

Final Report

STUDY ON
**MANPOWER REQUIREMENTS IN VARIOUS
DEPARTMENTS OF NDMC**



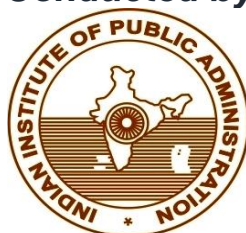
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New Delhi Municipal Council

Conducted by



Indian Institute of Public Administration

**IP Estate, Ring Road,
New Delhi**

August, 2019

Preface

Adequacy of manpower plays a decisive role to enable city governments to achieve standards in productivity, efficiency and equity (client orientation). It is particularly important for New Delhi Municipal Council (NDMC) which is located in the core of sixth fastest growing metro region in the world and accommodates seat of Government of India. Accordingly, urban sector in India looks forward to follow NDMC as a model to expedite reforms in the delivery of municipal services.

This study reaffirms that the NDMC has one of the front-line standards of performance in the municipal services in the country. Yet, the productivity and cost to council has scope for significant actions to improve input output ratio on manpower deployment and delivery mechanism of services. The study suggests a re-deployment of manpower concomitant with restructuring of assets /alternate institutional arrangements.

Whereas the vertical set-up of delivery needs unified service centres at grass-root level under a single 'command' at respective division/service centre, the headquarter based functions need to be rationalised to support the divisions for necessary policy, technical, fiscal and managerial support. At the same time, grass-root deployment at cutting edge level at service centres should be equipped with multi-tasking skills to have optimum productivity, connectivity and quick disposal of local grievances. A systematic effort through ERP (Enterprise Resource Planning) is also needed along with real-time data collection and analysis on a dashboard pattern.

The study also suggests alternative institutional arrangements for typically different functions namely electricity and education. Special Purpose Vehicles (SPV) may be created for electrical department on the pattern of DISCOMs and Trust may be created in line with Navyug Schools of NDMC for secondary and senior secondary education.

We are highly thankful to NDMC for assigning the study to IIPA. Shri Naresh Kumar, IAS, the then Chairman, NDMC spared his valuable time to interact with the team on key issues. Shri Virender Singh, Director (Personnel), NDMC provided useful support to mobilise best possible cooperation from HR, Commerce, Finance, Public Health, Electricity and Education departments of NDMC.

Our thanks are also due to Prof. K.K. Pandey and Dr. Sachin Chowdhry who conducted the study and prepared detailed strategy for inception report, data sheets/questionnaires and analytical report writing. They were supported by a dedicated team consisting of, Research Associates Ms. Niharika, and Ms. Rableen Kaur and Shri Anand Singh, Research Assistant. The members of the team also deserve our thanks and compliments.

I am sure that this study will provide useful feedback to urban planners, managers, professionals and researchers on the subject to effectively deliberate on manpower management in the delivery of municipal services. In the creative economy, resources count far less than resource fulness.

Surendra Nath Tripathi, IAS
Director, IIPA

Contents

	PAGES
<i>Preface</i>	<i>ii</i>
<i>Abbreviations</i>	<i>iv</i>
<i>Executive Summary</i>	<i>vi</i>
1 Introduction	2
2 Global Manpower Assessment of NDMC	4
3 Education	18
4 Civil Engineering	32
5 Horticulture	40
6 Electricity	56
7 Public Health	60
8 Rationalization of Manpower at NDMC	67
<i>Annexures</i>	78

Abbreviations

AE	:	Assistant Engineers
AMC	:	Annual Maintenance Contract
ARR	:	Accounting Rate of Return
ASI	:	Assistant Sub-inspector
BBMP	:	Bruhat Bengaluru Mahanagara Palike
BRPL	:	BSES Rajdhani Power Limited
BSES	:	Bombay Suburban Electric Supply
CB	:	Capacity Building
CBSE	:	Central Board of Secondary Education
CDC	:	Current Duty Charge
CEO	:	Chief Executive Officer
CMO	:	Chief Medical Officer
CPWD	:	Central Public Works Department
CSI	:	Commodity Selection Index
CTC	:	Cost to Council
DEO	:	Data Entry Operator
DERC	:	Delhi Electricity Regulatory Commission
DESU	:	Delhi Electricity Supply Undertaking
DISCOMS	:	Distribution Companies
DSO	:	Distribution System Operator
EE	:	Executive Engineer
EPC	:	Engineering, procurement and construction
ERP	:	Enterprise Resource Planning
FY	:	Financial Year
GNCTD	:	Government of National Capital Territory of Delhi
GPS	:	Global Positioning Systems
HM	:	Head Master
HQ	:	Headquarter
HR	:	Human Resource
IIPA	:	Indian Institute of Public Administration
IOR	:	Indian Ocean Rim
IT	:	Information Technology

JE	:	Junior Engineer
KPI	:	Key Performance Indicators
KV	:	Kilo Volt
LAD	:	Least Available Depth
MCU	:	Microcontroller Unit
MLA	:	Member of the Legislative Assembly
MoHUA	:	Ministry of Housing and Urban Affairs
MP	:	Member of Parliament
MSW	:	Micro Solid Waste
NDMC	:	New Delhi Municipal Council
NULM	:	National Urban Livelihood Mission
OSD	:	Officer in Special Duty
PGT	:	Post Graduate Teacher
PPP	:	Public Private Partnership
PRT	:	Primary Teacher
RBI	:	Reserve Bank of India
RMR	:	Regular Muster Role
RR	:	Recruitment Rule
RTI	:	Right to Information
RWA	:	Resident Welfare Association
SCADA	:	Supervisory Control and Data Acquisition
SDMC	:	South Delhi Municipal Corporation
SI	:	Sub Inspector
SO	:	Section Officer
SPV	:	Special Purpose Vehicle
SWM	:	Solid Waste Management
TGT	:	Trained Graduate Teacher
TMR	:	Temporary Muster Role
TOR	:	Terms of Reference
UDISE	:	Unified District Information System for Education
ULB	:	Urban Local Bodies
VIP	:	Very Important Person

Executive Summary

Background

1. This study reaffirms socio-political and economic significance of NDMC as a city government to serve the population and area representing the seat of government of India and lungs of sixth best performing metro economies in the world out of top 300 global cities. Accordingly, expectations from NDMC are always very high and become a challenge to perform to the best of its ability and efforts. It is also noted that NDMC provides benchmarked standard of services to a highly sensitive clientele. Further, NDMC has revenue account surplus, efficient maintenance of roads, parks, gardens, cost effective delivery of water and electricity and prevention of communicable diseases (malaria etc.).
2. Yet, the scope for manpower productivity is fairly high as compared to select cities or group of cities (SDMC, BBMP, 35 Municipal Corporations). It is also noted that per-employee per-day cost to council (CTC) calculated as input output ratio is also substantially high as compared to SDMC, BBMP and 35 municipal corporations. These trends confirm scope of reforms in the manpower and O&M cost at NDMC taking into account the normative assessments and innovations as may be adapted in the local conditions.

The Study

3. This study examines organizational structure of NDMC to have manpower assessment with a view to suggest a road map for deployment of staff to meet growing focus on municipal manpower reforms to make NDMC a model for smart cities in India and elsewhere.

Findings

4. It is noted that NDMC provides two sets of services which are identically similar to municipal functions as noted across the country and the other set of services typically different than a routine municipal function. The first category includes HQ based functions, Horticulture, Public Health and Civil Engineering whereas the other set of functions cover Electricity and Secondary & Higher Secondary Education.
5. The productivity of NDMC (input output ratio) suggests substantial scope to rationalise the input cost (expenditure on manpower and O&M to improve output for higher productivity). It appears that the deployment of staff is relatively less cost-effective compared to some other cities (SDMC, 35 Corporations, Bengaluru etc.).

6. HQ based establishment is a focal point of a top-down and vertical structure of NDMC with a CTC of ₹ 6,217/-. On the other hand, Horticulture (₹ 1758.5), Electrical (₹ 1975.7), Civil Engineering (₹ 1322.6) and Health (₹ 1979.8) show a relatively lower CTC as compared to average (₹ 2994) CTC (per employee per day cost to council). Each of these functions have their own system of vertical support at grass root level. It is noted that these functions cover 76% of municipal employees and 84% of muster roll employees (whose total share in NDMC is as high as 37%).

7. NDMC has a total strength of 16761 employees out of which 71% are deployed on routine functions whereas electricity and education deploy 20% and 9% employees respectively. These employees also include Regular/Temporary Muster Roll employees who constitute little over two third share out of which 29% belong to electricity and education. It is also noted that scope of work for RMR/TMR is fairly ad-hoc and concentrated on single tasking at grass-root level lacking measurable performance indicators accordingly.

8. As NDMC operates in a top down vertical manner wherein Civil Engineering (Roads, Buildings, Street Lighting), Public Health (Water Supply, Water Management) and Horticulture (Gardens, Parks) services are delivered in a stand-alone manner through respective service centres located in the different parts of NDMC area.

9. Analysis of individual departments also indicates need of suitable consideration for deployment. It may be noted:

- (i) There are six engineers per sq. km. in NDMC area in civil engineering department as compared to 1.5 engineers in SDMC area. Similarly Building & Maintenance has 32 and Road division has 25 service centres as part of vertical units.
- (ii) Deployment of Malis in Horticulture (1715) is more than sanctioned posts. At the same time, work allocation and measurement are fairly ad-hoc.
- (iii) The deployment of staff in Electricity is relatively high as compared to BRPL (BSES Rajdhani Power Ltd.) which serves 17 times area and 33 times consumers that of NDMC, while the employees of BRPL are only 4.5 times more than NDMC.
- (iv) Similarly, public health department too needs rationalization of staff taking into account the approaches and innovations in the current context. For instance, deployment of Malaria Guards needs to be reassessed in view of DGHS norms and automation like vehicular spraying. Normatively, there would be requirement of 30 manual squads having 150 as against present 174 Malaria guards. Further, the role of safai karamcharis needs reassessment in view of out sourcing, community composting etc.

10. Therefore, it appears that horticulture, electrical, civil and public health need redeployment of staff on the basis of a detailed Enterprise Resource Planning (ERP) along with a suitable reporting and monitoring process based on modern tools and techniques such as real time/GPS based information.

11. There is no planning department per se leading to ad-hoc planning. Departments are mainly making Annual Plans which are mostly incremental in nature. The nature and volume of information/data at NDMC is largely segregated, adhoc and irregular and does not provide a consolidated and bottom-up assessment for necessary analysis. For instance, budgetary description of functions specifies 32 departments whereas personnel resource division brings together the manpower data under five main areas of functions namely (i) Education, (ii) Architecture & Horticulture, (iii) HQ based services, (iv) Electrical, (v) Civil and (vi) Health. Further, the information on deployment and performance of staff is not maintained in a real time manner at grass-root level.

12. It is further important to note that electrical and education (middle and secondary) are typically different functions due to (i) existence of discom-category in GNCTD and (ii) coverage of middle and higher education which is not an obligatory function. Spatial outreach in NDMC schools is fairly wide and going much beyond the jurisdiction of city government. Pupil to teacher ratio in nursery and primary education is comparable to norms whereas secondary education shows a low ratio which is caused by mis-match between number of schools, subjects and students. Therefore, number of Secondary schools needs to be rationalized. It may free a lot of space for the Council.

Recommendations

13. In the current phase of NDMC's transition into a world class smart city and a model city for Indian follow up in the sector, it is important to equip the manpower with the emerging focus of new public management and governance with special reference to productivity efficiency and client orientation along with information management in a systematic and real time manner. The study suggests that the manpower reforms are inevitable and should focus on a five-pronged strategy namely (i) HQ based functions/ services, (ii) Divisional/Zonal Consolidation, (iii) Alternative Institutional Arrangements (iv) Enterprise Resource Planning and (v) Real Time Data Organisation and Updation

14. The HQ based functions need to be rationalized and confined to a core unit of four functional groups namely (i) Council, chairman office, secretary and CEO, (ii) HR, IT and administration, (iii) Finance along with revenue and commercial planning and (iv) establishment of HoDs of three functional units (Health, Civil and Horticulture). Electrical and Education need to have SPV (Special Purpose Vehicle)/Trust respectively under overall control / ownership of NDMC in line with the system of DISCOM and Navyug Schools management. Accordingly, specific actions suggested are as follow.

- a. HQ should be a focal point of management control and planning at different levels of operations for a vertical coordination with respective units to be created in a decentralised manner under unified command at each zonal level having common jurisdiction different from the current system of stand-alone units.
- b. The departmental 'head' (HoD) at HQ should operate to facilitate procedural and approval, monitoring performance assessment tasks for respective employees in the overall system of municipal governance.
- c. The number of departments at HQ should be minimised to Chairman / office, council, vigilance, HR / Administrative / IT and finance.
- d. 2074 HQ base employees may be restructured under four functional groups as above whereas 4012 employees under education and electrical could be assigned to respective SPV's. Remaining 10675 employees should be placed as per detailed Employee Deployment policy.

15. Divisional and zonal consolidation should include deployment of 10675 employees at selected divisions / zones to consolidate managerial services in a decentralised manner. The pool of employees working under Horticulture, Health and Civil should be reorganized into a select number of unified functional points to be identified as division/zone of NDMC. Currently different departments of NDMC (civil, health, horticulture, etc.) have their own service centres to cater to the need of respective functions at grassroot level. They do not operate as a single focal point to have synergy and horizontal coordination to address requirement of a common citizen. Therefore, a system of divisional consolidation at grass root level (somewhat similar to South Delhi Municipal Corporation system) is needed in which public health, education, engineering, land and building, finance is placed horizontally under the control of Assistant Commissioner/Urban Manager/SE. It is therefore suggested that:

- a. Different departments should be converged at the level functional units may be called as divisions / zones.
- b. Some (6-8) division /zones under unified command of Urban manager/ Assistant Commissioner should be established at the level of SE (Superintendent Engineers) or equivalent wherein different functional positions such as Executive Engineer, Assistant Engineer, Junior Engineer and Health Officer, Health Inspector, etc. should be created along with necessary manpower for finance and administrative/support.
- c. The current strength of employees including 6237 RMR and TMR should be reallocated under respective main functional units including SPV/Trust.
- d. The number of 'Beldar' and other support staff should be identified for each of the functional unit.

- e. The reporting system should be coordinated by zonal/departmental head through divisional head. This will ensure citizen centricity who will know who is in-charge of the city in their respective area.
- f. As the functional unit will cater to a couple of functions, the support staff (RMR/TMR) will require suitable training on respective services which they are expected to provide during their job/assignment. A frame work of revised training to TMR/RMR may be designed.
- g. Recruitment of RMR/TMR may be stopped with immediate effect.
- h. If required, the functional units should identify necessary services for outsourcing where ever necessary as per ERP.
- i. A separate study on outsourcing of activities is recommended at the level of functional units. It should cover potential scope of outsourcing under different tasks.
- j. At the same time a rotation policy of employees including RMR / TMR should be initiated at all the divisional / zonal units.

16. The two functions namely education (middle/secondary) and electricity are typically different then remaining categories of NDMC services. They are not normally handled by city governments directly. Hence, these two deserve special attention. Whereas primary education is an obligatory function of NDMC, the middle / secondary education is not part of core municipal functions of NDMC as per the NDMC Act, 1994. It is also important to note that the Pupil to Teacher Ratio (PTR) is marginally high in the primary education (29) and substantially low in the middle and secondary education (23) as compared to norms of 30 and 35 as per CBSE and UDISE respectively. Among individual schools, the PTR has further scope of consolidation. Therefore, NDMC should initially confine its activities to nursery and primary education only as indicated in the 'Act'. The activities under education function in NDMC should be minimised in a phased manner to transfer education function to a suitable/alternative institution. Specific actions in this connection may include:

- a. Nursery/Primary and Middle/Secondary schools' education should be separated from each other.
- b. Nursery or Primary education should be confined to NDMC area only whereas the number of middle and secondary schools should be reduced to suitably absorb students from NDMC schools / areas.
- c. A separate trust in line with the arrangement for Navyug Schools may be created for secondary school education.
- d. Wherever feasible start 2nd shift for secondary / senior secondary schools as already applied in the other public sector schools in GNCTD. It will enable merger of existing schools.

- e. Give preference / restrict the admission to secondary schools to the students from NDMC area / pass out from NDMC owned primary schools.
- f. Identify space available from restructuring of schools through 'Assets Management study' to follow a social and economic agenda of NDMC drawn from schedule XII of constitution of India. It should particularly include the activities under NULM (National Urban Livelihood Mission).
- g. The space can be utilised to carryout activities similar to city livelihood centre/ productivity centre such as training (cover educated unskilled), skill promotion/upgradation, high-tech oriented start-ups and networking (convention centre/community centre / seminar promotion, etc.)
- h. The activities under a to g above should be handed over to a trust as per suitable TOR to be framed after an asset management study.
- i. It may also be examined whether to include Primary Education also under above arrangements.

17. Electricity is being provided by city government in a different model of management. The part of NCTD has DISCOMS (Distribution Companies) for electricity supply. Accordingly, 'electrical' function of NDMC needs specific modification such as:

- a. The department to be converted into SPV (Special Purpose Vehicle) a fully owned company of NDMC. Being Smart City NDMC already has a mandate to create SPV. Therefore, the new SPV for Electrical may be constituted in line with guidelines of smart city.
- b. The SPV should have healthy competition with the other two DISCOMS in Delhi in terms of performance indicators such as line losses etc.
- c. A separate study may be carried out to work out modalities to send NDMC employees to SPV in a similar manner as was adopted for employees of DESU (Delhi Electric Supply Undertaking) to go to respective DISCOM in NCTD.

18. Employee Deployment Policy should be part of ERP to cover all the 16761 employees of NDMC. Accordingly, detailed ERP (Enterprise Resource Planning) should be done covering. Assessment, Deployment, Rotation, Performance Evaluation, Capacity Building and Resource Efficiency and Citizen Centric delivery of services. Which includes:

- a) Performance assessment under ERP could be three-fold i.e. KPI (Key Performance Indicators), Reporting and follow up. Accordingly, HR system should be tuned to address emerging requirements for effective delivery of managerial services.

- b) Create suitable positions (Career Enhancement System) to develop NDMC's own cadre giving a chance to vertical growth to existing manpower and build institutional capacity and memory in a sustainable manner. This could be done without having much impact on financial burden on NDMC.
- c) The possibility of sending TMR/RMR in addition to existing number of such employees in education and electrical should also be examined. There could be scope of employment in the potential skill centres which may be established in the space to be identified in the asset management study of NDMC schools.
- d) The deployment of staff should be minimised and assessed in a periodic manner along with their performance and workload and potential options for redeployment. This should be regular nature of activity.
- e) A well-defined training & capacity building plan for both on the job and outside training should be developed.

19. Once reorganisation is done as above, the information system could be developed in a real time manner/dashboard approach which may include

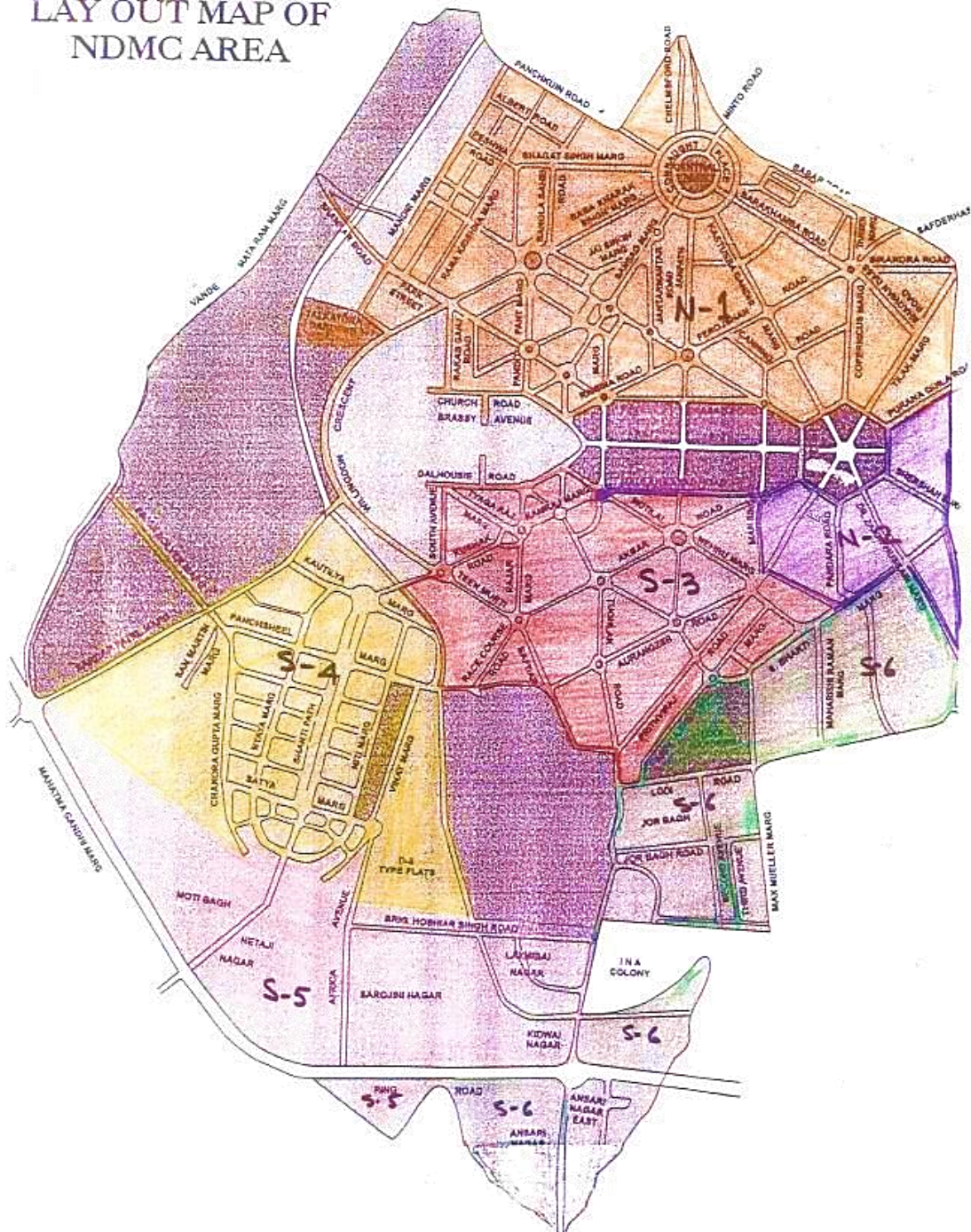
- a. Each division to prepare a task assigned format at grass-root level.
- b. Daily follow-up in a computerised recording which should include:
 - Attendance
 - Complaint Received
 - Work Attended
 - Work Done
 - Feedback
- c. WhatsApp groups may be diversified and strengthened to monitor (b) above.
- d. Capacity Building Framework should be followed as per a well-defined plan covering Total Budget of Department, Budget for CB and Training, Annual Plan and Monthly Progress, CB should include Exposure Visit, on the job training (Handholding) and Classroom training.

