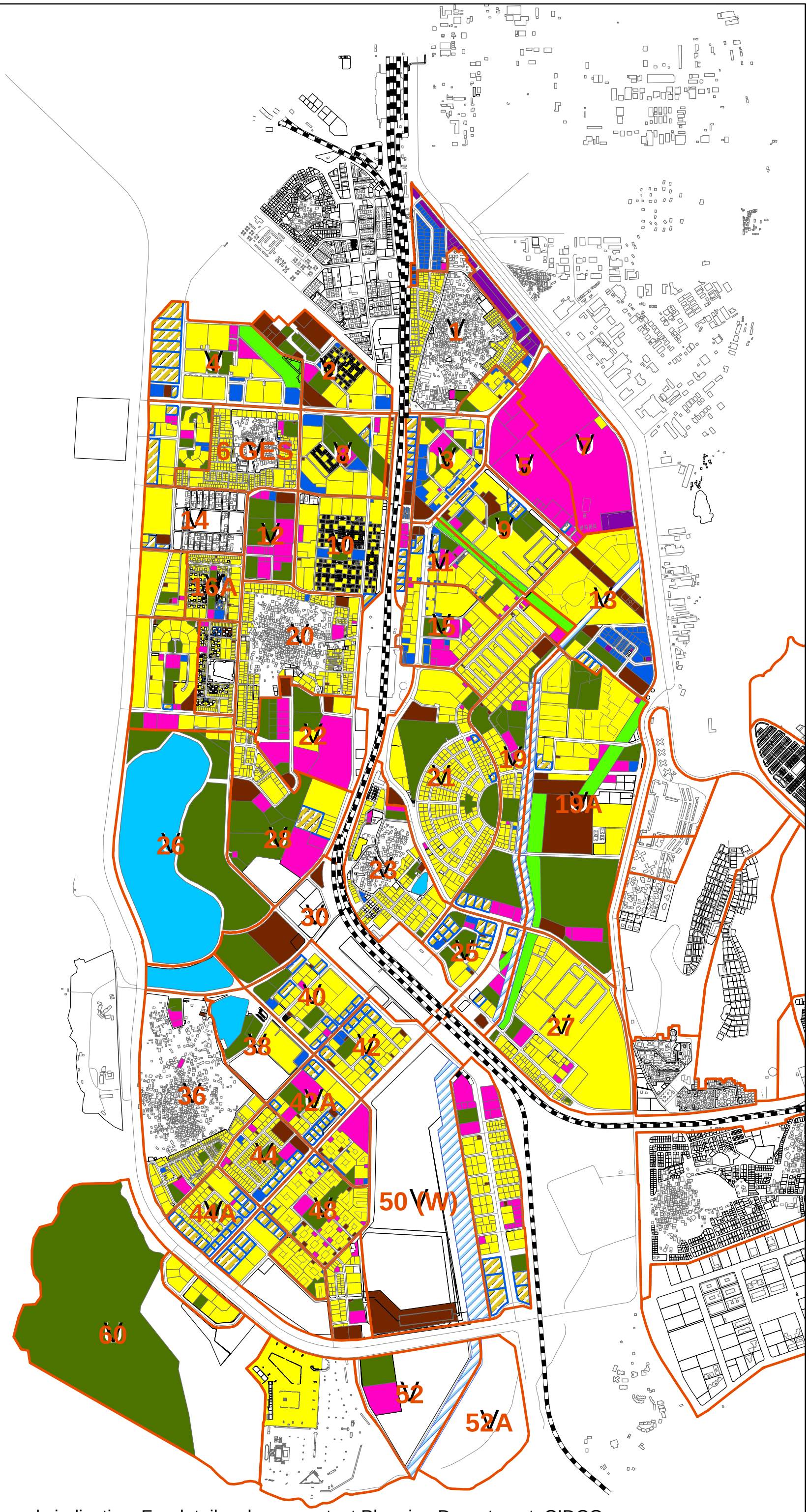
Legend

- Railwayline
- Roads
- Sector Boundry

Plots

Landuse_

- Residential
- Comm+Resi
- Commercial
- Public Utility
- Social Facility
- SI/WH
- OS/G/PG
- Waterbody
- Channel
- Corridor



1:16,000

CIDCO

Planning (DP & GIS)

Land Uses shown in this plan are only indicative. For details, please contact Planning Department, CIDCO.

