

Table no.5.12 - Revised Framework for Action (Alternative II)

Sr. No.	Zone	OD families as per survey	OD Population as per survey	IHHL toilets constructed by Zone	IHHL toilets by CSR	OD families covered	Balance OD families for individual toilets	Estimated cost of individual toilets (Rs. Lakhs)	Requirement of CT based on slum population	Estimated cost of CT based on floating population (rs. Lakhs)	Requirement of PT based on floating population	Estimated cost of PT based on floating population (Rs. In lakh)	Total estimated cost (InRs. Lakhs)
1	BELAPUR	492	2460	92	0	92	400	68	14	42	126	378	488
2	NERUL	241	1205	22	0	22	219	37.23	230	690	2	6	733.23
3	VASHI	86	430	0	0	0	86	14.62	Nil	0	114	342	356.62
4	TURBHE	905	4525	17	0	17	888	150.96	1247	3741	118	354	4245.96
5	KOPARKH AIRNE	949	4745	38	0	38	911	154.87	279	837	128	384	1375.87
6	GHANSOLI	252	1260	41	0	41	211	35.87	1146	3438	109	327	3800.87
7	AIROLI	179	895	67	0	67	112	19.04	1332	3996	64	192	4207.04
8	DIGHA	294	1470	109	0	109	185	31.45	1126	3378	74	222	3631.45
		3398	16990										18839.04

5.4 Comparison of alternative I and II

As mentioned in preceding chapter the NMMC desired to prepare FFA strategy for achieving **ODF City** status by December 2019. The **Table No. 5.6** depicts individual toilet seats need to be constructed to achieve **ODF City** as compared (Alternative I). The **Table No.5.12** depicts cost of all types of toilet seats need to be constructed to achieve **ODF City** as compared (Alternative II). The comparison of alternative I and II is given in **Table No.5.13** given below.

Table No. 5.13–Comparison of Alternatives I and II

Name of Wards		Belapur	Nerul	Vashi	Turbhe	Koparkhairane	Ghansoli	Airoli	Digha	Total
No. of Individual Toilets	Alternative I	1049	3260	4400	2700	5300	6248	3750	350	27057
	Alternative II	400	219	86	888	911	211	112	185	3012
Cost of individual toilets	Alternative I	209.80	652.00	880.00	540.00	1060.00	1250.00	740.00	70.00	5401.80
	Alternative II	68	37.23	14.62	150.96	154.87	35.87	19.04	31.45	512.04
No. of community toilets	Alternative I	14	230	NIL	1247	279	1146	1433	1126	5475
	Alternative II	14	230	Nil	1247	279	1146	1332	1126	5374
Cost of community toilets	Alternative I	42.00	690.00	NIL	3741.00	837.00	3438.00	3996.00(4299)	3378.00	16121.00
	Alternative II	42.00	69.00	Nil	3741.00	837.00	3438.00	3996.00	3378.00	16122.00
No. of public toilets	Alternative I	124	NIL	113	117	127	108	63	73	719
	Alternative II	126	1	114	118	128	109	64	74	735 (including 10 Her Smart Toilets)
Cost of public toilets	Alternative I	372.00	Nil	339.00	351.00	381.00	324.00	189.00	219.00	2175.00
	Alternative II	372	3	339	351	381	324	189	219	1878
No. of special toilets	Alternative I	2	2	1	1	1	1	1	1	10
	Alternative II	2	2	1	1	1	1	1	1	10
Cost of special toilets	Alternative I	40.00	40.00	20.00	20.00	20.00	20.00	20.00	20.00	200.00
	Alternative II	40.00	40.00	20.00	20.00	20.00	20.00	20.00	20.00	200.00

5.5. Discussion with NMMC on 21st September 2016:-

The alternative I and II was explained to NMMC and the basis for preparing quantification and cost of various items was also narrated. The NMMC felt that the assumption in regard to existing toilets in villages was wrongly assumed while discussing and submitting the secondary data in May – June 2016. It was further informed that there is no necessity of individual toilet in villages and the cost of these individual toilets need not be taken into account while working of the cost of alternative I and II. Nevertheless the AILSG Consultants argued that even though the villagers not having individual toilet are using the community toilet it is expected that the villagers should construct individual toilet wherever the space is available. The cost of these individual toilets is to be borne by villagers without availing of SBM funds. However the NMMC may examine the feasibility of giving permission to construct the individual toilets. It was thereafter decided to work out cost estimates based on the data provided by NMMC on 21st September 2016 which is given below:

**Table No.5.14 -
Information of Public Toilets – Abstract**

Sr.No.	Zone	No of Toilet Blocks	Public Uses					Total
			Female	Male	Divang	Children	e-toilet	
1.	Belapur	59	320	349	17	19	2	707
2.	Nerul	51	258	277	5	21	0	561
3.	Vashi	34	170	163	9	13	0	355
4.	Turbhe	48	266	300	9	11	0	586
5.	Kopar-Khairane	55	304	311	1	4	4	620
6.	Ghansoli	85	460	495	6	37	3	1001
7.	Airoli	55	311	315	7	11	1	645
8.	Digha	66	404	397	1	1	0	803
	Total	453	2493	2607	55	117	10	5278

Source :Navi Mumbai Municipal Corporation implementation Plan

**Table No.5.15 -
Information of Public Toilets
Abstract Community Toilets (CT)**

Sr.No.	Zone	No of Toilet Blocks	Public Uses					Total
			Female	Male	Divang	Children	e-toilet	
1.	Belapur	43	280	307	15	17	0	619
2.	Nerul	20	114	125	3	15	0	257
3.	Vashi	16	117	104	9	13	0	243
4.	Turbhe	32	215	235	8	10	0	468
5.	Kopar-Khairane	44	290	293	1	4	0	588
6.	Ghansoli	80	446	478	5	37	0	966
7.	Airoli	31	135	133	0	0	0	268
8.	Digha	66	404	397	1	1	0	803
	Total	332	2001	2072	42	97	0	4212