20. Finally, owing to its importance, NDMC has to develop as a role model for smart cities in India and take up a series of reforms to have optimum use of existing manpower in the overall context of 'efficiency' and 'productivity'. These include reorganization of manpower, creation of subsidiaries (SOUs/ Trusts), Enterprise Resource Planning (ERP) covering redeployment, performance assessment system and capacity building of NDMC employees.



नई दिल्ली महानगरपालिका परिषद

LAY OUT MAP OF NDMC AREA



Chapter 1

Introduction

1.1. Background

New Delhi Municipal Corporation (NDMC) is one of the frontline smart cities in the country which are undergoing transformation from labour intensive to high-tech, user friendly, participatory and citizen centric municipal system. Accordingly, NDMC is also taking necessary steps to re-orient municipal manpower to acquire necessary experience and expertise. It is in this context that IIPA (Indian Institute of Public Administration) has taken up this study at the instance of NDMC. This report is organised in the interrelated chapters which include (i) Introduction, (ii) Global Manpower Assessment, (iii) Education, (iv) Civil Engineering, (v) Public Health, (vi) Horticulture, (vii) Electricity and (viii) Rationalisation of Manpower.

1.2. Objectives

The main objectives of the study are to

- i. Carry out organizational analysis covering appropriateness of existing structure in supporting the mission, strategy and the needs of the NDMC.
- ii. Identify assessment criterion based on-individual, group and organizational level.
- iii. Carryout manpower assessment with specific focus on Public Health, Electricity, Civil Engineering, Horticulture and Education.
- iv. Suggest road-map for capacity building of NDMC staff to reorient them to emerging requirements.
- v. Suggest a framework for deployment in the city for selected areas.

1.3. Methodology

The manpower deployment at NDMC has been examined in this study through a two-pronged strategy (a) Global analysis, (b) Detailed analysis of select functions which cover (1) Establishment/HR, (2) Education, (3) Horticulture, (4) Electricity, (5) Civil Engineering (Roads, Municipal Buildings, Water Supply) and (6) Public Health. The Productivity efficiency and client orientation has been examined in the assessment of manpower which also includes application of governance norms such as decentralization, accountability, transparency and participatory delivery of services. The overall assessment also includes relevance, effectiveness and rationale of respective functions in the context of overall missions of NDMC. The study is based on several rounds of

discussions, visits, data collection at different levels of operations within NDMC and visit to a couple of similar institutions elsewhere in the country. (Annexure 1)

1.4. Organizational Analysis

We have not been able to get the information as per our detailed formats. Yet, we have made best use of the necessary available information for analysis, as per study objectives.

NDMC has as many as 32 departments to carry out 49 functions (Annexure I) along with a fairly large network of functionaries. The analysis covers (1) Organizational Analysis, (2) Assessment Norms for Employee Productivity, (3) Staff Deployment Framework, and (4) Manpower Augmentation to reorient them for higher productivity and efficiency. The global analysis also includes Muster Roll employees. (ii) Fiscal implications of manpower deployment (iii) Promotion and planning process (iv) Skill, knowledge and attitude, through training and capacity building.

Manpower assessment also includes discussion of employees Assessment & deployment policy in NDMC; Appointment process – Group A, B, C & D level employees in NDMC; as applied.

Finally, this study has attempted a classification of Key Function Groups, Cadre Management, Management System, Performance Management System, HR System for Manpower Management. Further productivity is also examined to suggest suitable follow up.

1.5. Data Collection

A detailed data sheet was developed to gather requisite information on Annexure-I and Annexure-II. We also gave due cognizance to NDMC budget including the latest one presented in the month of January, 2018 to seek necessary/latest feedback for different proposals.

1.6. Limitation

The database in NDMC is better than average ULB in India. However, the data on different attributes of respective functions is highly segregated. It is not maintained in a requisite form and bottom up reporting. Therefore, productivity, performance, assessment and follow up is largely ad-hoc in individual centre and inadequate for meaningful assessment accordingly.

Chapter 2

Global Manpower Assessment of NDMC

This section brings together the inter-departmental assessment of manpower in the New Delhi Municipal Council (NDMC) with a particular reference to productivity ratio, distribution, relative weight, nature of appointment (regular and muster role), average per day per employee cost to the council (CTC) and overall expenditure on manpower deployment.

2.1. Productivity Ratio of NDMC (IOR)

Productivity of NDMC is examined in terms of Input (Resources=Revenue Expenditure) and Output (Revenue Income) Ratio (IOR) (Table 1). It is striking to note that IOR of NDMC is 1.07 and 0.97 without electricity and water supply functions of NDMC. This is significantly low as compared to SDMC (South Delhi Municipal Corporation) being 1.19, Bruhat Bengaluru Mahanagara Palike (BBMP) being 1.15 and 2.09 the average of 35 municipal corporation in the country. It is therefore, at preliminary level, evident from productivity analysis that NDMC needs to rationalise the input cost (Labour + Resources) to improve output (Revenue).

Table 2.1
Productivity Ratio of NDMC

(Rs. In '000)

Components	NDMC ¹		SDMC ²	BBMP ³	35 Municipal Corporations of India ⁴
	With Electricity & Water Supply	Without Electricity & Water Supply			
Output (Revenue Income)	29961131	16929172	39549600	43098900	127880000
Input (Revenue Expenditure)	28083725	17387405	33249600	37546100	61321500
IOR	1.07	0.97	1.19	1.15	2.09

Source: ¹ Actuals 2016-17, NDMC Budget 2018-19; ² Actuals 2015-16, SDMC Budget 2017-18; ³ BBMP Actuals 2017-18; ⁴ Municipal Finance in India

An Assessment, Department of Economic Analysis and Policy, Reserve Bank of India, Mumbai, December 27, 2007 (Page 96,98)

Average cost to council per day per employee (CTC) at NDMC also confirms that even without water and electricity, the CTC is fairly high as compared to its neighbouring SDMC (Table 2). Similarly, BBMP incurs substantially lower cost per employee per day at Rs.1350. It may be noted that BBMP has outsourced large part of horticulture and SWM activities.

Table 2.2
Average Cost to Council per Day per Employee (in Rs.)

NDMC ¹		SDMC ²	BBMP ³
With Electricity & Water	Without Electricity & Water		
7326.0	5042.3	3503.9	1350

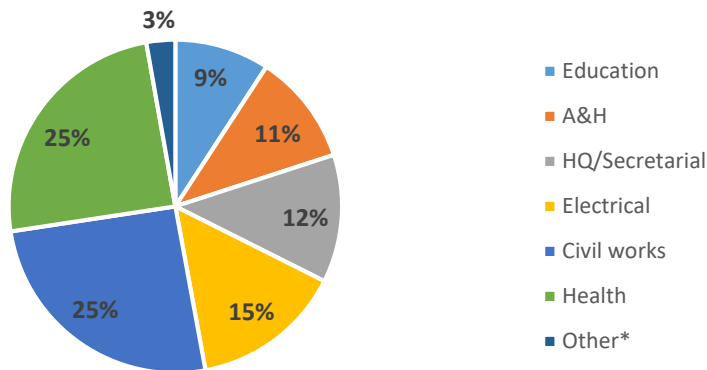
Source: ¹ Actuals 2016-17, NDMC Budget 2018-19; ² Actuals 2015-16, SDMC Budget 2017-18, ³BBMP Data Sheet

It is therefore, observed that Data on IOR indicate the scope for enhancement of productivity and manpower assessment, and rationalization of respective function in NDMC.

2.2. Composition of NDMC Manpower

NDMC has 16761 employees which are divided into two main categories i.e. Regular and MR (Muster Role employee i.e. Regular MR and Temporary MR). These employees according to NDMC, are broadly grouped into six categories of functions namely (i) HQ based services, (ii) Education, (iii) Horticulture, (iv) Electrical, (v) Civil Engineering and (vi) Health & related services. It is important to note from the composition of NDMC manpower that (Table 2.3 & Figure 2.1):

Figure 2.1
Distribution of Manpower in different activities



Source: Personnel Department, NDMC, 2018

- Civil Engineering and Health are two largest functions of NDMC containing a majority of employees (25% each) followed by electrical (15%) HQ, secretarial services (12%), A&H (11%) and Education (9%);
- Share of 6237 muster role employees is fairly significant being 37.2% of total staff strength of NDMC;
- Civil, Health and Electrical have largest concentration of MR employees at 31%, 21% & 20% respectively.
- Inter departmental share of muster role employees within the respective category shows that Electrical (51) Civil (46), Horticulture (41), Health (32) and Education (29) have most of the MR employees with almost one third to half employees coming from muster role category whereas HQ based services show less than 1% muster role employees (Figure 2.3b and Figure 2.2).

Table 2.3a
Distribution of Employees as per major activity and nature of employment

S. No.	Establishment	Total Deployment	Regular Employees	% of Total Regular Deployment	Muster Role employees	% of Total MR Deployment
1	Education	1545	1092	10.4	453	7.3
2	A&H	1806	1064	10.1	742	11.9
3	HQ	2074	2056	19.5	18	0.3
4	Electrical	2467	1198	11.4	1269	20.3
5	Civil Engineering	4268	2325	22.1	1943	31.2
6	Health	4126	2789	26.5	1337	21.4
7	Other*	475	0	0.0	475	7.6
	Total	16761	10524	100.0	6237	100

*only RMR and TMR Employees

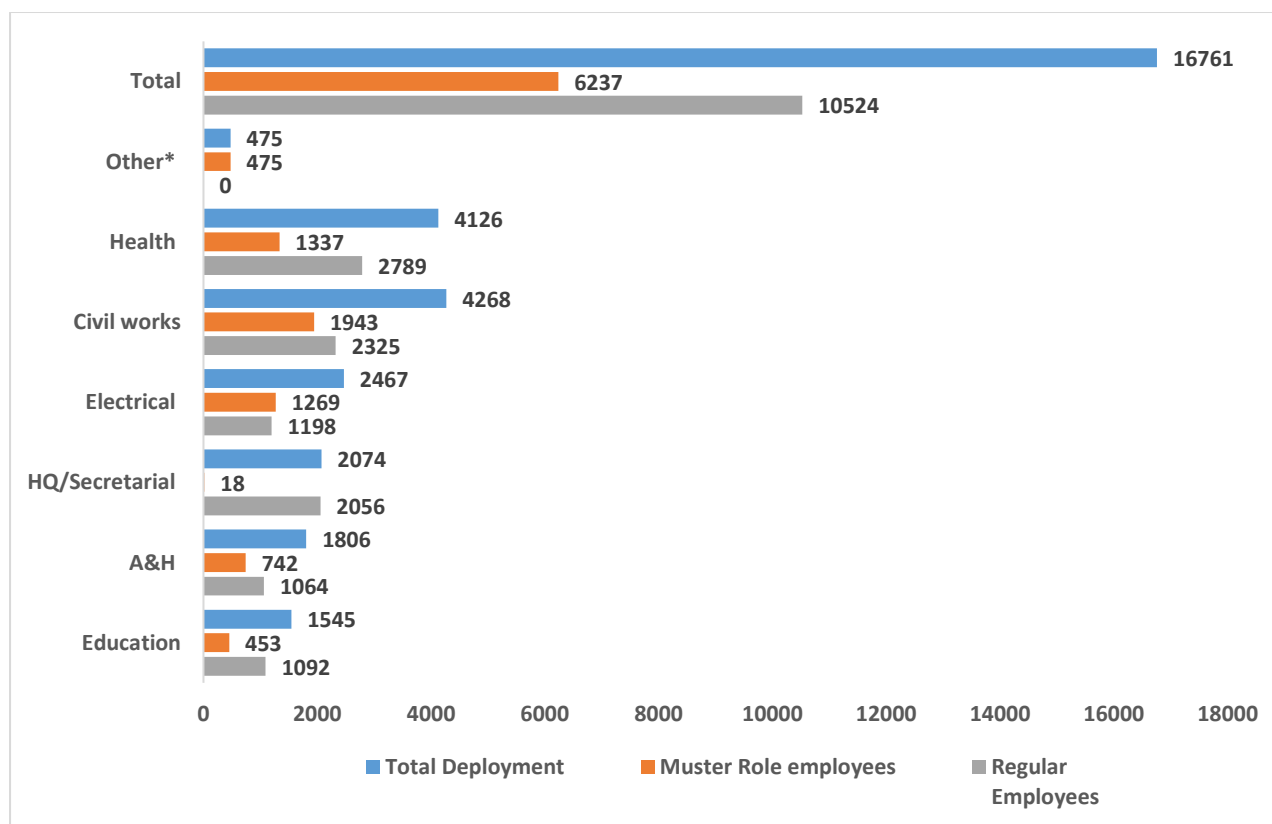
Source: Personnel Department, NDMC

Table 2.3b
Distribution of Employees as per major activity and nature of employment

S. No.	Establishment	Total Deployment	Regular	MR
1	Education	1545 (100%)	1092 (71%)	453 (29%)
2	A&H	1806 (100%)	1064 (59%)	742 (41%)
3	HQ	2074 (100%)	2056 (99%)	18 (1%)
4	Electrical	2467 (100%)	1198 (49%)	1269 (51%)
5	Civil Engineering	4268 (100%)	2325 (54%)	1943 (46%)
6	Health	4126 (100%)	2789 (100%)	1337 (32%)
7	Other*	475 (100%)	0 (0%)	475 (100%)
	Total	16761 (100%)	10524 (63%)	6237 (37%)

*only RMR and TMR Employees
 Source: Personnel Department, NDMC

Figure 2.2
Distribution of Muster Role Employee in different functions



Source: Personnel Department, NDMC

2.3. Inter-city Composition of Revenue Expenditure (Establishment / Administrative / O&M Expenditure)

Revenue Expenditure has been examined with a particular reference to establishment (Salaries, pension, administrative & other related expenditure.) and O&M expenditure on specific services to determine the efficiency in municipal expenses and services. Table 4 indicates that NDMC establishment expenditure is relatively high as compared to average establishment expenditure for municipal corporations and a capital city (Bhubaneswar) which is also frontline smart city in the country. It is important to note that (Table 2.4 and Figure 2.3)

- NDMC records 43.57% expenditure towards in establishment as compared to 24.13% in Bhubaneswar & 32.61% average in 35 municipal corporation in the country as per RBI study (2011),
- The high share of establishment expenditure appears to limit the share of capital expenditure in relative terms, and
- Accordingly, the reduction in establishment and O&M expenditure may lead to availability of more funds for capital projects which is fairly significant in the light of NDMC mission to become a world class model of smart city (Figure 3).

Table 2.4
Distribution of Expenditure

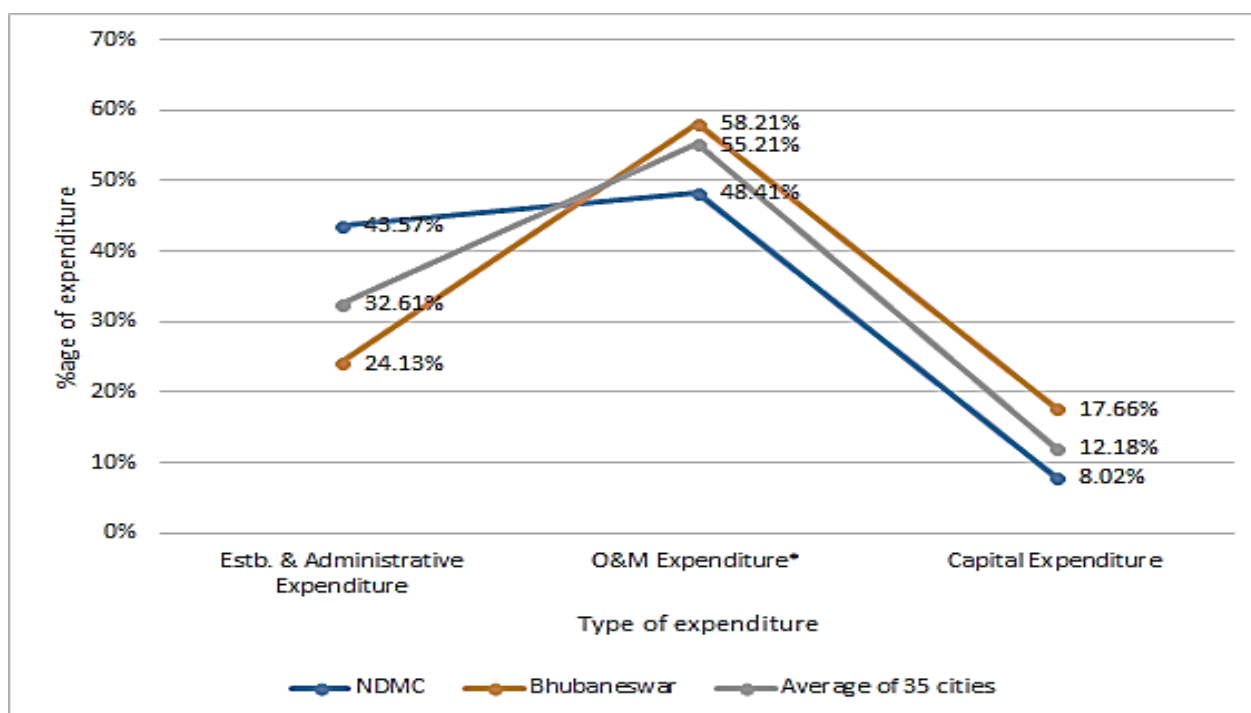
(Rs. In '000)

Type of Expenses	NDMC ¹	Bhubaneswar ²	Average of 35 cities ³
E&A Expenditure	13303516 (43.57%)	524851 (24.13%)	40255000 (32.61%)
O&M Expenditure	14780209 (48.41%)	1266246 (58.21%)	68159000 (55.21%)
Capital Expenditure	2448365 (8.02%)	384229 (17.66%)	15042400 (12.18%)
Total	30532090 (100%)	2175326 (100%)	123456400 (100%)

Figures in the brackets indicate % share to total

Source: ¹Actuals 2016-17, NDMC Budget 2018-19; ²Actuals 2015-16, Bhubaneswar Municipal Corporation Budget 2017-18; ³Municipal Finance in India: An Assessment, Department of Economic Analysis and Policy, Reserve Bank of India, Mumbai, December 27, 2007(Page 123)

Figure 2.3
Expenses in different cities



Source: Table 3- Distribution of Expenditure

Table 2.5
Share of Establishment & Administrative Expenditure and O&M Expenditure

(Rs. In '000)

S. No.	Major Functions	E&A Expenditure	% of Total Establishment Expenditure	O&M Expenditure	% of Total O&M Expenditure
1	Education	1144883	8.6%	124482	1.14%
2	A&H	866071	6.5%	252494	2.31%
3	HQ	3615945	27.2%	137540	1.26%
4	Electrical	1244159	9.4%	8531455	78.13%
5	Civil Engineering	1602253	12.0%	1457025	13.34%
6	Health	2082735	15.7%	413414	3.79%
7	Other*	2747470	20.7%	2708	0.02%
	Total	13303516	100%	10919118	100%

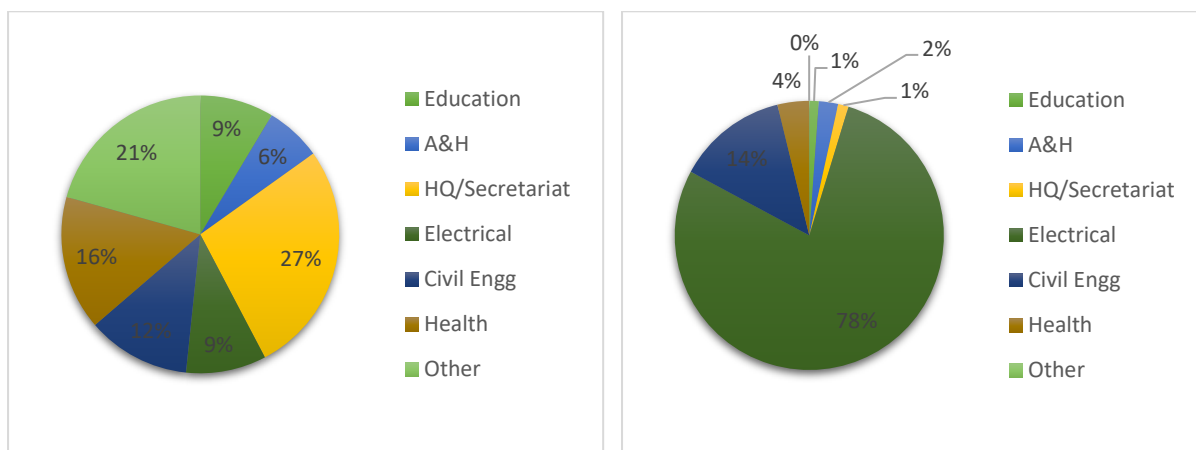
Source: NDMC Budget 2018-19, Personnel Department, NDMC

Establishment Expenditure includes Salaries, Wages and Bonus, Benefits and Allowances, Other Terminal & Retirement Benefits, Pension

*Others includes Pension for Administration for NDMC Staff

Figure 2.4

Distribution of (a) E&A and (b) O&M Expenditure in different functions



(a) E&A Expenditure

(b) O&M Expenditure

Source: NDMC Budget 2018-19, Personnel Department, NDMC

2.4. Inter-function distribution of Revenue Expenditure of NDMC

Distribution of Establishment and O&M expenditure among major categories of NDMC functions reveals the relative weight of respective function. It is striking to note from Table 2.5 are Table 2.3 (a & b) that:

- a. The composition of employees as given in Table 2.3(a & b) shows a vertical structure with the dominance of HQ based activities and services of NDMC establishment. In addition, Health, Horticulture and Civil Engineering appear to be labour intensive whereas electricity and education present a typically different nature of function.
- b. The composition of HQ based activities involves 27.2% of establishment expenditure with only 12% deployment. It is also noted that HQ based services constitute 99% of regular employees. It may be noted that HQ has concentration of departmental heads and other senior officers covering Director, Joint Director, Deputy Director, Section Officer, Head Assistant, Senior Assistant & Junior Assistant, PS, PA and steno etc. All of them are regular employees.
- c. Health services with 25% of total deployment of workforce out of which nearly 1/3rd are muster role employees have 15.7% share in the total establishment expenditure and only 3.8% share in the O&M expenditure. These Figures confirm the labour-intensive nature of health services.