Belapur

1:12,000

CIDCO

9N
8A
8
6
1B
3A
2
1
1A
3
4
5
7
6
10
24 & 25
23 & 26
30 & 31
27
13
12
11
19 & 20
15A
14
15
32
Text

Legend

- Nodal Boundary
- Sector Boundary
- Railway Line
- Road

Plots

Landuse

- RESIDENTIAL
- 12.5% SCHEME
- COMMERCIAL
- COMM+RESI
- PUBLIC UTILITY
- SOCIAL FACILITY
- OS/G/PG
- WATER BODY
- <Null>
- Buildings

Land Uses shown in this plan are only indicative. For details, please contact Planning Department, CIDCO.

CIDCO Ltd.

CITY AND INDUSTRIAL DEVELOPMENT CORPORATION OF MAHARASHTRA LIMITED. C.B.D., BELAPUR NAVI MUMBAI

DATE : JAN 2010

SCALE : 0 — 500

AREA=1 HA.

PLAN OF KHARGHAR NODE

THE LANDUSES ARE INDICATIVE

THEY ARE NOT "RESERVATIONS" AS DEFINED IN MRTP ACT. 1966.

BASED ON TIME-TO-TIME REQUIREMENT LANDUSES ARE SUBJECT TO CHANGE.

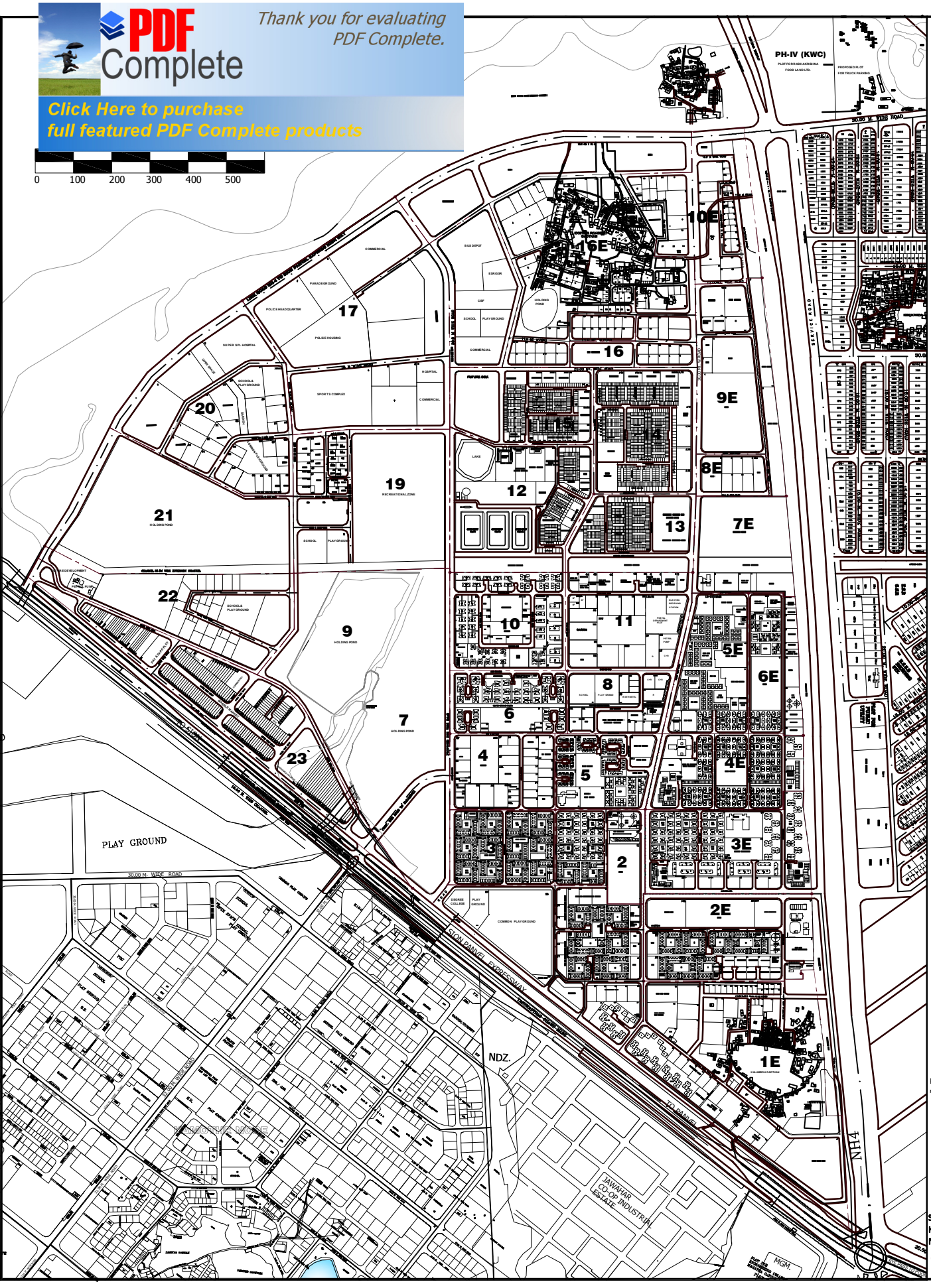
"THIS IS A STRUCTURE PLAN, DETAILED LAYOUTS, LANDUSES INDICATED, PLOT SHAPE, SIZE, AREA, DIAMENSIONS ETC., ARE SUBJECT TO CHANGE. PLOTS SHOWING LAND USES ARE EARMARKED FOR CERTAIN USE AND ARE NOT RESERVATIONS PER SE"