Source :Navi Mumbai Municipal Corporation implementation Plan

**Table No.5.16 -
Information of Public Toilets
Abstract Community Toilets (PT)**

Sr.No.	Zone	No of Toilet Blocks	Public Uses					Total
			Female	Male	Disable	Children	e-toilet	
1.	Belapur	16	40	42	2	2	2	88
2.	Nerul	31	144	152	2	6	0	304
3.	Vashi	18	53	59	0	0	0	112
4.	Turbhe	16	51	65	1	1	0	118
5.	Kopar-Khairane	11	13	15	0	0	4	32
6.	Ghansoli	5	14	17	1	0	3	35
7.	Airoli	24	176	182	7	11	1	376
8.	Digha	0	0	0	0	0	0	0
	Total	121	491	532	13	20	10	1065

Source :Navi Mumbai Municipal Corporation implementation Plan

Considering 2011 census population of slums and SBM norm the total number of community seats required works out to 5684. The community toilets at present for all the 8 zones are 4212 numbers. (Table No.5.15). The public seats for a floating population of 2,

00,000 works out to 1,000 no. with norm of average 200 users per seat. The **Table No.5.16** in regard to existing public toilets mentioned the existing public toilets as 1065 numbers. Hence, the number of toilets in NMMC required for the condition of 2021 already complies with the requirements. Considering this scenario as inform by NMMC in 21st September 2016, the fund requirement for 1472 community toilets seats with NMMA type works out to Rs.4416 Lakhs. The summarising these requirements the alternative III works out as below:

No. of community required: - 1472

The cost of Construction for these seats: - Rs.4416 Lakhs

No. of public seats required: - Nil

Cost of public seats required: - Nil

The no. of individual toilets is required in villages is to be considered: - Nil

This is because the villagers are using the community toilets for the present and expected to construct the individual toilets wherever feasible at their cost without using SBM funds. The individual toilet requirement in slums can be considered as 10% of total requirement of 5684 numbers which works out to 570 individual toilets in slums. The consultant have considered unit rate of Rs.0.20 Lakhs per seats of the individual toilet as mentioned in the earlier chapters. Hence, the cost of individual toilets in alternative III therefore, works out to Rs.114 Lakhs.

5.6. Revised alternative III (based on discussion with NMMC on 24th October 2016)

The "Alternative III" which was based on the discussion with NMMC on 21st September 2016 was further discussed with NMMC on 24th October 2016 and 6th December, 2016. The NMMC during the discussion provided following information:

- A) As per the self declaration by the Hon'ble Mayor and Commissioner, NMMC (Annexure V) total 111 wards have become ODF, following the procedure prescribed by MOUD, GoI and UDD, GoM.
- B) NMMC has proposed to provide toilet facilities to all the 3398 Households surveyed who do not have access to individual toilet / CT / PT toilet. It is revealed during the verification of the applications received from the households surveyed, that out of 3398 households, it is possible to construct 2325 IHHL. For remaining 1073 household it is not possible to construct individual toilet due to technical reasons and non submission of required documents. Hence, for 1073 household NMMC is providing toilet facilities in the form of Community Toilet seats. NMMC had organized mass sanitation campaign in slum areas. During this campaign no. of households have come forward on their own to construct individual toilet. NMMC has decided to provide individual toilets for these households. Though, they are in non OD area, but using community / public toilet. Thus, NMMC will construct and complete the target of 3398 IHHL target. This will definitely help in increasing the percentage of coverage of individual toilet in urban poor areas, and moving towards "ODF +"

- C) 95% area of NMMC is covered by Sewerage system. NMMC has published tender for construction of sewerage system in part of the area. So that this area will also be available to connect the existing toilets to the sewerage system, and moving towards “ODF +”
- D) The Shelter Associates is constructing individual toilets under CSR funds in the CBD Belapur / Airoli / Ghansoli and Digha. The Shelter Associates has surveyed total 6451 households in these area out of that 772 households have own individual toilets. 762 households cannot connect to existing drainage line for some technical reasons. 1620 Households can be connected to the proposed drainage line. Presently, Shelter Associates have completed construction of 169 individual toilet in urban poor area. Additional 32 toilet will be constructed soon. As NMMC has proposed to construct sewerage system in remaining part of NMMC area. Shelter Associates can complete remaining 2238 individual toilet in urban poor areas. This will help NMMC moving towards “ODF +” / “ODF ++”.

5.7. Summary Statement for alternatives I, II & III:-

The table below depicts the summary of alternatives for Capital Cost considerations.

Table No.5.17 - Summary of Alternative I, II and III

Sr.No.	Item	No. of Toilet Seats	Cost (Rs.Lakhs)
1	Individual Toilet		
	Alternative –I	27057	5401
	Alternative –II	3012	512
	Alternative –III	570	114
2	Community Toilet		
	Alternative –I	5475	16121
	Alternative –II	5375	16121
	Alternative –III	1472	4416
3	Public Toilet		
	Alternative –I	719	2175
	Alternative –II	719	2175
	Alternative –III	Nil	Nil

5.8. Emerged Residential Patterns in NMMC

NMMC residential area is divided into three patterns as detailed below .

- i) Nodal area
- ii) Village area
- iii) Slum area

The Nodal area is planned area having individual toilets for all the households in that area. Thus in Nodal area 100% Households have access to own individual toilet facilities. Households in 30 villages are having access to individual toilets / CT and PT toilets. These village areas are included in the wards that have been declared ODF following the prescribed procedure. Hence, the question of providing toilet facilities in appropriate number to slum area is required to be focused. NMMC has 48 slums having population of 2, 09,025. Out of this population 16,990 (number of OD persons surveyed by NMMC) is being provided with individual toilet facility. So the remaining population of 1, 92,035 need to be provided community toilet seats. Consultants have considered average norm of a 35 persons per individual seats. Accordingly, 5486 community toilet seats are required. Existing community seats are 4212. Therefore, total 1274 additional community toilet seats are required. NMMC has proposed to construct 719 community toilet seats. This will provide 4931 community toilet seats as against required 5486 seats. Shelter Associates has already constructed 169 individual toilet seats in slum area. So there will no shortfall for community toilet seats after completion of a proposed 719 community toilet seats. As against norm of 35 persons per seat, there will be 38 persons per seats.