- d. Horticulture (with 11% of total deployment out of which 41% are on MR) shows only 6.5% of establishment & administrative expenditure and 2.3% of O&M expenditure. This is another labour-intensive function.
- e. Civil Engineering (with 26% of deployment out of which 46% are MR) shows a similar pattern of distribution of establishment (12%) but relatively higher share of O&M (13.34%) expenditure confirming the nature of works/construction function which involves extensive use of, material for road/building etc.
- f. Electrical (with 15% share of total NDMC employees out of which 51% work on MR) has a highest share of O&M (78.13%) along with 9.4% establishment expenditure indicating the specific nature of the function and technology adoption in the management of its activities. This function is typically different from normal NDMC functions.
- g. Education (with 9% share of employment out of which 29% work on MR) shows 8.6% for establishment and 1.14% in O&M expenditure suggesting specific nature of work of teachers and upkeep of schools.

2.5. Intra-functional Distribution of Revenue Expenditure

Composition of revenue as given in Table 2.6 is worth noting. Intra-functional distribution shows that:

- a. NDMC has a vertical nature of institutional set-up with prominence of HQ based activities and dominance of Health, Horticulture and Education as labour intensive function along with Electricity and Education as different type of functions.
- b. Health services (83.4%), Horticulture (74.2%), Education (65.9%), Civil (53.7%) HQ/Secretarial service (50.8%) have majority of revenue expenditure on establishment whereas it is 12.7% in electricity.
- c. Health, civil and Horticulture (constituting 60% of employees) deserve special attention on rationalization of manpower whereas HQ based services (with only 12% employees) reaffirms a vertical nature of deployment and consuming administrative expenditure 51%, 49% pension contribution for the whole organization
- d. Education and Electricity present two different stream of exposure using 66% and 13% share of their revenue expenditure. This is typically different pattern of expenditure on municipal functions and deserves a suitable cognizance.

Table 2.6
Establishment and O&M Expenditure of NDMC in 2016-17 (Actuals)

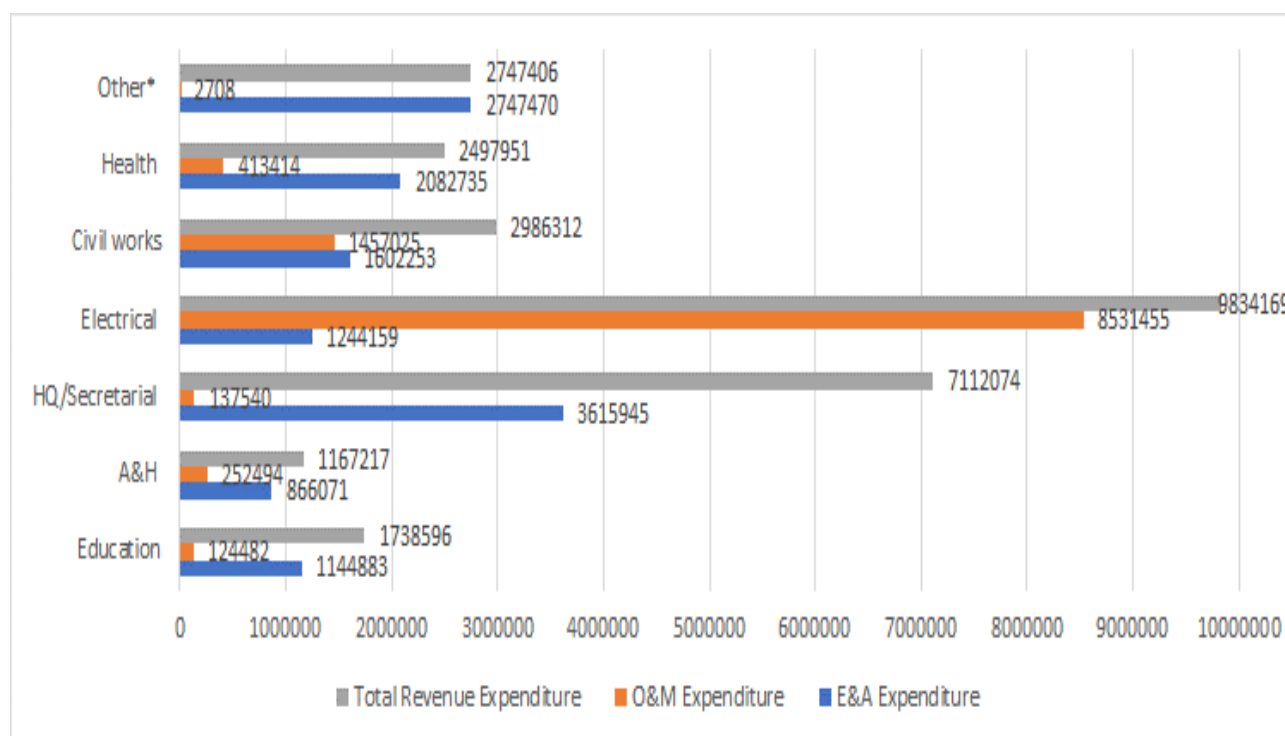
(Rs. In '000)

S.No.	Major Functions	Total Revenue Expenditure	E&A Expenditure		O&M Expenditure		Other Expenditure#	
			Amount	% of Revenue Expenditure	Amount	% of Revenue Expenditure	Amount	% of Revenue Expenditure
1	Education	1738596	1144883	65.9%	124482	7.16%	469231	26.99%
2	A&H	1167217	866071	74.2%	252494	21.63%	48652	4.17%
3	HQ	7112074	3615945	50.8%	137540	1.93%	3358589	47.22%
4	Electrical	9834169	1244159	12.7%	8531455	86.75%	58555	0.60%
5	Civil Engineering	2986312	1602253	53.7%	1457025	48.79%	-72966	-2.44%
6	Health	2497951	2082735	83.4%	413414	16.55%	1802	0.07%
7	Other*	2747406	2747470	100.0%	2708	0.10%	-2772	-0.10%
	Total	28083725	13303516	47%	10919118	38.88%	3861091	13.75%

Other Expenditures which are not classified in E&A and O&M Expenditures includes prior period items and miscellaneous expenditures.

Source: NDMC Budget 2018-19, Personnel Department, NDMC

Figure 2.5
Share of Establishment and O&M Expenditure in Revenue Expenditure



Source: NDMC Budget 2018-19, Personnel Department, NDMC

2.6. Labour Intensity and Manpower Rationalization

Labour intensity of respective functions particularly the incidence of unskilled and semi-skilled workforce brings together the scope for manpower reforms at NDMC. Share of revenue expenditure and size of employees in NDMC is worth noting from (Table 2.7 and Figure 2.6).

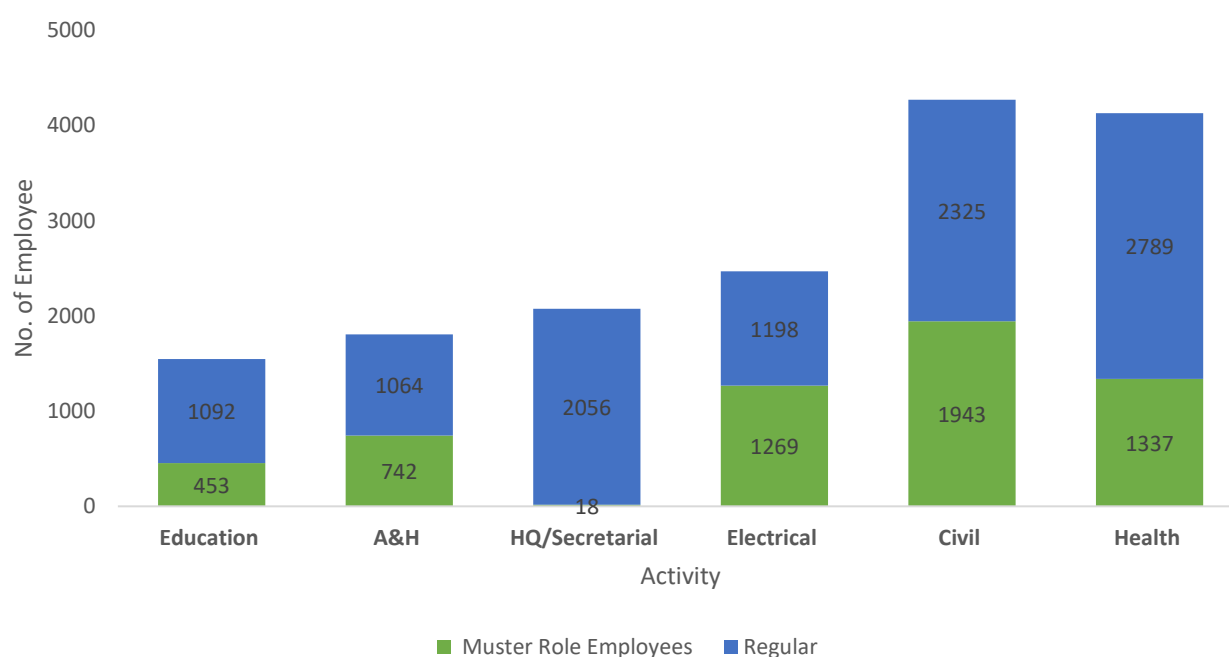
Table 2.7
Share of Establishment Expenditure and Muster Role in different Establishment

Major Functions	Share of Estb. In Revenue Expenditure of Respective Functions (in %)	Total deployment	No. of Total MR Employees	Share of Muster Role Employee (in %)
Education	58.38	1545	453	29
A&H	66.39	1806	742	41
HQ/Secretarial	7.51	2074	18	1
Electrical	12.09	2467	1269	51
Civil Engineering	46.12	4268	1943	46
Health	79.79	4126	1337	32
Others [#]	195.06	475	475	100
Total	43.59	16761*	6237	37

Others has a higher share of % because of contribution of pension of Rs 2612316 (In '000)

Source: Table 1 & 3

Figure 2.6
Share of Muster Role in total deployment in different functions



Source: Table 1 & 3

Data on inter functional labour intensity again confirms (Table 2.4) that:

- a. The Health & Horticulture are most labour-intensive functions followed by education, civil, electrical and HQ based activities.
- b. HQ based functions are relatively less labour intensive and top heavy.
- c. High share of muster role personnel by and large is reflected by high share of establishments cost except for electrical which is typically different and technology-oriented function.
- d. Data also confirms that HQ based services and Education are high skill or senior cadre-oriented services which require a different set of analysis for efficiency in expenditure and labour management.

2.7. Average Cost per Employee per day Cost to Council (CTC)

Average cost per employee per day is yet another indicator to show labour intensity. It is important to see from Table 2.8 that

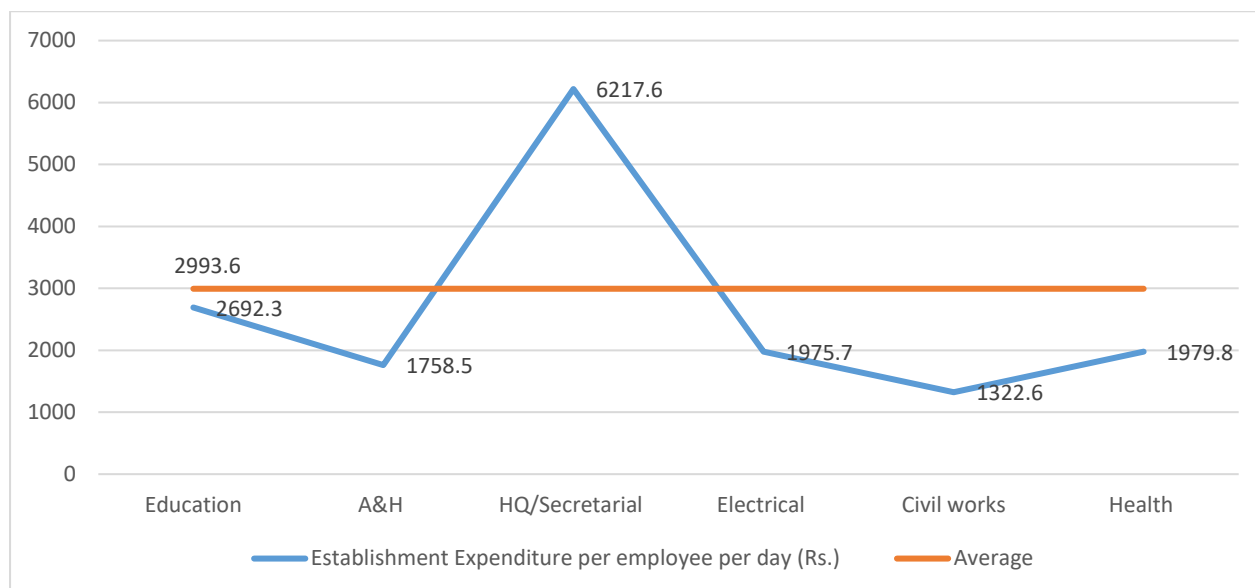
Table 2.8
Establishment wise Per Employee Expenditure of NDMC in 2016-17

<i>(Actuals)</i>				
S. No.	Major Functions	Establishment Expenditure* (Rs.)	Deployment	CTC employee per day (Rs.)
1	Education	1014954000	1545	2692.3
2	A&H	774904000	1806	1758.5
3	HQ	3146477000	2074	6217.6
4	Electrical	1189280000	2467	1975.7
5	Civil	1377366000	4268	1322.6
6	Health	1993180000	4126	1979.8
7	Other	2746747000	475	23699.3
8	All	12242908000	16761	2993.6

*Establishment Expenditure includes Salaries, Wages and Bonus, Benefits and Allowances, Other Terminal & Retirement Benefits, Pension

Source: NDMC Budget 2018-19, Personnel Department, NDMC

Figure 2.7
Function wise Per Employee Establishment Expenditure of NDMC in 2016-17 (Actuals)



Source: NDMC Budget 2018-19, Personnel Department, NDMC

- I. HQ based activities and education top the list on CTC confirming the inverse labour intensity and a top-heavy structure in the two functions.
- II. The data of CTC also reaffirms that Horticulture (Rs. 1758.5), Electrical (Rs. 1975.7), Civil Engineering (Rs. 1322.6) and Health (Rs. 1979.8) are four top labour-intensive functions whereas education with Rs 2692.3 shows a different pattern of expenditure.
- III. Figures on others are not comparable as this expenditure includes pension and retirement benefits.

2.8. Relative Weight of Establishment and O&M Expenditure

It is equally important to assess the relative weight of O&M and establishment cost on individual functions Table 2.9 throws light on this.

Table 2.9
Establishment and O&M Expenditure Ratio of NDMC in (2016-17)

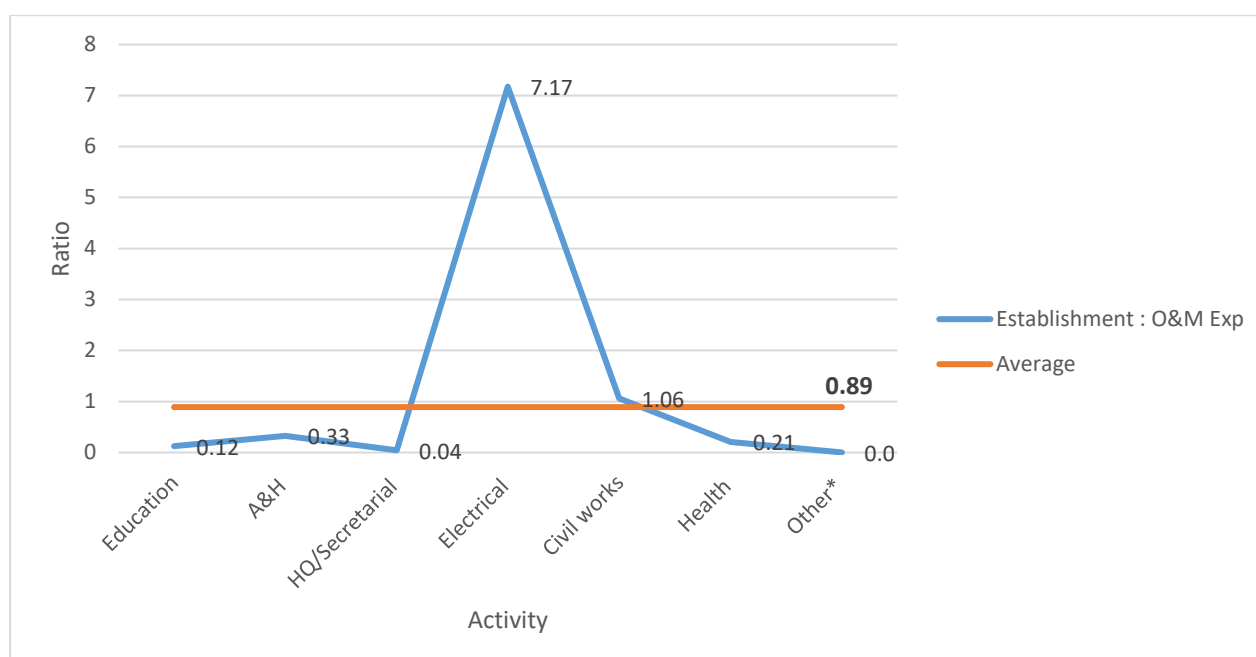
(Rs. In '000)

S. No.	Major Functions	Establishment Expenditure*	O&M Expenditure	Establishment O&M Expenditure
1	Education	1014954	124482	1:0.12
2	A&H	774904	252494	1:0.33
3	HQ	3146477	137540	1:0.04
4	Electrical	1189280	8531455	1:7.17
5	Civil	1377366	1457025	1:1.06
6	Health	1993180	413414	1:0.21
7	Other	2746747	2708	1:0.001
8	Total	12242908	10919118	1:0.89

*Establishment Expenditure includes Salaries, Wages and Bonus, Benefits and Allowances, Other Terminal & Retirement Benefits, Pension.

Source: NDMC Budget 2018-19, Personnel Department, NDMC

Figure 2.8
Establishment expenditure
O&M Expenditure Ratio of different activity



Source: NDMC Budget 2018-19, Personnel Department, NDMC

- The expenditure pattern confirms that Civil, Health, Horticulture are dominated by establishment and salary expenditure along with low share of O&M due to labour intensive nature as elaborated earlier.
- The ratio of E&O/M expenditure is significantly high in Electrical (1:7.17) as compared to average of NDMC (1:0.89) confirming a typically different nature of electrical function in the NDMC.

- c. Further, Civil Engineering shows a relatively high share of O&M expenditure followed by Education (1:0.12), HQ based services (1:0.04), Horticulture (1:0.3) and Health (1:0.2).

2.9. Conclusions

It appears from preceding analysis that:

- a. There is a need to rationalize mobilization of input (Resource= Manpower + O&M) cost to improve output (Revenue) to achieve a relatively higher productivity. Better productivity may also add to the rating of NDMC to enable easy access to capital market.
- b. The incidence of MR (Muster Role employee) is particularly high in NDMC being 37.2% which needs to be examined in the context of right sizing and the establishment expenditure.
- c. HQ based activities and Education with majority of revenue expenditure on establishment have substantial scope to have economy in expenditure and identification of suitable ways and means to review institutional arrangements.
- d. Electricity is a typically different function than routine municipal functions. Although the share of O&M is fairly high, the proportion of MR employee is also high (51.4%) in the electricity function. Therefore, electrical function deserves appropriate attention for rationalization of manpower.
- e. Horticulture, Health and Civil Engineering show high labour intensity and deserve economy in the manpower. The share of MR employee among these three departments is also fairly high being 41%, 32% and 46% respectively. Accordingly, deployment of staff under these services needs to be rationalised.