INDEX :

- 12.5% SCHEME AREA=135.0 HA
- RESIDENTIAL AREA=286.50HA — 24.30%
- COMMERCIAL & RESI+COMM AREA=128.40HA — 7.40%
- INSTITUTIONAL AREA=123.69HA — 7.13%
- OPEN SPACE AREA=235.05HA — 13.56%
- PUBLIC UTILITY AREA=400.04HA — 23.13%
- AREA UNDER HIGH FSI ZONE AREA=186.84HA
- IDENTIFIED AREA FOR MTHL TDR AREA=45.32HA
- GOLF COMPLEX AREA=30.0HA
- MANGROVE

NOTE: THIS MAP IS INDICATIVE AND ONLY FOR INFORMATION PURPOSE.

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Notes:

1. This Plan is issued for your information and should not be used for any other purpose.
2. The locations are indicative are subject to modifications as per site conditions, planning requirement and future developments.
3. Final boundary and area of plots shall be as per agreement drawing of individual plots. Only indicative boundaries are marked on plan and they are not to be measured.
4. The uses indicated are not satutory reservations as per MR&TP act 1966.
5. CIDCO reserves right to modify the location & area of the plot, facilities and use.
6. All proposed development is subject to CRMP and other applicable directives, orders and regulation from competent authority.

LEGEND

- RESIDENTIAL
- C+R
- COMMERCIAL
- PUBLIC UTILITY
- SOCIAL FACILITY- RELIGIOUS
- SOCIAL FACILITY- HEALTH
- SOCIAL FACILITY- EDUCATION
- SOCIAL FACILITY- OTHERS
- OPEN SPACE - PLAYGROUND
- OPEN SPACE - GARDEN
- 12.5% SCHEME AREA
- HFSI
- WATER BODY
- 12.5% SCHEME BOUNDARY
- SECTOR BOUNDARY

12.5% Boundary
Sector Boundary
Municipal Boundary
Gaothan Boundary

REVISION :

MODIFICATION MADE ON DT.13/03/2008.

SCALE 1: N

DATE : 08/07/2008

SR. DRAUGHTSMAN :-

ASSTT. PLANNER

ASSO. PLANNER

SR. PLANNER (S)