5.9. NMMC has a floating population of a 2, 50,000 approximately. Consultant has considered 200 persons per public toilet seats. Accordingly, total 1250 public toilet seats are required. Presently, 1065 public toilet seats are available. In addition to that 58 public toilet seats are proposed to be constructed by NMMC. **Thus total 1123 public toilet seats available for the floating population. These seats are sufficient as per the norms, as the floating population of NMMC area is mostly visiting to the government offices / industrial offices/ educational institutions and other institutions which have their own public toilets.**

5.10 Budget provision for construction of individual /community / public toilet seats : NMMC has Budget provision of Rs.30 crores for construction of community / public toilet seats. Provision of Rs.2 crores for individual household toilet seats has been made in Budget in NMMC. The Budget provision is being enhanced from Rs. 2 to Rs. 6 crores by way of re-appropriation.

So far as Public toilets are concerned, Reliance Foundation is providing Corporate Sector Responsibility [CSR] fund for construction of “Smart Her Toilets”.

As reported by NMMC Officials, these provisions apart some provisions for capital and O & M expenditure from earlier “P” budgets have remained unutilized, which may be available and utilized for the works to be carried out under SBM

In consultation with WMRC, AILSG, NMMC has developed contract agreement in which the beneficiaries will have to declare the cost of maintenance as well as electricity charges will be borne by them and they will not indulge into open defecation.

The NMMC, in consultation with WMRC, AILSG, has also developed proto-type ‘Vasti Maintenance Policy’ (Annexure III), which covers the provision regarding day to day staff engagement services, benchmarking services, intensive penalty, Power Consumption and

Audit, Water Consumption and Audit as to monitored effectively with the supervisory control of Sanitation / Engineering Department.

NMMC SMA Cell has also prepared documents for comprehensive Operation and Maintenance of PTs including E-Toilets and other Modular Toilets as well as CTs which are not covered in Vastti maintenance policy till date.

Chapter 6 Operation and Maintenance

6.1 Alternative A

The provision of necessary number of toilets is particularly in case of community toilets and public toilets will help to achieve desired result in respect of ODF particularly in slums and public places. The sustainability of use of these toilet seats on a proper and continuous basis by the user is an important factor. It is suggested that the NMMC may opt for operating these toilet units in (CT and PT) by appointing a central agency. The appointment may be done by inviting tender covering the following aspects to be carried out by the appointed operator.

6.1.1 The operator shall carry out all facility operation in accordance with good operating practices, as set out in this type –

- i. Operating all CT/PT including e-toilets, she – toilets (existing designated and may change in future), smart toilets, modular toilets, urinals, baths etc. As per tender document round the clock 24X7 hours without fail and shall be ensured that all seats and facilities shall be available and accessible all the time.
- ii. Daily cleaning / sweeping of the toilet premises inside out round the clock such as to maintain odour free and hygienic conditions by using approved cleaning agents, sanitizers and air fresheners. The record of all the time consumables shall be maintained all the time.
- iii. Watch and ward by providing security / caretaker for all facilities.
- iv. Daily monitoring of public usages / tool falls manually in pro-forma as well as by ICT tracking systems.
- v. Updating, maintaining, upgrading and ensuring use of android based toilet locator app and for the users in general.
- vi. Maintaining availability of water supply 24X7 by arranging water tanker, supply during water shortages / inadequate supply by the corporation.
- vii. Maintaining power supply for electrical accessions and pump, area lighting, illumination including timely payments to MSED/ authorities and arrangement of portable DG during power shut downs.
- viii. Conducting cleanliness / community triggering / thematic drives for the Information, Education, and Behavioural change and Communication (IBEC) activities as directed by the corporation.
- ix. Handling all customer queries and complaints registered at ward office / facility and online Redressal systems.
- x. Display of signages / direction boards, NMMC name plate, operators name, address, contact numbers, period of contract on visible front side of the facility as directed by the corporation.
- xi. Contingency plan –development and implementing contingency plan in respect of responses to natural disasters, period of power failures, floods

- xii. Cleaning and desilting of all septic tanks, soak pits, inspection chambers, sewer traps and connecting internal sewer-lines as per schedule and adding bio-digester culture as directed by the Engineer every quarterly.
- xiii. Cleaning and disinfecting overheads/ underground water storage tanks.
- xiv. Good housekeeping, maintaining and developing horticulture, area in development manager as mobile toilets as per requirement.

6.1.2 The operator may be informed to quote for operational part of this toilets covering the following item –

Name of work –

A) Operation and maintenance of IWC/EWC seats in toilets of

- i. RCC / load bearing structures
- ii. Container type
- iii. E – toilets
- iv. Her Smart Toilets
- v. Smart toilets (NAMMA type) and modular toilet
- vi. Urinals / unit
- vii. Bath / unit
- viii. Mobile toilet / unit

**B) Hiring suction unit services for septic tank cleaning / desilting / hour
(Travel of 10 km)**

**C) Hiring jetting machine unit services for removal of blockages in connecting / hour
sewer line of toilets (travel of 10 km)**

(Rs. _____ extra for travel beyond 10 km and up to 30 km)

6.1.3 Repairs and Maintenance

The responsibility of carrying out repairs and maintenance of toilet blocks and seats may also be given to the same operator for which the quotation being called for operation. The terms of reference for repairs and maintenance may contain the following aspects.

Repairs and maintenance

The operator shall carry out repair and maintenance of all toilets facilities as and when required. The operator shall carryout preventive, routine maintenance and breakdown maintenance operations, and in accordance operating practices, the following items shall be indicated in such maintenance and the stock of repaired materials shall be maintained for standard operating practices.