Chapter 3

Education Department

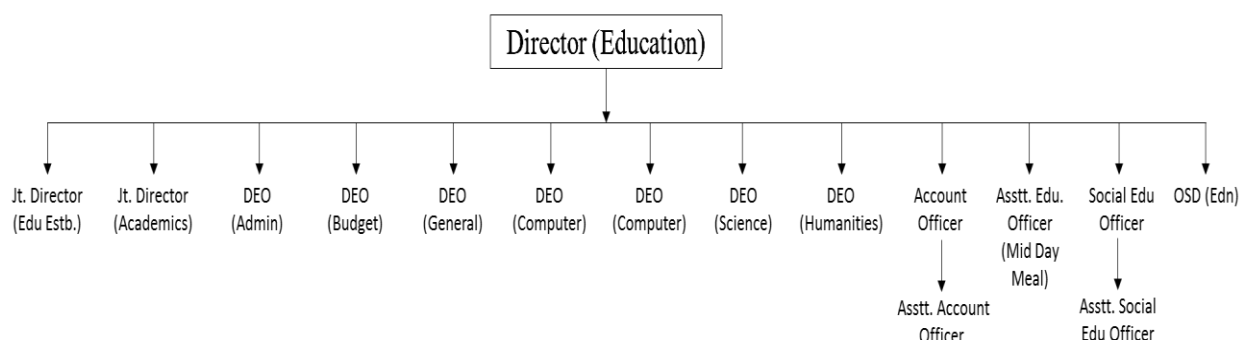
This section brings together the manpower assessment of Education Department of NDMC with a particular reference to typology and distribution of schools, deployment and workload of teachers and adequacy of service in terms of minimum requirements of manpower. Education is one of the obligatory functions of NDMC as per, New Delhi Municipal Council Act, 1994 which specifically mentions:

1. Chapter III, Section 11 (r) “The establishment, maintenance of, and aid to, schools for primary educations subject to such grants as may be determined by the Central Government from time to time”.
2. Further, education is also in the discretionary functions of the council as per Section 12 (a) of the New Delhi Municipal Council Act, 1994. This reference covers “The furtherance of education including cultural and physical education by measures other than the establishment and maintenance of, and aid to, schools for primary education. Accordingly, NDMC initiatives on primary education are as per obligatory functions whereas secondary education is a discretionary function of NDMC.

3.1. The Management of Department

The department is controlled by education wing of NDMC located at its headquarter. The department is headed by Director on deputation to NDMC from Government of India. There are two Joint Directors and Six Deputy Education Officer (DEO). In addition, education department has six other officers covering one each as Accounts Officer, Assistant. Account Officer, Assistant Education Officer (Mid-Day Meal), Social Education Officer, Assistant Education Officer and OSD (Officer on Special Duty) Education. Also refer to Figure 3.1 and Table 3.1

Figure 3.1
Management of Education Department



Source: NDMC Education Department

Table 3.1
Structure of Education Department at NDMC

S. No.	Post	Deployed employee
1.	Director	1
2.	Joint Director	2
3.	Deputy Education Officer	6
4.	Accounts Officer	1
5.	Assistant Account Officer	1
6.	Assistant Education Officer (Mid-day meal)	1
7.	Social Education Officer	1
8.	Assistant Social Education officer	1
9.	OSD (Edn)	1

Source: NDMC Education Department

NDMC schools have fairly good infrastructure including world class classrooms facilities, wifi, smart classes, projectors, e-boards, tablet-based classes, etc. Teachers are trained to use smart teaching technologies.

3.2. Typology and Distribution of Schools, Students and Teachers

NDMC with its total area around 42 km² is running as many as 34 schools. Although, NDMC schools provide nursery and primary education, 13 are exclusively devoted to nursery and primary education (which is listed as an obligatory function as per Section 11 of the New Delhi Municipal Council Act, 1994) whereas 13 schools cover senior secondary education and remaining 8 schools provide education at secondary (7) and middle (1) level. Accordingly, education has become an extended activity by NDMC covering secondary and senior secondary education which is not part of its obligatory functions. Further, there are 11 Navyug Schools are also run by a trust and outside the scope of this study.

Table 3.2
Category wise student distribution in NDMC area

S. No.	Typology of Schools	Schools		Enrolled Student		Average no. of student per School
		Number	% of total	Number	% of total	
1	Nursery Schools	3	9.0	511	2.0	170
2	Primary Schools	10	29.0	3565	17.0	356
3	Middle Schools	1	3.0	288	1.0	288
4	Secondary Schools	7	21.0	2719	13.0	388
5	Sr. Sec Schools	13	38	14472	67.0	1113
6	Total	34	100	21555	100	634

Source: Base Table 3-1

It is further important to note from Table 3.2 that Nursery and Primary Schools include 38% share in the total schools covering a portion of 19% students coming to all the NDMC Schools. Overwhelming majority (81%) of students go to Middle (1%), Secondary (13%) and Sr. Secondary (67%) schools which also have nursery/primary classes.

3.3. Distribution of Students and Teachers

The number of students in nursery to primary education covering all the students under this category works out to 11955 students among all 34 schools (Table 3.3) indicating a major share of 55% of total students.

Table 3.3
Composition of Teachers and Students

Particular	Nursery - V		VI-X		XI-XII		All
	Number	%age of Total	Number	%age of Total	Number	%age of Total	Number
Student	11955	55.5	6720	31.2	2880	13.4	21555
Teacher	135	16.7%	461	15.9%	335.5	67.4%	806

Source: Base Table 3-1

On the other hand, deployment of teachers in Nursery to Primary School covers 45% of total teachers / HM (Principals). Therefore, it appears that Primary Education cover a majority of students and nearly half of the teachers. The middle and secondary school attracts almost equal importance.

3.4. Manpower Sanction and Deployment

It is important to note that nearly 75% sanctioned posts are filled, whereas the share of Class D employees is having highest recruitment with namely 95%, the recruitment at Class C (75%). B (65%) and A (78%) is comparatively low (Table 3.4)

Table 3.4
Category wise Deployment of Staffs

Category	Sanctioned Post	Deployed		Vacant	
		Number	% age	Number	% age
A	40	31	77.5	9	22.5
B	977	639	65.4	338	34.6
C	303	228	75.2	75	24.8
D	407	385	94.6	22	5.4
Total	1727	1283	74.3	444	25.7

Source: Base Table 3-II

3.5. Process of Deployment

Academic and related staff is divided into three categories which includes Principal, Vice Principal and PGT (Post Graduate Teachers), TGT (Trained Graduate Teachers), PRT (Primary Graduate Teachers) and other specific subject teachers support staff covering Group D includes peon, beldar, safai karamchari and chowkidar.

All the Category 'A' posts are filled through promotions whereas a majority of Category 'B' posts are also filled through promotions. On the other hand, almost two third post (65%) at Class 'C' are filled through direct recruitment which provide scope for onward promotions. (Table 3.5)

Table 3.5
Process of Deployment of staffs

Category	Total Deployed	Direct Recruitment	Promotion
A	31	-	31
B	639	308	331
C	228	149	79
D	385	-	-
Total	1283		

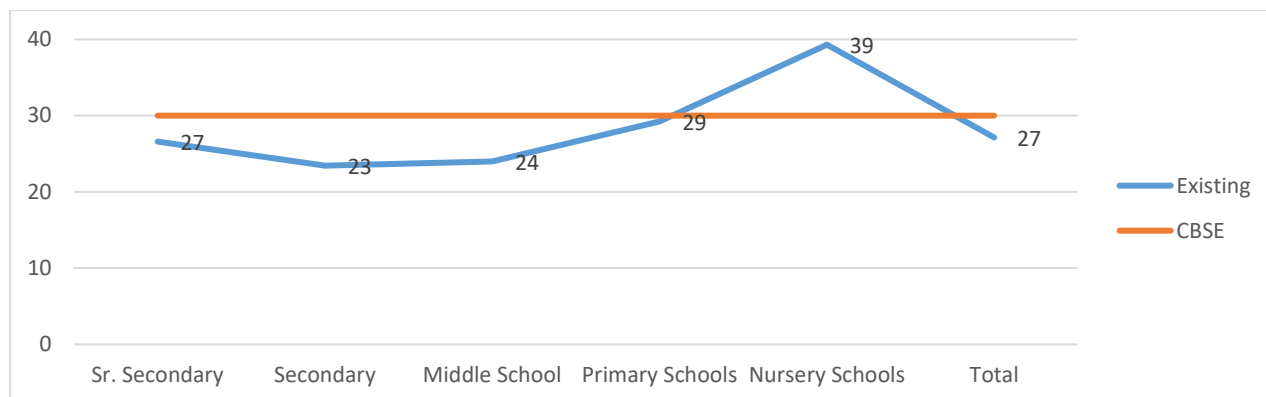
Source: Base Table 3-II

3.6. Workload

On the whole, Student Teacher Ratio is within the prescribed norms except for nursery schools having a ratio of 1:27 (which is calculated as Total Students Enrolled i.e., 21555

divided by Total Teachers i.e., 806) as compared to CBSE Affiliation Bye-Laws of student/teacher 1:30. However, CBSE has also prescribed ceiling of student as 40.

Figure 3.2
Student Teacher Ratio in various category schools of NDMC



Source: Base Table 3-1

Student Teacher Ratio on the other hand show a great deal of variation from school to school and one category of classes (Nursery, Primary, VI-X and XI-XII) to others. It is important to note from base Table 3.1 that:

- Nursery to V category shows a fairly high distribution of student teacher ratio showing only 15 of schools out of 34 schools falling below the average of 29 students.
- The student to teacher ratio in the category VI to X is fairly low being 6 to 22 students per teacher among individual schools (Base Table 3-I).
- Similarly, student to teacher ratio for Class XI & XII is abnormally low being by 9 ranging for 5 (Kidwai Nagar) to 13 (Ansari Nagar) among individual school. One reason for low ratio among the class category other than Nursery to V can be sited that teachers are needed for different subjects in each school irrespective of number of students which is fairly logical.

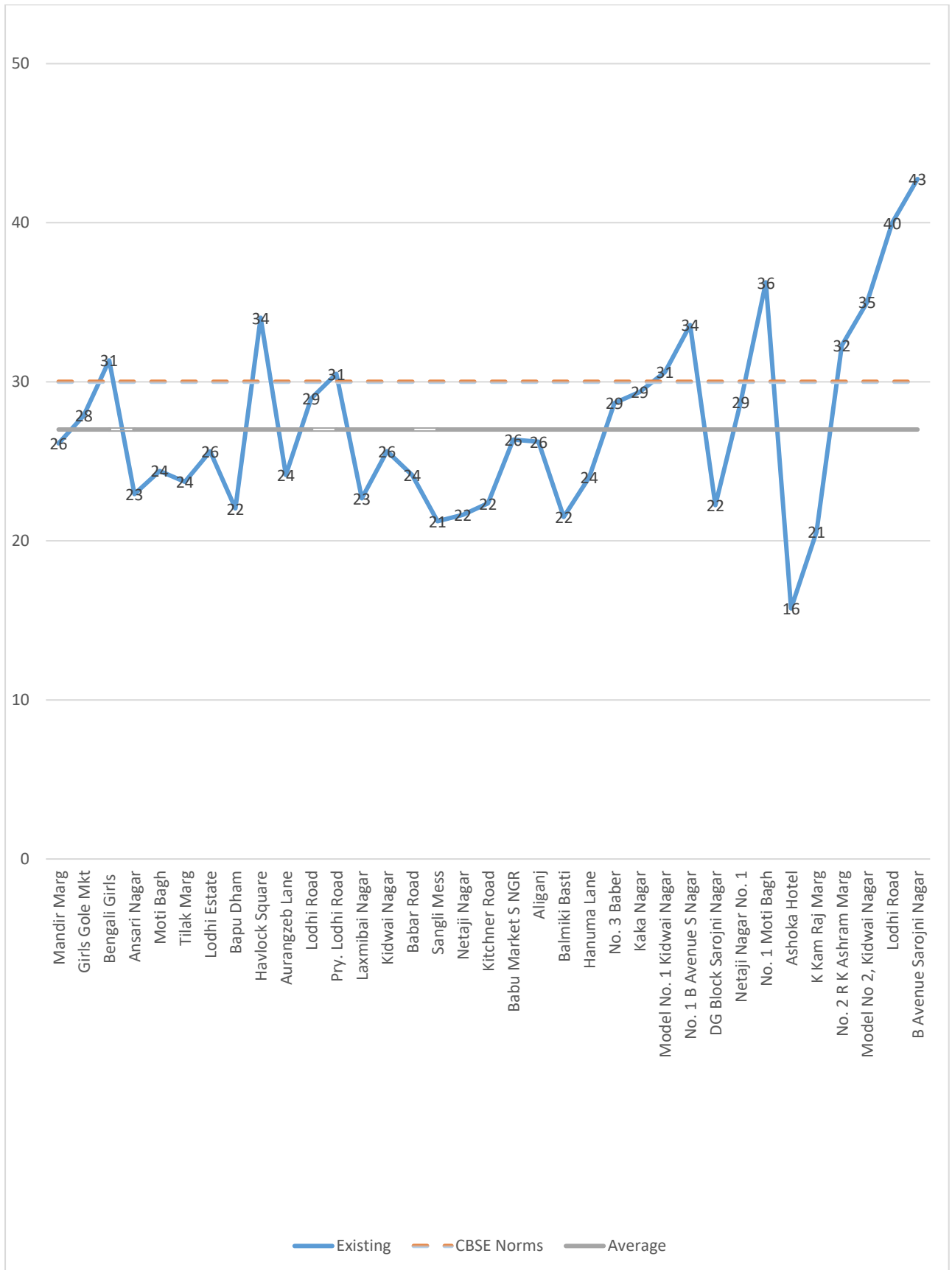
Table 3.6
Student Teacher Ratio in Different Classes

Classes	Total Students	Total Teachers	Student/Teacher Ratio
Senior Secondary	14472	545	26.6
Secondary	2719	116	23.4
Middle	288	12	24.0
Primary	3565	122	29.2
Nursery	511	13	39.3

Note1: Overall Student Teacher Ratio is 27.13.

Note2: Student Teacher Ratio is calculated as Number of Students divided by Number of Teachers

Figure 3.3
School-wise Student-Teacher Ratio of NDMC schools



Source: Base Table 1; Education Department, NDMC

Base Table-I

Sr. SECONDARY SCHOOL																	
S.No.	Name of school	Enrolled Students				Teachers				Total Teaching Staffs	Non-Teaching Staff	Total Teaching Staff	Non-Teaching Teaching	Student Teacher Ratio			
		Nur-V	VI-X	XI-XII	Total	NT	AT	TGT	PGT					Nur-V	VI-X	XI-XII	Total
1	Mandir Marg	429	636	294	1359	1	14	15	22	52	13	65	1 4	29	22	8	26
2	Girls Gole Mkt	446	395	274	1115	4	10	11	15	40	14	54	1 2.85	32	19	11	28
3	Bengali Girls	822	559	155	1536	4	20	15	10	49	15	64	1 3.3	34	16	6	31
4	Ansari Nagar	218	268	386	872	2	7	10	19	38	11	49	1 3.45	24	16	13	23
5	Moti Bagh	343	442	264	1049	1	12	15	15	43	13	56	1 3.3	26	16	9	24
6	Tilak Marg	188	224	252	664	1	5	9	13	28	10.5	38.5	1 2.6	31	16	11	24
7	Lodhi Estate	392	451	233	1076	2	13	13	14	42	15	57	1 2.8	26	17	9	26
8	Bapu Dham	374	214	117	705	3	11	8	10	32	9.5	41.5	1 3.36	27	11	7	22
9	Havlock Square	531	494	319	1344	3	14	11	11.5	39.5	10	49.5	1 3.95	31	20	14	34
10	Aurangzeb Lane	222	315	115	652	1	7	10	9	27	12	39	1 2.25	28	19	6	24
11	Lodhi Road	749	540	158	1447	5	18	19	8	50	10	60	1 5	33	15	6	29
12	Pry. Lodhi Road	549	0	0	549	0	18	0	0	18	3	21	1 6	31	0	0	31
13	Laxmibai Nagar	323	281	167	771	2	10	11	11	34	14	48	1 2.42	27	13	8	23
14	Kidwai Nagar	643	544	146	1333	3	18	20	11	52	12	64	1 4.3	31	14	5	26
SECONDARY SCHOOL																	
1	Babar Road	252	303	0	555	1	10	12	0	23	9	32	1 2.5	23	14	NA	24
2	Sangli Mess	140	136	0	276	1	6	6	0	13	6.5	19.5	1 2	20	11	NA	21
3	Netaji Nagar	117	186	0	303	1	6	7	0	14	9	23	1 1.5	17	14	NA	22
4	Kitchner Road	142	171	0	313	1	7	6	0	14	7	21	1 2	18	13	NA	22

5	Babu Market S NGR	273	228	0	501	2	9	8	0	19	9	28	1 2.1	25	13	NA	26
6	Aliganj	212	129	0	341	2	5	6	0	13	7	20	1 1.85	30	12	NA	26
7	Balmiki Basti	322	108	0	430	2	10	8	0	20	7	27	1 2.85	27	6	NA	22
MIDDLE SCHOOL																	
1	Hanuma Lane	192	96	0	288	1	7	4	0	12	5.5	17.5	1 2.85	24	9	NA	24
PRIMARY SCHOOLS																	
1	No. 3 Baber	258	0	0	258	2	7	0	0	9	3	12	1 3	29	0	NA	29
2	Kaka Nagar	323	0	0	323	2	9	0	0	11	4	15	1 2.75	29	0	NA	29
3	Model No. 1 Kidwai Nagar	551	0	0	551	4	14			18	3	21	1 6	31	0	NA	31
4	No. 1 B Avenue S Nagar	470	0	0	470	3	11	0	0	14	2	16	1 7	34	0	NA	34
5	DG Block Sarojni Nagar	178	0	0	178	2	6	0	0	8	2	10	1 4	22	0	NA	22
6	Netaji Nagar No. 1	402	0	0	402	4	10	0	0	14	3	17	1 4.67	29	0	NA	29
7	No. 1 Moti Bagh	435	0	0	435	2	10	0	0	12	3.5	15.5	1 3.43	36	0	NA	36
8	Ashoka Hotel	126	0	0	126	1	7			8	1	9	1 8	16	0	NA	16
9	K Kam Raj Marg	144	0	0	144	2	5	0	0	7	0.5	7.5	1 14	21	0	NA	21
10	No. 2 R K Ashram Marg	678	0	0	678	4	17			21	3	24	1 7	32	0	NA	32
NURSERY SCHOOL																	
1	Model No 2, Kidwai Nagar	140	0	0	140	0	0	0	0	4	0	4		35	0	NA	35
2	Lodhi Road	200		0	200	0	0	0	0	5	0	5		40	0	NA	40
3	B Avenue Sarojni Nagar	171	0	0	171	0	0	0	0	4	0	4		43	0	NA	43

3.7. Case Study of N.P. Girls Senior Secondary School, Gole Market

The school was established during British rule in the year '1933'. Subsequently the school was handed over to NDMC. Since 1933 to 1947 it was a higher secondary school. In the year 1947 it was named as N.P. Girls Senior Secondary School.

3.7.1. Students and Sections

It is noted during the visit to N.P. Girls Senior Secondary School that 40% students belong to Nursery and Primary class and 60% go to Middle, Senior & Senior Secondary classes. It is noted that 1142 students are accommodated among 33 sections giving an average of 34.6 students per section which is significantly lower than CBSE norms of 40 students per class. (Table 3.7 and 3.8)

Table 3.7
Number of Students Enrolment

Classes	Total Students	Percentage of Students
Nursery	116	10.2%
Primary	340	29.8%
Middle	269	23.6%
Secondary	158	13.8%
Senior Secondary	259	22.7%
Total	1142	100.0%

Table 3.8
Number of Sections

Classes	Sections	Students	Average Student Per Section
Primary	14	456	32.6
Middle	6	269	44.8
Secondary	5	158	31.6
Senior Secondary	8	259	32.4
Total	33	1142	34.6

3.7.2. Composition of Teacher and Students

The section teacher ratio in the school is 1.68 which is slightly more than CBSE norms of 1:1.5. However, in case of individual groups, except of middle and secondary classes, student teacher ratio is low.

Table 3.9(a)
Section Teacher Ratio

Classes	Sections	Teachers	Section Teacher Ratio
Primary	14	16	1.14
Middle & Secondary	11	21	1.91
Senior Secondary	8	16	2.00
Overall	33	53	1.68

* Acc to CBSE Norms it should be 1:1.5

Table 3.9 (b)
Teachers according to Employment Terms

Terms	No. of Teachers
Guest	13
Contract	5
Regular	36
Total	54

Another striking feature to be noted is that majority of students are from outside NDMC area. Further, nursery to primary have overwhelming majority of student for NDMC area. Middle to secondary classes have 42% students from outside NDMC area.