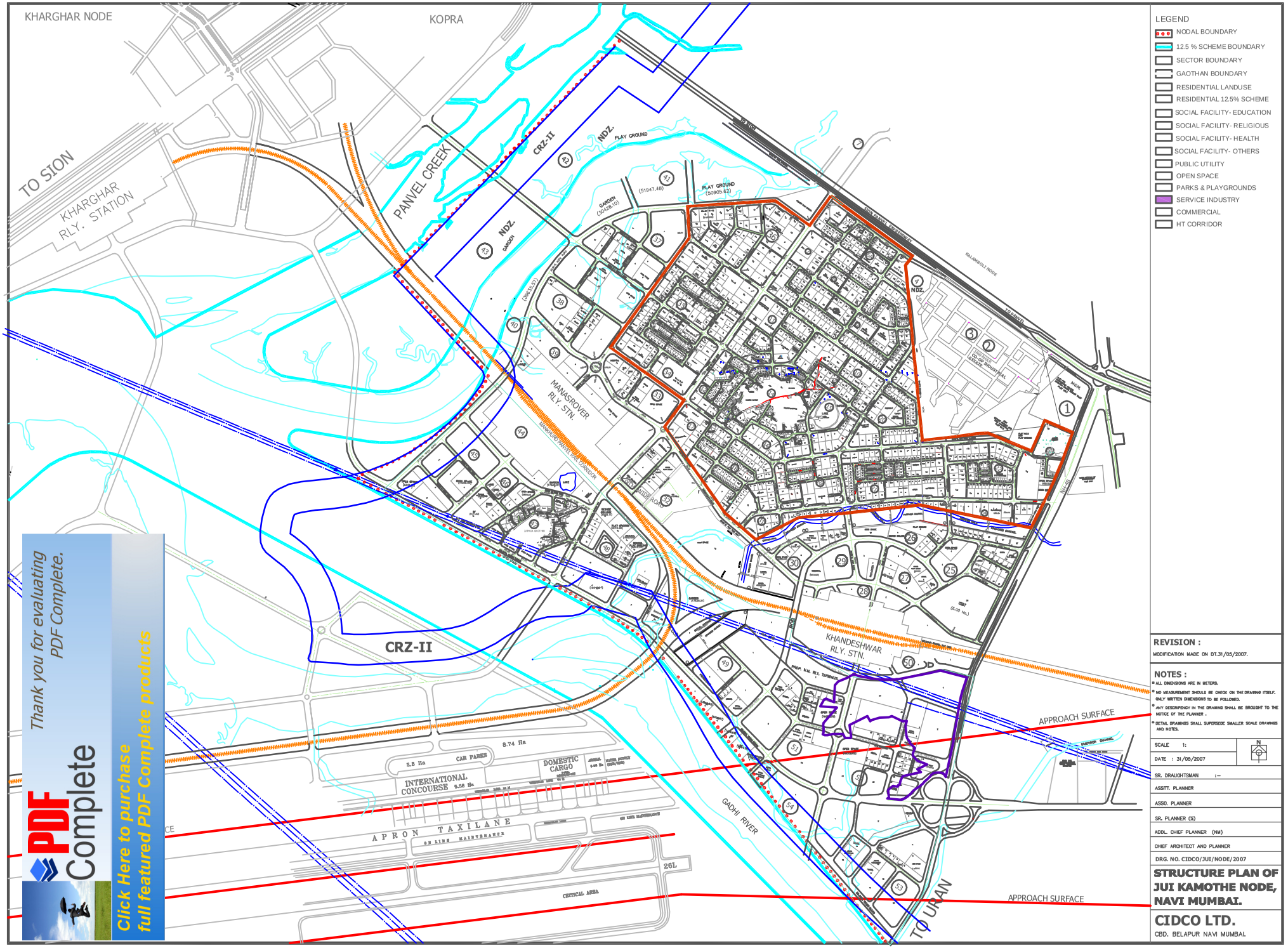
ADDL. CHIEF PLANNER (NM)