A) RCC / load bearing toilet structures and container type toilets

- i. RCC / structural components, MS/GS shuts, FRP shuts
- ii. Brickwork / UCR
- iii. Plastering / Rendering

- iv. Ceramic tile / existing thing
- v. Ceramic tile dado / skirting
- vi. IWC / EWC / urinals / baths washbasins / flushing cisterns
- vii. Nahani trap / sewer trap
- viii. Connecting internal sewer lines
- ix. Water supply distribution lines / rising main / downtakes/
- x. Sanitary-wares, accessories.
- xi. Plumbing
- xii. Plumbing fittings / fixtures, accessories
- xiii. Doors frames / shutters, jambs.
- xiv. Window shutter / frames,
- xv. Glass panels
- xvi. Uren pipes, cawls.
- xvii. Manhole covers, inspection chambers and covers
- xviii. Water meter / electricity meter /

B) Modular toilets

- i. Modular unit of e- toilet / Her Smart toilets including accessories span parts
- ii. Control panel
- iii. Cable and connectors
- iv. Coin box led
- v. Door lock
- vi. Coin acceptor module
- vii. Extension box
- viii. ELCB
- ix. Human presence detection sensor
- x. Water flow control valve
- xi. Health facet
- xii. Interior ceiling light
- xiii. Switches for floor flush
- xiv. Door sensor switch
- xv. Status display
- xvi. Exhaust fan
- xvii. Sanitary vending machine
- xviii. Incestor
- xix. CCTV with cameras
- xx. Railings
- xxi. Advertisement / display panels
- xxii. Oh water tank and plumbing accessories
- xxiii. Siphons (internal and external)
- xxiv. Facia board
- xxv. Water meter
- xxvi. Electrical meter
- xxvii. Plumbing accessories
- xxviii. Sanitary wares / accessories
- xxix. IWC/EWC, washbasin

- xxx. Illumination accessories
- xxxi. Signages, direction / name board
- xxxii. Area development –adjacent / interlocking tiles
- xxxiii. All electric accessories / PLC, software instrumentation devices / panels etc as per manufacturer / suppliers check list.
- xxxiv. protection, gates , wicket gates, chajja, colt. Collapsible agets, railings and ramps.
- xxxv. OH/ UG water tanks, ball cocks, overflow pipes.
- xxxvi. Septic tanks, soak pit and bio digesters.
- xxxvii. Area development and horticulture
- xxxviii. interlocking pavements , etc.
- xxxix. Signals, sign / direction boards.
 - xl. Electrical accessories / fixtures / fittings / ELCB.
 - xli. Area lighting.
 - xlii. Swachhata message box / boards/ boardings.
 - xliii. Furniture.
 - xliv. Bio gas system
 - xlv. Supporting / structural work advertisement panels.
 - xlvi. Water proofing of ceiling / roofs and lamp walls.
 - xlvii. Water proofing of water closet units.
 - xlviii. Ladders
 - xlix. Staricae and steps.
 - l. Spare parts of mobile toilets.
 - li. Whels
 - lii. Axels

Daily summary of operation of CT/PT including power consumption

Desalting of septic tanks

Sock pits, inspection chambers, connecting sewer traps.

Periodic cleaning of overhead and underground water tanks.

In the O & M contract following aspects may be required to be considered and expected from the appointed operator.

6.2 Alternative B

Alternative B could be individual toilet block / cluster toilet blocks NGOs / CBOs can take lead through community participation the model can be as Triratna Prerna Mandal operational toilet at Santacruz.

In this case partial responsibility and budget provision by NMMC can be taken and work out maintenance carried out through existing petty work contract.

Points to be considered while finalising the tender document for operation and maintenance of CT and PT-

- i. Regular tender notice
- ii. Schedule A
- iii. Schedule B (block plan / toilet, block details)
- iv. Show the selective electric prints / plumbing points / US lay out
- v. Show the drainage connection if any and / or excreta disposal system
- vi. Show the water supply system
- vii. Show the vertical stack system including traps, and water closet pans location as well as other accessories of sanitation
- viii. Show the location of water tanks
- ix. Show the invert level and under ground pipeline details including house drainage system and sewer trap chamber
- x. Add relevant definition for operation and maintenance of toilet block system. This can be availed from drainage and water – bye laws
- xi. Include preventive maintenance and spot – maintenance
- xii. The operation of the system by the public in general has to be described in the tender document.
- xiii. Mention about the participation by the community as well as recovery of the charges by the community
- xiv. Define whether it is a concessional contract or payment by the client from operation and maintenance
- xv. Mention the minimum period of the operation and maintenance of the contract expected from the contractor.
- xvi. Penalty clause and basis for penalty
- xvii. Mention about the Bill of Quantity (BOQ) either by item rates or lump sum
- xviii. Prepare repairs and maintenance schedule with proper time element
- xix. Reporting schedule to be prepare in which it is mandatory to the contract to keep on record the operational parts of the contract
- xx. add for propose involvement of the man power to execute the contract
- xxi. add relevant laws to be observed and enforced by the contractors
- xxii. include for material and labour management for operation and maintenance
- xxiii. for item rte tender specified items have to be short listed with rates and quantity
- xxiv. if it is lump sum tender then detail specification have to be drafted to the lump sum contract
- xxv. rate of pre-bid and site visit is to be mentioned in the tender

Chapter 7

Marching Towards ODF NMMC

7.1 Credentials of NMMC -

Navi Mumbai Municipal Corporation (NMMC) has its Mission to protect, enhance and restore the natural environment for the well being of all its citizens. To achieve the Mission NMMC has vision to bring the city to International Standards with respect to infrastructural and environmental standards.

To achieve the Mission and the Vision NMMC has prepared City Sanitation Plan (CSP) in 2012, on the basis of the guidelines of National Urban Sanitation Policy (NUSP) 2008. Total 7 elements were covered in the CSP viz. (i) Sanitation and Open Defecation (OD), (ii) Sewerage Management, (iii) Solid Waste Management, (iv) Storm Water Drainage, (v) Water Supply, (vi) Environmental Status and (vii) IEC including Social Mapping. Considering the then existing situation for all the elements and assessing the gap between ultimate requirements and existing status, a holistic Framework for Action (FFA) was prepared costing Rs. 551.96 cores.