Table 3.10 (a)
Total Students Enrolled

Area	Students	Percentage
NDMC	507	44%
Outside NDMC	635	56%
Total Students	1142	100%

Figure 3.3
Percentage of students (area wise)

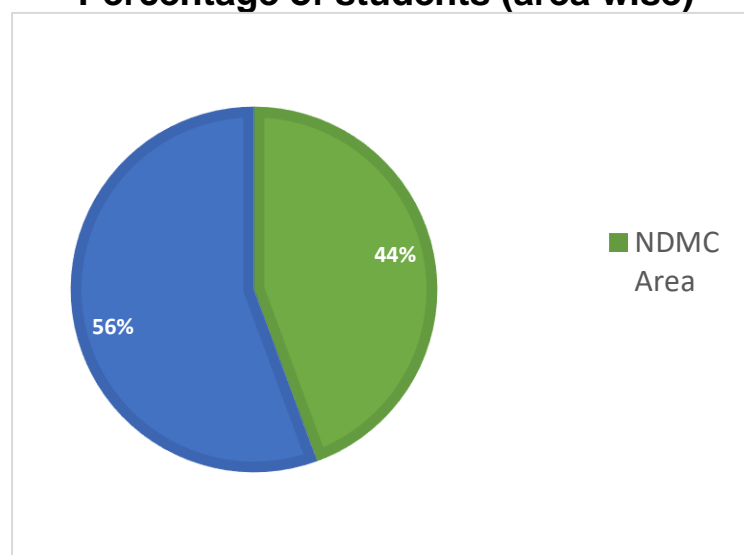


Table 3.10 (b)
Total Students Enrolled (According to Area)

Classes	NDMC Area	Outside NDMC	Total
Nursary-Primary	24%	76%	100%
Middle-Senior Secondary	58%	42%	100%

Section Teacher Ratio is calculated as No of teachers divided by No of sections. In this school within primary class the ratio is 1:1.14; Middle & Secondary class ratio is 1:1.91 and Senior Secondary class ratio is 1:2.0. According to CBSE norms the section teacher ratio should be 1:1.5.

3.8. Capacity Building

Faculty development is an important component of manpower effectiveness. It is noted that 42% to 61% of teachers attended workshops organized by education department. Therefore, a sizable number of staff is not regularly exposed to changing methods and techniques to be used in their respective subject areas.

Table 3.10
List of training conducted for teachers in 2017-18

Workshops conducted by Education Department					
S No.	Workshop	No. of Days	Participants	Number	%age of Working
1	Assistant Teachers (DSSSB)/LRT for all NDMC/ Navyug	4	Asstt. Teacher	150	45.0
2	Assistant Teacher of NDMC/Navyug Schools	4	Asstt. Teacher	140	42.0
		4	Asstt. Teacher	140	42.0
3	Asstt. Teacher (Urdu)/ Lab Asstt./ Librarians (all librarians DMC/Navyug /Public Relation Dept. NDMC)	3	Asstt. Teacher (Urdu)	45	61.2
		4	Librarian & Lab Assistant	30	
4	A Four day Training Programme (INSET under SSA) organized by DIET RK Puram	4	Nursery Teacher	80	97.6
5	In-Service teacher training under SSA of Asstt Teacher working in NDMC/Navyug Schools	4	Asstt. Teacher (I-II)	143	42.9
		4	Asstt. Teacher (III-IV)	190	57.1
6	Train the Trainer workshop for SMC members	4	HoS	19	79.2
			DEO (Science)	1	16.7

Source: NDMC Education Department

3.9. Main Findings

The study observes that department of Education of NDMC is an important department and deals with one of the critical and obligatory functions of civic body i.e. Primary Education as per Section 11 of the NDMC (Amendment) Act, 2011.

The share of education department in NDMC budget is Rs. 171.59 lakhs which is 6.11% of total in the year 2016-17. However, the secondary education is not a part of municipal functions as per the list given in the Act. This service however is largely covered by Government of NCTD in the state which has proposed its largest share being 26% of budget for 2018-19 towards education¹. Important points which may be noted from manpower assessment are:

- i. Spatial outreach of NDMC schools is fairly wide with 34 schools over an area of 42 km². As may be seen from the case study, the school cover a fairly large number of students coming from the area outside the limits of NDMC.
- ii. All 34 schools carry out obligatory function of education i.e. Primary Education. However, 21 schools also provide education covering class VI and above.
- iii. Yet, 45 percent of students belong to non-primary segment of education.
- iv. Student to teacher ratio in nursery to primary segment of schools is by and large comparable to norms. Whereas, the ratio for Secondary/Sr. Secondary Schools is fairly low.
- v. The low students to teacher ratio in the secondary education schools of NDMC is largely attributed to requirement of teachers for different subjects in the individual schools irrespective of number of students.
- vi. On the whole 74% posts are filled whereas 94% positions for Group 'D' positions are occupied, 'Teaching positions under 'A', 'B' or 'C' category are filled in a ratio of 77, 65 and 75 percent respectively.
- vii. Capacity building containing faculty developed in the NDMC schools has further scope of improvement. Capacity building of higher standard teachers especially TGT and PGT teacher should be done.
- viii. It is noted that section teacher ratio is high in the sample cases. 56% of students come from outside the NDMC limits. Similarly, student teacher ratio is 27.13 which is significantly lower than CBSE norms of 30 and as per Unified District Information System for Education (UDISE) norm of 35.

¹ Hindustan Times (22-03-2018), "Delhi Budget 2018-2019: AAP allocates Rs 14,000 crore to education sector" website: <https://www.hindustantimes.com/education/delhi-budget-2018-2019-aap-allocates-rs-14-000-cr-or-26-of-total-money-to-education-sector/story-7I9sKUOXChaxgwmgHK6RgK.html>

3.10. Recommendations

Productivity, efficiency and client orientation should be the key areas of focus for manpower management. NDMC deployed 74.3% of sanctioned posts whereas efficiency in terms of coverage of student (STR) remains lower than prescribed norms. Specific recommendations on manpower deployment in education are:

- i. NDMC should further consolidate its activities on Primary Education being a mandated function as per Section 11 of the New Delhi Municipal Council Act, 1994.
- ii. Accordingly, the manpower positions as sanctioned posts need to be reviewed from its decision about the expansion of education beyond primary level. It may include freezing or scrapping the 'vacant' posts.
- iii. Productivity of teachers in the nursery to V segment of schools need to be reviewed on case to case basis and suitability of redeployment of teachers from one place to other.
- iv. There is a need for NDMC to separate primary and secondary education from each other to consolidate its obligatory function of education in a more focused manner.
- v. Accordingly, NDMC has to minimize its footprint in the secondary education in line with the practice adopted by MCD. However, it may continue with secondary education primarily to serve and encourage and accommodate its primary school children to study secondary education.
- vi. Thus, the number of secondary schools need to be rationalized. It will also provide an opportunity to improve student teacher ratio by having more students and more teachers in a relatively less number of schools.
- vii. Asset Management Exercise should also be done to work out suitable plan for the assets in the schools including land and building to ensure optimum use of space.
- viii. More students can be accommodated in case the education is taken up in 'shifts' as already practiced elsewhere in NCTD.
- ix. In this regard, NDMC may also consider skill education and training at the space at available sites.
- x. At the same time, monetization of such space may also be examined along with municipal social agenda to partially recover the cost considering the hi-tech potential of skill and employment creation covering outsourcing of avenues for world class/hi-tech business establishment.
- xi. It is suggested that a separate trust or SPV (special purpose vehicle) under full control of NDMC may be established to handle entire education as indicated above. This arrangement will continue to have NDMC support and

should also be able to modify resources based on a proper asset management study and monetization of land on a revenue model. At the same time, deputation of regular employees under new arrangements should be done keeping in view the full interest of their existing perks and facilities and betterment in a long-term perspective.

- xii. In addition, the trust / SPV may also handle 'skill development', 'business promotion' as part of follow up activities of education. In this regard, NULM (National Urban Livelihood Mission) and related activities may be assigned by NDMC to SPV/trust in line with the focus from Government of India.

Chapter 4

Civil Engineering

This section deals with the civil engineering wing of NDMC to examine functions and structure of the department, focal points for the delivery of services and budget.

Civil Engineering Department mainly deals with maintenance of buildings, roads and sewerage and construction related to that. The department is divided into two divisions namely 'Civil I' and 'Civil II'. There are total 3,874 employees. This implies that it has around 25% of the total manpower employed by NDMC and is a department which gets to discharge its responsibilities through labour intensive functions. As per the New Delhi Municipal Council Act, 1994 the obligatory functions of the council related to civil engineering include:

- a. The construction, maintenance and cleansing of drains and drainage works and of public latrines, urinals and similar conveniences;
- b. The construction and maintenance of works and means for providing supply of water for public and private purposes;
- c. The construction or purchase, maintenance, extension, management for providing a sufficient supply of pure and wholesome water;
- d. The construction, maintenance, alteration and improvement of public streets, bridges, culverts, causeways and the like;
- e. The maintenance of municipal offices;

Discretionary functions of the Council include:

- a. the construction and maintenance of rest-house, poor-houses, infirmaries, children's homes, houses for the disabled and physically handicapped children, mental asylum.

4.1. Functions of the department

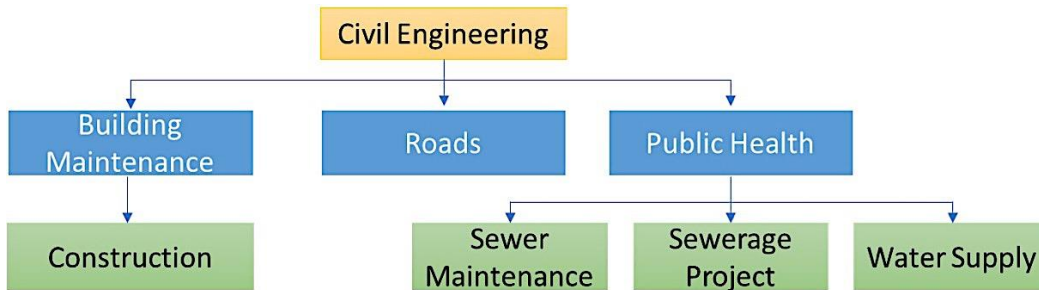
With increasing needs and aspirations of the citizens and development of the city the scope of the work has increased significantly. So, the above-mentioned obligations have been operationalized through:

- i. Maintenance of Commercial, Residential Buildings, Schools, Baratghar, Community Centre and Construction of various types of buildings.

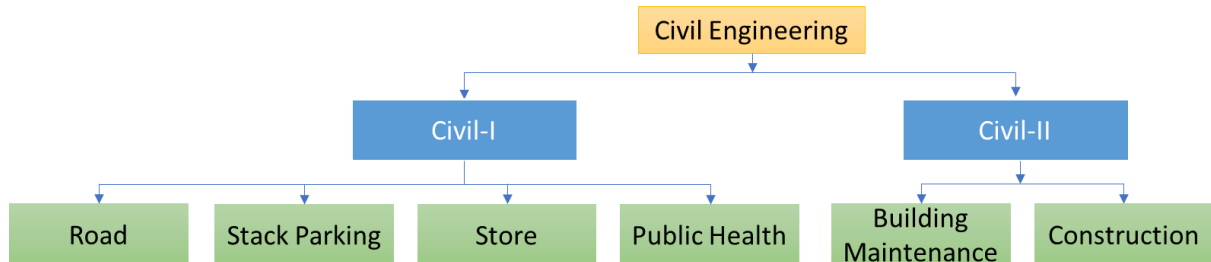
- ii. Looking after various construction/upgradation.
- iii. Preparing and coordination work, inter-department and outer-department behalf CEC-I; RTI work; and road cutting for services work.
- iv. Construction and maintenance of various social/civil infrastructure in NDMC viz public/community toilet facilities.
- v. Resurfacing of main roads in NDMC area, construction of building infrastructure viz proposed skill development centre at Moti Bagh, construction and maintenance of Bus-Q-Shelter on PPP model, besides other day to day activity related to other infrastructure i.e. foot over bridges, C&D disposal/management, etc.
- vi. Construction and maintenance of various social/civil infrastructure in NDMC viz repairing of roads, footpath, resurfacing of main roads in NDMC areas, installation of fountains, open gyms, compost pits, upgradation of Minto road & Sansad Marg under Smart City Project, etc.
- vii. Day-to-Day maintenance of the roads in their jurisdiction is being carried out along with the street furniture along the road such as signages, railing, dust-bins, bollards, manholes/GTs of drainage. The aforesaid staffs are being used for maintenance as well as new works related to roads, parks, drainage, etc. and also to implement the works under MLA LAD/MPLAD.
- viii. Maintenance of roads in R-II division and multi-level car parking projects on EPC and PPP model and Design division performing structural work with respect to NDMC building and its rehabilitation.
- ix. To procure and issue the material required for public utilities, to procure the material accordingly to the CPWD specification; to execute works as per requirement of users/dept; and while executing supply/works, all rules & laws should be followed specifically labour rules & laws & CPWD Manuals.
- x. Maintenance of sewer, sewerage projects and water supply.

4.2. Structure of the Department

As mentioned earlier, Civil-I division is handling building maintenance, special project and construction, whereas Civil-II deals with road maintenance, store, stack parking and public health. Thus, the responsibilities are distributed in three areas- Building Maintenance, Roads and Public Health. There is some overlapping in the functions. Civil II shares some responsibilities with Public Health Department. Manpower for sweeping is dealt with by Public Health Department for the cleaning of buildings being maintained by the NDMC, while sweeping on the roads is handled by the Engineering department. The responsibilities are shown as under:



These divisions are further divided into several sub-divisions:



There are several positions for which sanction is not there. This inference has been derived from the data furnished to the study team. In fact, this is an area of concern that statistics about the manpower is not consolidated. While the department has the list of employees, it does not know as to what is the sanctioned strength, for which reference is made to the Personnel Department. The manpower distribution as per these divisions is as follows:

Table 4.1
Deployment of Staff in Civil Engineering Department

Divisions	Sub-divisions	Total number of staffs*	SE	EE	AE	JE
Civil-I	Building Maintenance	1351	-	3	15	27
	Special Project	30	-	1	3	4
	C-III	29	-	1	3	2
Civil-II	EO (C-I)	28	-	-	3	-
	ACE (C)	129	-	3	10	26
	Road	1225	2	3	13	45
	Stack Parking	297	1	2	6	11
	Store	55	1	1	4	6
	Public Health	730	1	3	11	29
Total		3874	5	17	68	150

* The difference in the no. of employees from Table 2.3 etc. is stated to be the non-inclusion of support staff (finance/admin) in the above table.

Civil Engineering department has 3874 employees. Department has deployed 241 engineers from Superintending Engineer to Junior Engineers. This is senior and middle

management level and if we compare it to another municipal body within Delhi, seems to be heavy.

Table 4.2
Distribution of Civil Engineers in SDMC and NDMC

S. No.	Name of the Post	SDMC	NDMC
1	Chief Engineer (Civil)	5	1 (on deputation)
2	Superintendent Engineer (Civil)	12	5
3	Executive Engineer (Civil)	47	17
4	Executive Engineer (E&M)	2	-
5	Asstt. Engineer (Civil)	150	68
6	Asstt. Engineer (E&M)	4	-
7	Junior Engineer (Civil)	219	150
8	Junior Engineer (E&M)	3	-
	Total	442	241

To compare the workload and efficiency of civil engineering, the manpower of NDMC is compared with the civil engineering manpower of South Delhi Municipal Corporation (SDMC). There are 442 civil engineers in SDMC area which means 1.5 engineers per sq. km. SDMC is managing 657 sq.km area with 442 engineers. In comparison, there are approximately 6 engineers serving per sq.km. in NDMC area. Parkinson's Law that 'the number of subordinates increases at a fixed rate regardless of the amount of work produced' seems to be at work for the Department. Some rationalization in the structure is imperative. It would be appropriate if the CPWD guidelines are adopted in this regard.

4.3. Service Centres

Maintenance and complaints related to roads and buildings are dealt through service centres. Building Maintenance and Road Division have 32 and 25 service centres respectively. Service centres of building maintenance deals with the maintenance of commercial, residential buildings, schools, baratghar, community centre and construction of various types of buildings. These service centres operate on the complaints received from local residents through app, telephonic complaints or manual reporting.

If we keep in mind that there is significant area which is managed by the CPWD, the number of service centre seems to be very large.

Mandir Marg Service Centre Sub-Division-II

This service centre of Building Maintenance Division has 57 employees which include one JE, one Fitter, Mate, Sewerman, Mason, Welder, Carpenter and Painter each, three Chowkidar and 46 Beldars. Service centre deals with the complaints received by the residents regarding building maintenance. Residents can complain through 311 app which is forwarded to them, over phone or by lodging complain directly at the service centre.



The statistics about the works attended to is maintained only at the service centre level. There is no periodic reporting about it at higher levels. So effectively it is difficult to know the quantum of work done by each centre on a consolidated basis. The officials mentioned that they attend to calls as and when required and admitted that sometimes there are more complaints and sometimes less, which implies that there are times that the workforce remains idle.

It was interesting to see another service centre across the road belonging to other division, which has its own workforce. 57 employees at one centre seem to be too large. Add to that, there are positions of skilled worker which are vacant and in case of need have to be borrowed from another service centre. Officials said that it depends on the understanding that such skilled workforce is lent.

If we plot all the service centres on a map, the issue becomes much clearer. As can be seen in the map, some service centres are clustered in the distance of less than 1 km. In the north of Rajpath, there are 18 service centres in approximately 17 km². Apparently, the number of these service centres needs to be reduced and excess manpower can be used for other deficient functions/departments, which have expressed the need for more men. Each of these service centres is located on NDMC property and has its own office and store. Thus a lot of valuable assets can be freed for other usages if rationalization is done. This would also lead to less expenditure on transporting the material to these centres and other logistic issues resulting in a lot of savings in expenses of the

Department. Such consolidation would also help in tackling the problem of idle workforce at times and less people would be needed at each centre.

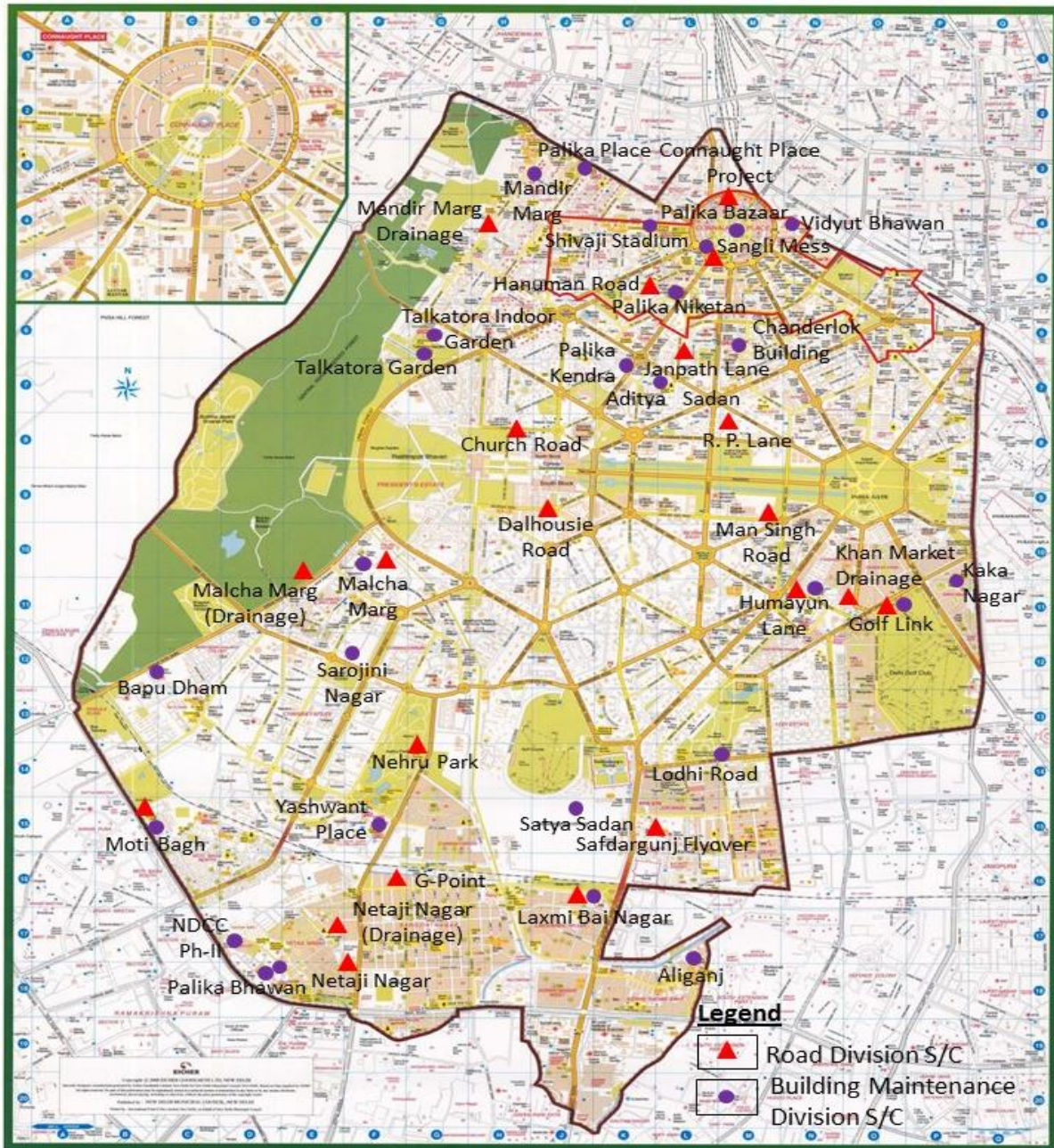
On the other hand, SDMC too has service centres like NDMC but it functions at ward levels which are further merged into zones. Operation and maintenance of all departments are coordinated through zonal officer i.e. Superintending Engineer. It reduces the overlapping of functions and issues are coordinated in a simple manner.

Logic of NDMC catering to VIP area and complaints need to be addressed urgently is over-stressed. Benchmarking of the services is integral part of any Smart City Plan and hence those are to be conformed to. Besides, it being a small area, things can be managed efficiently even otherwise. Therefore, it is recommended that service centres should be reduced and an integrated service centres should be made for various functions like building maintenance, road divisions and other feasible functions of different departments. It will reduce the complexity of the system as well as land being used for service centres can be utilized for other necessary functions/ revenue generating commercial activities.