CHIEF ARCHITECT AND PLANNER

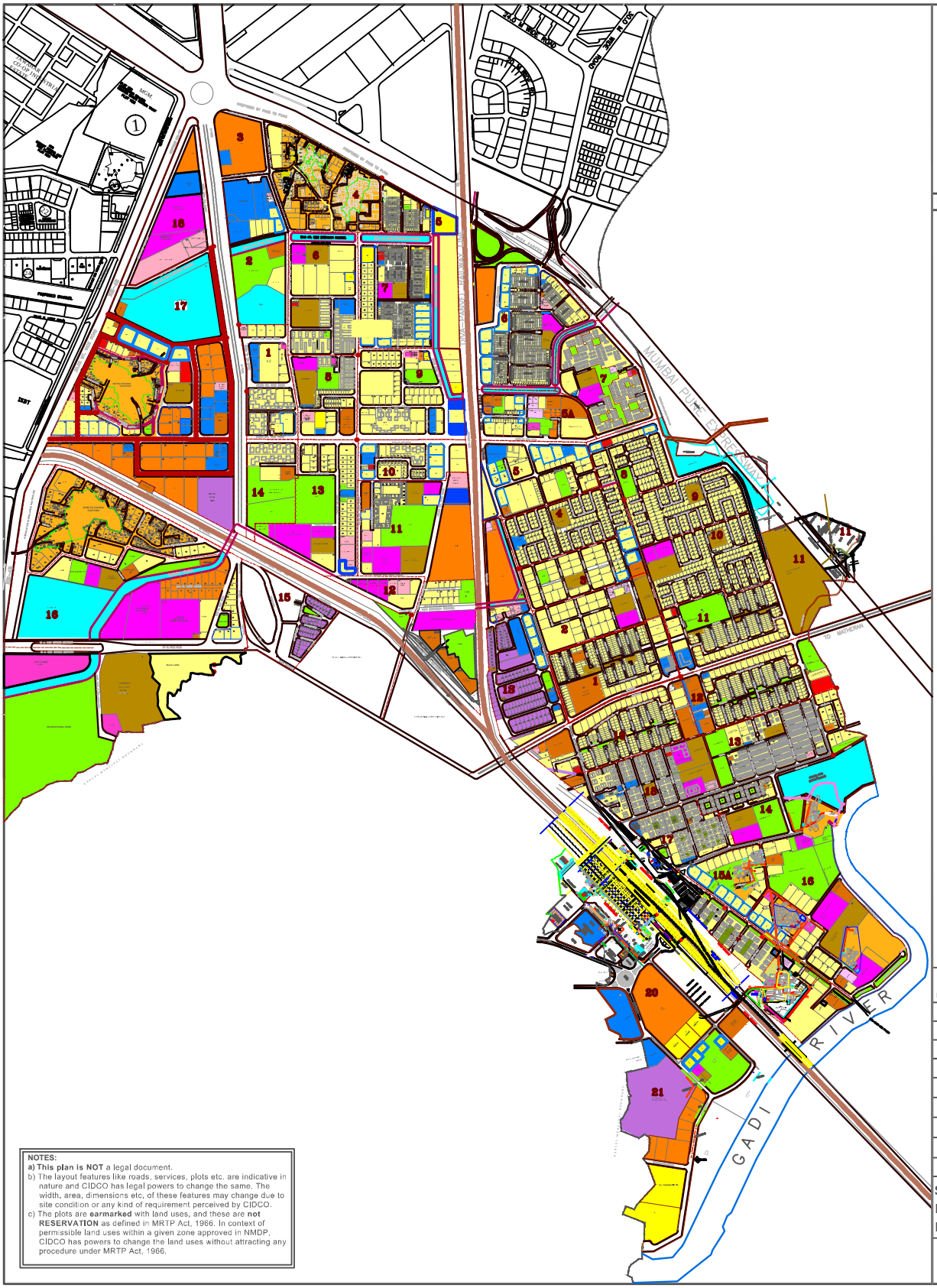
DRG. NO. CIDCO/PAN/NODE/2007

STRUCTURE PLAN OF KALAMBOLI NODE, NAVI MUMBAI.

CIDCO LTD.



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5. CIDCO reserve right to modify the location & area of the plot, facilities and use.

6. All proposed development is subject to CZMP and other applicable directives, orders and regulation from competent authority.

LEGEND

- RESIDENTIAL
- COMMERCIAL
- RESI+COMM
- HFSI
- PUBLIC UTILITY
- SOCIAL FACILITY- RELIGIOUS
- SOCIAL FACILITY- HEALTH
- SOCIAL FACILITY- EDUCATION
- SOCIAL FACILITY- OTHERS
- INDUSTRIAL
- OPEN SPACE - PLAYGROUND
- OPEN SPACE - GARDEN
- GAOTHAN AREA
- WATER BOUNDARY
- NAVI MUMBAI BOUNDARY
- SECTOR BOUNDARY
- 12.5% BOUNDARY
- GAOTHAN BOUNDARY

REVISION :

MODIFICATION MADE ON DT.28/05/2009.

SCALE 1:

DATE : 06/08/2007

SR. DRAUGHTSMAN :-

DEPUTY. PLANNER :- PRANJALI MANE

ASSO. PLANNER

SR. PLANNER (S)

ADDL. CHIEF PLANNER (NM)

CHIEF ARCHITECT AND PLANNER

DRG. NO. CIDCO/PAN/NODE/2007

STRUCTURE PLAN OF PANVEL (E & W) NODE, NAVI MUMBAI.