The CSP-2012 indicates the access to toilet facilities to the citizens. Accordingly 83.54% population is using individual toilets, 16.35% is using community toilets and 0.11% don't use toilets as on 2012. NMMC carried out the situation analysis of OD spots / OD families through Regional Centre for Urban and Environmental Studies (RCUES), All India Institute of Local Self Government (AIIILSG), Mumbai in September 2012 i.e. immediately after the preparation of City Sanitation Plan 2012. The situation analysis revealed 95 OD spots in the city. The citizens were not willing to pay user charges. This resulted in lack of proper Operation & Maintenance (O&M). Taking into consideration these points NMMC repaired the Community Toilets (CT) and provided some grant in aid to the institutions for operating and maintaining the CTs. Where space was the constraint NMMC provided mobile community toilets. These initiations were taken by NMMC to eliminate the Open Defecation in the City & the OD spots have been reduced to 64.

7.2 Awards received by NMMC – The work of NMMC in the sanitation /environmental sector has been appreciated by the Govt. of India / Govt. Of Maharashtra and various authorities as listed below.

- i. HUDCO AWARD : For the Best Practices to Improve the Living Environment (2015- 2016)
- ii. Award by “Washrooms & Beyond” for the category Development of Model Public Washrooms by State Government Body in year 2015 (SBM).
- iii. 45th Skoch Award for Innovative Public Toilets in NMMC area (SBM).
- iv. 45th Skoch Award for IEBC Activities in NMMC area (SBM).
- v. JCB Clean Earth Award for Excellence in Solid waste Management (2015)
- vi. Award for Solid Waste Management 2014 by EPC World Media Group.
- vii. National Urban Water Award 2011 for contracting O & M services.

- viii. EPC World Award for Outstanding Contribution in Urban Civic Amenities (STP Project).
- ix. Sant Gadge Baba Nagri Swachata Abhiyan special Award -2008-09 from Government of Maharashtra for best Sanitation practices in city.
- x. India Municipal Vision-2020 Award for “WISITEX Green Urban Development Award of the Decade”.
- xi. Government of India National Urban Water Awards (NUWA) 2010 for “Sanitary Improvements and Safe Disposal Practices, Integrated Storm Water Disposal System”.
- xii. Government of India National Urban Water Awards (NUWA) 2010 for “Improved Customer Satisfaction, Governance, Public Disclosure and Transparency”.
- xiii. Best City Award for Improvement in Waste Water and Sanitation Services under JNNURM (2009).
- xiv. Vasundhara Award – 2009 by Hon. Chief Minister of GOM for excellence in city environment.
- xv. National Urban Water Award -2009 by Hon. President of India for “Services to Urban Poor”.
- xvi. National Water Award-2008 constituted by Urban Development Dept. (Government of India), Administrative Staff College of India, Hyderabad and FCCI for successful implementation of 24x7 water supply in Navi Mumbai.
- xvii. 1st prize under the Sant Gadgebaba urban cleanliness campaign twice (2002-2003 & 2005-2006) with cash reward of Rs.50,00,000/-

7.3 NMMC initiatives under SBM/SMA-

- i. SBM launched on 2nd October 2014 & SMA launched on July 2015.
- ii. Swachh Navi Mumbai Mission launched on 7th March, 2015.
- iii. Swachh Maharashtra Abhiyan Cell formed on 8th August, 2015 as per the Guidelines of SBM.
- iv. Awareness campaigns, Rallies conducted on Mass scales day to day by the Cell for human behavioural changes and cleanliness.
- v. Special cleanliness drives & thematic drives community triggering suggested by MoUD carried out.
- vi. Enforcement of Nuisance Detection squad.
- vii. Imposing spot penalty of Rs. 100/- for defaulters (for OD) has revised to Rs. 1200/- with effect from June 2016.
- viii. Penalty of Rs.2, 88,000/- has been collected during the current financial year.
- ix. Providing maximum Nos. of Grant for IHHL
- x. Construction of CT/PT and E- toilets in large Nos. for adequate sanitation facilities.
- xi. Planned Construction of ‘Her smart toilet’ exclusively for walking /working women through 'CSR' under right to 'Pee'.
- xii. Construction of Smart Toilets (NAMMA type) through CSR funds at Turbhe & CT at Rabale areas having large OD.
- xiii. As per guidelines provided by Government of India, regarding selection of "Swachhta Brand Ambassador". Navi Mumbai Municipal Corporation has

- selected "Arjun Award Winner", National Kabbadi Champion Miss Abhilasha Shashikant Mhatre as a "Swachhta Brand Ambassador" for Navi Mumbai City.
- xiv. Mr. Shankar Mahadevan famous personality as a musician, singer and an actor in Cine industry is appointed as a "Swachhta Brand Ambassador" for Navi Mumbai City.
 - xv. Sanitation App started.

7.4 Present Status of Toilet coverage –

As per census 2011, Population of NMMC is 11, 19,000. Existing population is 14, 37,000. The Household size is 5 persons per family including slum area. Accordingly total Households are 2, 87,400. Out of that slum household are 41,805 comprising of 14.54% of the total households. The non-slum area has 2, 45,595 households comprising of 85.46 of the total households.

As discussed earlier in Chapter 5, the NMMC residential area is divided into three patterns as detailed below.