CPWD manual suggests that as far as possible, Service Centres should be combined to cater to the services related to civil, electrical and horticulture disciplines. "A Junior Engineer/ Sectional Officer is incharge of a service centre related to their respective disciplines viz: Civil, Electrical or Horticulture. The service centre is attended by a JE / SO (Horticulture) and AE / ADH every day and by an EE / DDH at least once a week in general and twice a week where the service centre caters to maintenance needs of VIP residences.

It further states that instead of attaching one or more Beldars with a particular category of skilled labourers, a pool of Beldars should be fixed on the basis of the total number of skilled labourers in a Division. This pool should then be deployed to work with the skilled labourers or otherwise in performing miscellaneous jobs, like cleaning the drains, repairs to roads, carriage of material etc., at the discretion of the Assistant Engineer in charge. The annual repair work, and Retrofitting and upgradation works and works of Security are generally carried out through contracts."

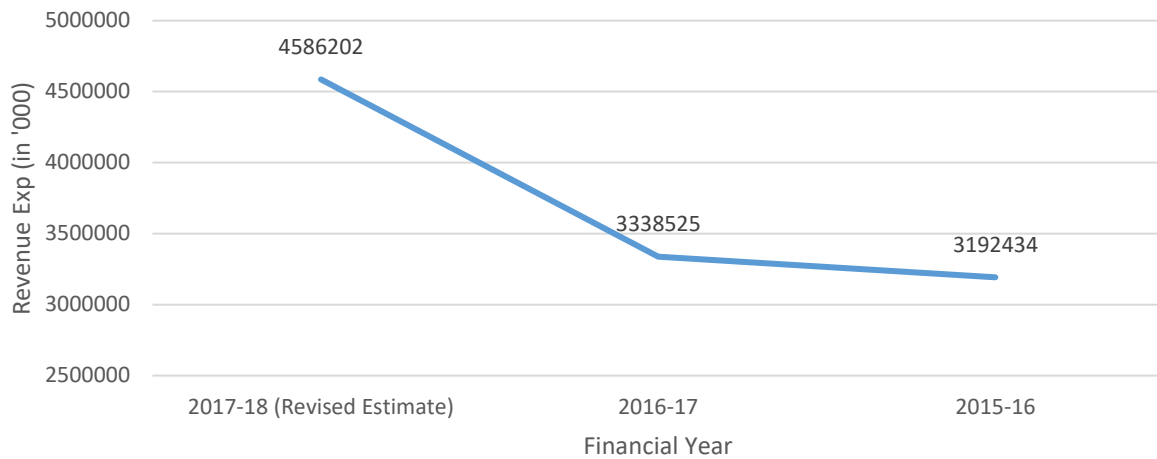
Map: Service Centres



It is important to mention here that no assessment of work load has been made to establish the centre on the ground that the measurement of the work is possible as it is primarily complaint driven. Many maintenance works are outsourced, which again implies that there would be fewer loads on the workforce. There is a need of assessment of the workload at the service centre level and accordingly thereafter, workload should be equally distributed among officers/engineers.

4.4. Budget

Revenue Expenditure of Civil Engineering department increased by 4.5% from FY 2015-16 to FY 2016-17.



Discussions with officials as well as observed at Mandir Marg, revealed that there is no centralised system of handling complaints. Complaints are manually recorded. This is also confirmed by the fact that many divisions, in response to the question on grievances in the last two years, have said that there was no grievance. Hence, it is recommended that complaint registration as well as response / feedback should be digitized. It will be helpful for analysing the efficiency of the service centres as well as in the performance appraisal of employees. Grievance reporting process should be digitized.

Conclusion

It appears that the Civil Engineering wing is fairly diversified and functions are segregated in a complex manner. Restructuring and integration of department is needed at grass-root level to become a part of overall service delivery in a more effective manner. Deployment of Engineers appear to be more than SDMC (6 as compared to 1.5 per sq. km.).

There is some overlapping in the functions between Civil Engineering and Public Health department with regard to maintenance of buildings. Similarly, different wings within Civil Engineering (building/roads) have their own service centres. Further, some service centres are at the distance of less than one km. North of Rajpath has 18 service centres for 17 km² area. Therefore, there is a need to intergrate and consolidate NDMC support system at grass-root level through suitable institutional mechanism.

Thus, there is a need to re-organise service centres and deployment of staff to integrate NDMC functions in a more inclusive manner under one unified command at zonal level.

Chapter 5

Horticulture Department

This section brings together the functions, norms, productivity and work measurement of horticulture department of NDMC alongwith capacity building of cross-section of employees.

Green spaces of the urban areas have emerged to be very critical in view of increasing urbanization. These green spaces filter pollutants and dust from the air which have reached alarming levels in almost all cities across the country, but more so in the bigger cities like Delhi or Mumbai or Hyderabad. They also help in lowering the temperature thus countering the phenomenon of heat islands in the city. In other words, they improve the livability dimension of any city. In fact, creation, establishment or maintenance of green spaces is integral part of urban planning and management. So, the role of Horticulture Department in urban areas is very important.

5.1. Functions

Delhi has fair amount of green spaces and proportionately more in NDMC areas. The NDMC Act lists “*the laying out or the maintenance of public parks, gardens or recreation grounds*” as one of the obligatory functions. Discretionary functions include “*the planting and care of trees on roadsides and elsewhere*”. This is operationalized through the following responsibilities

- Management/Maintenance of prestigious green buffers of New Delhi i.e. Major Parks & Gardens like Lodhi Garden, Nehru Park, Talkatora Garden, Sanjay Jheel Park, Children’s Park, Singapore Embassy Park and Central Park, Connaught Place, 51 Nos. of Roundabouts, 110 Major Avenues, School Greens, Market Greens, more than 122 NDMC Colony Parks.
- Committed to provide pollution free environment to Residents and Tourists.
- Management of 981 CPWD Colony Parks.
- Collection and management of horticulture waste in major parks for local composting.
- Landscaping and environmental upgradation by plantation and creation of greens around NDMC Office buildings, dispensaries, schools and other institution etc.

- Awareness through Mass Plantation of trees, shrubs & ground cover etc. in entire NDMC area as well as CPWD area.
- Flower decoration during NDMC functions in schools, colony parks, inauguration as well as other events.
- Flower decoration of statues of our Former National Leaders, Freedom Fighters and Patriots etc.

5.2. Areas of Green Spaces

It is important to analyze the areas of different types of green spaces to assess the manpower requirement. As per the website of NDMC, it maintains public greens of approximately 1100-acre area within its jurisdiction which comprise of Gardens, Colony Parks, Roadside Trees, Roundabouts, School greens, Greens of NDMC office, markets and residential complexes, open green spaces etc. In the year April 2007 CPWD Colony Parks were transferred to NDMC and the Horticulture Department started basic maintenance works in them. The CPWD Colony Parks area is approximately 254 Acres. A typology of greens in NDMC, as procured from the department, is given below:

Table 5.1
Areas of types of green spaces being managed by NDMC

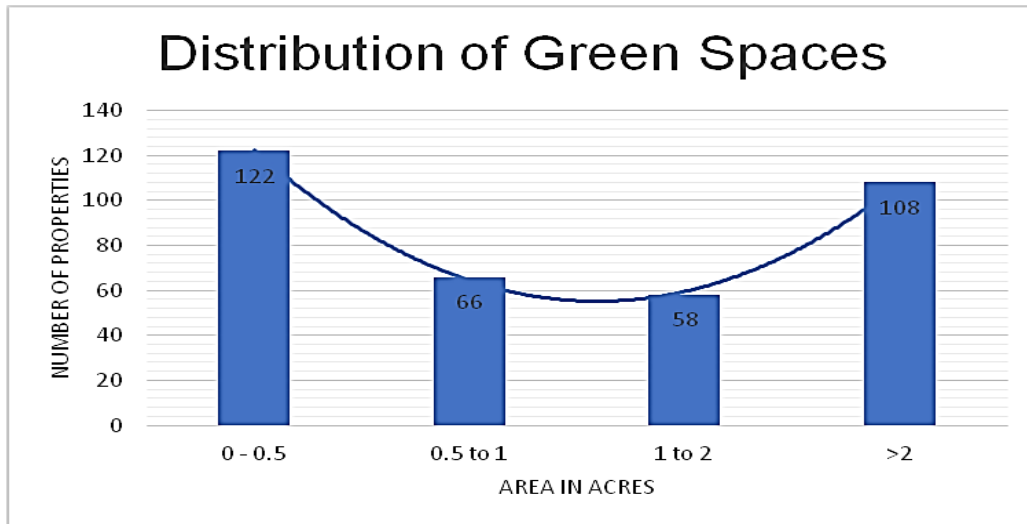
S.No.	Description	Area (in acre)
1	Major Garden	336.13
2	CPWD Colony Parks	254.06
3	Road side Green/Berms	238.89
4	Roll-Call Centers	150.11
5	NDMC/Navyug Schools	120.03
6	NDMC Parks	76.15
7	Roundabouts	60.07
8	Shopping complex/residential complex	35.05
9	Dispensaries	35.01
10	Old Age Homes/Technical Institutes/PSOI	30.09
11	Nurseries	25.07
12	Hospitals	25.06
13	Hostels	25.02
14	Baratghar/Community Centre/Stadias	15.07
15	Electric Sub-stations	12.15
16	Gymnasium	12.11
	Total	1450.07

Source: NDMC

NDMC strives to maintain the aesthetic standards of international order. It may be noted here that approximately 95 acres of area is additional in records, as the website puts the

figure at 1354 acres including the CPWD colony parks. There are large areas of greens and there are small ones as well, as can be seen from the following table:

Figure 5.1
Range of areas of green spaces



NDMC maintains about 54 Roundabouts, 33 CPWD Colony Parks, 122 NDMC Colony Parks, 121 Road Side Green Area and 16 Major Parks & Gardens and 8 Nurseries spread across NDMC area. As can be seen in the graph, amongst all these open spaces, 34.5% green spaces are less than or equal to 0.5 acre, 18.6% greens have an area between 0.5 acre to 1 acre, 16.4% cover greater than 1 acre and less than or equal to 2 acres area, and 30.5% others have area above 2 acres.

Thus, 65% of the green areas are either huge or very small spaces. In the case of huge spaces, a trained staff with modern equipments can manage with less manpower than required as per norms. Similarly, in the case of very small green areas like colony parks or roundabouts which require short or periodic handling, several teams of multi-tasking staff can be formed at divisional levels and they be given the responsibilities of the contiguous areas.

5.3. Norms for Manpower Requirement for the above Tasks

Assessment of the manpower requirement varies from place to place and several other factors like the terrain, level of automation, kinds of service arrangements etc. need consideration. In general, CPWD norms are followed by the agencies in such kind of works. On the basis of existing green areas, a normative assessment of requirement of Maalis, Senior Maalis and Choudhary has been made following the manual of CPWD².

² CPWD Maintenance Manual, 2012

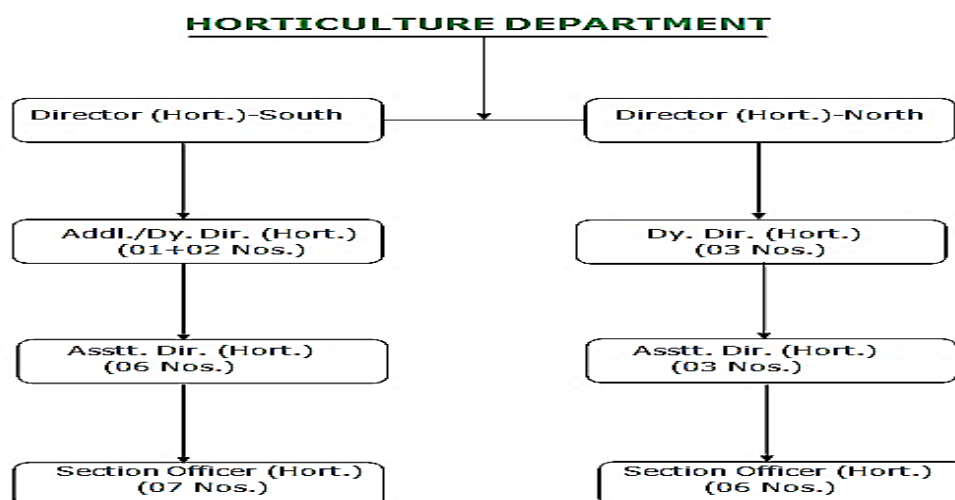
Table 5.2
Normative Requirement of Maalis / Sr. Maalis

S. No.	Description	Area (in acre)	CPWD norms (1 maali for)	Requirement of maalis
1	Major Garden	336.13	2	168
2	CPWD Colony Parks	254.06	2	127
3	Road Side Green/Berms	238.89	2	119
4	Roll-Call Centers	150.11	1.25	120
5	NDMC/Navyug Schools	120.03	2	60
6	NDMC Parks	76.15	2	38
7	Roundabouts	60.07	2	30
8	Shopping Complex/residential Complex	35.05	1.25	28
9	Dispensaries	35.01	1.25	28
10	Old Age Homes/Technical Institutes/PSOI	30.09	1.25	24
11	Nurseries	25.07	2	13
12	Hospitals	25.06	1.25	20
13	Hostels	25.02	1.25	20
14	Baratghar/Community Centre/Stadias	15.07	1.25	12
15	Electric Sub-Stations	12.15	1.25	10
16	Gymnasium	12.11	2	6
	Total Green Area	1450.07		823

Thus, given the area to be managed by the horticulture department, at least 823 maalis/ sr. maalis are needed. We may add 10% to the required manpower to provide for leaves and other necessities. That means we may consider the necessary strength at 905 at the field level, which has to be supplemented with monitoring and other administrative staff. Now, the present arrangement and manpower deployment needs to be analyzed.

5.4. Administrative Arrangement

The horticulture department has been organized at the Head Quarter as given below:



Source: NDMC

The sanctioned strength and present deployment of the staff is as given below:

Table 5.3
Sanctioned Staff Strength and Present Deployment

S. no.	Name of the Post	Category	Sanctioned Post	Present Deployment	Working as CDC/Contractual
1	Director (Hort.)	A	2	0	1
2	Deputy Director (Hort.)	A	6	2	5
3	Assistant Director (Hort.)	B	12	4	7 + 1 A.E. (Civil)
4	Section Officer (Hort.)	B	22	6	13 + 1 J.E. (M)
5	Choudhary	C	72	65	
6	Senior Maali	D	79	18	
7	Maali	D	1474	1697 (RMR 728)	
<u>Accounts</u>					
8	AAO	Regular		1	
9	Sr. Asstt.	Regular		3	
10	Data Entry Operator	Contract		1	
11	Peon	Regular		1	
<u>Head Asstt. Branch</u>					
12	H.A.	Regular		2	
13	Data Entry Operator	Regular		1	
14	Peon	Contract		1	
15	TMR			38 (C/L-28, LMV-7, H MV-4)	
	Total number of employees			1840	

Source: NDMC

In Group A, out of 8 sanctioned posts, only one is working on actual post, Director is on Current Duty Charge (CDC) and 5 Dy. Directors are also on CDC. In Group B, out of 12 sanctioned posts for Asstt. Directors, only one is working on actual post, 7 are working on CDC. The entire NDMC area has been divided into 22 divisions, with each division to

be under the charge of 1 Section Officer. However, presently only 13 SOs are deployed. All 13 section officers are appointed on contract.

The maximum deviation is in Group C and D, where we may take up the posts of Chaudharys, Sr. Maalis and Maalis. Choudharys are responsible for the attendance of staffs, supervision and management of staff deployment in the area under their jurisdiction in consultation with their respective senior officers. Roles and responsibilities of Maalis include preparation of land for plantation (trenching, levelling, dressing, spreading of manure, etc), filling of polybags with mixture, digging of pits, plantation, grass cutting, hedge trimming, tree pruning, tree surgery, weeding, etc. The working strength of maalis / sr. maalis is more than the sanctioned post. There are 1697 maalis at present against the sanctioned strength of 1474, i.e. 15% more than sanctioned. Even if we take combined strength of maalis and Sr. maalis, the present deployment is more than the sanctioned strength. Out of present combined deployment of 1715, 728 maalis are appointed on RMR. It was also mentioned that some maalis are working as peons.

The higher present strength is due to no manpower assessment made in the past. It was mentioned to the study team that one assessment had been made in 1994, and that formed the basis of deployment then. Even in 2002, the total strength of the department was 1604, which included 1361 maalis and 12 Sr. maalis (total 1373), which is far less than the present strength. This manpower managed 1030 acres of the greens. In the intervening period many equipment with advance technology have been added which have less requirement of men, and this should have led to reduction in the workforce. Thus, there is a requirement of restricting further recruitment of maalis on RMR. Extra maalis can be utilized in more efficient ways in other departments after appropriate training, if possible. Why CPWD norms are not followed should also be looked into.

At the same time, the number of Chaudhary is less than required at the present level of deployment. The CPWD Maintenance Manual 2012 mentions that there ought to be 1 Chaudhary per 18 maalis / sr. maalis. By that calculation there should be 95 Chaudhary. But as per normative assessment there should be 50 Chaudhary to supervise 905 maalis / sr. maalis. Looking at it from the other side, if we take the sanctioned post of Chaudhary, which is 72, the total number of maalis / sr. maalis should be 1296. By that calculation too, the present deployment of maalis far exceeds the norms. We are not discussing the ratio of maalis and Sr. maalis, because many of the maalis have been promoted as Sr. maalis as a natural career progression.

Excess manpower may be the result of decentralized recruitment of TMR employees, who subsequently became eligible to become RMR employees after logging in 500 days and thereafter were absorbed at the maali level after 6 years. In the process, sometimes the actual strength became more than the sanctioned strength. As a result of which, more posts had to be created. The decentralized recruitment can be said to be arbitrary as there are no qualifications mentioned in the Recruitment Rules for maalis and their selection was done at the Divisional Levels. This has led to a situation where we find that the total strength is almost double the requirement. This also implies that even if the workforce is efficient, the efficiency of the department is half. The study team is of the opinion that the system of bio-metric attendance should be used at the field level.

5.5. Productivity Assessment

The outputs of the department are not measurable. Therefore, the productivity of the employees can be measured by comparing the deployment of staff against the norms. Efficiency can be assessed through a comparative analysis.

Particular*	Existing
Average area per maali (existing) ³	0.85 acre per maali
Deployed Maali percentage ⁴	63.55
Working Maali percentage ⁵	110.43

* Maalis and sr. maalis have been added as their responsibilities are similar

As can be seen, the services of maalis are underutilized. As per the normative assessment, average area to be managed per maali ought to be 1.60 acres (including 10% additional manpower). To understand excess deployment and to elaborate the point, we may use one example of Lodhi Garden.

5.6. Lodhi Garden

Lodhi Garden is located in South Zone Division (Hort.-VI) of the Horticulture Department of NDMC area. Average daily footfall in the Garden is approximately 20000. The area of the Garden is 95 acres which also includes 5 acres of Glass House Nursery. Garden and Nursery is served by 77 and 32 Choudharys and maalis respectively. The detailed manpower deployment is as follows:

³ Total green area ÷ total maalis

⁴ Deployed Maali % age = (Regular Maali/Total number of sanctioned post for maalis)*100

⁵ Working Maali %age = {(Regular + RMR Maali)*100}/ Total no. of sanctioned post for maalis

Staff	Regular		RMR	TMR
	Lodhi Garden	Glass House Nursery		
Choudhary	4	1	0	0
Maali	73	31	0	0
Total	109			

Source: NDMC

As can be seen that the average area managed by 1 maali is 1.23 acre, which is less than the norms of 2 acres per maali. Even if we provide for 10% workforce to take care of leaves of maalis, other works etc., the average figure remains 1.36 acres per maali, which too is less than the norms. As per norms there should have been 45 maalis for 90 acres of Garden, which means there is more than one-third excess manpower. This would also mean less number of Chaudharys needed in the Garden. The workforce in the Glass House Nursery is also on the higher side.

The garden is equipped with pump, rainwater harvesting, gymnasium, S.T.P. and compost pits. These responsibilities are handled by Electricity department/Water Supply department for electric pump, Civil Engineering for rainwater harvesting, Street Furniture, rainwater harvesting and S.T.P. street light by Electricity department and compost pit by horticulture department. Same work distribution is followed in rest of NDMC area.

There is no community engagement with RWA, associations and residents. As per the officials of division office, they are facing the issues of inadequate and ageing staffs, additional workload viz picking, cleaning of dustbins, repair of pipelines, chowkidar, official work, etc.

5.7. Work Measurement and Performance

Work in the NDMC green areas mostly pertains to maintenance and can be said to be primarily routine in nature. Sometimes there are specific projects which are handled by the respective division. There are 3 service centres, where people may lodge the complaint in case of any related issue like broken tree or pruning of hedges etc. Inter and intra-departmental discussions or information sharing are also through WhatsApp groups. One group comprises senior officials from Chairman to heads of almost all departments and one personal group of the department itself comprising all officials till SO level.

Performance assessment is very subjective and is the responsibility of the Supervisor, who assesses the total work and conduct of the employees. It was mentioned by the officials that the work in the field is not amenable to measurement and so efficiency

measurement of individual employees is difficult. Also that, physical capacity of different individuals is different.⁶ However, it may be kept in mind that the norms are based on average performance and the total strength may cover up for the different capacities. Moreover, instead of attaching staff with fixed park/garden, a pool of maali/sr. maali at the discretion of the Asstt. Director would be more appropriate. Such is practiced also but it is important to mention that employees at the field level are hardly transferred or not transferred at all.