CIDCO LTD.

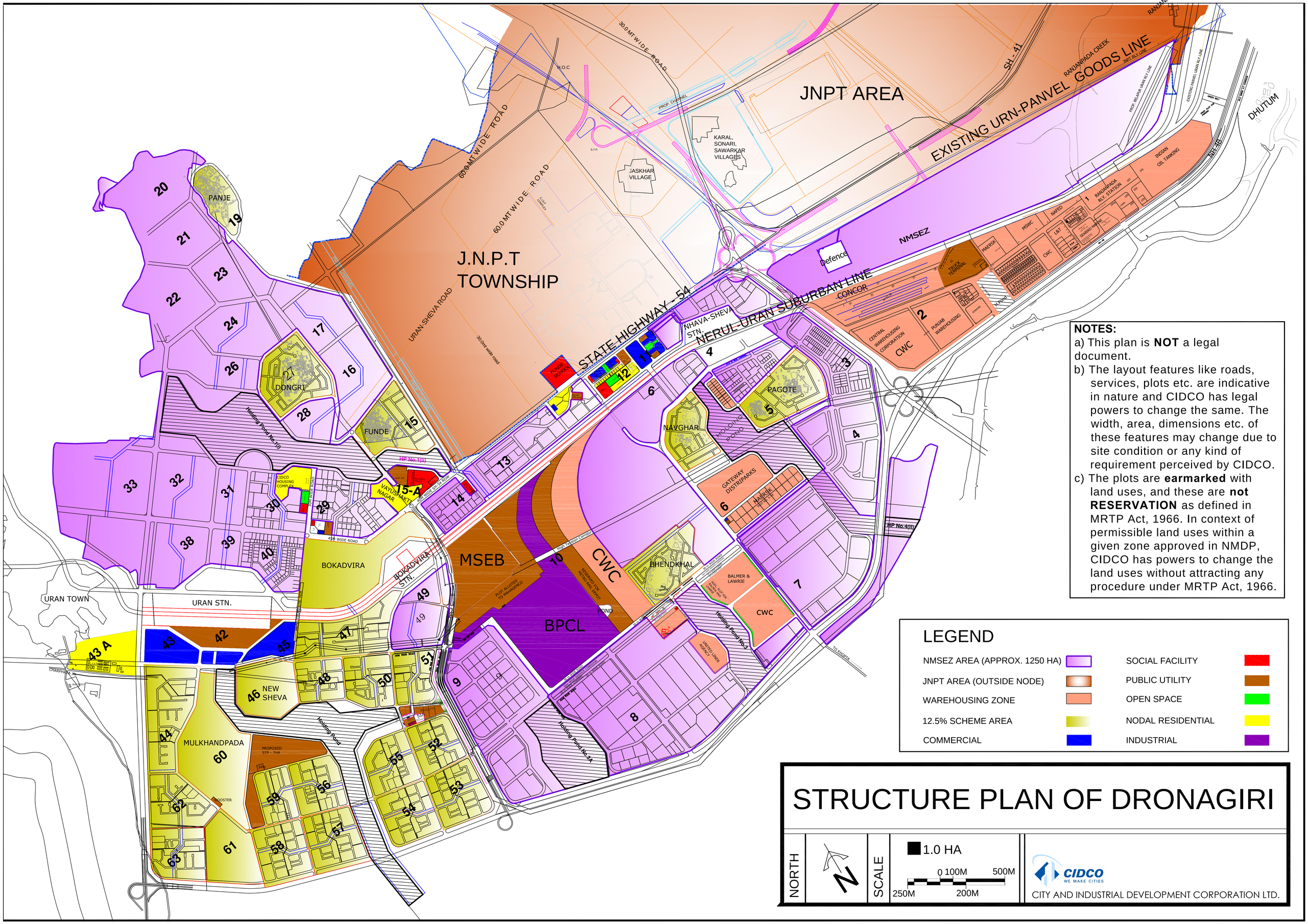
CBD. BELAPUR NAVI MUMBAI.

NOTES:

a) This plan is NOT a legal document.

b) The layout features like roads, services, plots etc. are indicative in nature and CIDCO has legal powers to change the same. The width, area, dimensions etc, of these features may change due to site condition or any kind of requirement perceived by CIDCO.

c) The plots are **earmarked** with land uses, and these are **not RESERVATION** as defined in MRTP Act, 1966. In context of permissible land uses within a given zone approved in NMDP, CIDCO has powers to change the land uses without attracting any procedure under MRTP Act, 1966.