- i. Nodal area
- ii. Village area & Gaothan Expansion Scheme (GES) area.
- iii. Slum area

The Nodal area is planned area and has individual toilets for all the households in the area. Thus in Nodal area 100% Households have access to own individual toilet facilities. Households in 30 villages area are having access to individual toilets / CT and PT toilets. This village area is included in the wards that have been declared ODF following the prescribed procedure. Non-slum area has 2, 45,595 households and all are covered by IHHL. This presumed that 85% households are covered by IHHL. Hence, the question of providing toilet facilities in appropriate number to slum area is required to be focused. NMMC has 48 slums having population of 2, 09,025. Out of this population 16,990 (number of OD persons & 3,398 OD families surveyed by NMMC) is being provided with individual toilet facility and community toilet facility so the remaining population of 1, 92,035 needs to be provided community toilet seats. Consultants have considered average norm of a 35 persons per individual seats. Accordingly, 5486 community toilet seats are required. Existing community seats are 4212. It means that as against norms of 35 persons per seat presently 50 persons are using 1 toilet seat. Thus per seat there is load of 15 persons. **NMMC has proposed to construct 719 community toilet seats. This will provide 4931 community toilet seats. Shelter Associates has already constructed 169 individual toilet seats in slum area so there will be no shortfall for community toilet seats after completion of a proposed 719 community toilet seats.**

NMMC has a floating population of a 2, 50,000 approximately. Consultants have considered 200 persons (Average as per National Building Code [NBC] guidelines) per public toilet seats. Presently, 1065 public toilet seats are available. In addition to that 58 public toilet seats including e-toilets, Smart toilets are being constructed by NMMC. Thus total 1123 public toilet seats available for the floating population. **These seats are sufficient as per the norms as the floating population of NMMC area is mostly visiting to the**

government offices / industrial offices/ educational institutions, IT, ITES which have their own public toilets.

7.5 Target under SBM for toilet coverage and elimination of OD –

- A. Target of IHHL set by GOI/GOM – The MoUD, GOI under SBM set target of 17,294 OD families and conveyed the same to NMMC. As per census 2011 number of OD families is 5000. However as per the survey carried out ward wise in July 2015 by NMMC revealed 3398 OD families. Hence the MoUD, GOI was requested to revise the target of OD families from 17,294 to 3,398. In response to the NMMC letter the MoUD, GOI informed GOM to set the target at state level. Taking in to consideration the census 2011 figure of 5000 OD families and the initiatives taken by NMMC to reduce the OD in the city during 2011 to 2015, the UD, GOM approved the target of 3398 OD families surveyed by the NMMC in July 2015. Thus, under SBM the NMMC has the target to construct 3398 IHHL.
- B. Target of PT seats as per norms under SBM. As per norm of 200 persons per seats total 1250 public toilets seats are required. Presently, 1065 public toilet seats are available. Hence 185 public toilets seats are required.

7.6 Framework for Validation of Self-declared ODF Cities-

- A. **Protocol to be followed for declaration of cities / wards as Open Defecation Free (ODF) has been prescribed by the MoUD, GoI vide its D.O. letter No. 2 – 11021/04/2016-SBM – II, dated the 2nd March, 2016. Accordingly ODF ward / city is defined as “A city / ward is notified as ODF city / ward if, at any point of the day, not a single person is found defecating in the open”.**
- B. Necessary conditions to be achieved before declaring the city / ward as Open defecation free :
 - i. All households that have space to construct toilet, have constructed the one.
 - ii. All occupants of those households that do not have space to construct toilet have access to community toilet within a distance of 500 meters.
 - iii. All commercial areas have public toilet within a distance of 1 km.
 - iv. City has a mechanism in place which impose fine on the persons who defecate in open
- C. After notification of the city as ODF by the administration, State should ensure that the claim of the city is verified through third party. The third party protocol will be shared with the citizens and states. The MoUD, GoI vide its D.O. letter No. 2-11021/04/2016-SBM-II, dated the 16th March 2016 has also prescribed the following :
 - i. A declaration has been obtained from all wards of a city, without exception, declaring respective wards as ODF. All ward Councillors of a city may make this self- declaration and submit to city municipal administration by the ward in order to facilitate the above self declaration: besides self declaration by school,

declaration by school students, teaching / non – teaching staff of all schools and declaration by Self Help Groups (SHG) in prescribed format be obtained.

- ii. Meanwhile ULB is required to submit proposal to the state UD for third party inspection even in case of part of the city. Once all the above declaration have been obtained by the respective City Municipal Administration, from all wards, the city municipal administration may, thereafter, pass a preliminary resolution declaring the city to be open defecation free, a suitable public announcement may be made for the same as well.
- iii. Following such resolution, public objections / feedback may be invited with a fifteen day timeline. If no substantial objections are received at the end of this time, a final resolution is adopted by the City Municipal Administration and the same is communicated to respective state governments.
- iv. On receipt of the such communication the state government may ensure that the claim of the city is verified through an appropriate third party verification process (in a time bound process) before formally according the city status of being ODF with verification from QCI (third party inspection)

7.6.1 Formats Prescribed by MoUD, GoI for ODF Declaration Protocol:

MoUD, GoI has prescribed six formats for declaration to be submitted by various authorities as detailed below:

- A. Format for declaration to be submitted by City / Town.
- B. Format for declaration to be submitted by schools.
- C. Format for self - declaration by school students (to be attached with the school declaration).
- D. Format for self - declaration submitted by school staff and teachers (to be submitted with school declaration).
- E. Format for self - declaration to be submitted by Self – Help Groups.
- F. Format for declaration to be submitted by Ward Councillor.

Accordingly the GoM has developed a systematic validation framework to ensure authenticity and sustainability of the success achieved by ULBS as detailed below –

Table No. 7.1 - A Framework developed by Government of Maharashtra for defining "ODF Cities" in Maharashtra

	Elimination of OD practices	Access to toilets	Conveyance and treatment of faecal waste
ODF City	<ul style="list-style-type: none"> • Not a single person found defecating in the open • No traces of faeces are visible in the city at any time of the day 	<ul style="list-style-type: none"> • All the properties in the city have access to either own toilet or functional community / public toilet • Floating population in the city has an access to sufficient and functional public toilets 	<ul style="list-style-type: none"> • All toilets are connected to a disposal system
ODF City+	<ul style="list-style-type: none"> • Not a single person found defecating in the open • No traces of faeces re visible in the city at any time of the day. 	<ul style="list-style-type: none"> • At least 80% of residential properties in the city have access to own toilets • Remaining properties and floating population in the city have access to functional community / public toilets. 	<ul style="list-style-type: none"> • All toilets are connected to a disposal system • Regular and safe collection, conveyance and treatment of all the faecal matter
ODF City++	<ul style="list-style-type: none"> • Not a single person found defecating in the open • No traces of faeces are visible in the city at any time of the day. 	<ul style="list-style-type: none"> • At least 95% of residential properties in the city have access to own toilets • Remaining properties and floating population in the city have access to functional community / public toilets 	<ul style="list-style-type: none"> • All toilets are connected to safe disposal system • Regular safe collection, conveyance and treatment of all faecal matter and waste mater including septic tank effluent and grey water