5.8. Capacity Building

Outputs can be increased and efficiencies can be achieved through a proper capacity building plan. This would also enable the workforce to be innovative. Maalis are given training after joining, in the Gardening School of the NDMC. However, it is not regular and at periodic interval. For other trainings, Maalis are selected on the basis of their interest and performance by their seniors, which is very subjective. A look at the other training programmes conducted in the recent past is pertinent here.

Table 5.4
Capacity Building Programmes for Employees of the Department

S. No.	Name of Training	Designation	Number	Years	Duration
1	Training Programme in NDMC at CUGE Singapore	Chaudhary Maali	9 10	2016	5
2	Training programme on Reservation in services for SC/ST/OBC	Dy. Director	1	2016	3
3	Training at Beijing China	Chaudhary Maali	2 1	2017	8
4	Training program of Delegation NDMC at levuen Belgium	Dy. Director Asstt. Director/SO Chaudhary Maali	1 1 1 5	2017	7

As given in the table, in last 2 years only 4 training programmes were conducted for the capacity building. Therefore, it is recommended that Group A and B officers should be sent for the better awareness of the technological innovations in gardening and Group D staffs (Maalis and Sr. Maalis) should be trained for efficient use of resources and machineries. The training should aim at preparing multi-tasking staff. This has become very important in light of the fact that there are activities within the premises of these green spaces, which are handled by other departments and for which they have to deploy

⁶ It was mentioned by officials that efficiency decreases with age.

staff of their department in less productive manner. With little training, such responsibilities can also be handled by the staff of the horticulture department.

It is important to mention here that the programmes need not be focused only on the technical issues relating to gardening, but should also include socio-psychological aspects. They may be sensitized about the emerging environmental issues, significance of collaborating with stakeholders outside the department, etc. A comprehensive capacity building exercise may be planned by experts for this.

Recruitment and Recruitment Rules

S. no.	Name of the Post	Qualification	Responsibilities
1	Director (Hort.)	N.A.	N.A.
2	Deputy Director (Hort.)	i) M.Sc. in agriculture with specialization in Horticulture/MSc. in Horticulture with floriculture or Olericulture as a subject/ M.Sc. in botany with horticulture as a subject / B.Sc. in agriculture or botany or horticulture with master's degree in landscape architecture / master degree in floriculture and landscaping or horticulture from a recognized university/ institute. ii) 05 years' experience in horticulture including ornamental gardening.	N.A.
3	Assistant Director (Hort.)	A. (i) M. Agriculture/M. Horticulture from a recognized university or equivalent; and (ii) 3 years' experience in ornamental gardening ranging over various fields of horticulture	N.A.
		B. (i) Degree in agriculture or horticulture of a recognized university or equivalent; and (ii) 5 years' experience in ornamental gardening ranging over various fields of horticulture	N.A.
4	Section Officer (Hort.)		

5	Choudhary	N.A.	Responsible for the attendance of staffs, supervision and management of staff deployment under the area of his jurisdiction in consultation with his senior officers
6	Senior Maali	N.A.	Supervision of Maali and Preparation of land for plantation (trenching, levelling, dressing, spreading of manure, etc), filling of polybags with mixture, digging of pits, plantation, grass cutting, hedge trimming, tree pruning, tree surgery, weeding, etc.
7	Maali	N.A.	Preparation of land for plantation (trenching, levelling, dressing, spreading of manure, etc), filling of polybags with mixture, digging of pits, plantation, grass cutting, hedge trimming, tree pruning, tree surgery, weeding, etc.

There is no qualification prescribed for recruitment to the position of maalis. Even if we consider that no fresh appointments are being made, RR may be modified keeping in view the emerging changes. Senior maalis and Chaudharys are through promotion, but to have leadership and also for remaining maalis, slightly more advanced qualification be introduced.

5.9. Expenditure

Efficiencies are achieved through optimal utilization of resources. As the manpower is significantly more than the norms, it is important to see as to what is the impact of manpower on the overall expenditure of the department:

Table 5.5
Cost Allocation

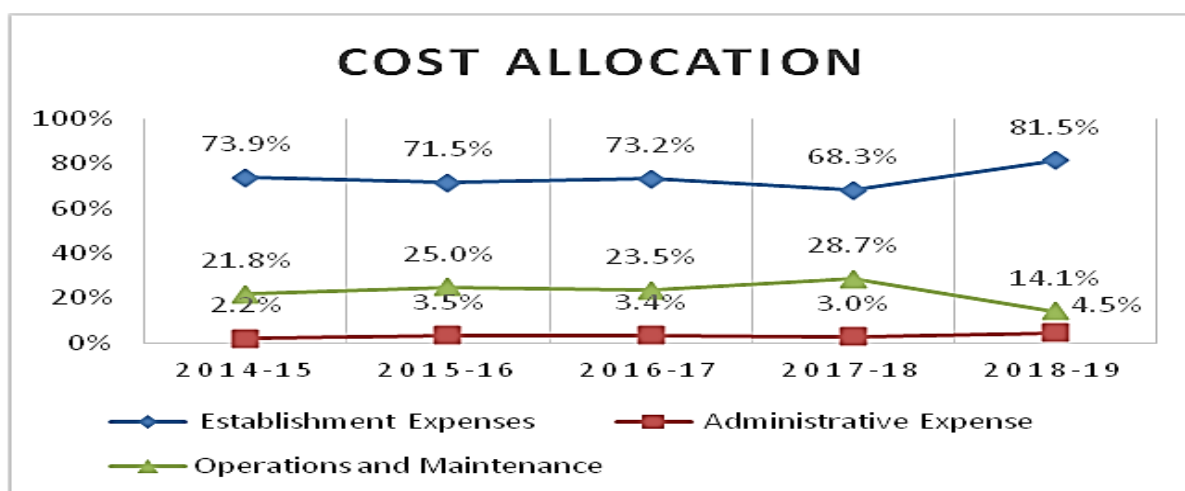
(In Rs. '000)

Descriptions	Actual				Estimates
	2014-15	2015-16	2016-17	2017-18	2018-19
Total Establishment Expenses	576,027	568,411	643,225	701,737	901,908
Total Administrative Expense	18,391	27,808	29,567	31,140	49,352
Total Operations and Maintenance	185,222	198,216	206,289	295,142	156,026
<i>Total Revenue Expenditure</i>	<i>849,728</i>	<i>794,445</i>	<i>878,831</i>	<i>1,028,029</i>	<i>1,107,296</i>

*Source: Budget Book 2018-19 Volume 1⁷

⁷ [https://ndmc.gov.in/ndmc_budget/FINAL%20BUDGET%202016-17\(VOLUME-I\).pdf](https://ndmc.gov.in/ndmc_budget/FINAL%20BUDGET%202016-17(VOLUME-I).pdf)

Figure 5.2
Cost Allocation (In Percentage)⁸



Establishment expenses include salaries, wages, perks and benefits; administrative expenses include various day to day expenses like communication expense, travelling and conveyance, and other administrative expenses; and Operations and Maintenance expenses include Repair and Maintenance etc. This sector depends on labour intensive works and techniques, which leads to increase in establishment costs. It can be seen that majority of revenue expenditure is borne on account of establishment expenses followed by Operations and Maintenance Expense and lastly administrative expenses. Establishment expenses show an increasing trend over the years because of using more of employees on muster roll (which is one of the most important reasons of increasing this cost). It is estimated that in 2018-19, almost 81.5% of the total revenue expenditure would be because of establishment expenses. At the same time, the cost of administrative expenses shows modest increasing trend. Operations and Maintenance expenditures are expected to reduce from present 28.7% in 2017-18 to 14.1% in 2018-19. Apparently, transfer of the excess staff to other departments would lead to substantial savings by the department. In 2016-17 alone the department has paid approximately 8.47 crores on daily wages to RMRs.

The department does not outsource any activity, nor uses any MP/MLA fund, so actually all the expenditure is borne by NDMC. There is negligible amount of revenue generated through auction of dry trees. Here, a leaf can be taken from some other municipalities,

⁸ Respective Expenses of Division / Total Revenue Expenditure X 100

who are generating good revenue through waste management like composting. There is huge scope of this in NDMC areas.

5.10. Conclusion

It is clear from the above analysis, that there is need to have complete ban imposed by the Government on engagement of labour through Muster Roll. This may further require rationalization of tasks. One of the defenses for the deployment of bigger manpower in the NDMC areas is attributed to the importance of the area as there are large number of VIPs living in the area like ministers, elected representatives, etc., it being a diplomatic zone etc. But this cannot justify deployment of almost double the staff required. Besides, there are areas like CPWD colonies and other areas, where people can be involved in the process, which would greatly help the department in carrying out its activities efficiently.

Gil Penalosa, Director 8-80 cities, Canada argues for involvement of the communities in the parks. He says “parks are more as outdoor community centres where we need to invest in uses and activities so they can fulfill their potential”. However, the department does not seem to be very inclined towards this. While there are certain evidences indicating interaction with RWAs of some areas but such interaction is not institutionalized. Moreover, this is more in the form of grievance redressal rather than involving them in the greening effort.

Delhi Parks and Garden Society directly gives funds to RWAs, if residents want additional maalis for their nearby parks and gardens or to maintain any garden of their area. NDMC doesn't have any records of how many RWAs are taking this benefit. The practice of outsourcing is not there in the department. In the neighbouring Gurugram, the communities have been involved in such efforts. They are involved in saving encroachments near water bodies. Similarly, civil society organizations are involved in maintaining *Biodiversity Park* in Gurugram. This not only reduces the need for greater manpower but also ensures sense of ownership in the community members.

5.11. Recommendations

NDMC need to have a dual approach to maintain huge or very small spaces that constitute almost two third of Green spaces in the city. Trained staff with modern equipments can minimise the manpower requirements for huge areas whereas multi-tasking staff can handle very small (colony parks).

Community participation and convergence of resource (MP/MLA funds) have vast potential which should be used for upkeep of green spaces and applied elsewhere.

Reassess the requirements of staff e.g. the normative number of Malis works out to 823 as against deployment of 1697 Malis (including 728 RMR).

Performance assessment is discretionary and ad-hoc. Bio-metric attendance may be introduced

Training is given in an ad-hoc manner not on a regular interval to all eligible personnel.

Finally, overall assessment is needed on workload, capacity building and redeployment for a multi-tasking assignment at grass-root level.

Chapter 6

Electricity

The chapter covers objectives and functions of electricity department alongwith structure, organizational structure, manpower and capacity building.

6.1. Objectives and Functions

NDMC is a deemed licensee for distribution of electricity in areas under its jurisdiction. The aims and objective of the department is to ensure availability of adequate power from the grid & maintain continuity of electricity supply through “System Control” in close coordination with D.T.L. System control of NDMC operates from the SCADA Centre in Nirman Bhawan. Power is received through 66KV, 33KV & 11KV feeders from the Grid Stations of Delhi Transco Limited and B.S.E.S. Power supply system is maintained as per the guidelines and standards of the Indian Electricity Grid Code for efficient, reliable, economic and secured operation. It receives approx. 1% of the total electricity supplies in the city.⁹

There are about 70000 connections, which are distributed in 30 housing complexes and 25 commercial / official buildings. The road length covered is approx. 200 kms. There are about 23 notified slums, which are also covered by NDMC. Comparatively AT&C losses are high at approx. 11.5%-12%. In FY 15 DERC approved them to be at 9.85% but actual was 12.26% and in FY 15-16 it was 9.6% and 11.76% respectively. It may be mentioned here that BSES Rajdhani Power Ltd. (BRPL) has been able to bring the AT&C losses in many areas like R.K. Puram, Vasant Kunj and Vasant Vihar to single digit.¹⁰ For 2017-18, DERC has accepted ARR of ₹1031 cr. against the claims of ₹1148 cr. by NDMC.

6.2. Structure

Electricity department is divided into two divisions. Electricity 1 is responsible for distribution of electricity to all consumers coming under its jurisdiction including all government buildings. It is fulfilling the responsibility of providing and maintaining reliable and quality supply of electricity round the clock to all its consumers. Besides above the

⁹ Share of BRPL is 43%, Tata Power 30% and BYPL is 26% in total electricity supply in the city of Delhi.

¹⁰ ARR as submitted to DERC by BRPL.

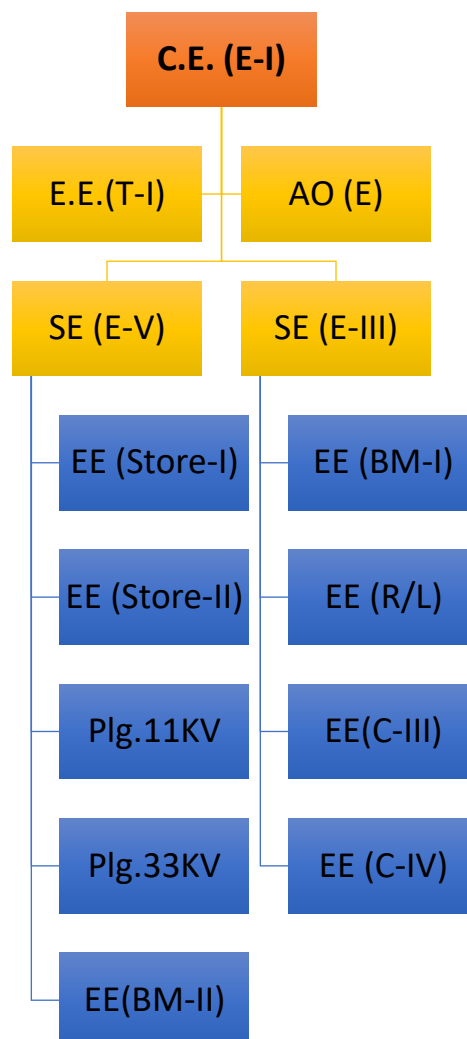
street lightings and electric maintenance of NDMC offices (Commercial building, Schools, Hospitals) and NDMC residential flats are its responsibility.

Electricity 2 is responsible for works related to electricity infrastructure, construction, and Operation, Maintenance and Distribution of power supply system in NDMC. It has 5 nos. of 66 KV Electric Substations, 25 Nos. of 33KV Electric Substations and 465 nos. of 11KV Electric Substations.

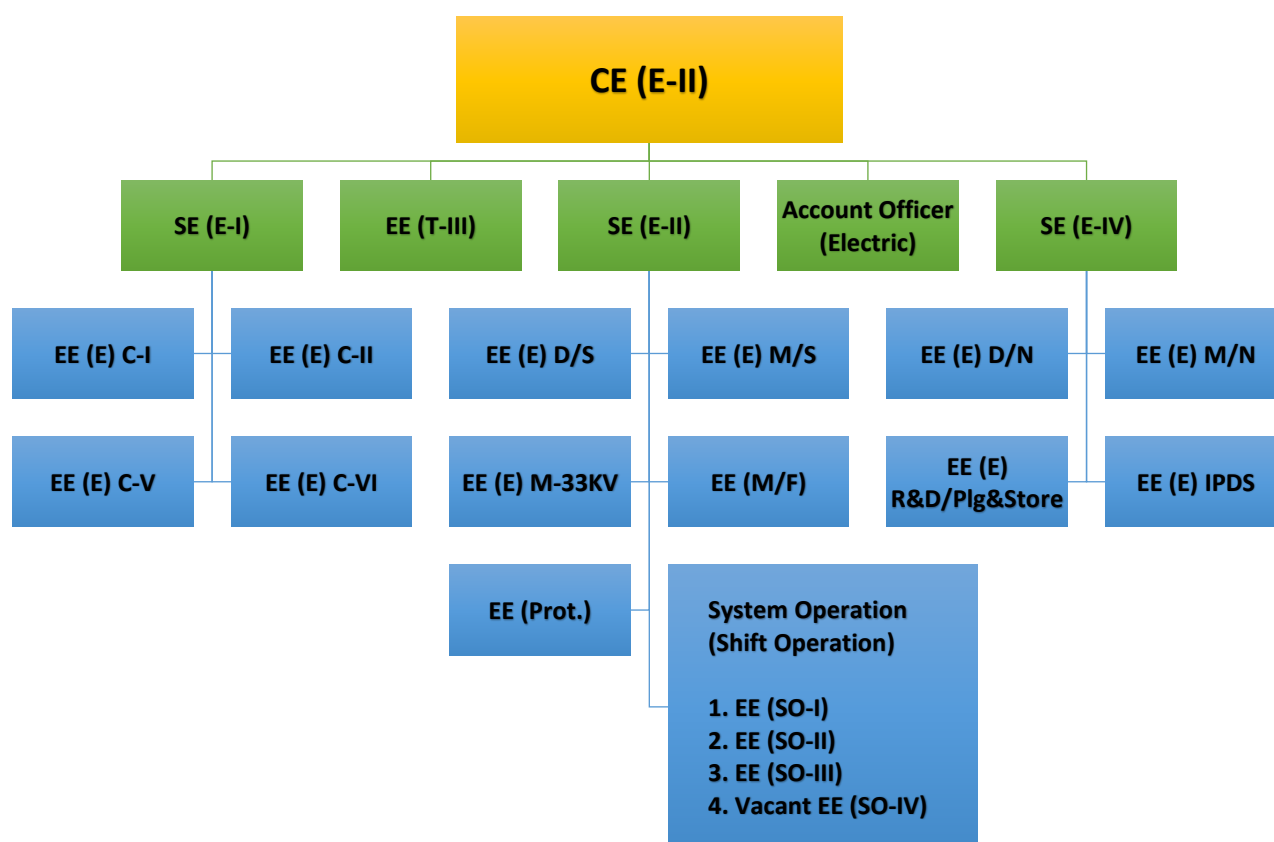
Here it is important to note that some activities relating to the electricity are shared by other departments. Power department looks after the sale and purchase of electricity, and billing and collection, that include installation of meters, are handled by the Commercial Department.

6.3. Organizational Structure

The two divisions are headed by Chief Engineer 1 and Chief Engineer II respectively.



Organization Chart Electricity Department-II



6.4. Manpower in the Department

The combined strength of the Department is 2467 out of which 1198 are regular employees and 1269 are either RMR or TMR. The sanctioned strength for the Department is 2275 as per information given by the Personnel Department. However, these figures differ from the figures provided by the Electricity Department.

Table 6.1
Sanctioned Staff Strength and Present Deployment

Sl. No.	Division	Sanctioned	Working	Vacant
1	Electricity I	1497	859	638
2	Electricity II	927	418	509
3	Total	2424	1277	1147

Note: The figures do not include RMR and TMR

Source: Electricity I & II, NDMC

Electricity II in another document has indicated the sanctioned strength for its division as 1729 against which 1094 employees have been deployed. It can be seen that there is huge mismatch in figures of manpower with the department and those with the Personnel Department. This requires scrutiny of the data and reconciliation. An ERP for the entire organization may be very helpful in this.

Further, the Department has deployed approx. 14.7% of the total workforce and almost 11.4% of regular employees of NDMC. Given the magnitude, the workforce seems to be on higher side. A comparison with BRPL would illustrate the point. BRPL covers approx. 750 km² and serves 23.3 lakh consumers, which is almost 17 times and 33 times respectively of NDMC with 11000 total staff which is only about 4.5 times of the strength of NDMC staff. Though it may be mentioned that BRPL has outsourced ground level responsibilities, which may be comparatively difficult in the case of NDMC keeping in mind the importance of the area, though it also has outsourced some activities. But it may also be kept in mind that the NDMC has state of the art equipments which are new and have low downtime¹¹. Moreover, given the importance of the area, a lot of redundancy has been planned, which does not require the same level of deployment.

Again the Management cadre is about 12 % of the total workforce in BRPL as compared to about only 6% in NDMC, which indicates that the workforce at the field level is more than the requirement.¹² One reason given was that because of no recruitment having taken place since 1994 and employees retiring every year, there is huge shortage of manpower. In August 2014, the Electricity II made a requisition of 1399 posts, which included 635 vacant posts and additional requirement of 764. If it is any indication that there has been no major complain and the department managing its activities effectively, the additional requirement of this tune, more than doubling the present capacity, needs to be reviewed. An internal assessment of the workload of employees only can throw a correct requirement.

Additionally, there are posts like pump operators, AC operator, Assistant AC operator and many others, which may no longer be needed. In the chapter on Horticulture, we have discussed that pump operations can be handled by *maalis*, if they are given basic training for the same. Similarly, AMC of ACs is these days outsourced, which makes the above posts redundant. Such positions can be identified where the activities can be or

¹¹ Since 2011 State of the Art equipment have been installed in the NDMC area.

¹² Posts from Jr. Engineer and above are included in the management cadre.

are being outsourced and large manpower may not be needed for those positions or the multi-tasking employees can handle them.

Moreover, numbers of RMR and TMR being more than the regular / technical staff is worrisome. It is a technical department and RMR and TMR may not be having the requisite skills to execute the tasks. Discussions with various stakeholders indicated that merging of the two divisions or at least some activities may reduce the need for this huge workforce.

There are 29 Complaint Centres with Electricity I and 13 Complaint Centres with Electricity II. Besides that complaints are also received on the 311 App of NDMC. An integrated approach having common complaint centres may reduce the need for so many complaint centres. It would also help in tackling the problem of shortage of skilled or technical staff.

6.5. Capacity Building

Some training programmes have been organized for the employees of the department, but most of them were exposure visits. In 2015, 7 employees got training or visited abroad to have exposure to latest technologies. This number was 9 in 2016 and 11 in 2017. This is miniscule given the strength of the department. It is equally important that the capacity building programmes are planned for the unskilled workforce. The officials in the Department were of the view that though employees are trained on new equipments whenever such are purchased, but a regular and periodic training plan for the entire department is not there.