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LEGEND

NMSEZ AREA (APPROX. 1250 HA)		SOCIAL FACILITY	
JNPT AREA (OUTSIDE NODE)		PUBLIC UTILITY	
WAREHOUSING ZONE		OPEN SPACE	
12.5% SCHEME AREA		NODAL RESIDENTIAL	
COMMERCIAL		INDUSTRIAL	

STRUCTURE PLAN OF DRONAGIRI

NORTH

SCALE

1.0 HA

0 100M 500M

250M 200M

CIDCO WE MAKE CITIES

CITY AND INDUSTRIAL DEVELOPMENT CORPORATION LTD.

NMSEZ

NMSEZ

NMSEZ

PROPOSED SEZ

PROPOSED INTERNATIONAL AIRPORT

747-400

TO PROP. AIRPORT

PROPOSED MTHL CASTING YARD

PROPOSED MTHL CASTING YARD

PROPOSED MTHL CASTING YARD

25

PROPOSED REHABILITATION SCHEME FOR AIRPORT PAPs

24

PROPOSED REHABILITATION SCHEME FOR AIRPORT PAPs

REGIONAL PARK ZONE

JAWLE

JAWAL MALE

VAHAL

ULWE

CREEK

KOMBADBHUJE

TARGHAR

Belapur

PROP. TARGHAR RLY. STN.

RLY. STN.

MOHA

UTILITIES - STP (PROPOSED)

UTILITIES - STP (PROPOSED)

UTILITIES

MORAVE

PROPOSED HOUSING

BAMANDONGRI

LANATI HOUSING SCHEME PLOT NO.2

SHELGHAR

PROPOSED SPORTS COMPLEX / STADIUM PLOT NO. 1&2

PROPOSED HOUSING

SHIVAJI NAGAR

KOPARKHAIRANE

GAVAN

MTHL CASTING YARD

PROPOSED MTHL ALIGNMENT

60.0 mt wide coastal road

15.00 mt wide road

23

19

17

16

15

18

21

20

19A

16A

14

1

6

8A

13

2

5

9

22

8

12

3

4

① 21.13 ha

NMSEZ

NMSEZ 7

② 38.28 ha

NMSEZ 9A

10B

11

10

③ NMSEZ 7.10 ha 10A

④ 13.53 ha

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d) Area under 12.5% scheme is tentative and subject to change.

SCALE

1.0 Ha

500M 100M 0 100M 500M

NORTH

LEGEND

NMSEZ AREA

MTHL CASTING YARD

12.5% SCHEME AREA

COMMERCIAL

SOCIAL FACILITY

PUBLIC UTILITY

OPEN SPACE

NODAL RESIDENTIAL

STRUCTURE PLAN OF ULWE NODE

CIDCO WE MAKE CITIES

CITY AND INDUSTRIAL DEVELOPMENT CORPORATION LTD.

Questionnaire for Navi Mumbai Residents

1 **Name :-**

2 **Address :-**

3 **Occupation :-** Service / Business / Pro ession / Student
Housewi e / Retired

4 **Age :-**

5 **Gender :-** Male / Female

6 **Leaving in Navi Mumbai Since : -** _____

7 **No. of years residing in Navi Mumbai :-** _____

8 **Location of Workplace :-** _____

9 **Mark your preference for residing in Navi Mumbai (1 – 9)**

Near to workplace ☐ Good education ☐ Well developed city ☐
Good connectivity with Mumbai ☐ good quality o li e ☐
A ordable Housing ☐ Ancestral place ☐
low cost o living ☐ other ☐

10 **Facilities provided by CIDCO in your area (√ / x)**

Internal Roads ☐ Waste management ☐ water ☐
Sewage Management ☐ Healthcare acilities ☐ Education ☐
other ☐

11 **Does your area has the following (√ / x)**

Garden ☐ Playground ☐ Primary School ☐
Secondary School ☐ Shopping place ☐ College ☐
Cultural / Community Centre ☐ Healthcare Facilities ☐

12 **Do you think CIDCO is successful in developing Navi Mumbai**
Yes / No

13 **Any other specific suggestion for development and maintenance :-** _____

------xox-------