7.6.2 Framework for Validation of Self- declaration ODF Cities

1. Self –declaration by ULBs for achieving the status of ODF/ODF+/ODF++
ULBs to submit the following documents to GoM as a self- declaration
 - 1) Covering letter for self- declaration
 - 2) City level resolution for self- declaration as ODF city
 - 3) 2 to 4 pager documentation of efforts made for achieving the target and strategy for sustainability
2. Validation by Collector's office
 - 1) One day validation as per checklist provided by GoM
 - 2) Collector's office to submit a report for this validation to GoM with collector's signature
3. Validation by State Level Committee (Round 1)
 - 1) Six SLCs formed by GoM (for six divisions)
 - 2) SLC comprises of one NGO, one reporter and one official from Divisional Commissioner's office
 - 3) 3-4 days validation as per checklist provided by GoM
 - 4) SLC to submit a report for this validation to GoM within given timeframe
4. Random verification in 10% of the cities by GoM
 - 1) GoM to verify the reports on a random basis through actual city visits, to ensure authenticity
5. Awards to "ODF Cities"
 - 1) Cities that pass all stages of validation will be declared as "ODF Cities" by GoM
 - 2) The list of such cities will be submitted to the GoI
6. Re- validation by State Level Committee (Round 2)
 - 1) SLC will revalidate sustainability of the success, six months after the round 1 validation by SLCs

Incentive Scheme – Rewards to ODF Cities: 30% on round 1 validation by SLC 70% on round 2 validations by SLC.

7.7 Strategy to make the City Open Defecation Free (ODF) by December 2016.

The NMMC aims to be Open Defecation Free (ODF) by December 2016. The following strategy is planned to make the City Open Defecation Free (ODF) by December 2016.

- A. Construct 100% Individual House Hold Latrines (IHHL) for 3398 households resorting to Open Defecation. NMMC has proposed to provide toilet facilities to all the 3398 Households surveyed who do not have access to individual toilet / CT / PT toilet. It is revealed during the verification of the applications received from the households surveyed, that out of 3398 households, it is possible to construct 2325 IHHL. For remaining 1073 household it is not possible to construct individual toilet

due to technical reasons and non submission of required documents. Hence, for 1073 household NMMC is providing toilet facilities in the form of Community Toilet seats. NMMC had organized mass sanitation campaign in slum areas. During this campaign no. of households have come forward on their own to construct individual toilet. NMMC has decided to provide individual toilets for these households. Though, they are in non OD area, but using community / public toilet. Thus, **NMMC will construct and complete the target of 3398 IHHL target. This will definitely help in increasing the percentage of coverage of individual toilet in urban poor areas, and moving towards “ODF +”**

- B. Construct 719 Community Toilet seats for household those do not have space or technical constraint to construct individual toilets. Shelter Associates has already constructed 169 individual toilet seats in slum area so there will be no shortfall for community toilet seats after completion of a proposed 719 community toilet seats. 95% area of NMMC is covered by Sewerage system. NMMC has published tender for construction of sewerage system in remaining part of the area & follow up with MIDC authorities. **So that this area will also be available to connect the existing toilets to the sewerage system, and moving towards “ODF +/ODF++”. The capacity of existing STP is 424 MLD & the sewage is being treated by C-Tech advance technology.**

The Shelter Associates is constructing individual toilets under CSR funds in the CBD Belapur / Airoli / Ghansoli and Digha. The Shelter Associates has surveyed total 6451 households in these area out of that 772 households have own individual toilets. 762 households cannot connect to existing drainage line for some technical reasons. 1620 Households can be connected to the proposed drainage line. Presently, Shelter Associates have completed construction of 169 individual toilets in urban poor area. Additional 32 toilets will be constructed soon. As NMMC has proposed to construct sewerage system in remaining part of NMMC area. Shelter Associates can complete remaining 2238 individual toilet in urban poor areas. This will help NMMC moving towards “ODF +” / “ODF ++”

- C. Appeal to household in project villages who do not have individual toilets and are presently using Community Toilets / Public Toilets.
- D. Construct 58 Public Toilets (PT) for floating population NMMC has a floating population of a 2, 50,000 approximately. Consultant has considered 200 persons per public toilet seats. Accordingly, total 1250 public toilet seats are required. Presently, 1065 public toilet seats are available. In addition to that 58 public toilet seats are proposed to be constructed by NMMC. **Thus total 1123 public toilet seats available for the floating population. These seats are sufficient as per the norms as the floating population of NMMC area is mostly visiting to the government offices / industrial offices/ educational institutions which have their own public toilets.**
- E. Construct Public Toilets on the line of Sion-Panvel Express way Vashi to CBD Belapur. (by PWD authorities)

- F. Spread awareness in regard to health & hygiene Practices while using individual / Community Toilets / and Public Toilets and proper Operation & Maintenance of the CTs/PTs.
- G. Monitor the usage of the individual toilets, community toilets and public toilets through Nuisance Detection Squad.
- H. NMMC is providing e-toilets on Palm Beach road.
- I. Providing 'Her' smart toilet with a rest room / modern amenities exclusively for walking and working women at busy/crowded places. With Palm Beach Road and on the junction of Sion- Panvel Highway.
- J. Advancement of PT by providing innovative modular smart toilet (sanitation amenities) in the city.
- K. O & M – Preferably with performance based O&M contract which has been successful experience in water supply and sewerage works in NMMC.
- L. For proper maintenance of the community toilets for 100% ODF city, IEBC activities as well as capacity building of NGOs/CBOs and caretaker is planned.
- M. O & M of a community toilet in slums by users with forming 'User committees' is also being explored for better hygiene and cleanliness. This will ensure ownership of community toilets by users towards sanitation facilities. (Annexure III)
- N. Review of user charges will be taken.

7.8 OD free wards -

All the 111 wards in NMMC have been self - declared Open Defecation Free. NMMC has now approached and requested MoUD for Swacch Certification.

Chapter 8 Actions for Sustainability

- i. All 111 wards of NMMC have been declared ODF by Hon'ble Mayor and Commissioner. As informed by the NMMC Officials, now the NMMC aims at becoming ODF + and ODF++ city and accordingly, has been carrying out various community triggering activities as below.
- ii. NMMC has acquired the Ghansoli Node Services from CIDCO and is planning for micro level toilets in sector 1 to sector 9 of CIDCO Node in NRI Seawood Darave Area; accordingly is constructing E toilets for floating population.
- iii. NMMC is coordinating with MIDC and CIDCO for redevelopment of slums.
- iv. Following up with MIDC for construction of maximum toilets; and PWD for construction of E toilet on Sion Panvel Highway.
- v. The construction of 'Her Smart toilets' and 'E- toilet' on highway junctions is in progress. Accordingly, few PT's on the basis of actual requirements have already been constructed for trial tests.
- vi. In the rest of the city, NMMC is planning to provide compact public toilets in public gardens, playground and busy crowded places like malls, shopping complexes. Additional budget provision has been made for the same.
- vii. NMMC is planning to introduce Toilet Cleanliness Feedback Poling Unit for Public Toilets all over the city and a demo has been installed in Sulabh Sauchalay at Vashi Bus Terminus.
- viii. A portal to register the CT/PT complaints, demands and suggestions, the corporation has introduced JANAGRAH app, developed by MoUD.
- ix. NMMC has also activated the Toilet Locator Mobile App for Android based system and made available free to download for the general public of NMMC jurisdiction, with the additional technical system for Geo tracking of toilets with actual photograph.
- x. NMMC has appointed Ms Abhilasha Mhatre (International India Kabbadi Player) as the brand ambassador of the campaign and now has roped in Mr Shankar Mhadevan (Famous Bollywood Singer/Composer/Lyricist) as the face of the cleanliness campaign carried out by NMMC.
- xi. NMMC aims at spreading the information of SNMM – Swacch Navi Mumbai Mission through hoardings, banners, placards, fillers; so as to achieve the target of being a clean city in a short while. These new educational banners have been placed at crowded places, malls, colleges, hospital, public places; NMMCS ward offices, open spaces and gardens, to reach the view of general public.
- xii. Various events such as Guidance to IAS Aspirants, Doctors, and Engineers etc are being organised where the Commissioner himself appeals to the crowd regarding Swacch Navi Mumbai Mission.
- xiii. Information regarding all CT/PT including locations has been updated on the revamped website of NMMC.
- xiv. NMMC is making progress as regards in creating awareness amongst general public through E-learning programme conducted at ward office levels.

- xv. Collaborating with Reliance JIO, 'Her smart toilets' (meant exclusively for women), with and without restrooms are being constructed at all important places.
- xvi. Nuisance detecting squad is provided with vehicles and, task force, has been deployed for purpose.
- xvii. Recently, NMMC has introduced Toll free number, Swatchta App linking to E Governance, separate registers maintained at CT/ PT as well as at ward offices. NMMC plans to connect each and every citizen of the city through bulk SMSs.

Chapter 9

Summary, Suggestions and Limitations

Introduction -

As per the terms of reference and alternatives has been suggested as below: -

- A) Revised framework for action based on MoUD and other norms with proper quantification for requirement of individual toilets, community toilets, and public toilets.
- B) Revised framework for action based on survey carried out by NMMCs relevant departments and required provisions and quantification of individual toilets, community toilets, and public toilets.

Summary –

Summary of requirement for Open defecation Free - Navi Mumbai Municipal Corporation city is made in **Table No.5.17** in Chapter 5. The quantification and the cost of individual community and public toilets seats requirement have been mentioned in this Table. The variation in the quantities and capital cost requirement in these alternatives is quite large mainly because of assumptions and philosophical aspects. In case of alternative I the consultant have considered and calculated and requirements based on the secondary data provided in the month of May 2016. In case of alternative II the release of data from survey carried out in June –August 2016 curtail the requirement of individual toilets. In case of alternative III the ODF Plan for Zone – 1 and 2 was released and the assumption in regard to existing toilet in villages and slums were totally changed thereby a large curtailment of requirement of seats in villages and slums was given by NMMC.

Limitations

The survey carried out by NMMC in June – August 2016 has many limitations. 64 OD spots were identified by respective department. The survey appeared to be carried out randomly on the basis of reconnaissance and limitations in regard to scientific observation and recording system through door to door information collection. Hence there are limitations to assume that the correlation thought of between OD spots and OD families is strong.

Suggestions

Looking to the aforesaid fact following suggestions are made –

- 1. For the proper compliance of Open Defecation Free Navi Mumbai Municipal Corporation for satisfying norms prescribed under SBM it is necessary to take holistic view without occurrence of any short coming in respect of construction of individual toilets, community toilets and public toilets. While execution and a continuous monitoring of happening of OD should be carried out so that the quantification in respect of number of toilets can be really considered dynamically.**

- 2. The alternative II describe here before envisages less number of individual toilets compared to those worked out in alternative I. It is observed that the NMMC officials during the process of implementation from October 2014 communicated the requirement of individual seats and community seats as 3398 families resorting open defecation. It appears that NMMC desires to stick up to the number of seats communicated. However it would be probably misleading, if the framework for action is limited to the number of seats already communicated. It is suggested that the phased programme of action may be drawn by NMMC. In phase I the programme for action may include construction of committed seats for 3398 families. Subsequently the results may be monitored for achievement of Open Defecation Free situation partly or fully through detection squad and implementation of penalty clause of OD. Depending upon the results of such observations, the phase II implementation may be decided to aim at ODF+/ODF++.**
- 3. It was informed that Swachh Maharashtra Mission has given revised target for IIHL as 1935 and for CT as 719. The NMMC shall take the necessary steps to fulfil the necessary target.**