6.6. Conclusion & Recommendations

Effectively 4 divisions- Electricity I, Electricity II, Power and Commercial, are involved in the provision of electricity, which may not be prudent from efficiency perspective. Besides, workload of the employees needs to be assessed internally as there are lot of non-specificity and overlapping in the responsibilities of the officials.

Line losses have scope for reduction in a single digit as practiced by other DISCOMs in the city.

The figures on staff need to be updated within personnel and electricity department to remove respective variation.

Multi-tasking needs to be introduced at lower level to minimise requirements of workforce e.g. pump operations etc. ERP needs to be done in this regard to review role of RMR/TMR, training for multi-tasking and improve citizen centricity.

The no. of complaint centres, 29 in Electricity-I and 11 in Electricity-II needs to be reduced through use of other IT tools more effectively. Similarly, there is further scope to improve efficiency and productivity of employees. Suitable exposure on innovative application of workplace need to be devised through on the job, class-room training and exchange visits at different levels of expertise/employees.

Chapter 7

Public Health

The following analysis covers the background of public health department alongwith functions, achievement, manpower and expenditure.

7.1. Background

Public Health department looks after various functions like sanitation, control of vector / water borne diseases, health licensing, vital statistics, veterinary services, education about health & hygiene, and testing of water quality in the entire area of New Delhi Municipal Council. It is also responsible for integrating directions in relation to Swachh Bharat activities from MoHUA, Government of India.

The department takes the preventive measures with the coordination of other departments to control the communicable diseases in its area. The statistics reveal that in last 10 years no infectious diseases have occurred in an epidemic form in any area of NDMC. The effective measures have also been taken to control water borne diseases and there has been no death in NDMC area due to cholera. Tuberculosis is under control by introduction of Directly Observed Therapy and a cure rate of 100% has been achieved in the area.

7.2. Functions

The Act enumerates the following functions for the Municipality relating to public health, some of which the department shares with other departments, like Civil Engineering Department:

1. Provision for daily cleansing of streets and removal of rubbish and filth.
2. Provision or appointment of receptacles, depots and places for rubbish, etc.
3. Duty of owners and occupiers to collect and deposit rubbish, etc. which are accumulated on premises used as factories, workshop, etc.
4. Prohibition in respect of air pollutant and water pollution by keeping check for information regarding burning and burial grounds.
5. Latrines and urinals, etc., for labour and other provisions for private latrines.
6. Obligation to give information of dangerous diseases and special measures in case of out-break of dangerous or epidemic diseases.

7. To check contamination and disinfection of public conveyance and also important to check the conditions of services of sweepers and other class of persons employed in municipal services.
8. Control over wells and tanks by prohibition washing by washermen etc.

NDMC is providing preventive, promotional and curative services to all the residents who come under the area of NDMC. The main public health activities are:

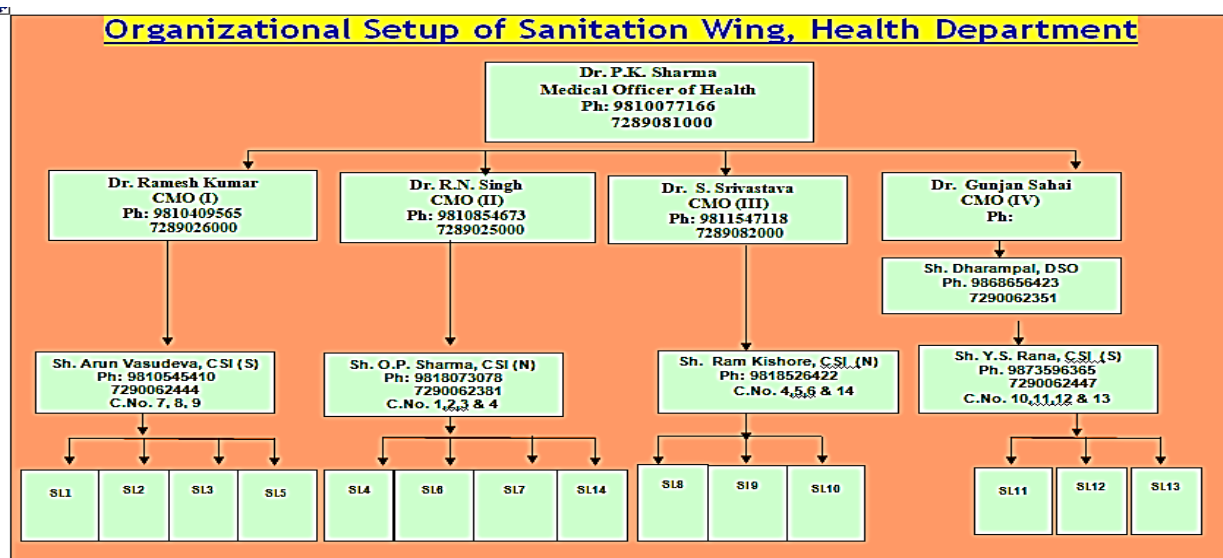
1. Sweeping of the area and collection & transportation of Municipal Solid Waste from the area to disposal site.
2. Epidemiological control of water and vector borne diseases. Control of malaria, dengue & chikunguniya.
3. Vital statistics (Birth & Death Unit)
4. Health licensing
5. Health Education

7.2.1. Achievements of the Department

1. The NDMC has succeeded in controlling all the *diseases*. Controlling of TB and mainly Directly Observe Therapy short course has been a great success and coverage of 100% has been achieved which is highest in the country.
2. The *medical facilities* provided by the NDMC - they run a 150 bedded Charak Palika Hospital, 50 bedded Palika Maternity hospital and 37 dispensaries within an area of 42.76 sq. Kms.
3. The NDMC also *provides free medicines* in these dispensaries pertaining to 3 systems of medicine which include Allopathy, Homeopathy and Ayurvedic.
4. The NDMC is planning to open *an HIV counseling and Testing Centre* and launching an HIV Control program. Being the hub of the country and having almost 10-15 lacs migratory population, the need for the HIV control program has been felt since long.
5. NDMC is also planning to strengthen its indigenous system of medicines by opening a Panchkarma unit at Polyclinic.
6. Maintain records of vital statistics i.e, birth and death unit.

7.3. Departmental Structure

There are separate units for Sanitation, Malaria Control Unit, Anti Larvae and Surveillance, Vital Statistics (Birth & Death Unit) and Health Enforcement besides the hospitals and dispensaries. The structure of Public Health Department is shown below graphically where Medical officer of health heads the department:



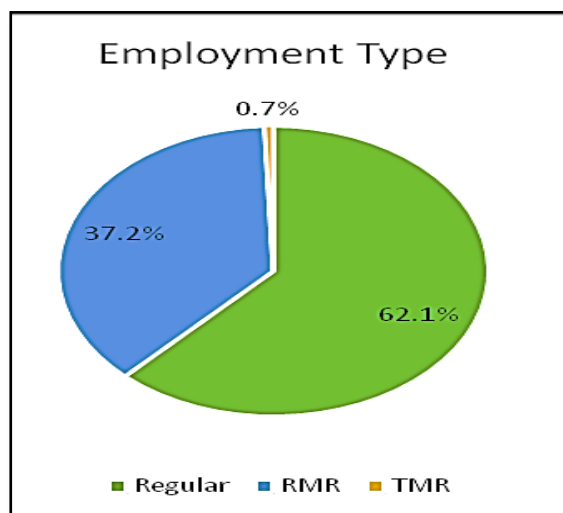
Source: NDMC

7.4. Manpower Deployment

The department is headed by Medical Officer of Health followed by CMO, DSO, CSI, SI, ASI, Safai-karamchari. Total 2,429 employees are employed by public health of which 62.1% of employees are regular, 37.2% belong to RMR and ~1.0% belong to TMR, which is given in the following table:

Manpower Breakup

S.No	Name of the Post	Category	Total No of deployed	Place of positing	Regular	RMR	TMR	Total
1	Medical Officer of Health	A	1	Headquarter	1	-	-	1
2	Chief Medical Officers (SAG)	A	4	Headquarter	4			4
3	Dy. Sanitation Officer	B	1	Headquarter	1			1
4	Chief Sanitation Inspectors	C	4	Sanitation Circles	4			4
5	Sanitation Inspectors	C	29	Sanitation Circles	29			29
6	Assistant Sanitary Inspectors	C	61	Sanitation Circles	61			61
7	Safai Karamcharis	D	2329	Circle Nos (1-14)	1409	904	16	2329
Total								2429



As can be seen that nearly 95% of the workforce is *Safai Karamcharis*. Even if reduce 920 RMR and TMR, they constitute almost 93% of the workforce. This proportion is probably more than the desired. We can take the examples of Malaria Control Unit (MCU) and sanitation workers.

In the MCU, there are 14 Circles with about 174 Malaria Guards besides the technical and surveillance staff. The population of the area is between 2.5 to 3 lakhs. Operational Manual for Implementation of Malaria Programme 2009¹³ recommended that 52 squads are required for 5 months spray period to cover a population of 1 million with DDT / synthetic pyrethroids, 87 squads are required for 4.5 months for 3 rounds of Malathion spraying. Each spray squad consists of 5 field workers working with two stirrup pumps and one Superior Field Worker. It is expected that a spray squad can on an average, cover 60 to 80 houses per day. One squad will take 12 to 17 days to cover a subcentre area with an average population of 5,000. Keeping in mind the population of the area, which is less than 3 lakhs at present, there would be requirement of less than 30 squads. Moreover, with spray now being supplemented by vehicular spraying, the exact requirement can be worked out.

Similarly for cities having population between 2 and 5 lakhs, the waste management requires the following manpower¹⁴:

1. Public Health/Environmental Engineer/or Civil Engineer having training in environmental or public health engineering in the Grade of Assistant Executive Engineer to be in charge of SWM department.
2. Public Health/Environmental Engineer in the grade of Assistant Engineer to look after the transportation, processing and disposal of waste.
3. Sanitary Officers @ one S.O. per 1 lakh population for supervising the storage, street sweeping and primary collection of waste.
4. Qualified Sanitation Diploma holder Sanitary Inspector (S.I.) @ one S.I. per 50,000 population or part thereof or @ 1 per 80 sweepers, whichever is less.
5. Qualified sanitation diploma holder Sanitary Sub-inspector (S.S.I.) @ one S.S.I. per 25,000 population or part thereof or @ 1 per 40 sweepers, whichever is less.
6. Sanitary Supervisors (a person who can read, write and report) @ one S. S. per 12,500 population or part thereof, or 1 per 20 sweepers, whichever is less.

¹³ Directorate of National Vector Borne Disease Control Programme, Directorate General of Health Services, Ministry of Health and Family Welfare

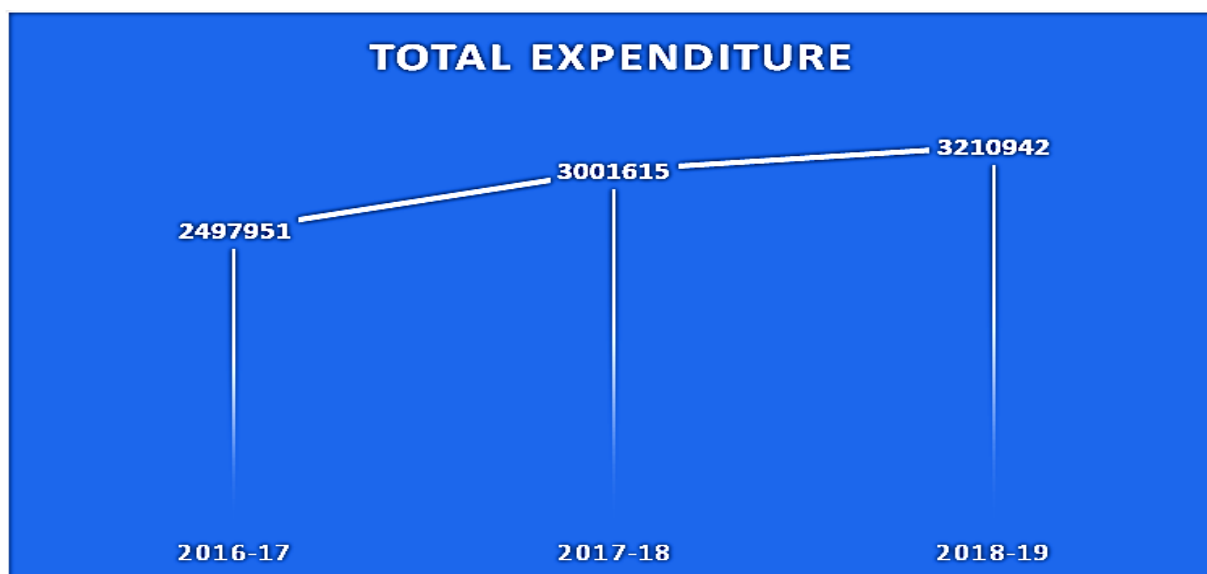
¹⁴ Manual on "Municipal Solid Waste Management", CPHEEO, Ministry of Urban Development, Government of India

7. In low density areas 650 to 750 running metres of road length and houses can be given to one sweeper. Normally 150 to 250 houses coupled with the above road length may be taken as a yardstick for allotment of work to an individual sweeper. Low density area has been identified as area having population less than 10000 per sq.km.

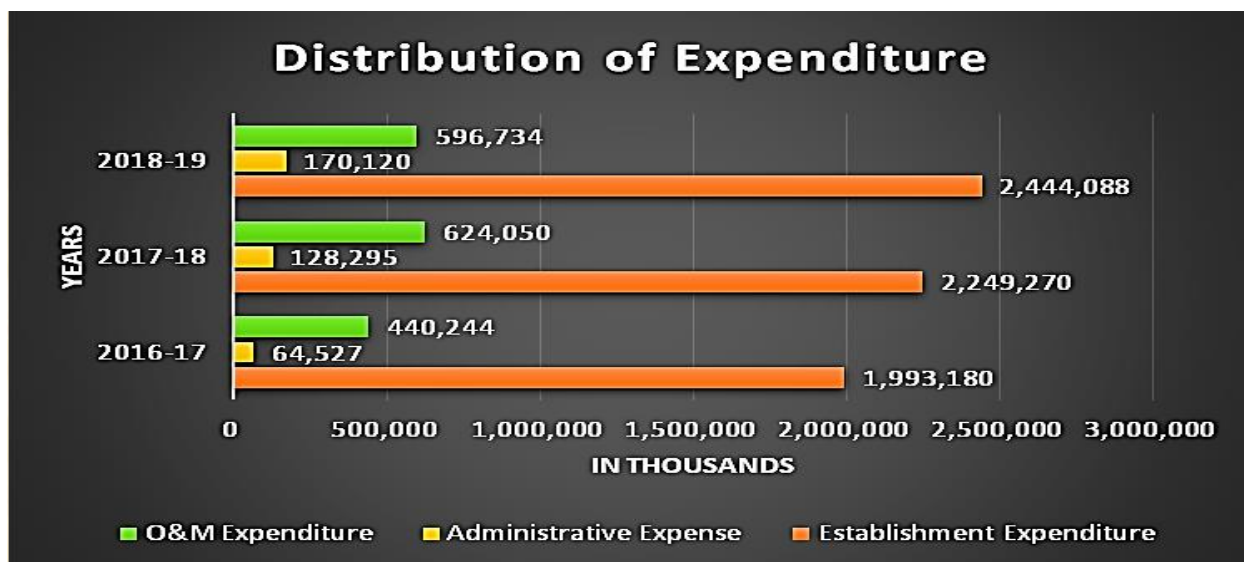
The NDMC has 1 Dy. Sanitation Officer, 4 Chief Sanitation Inspectors, 29 Sanitary Inspectors and 61 Asstt. Sanitary Inspectors besides 2302 safai karamcharis. Apparently they exceed far more than the norms. We may also keep in mind the fact that Collection and Transportation of MSW to processing units has been outsourced, which should also reduce the requirement.

7.5. Expenditure of the Department

The total expenditure over the three years has shown steady increase from Rs 24,97,951 thousands in 2016-17 to expected 32,10,942 thousand in 2018-19, i.e. an YoY change of 20% and 7% in 2017-18 and 2018-19 respectively. This information is displayed below in the figure.



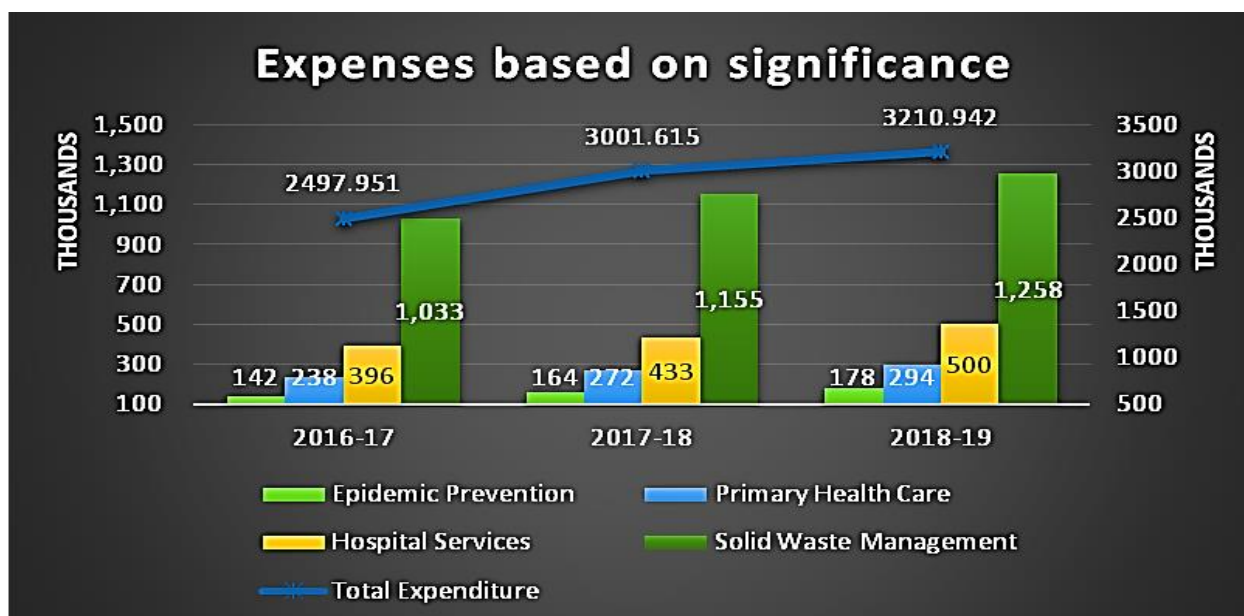
Total expenses (Total Revenue expenditure) can be divided into establishment expenses, administrative expenses and O&M expenditures. The diagrammatic representation shows share of each:



Source: Annual Reports of NDMC

Maximum share of expenditures is related to establishment expenses which constitutes ~80% in 2016-17, ~75% in 2017-18 and ~76% estimated for 2018-19, whereas the administrative expenses are very small as it only constituted 2.6% in 2016-17, 4.3% in 2017-18 and estimated to increase upto 5.3% in 2018-19. O&M expenses constitute 17.6% in 2016-17, 20.8% in 2017-18 and expected to be at 18.6% in 2018-19.

Of all the establishment expenditure borne by the Department, majority is of Solid Waste Management, followed by Hospital Services, Primary Health Care and Epidemic Preventions. Out of total revenue expenditure in 2016-17, 72.4% of the expenditure is incurred on the 4 functions mentioned above, of which 41.3% of expenditure is borne by solid waste management, 15.9% by Hospital services, 9.5% by Primary health care and lastly 5.7% by Epidemic Prevention.



The establishment expenses, which include salary and other perks, need to be reduced through proper planning and manpower deployment as illustrated above in the cases of malaria control unit and sanitation wing.

Finally, it appears that the deployment of staff and performance assessment is fairly complex. There seem to be scope for rationalization of staff in a normative and logical manner.

Conclusion

- (i) Deployment of staff seems to be on higher side as compared to prevailing norms. The proportion of safai karamcharies (90-95%) in the total strength is fairly High. As part of waste collection is already out-sourced, the deployment in the public health needs to be reassessed.
- (ii) No. of Malaria squads is fairly high as compared to normative requirement of 13 squads which will further reduce in view of vehicular spraying and automation.
- (iii) The potential of community participation to reduce the quantum of waste through local composting needs to be planned. Similarly, dry waste collection centres can be created to sort-out different material inputs for further processing as input as part of a circular economy.

Chapter 8

Rationalization of Manpower at NDMC

This section suggests corrective measures to rationalise the manpower deployment in New Delhi Municipal Council (NDMC) taking into account the barriers in the productivity and efficiency in the respective functions as elaborated in the preceding analysis.

8.1. Efficiency in Manpower Productivity

8.1.1. It is noted that NDMC has a productivity ratio of 1.07 and 0.97 (without electricity and water) as compared to 1.19 for SDMC, 1.15 for BBMP and 2.09 as average for 35 Municipal Corporations. In line with the low productivity ratio NDMC records 43.57% expenditure towards establishment as compared to 24.13% in Bhubaneswar & 32.61% average 35 municipal corporation in the country as per RBI study (2011).

8.1.2. Therefore, the productivity of NDMC (input output ratio) suggests substantial scope to rationalise the expenditure on establishment and deployment of staff at different levels of expenditure. It will also facilitate concentration towards other state of art facilities, aesthetics aspects and socio-economic agenda of municipal governance.

8.1.3. Second, the per employee per day cost at NDMC shows that HQ based costs top the list of individual functions being Rs 6217.6 per employee per day as against average CTC of Rs.2994. This indicates a top-heavy structure at HQ (with only 12% employees and 55% payroll of NDMC)

8.1.4. Third, Data also shows that Horticulture (Rs. 1758.5), Electrical (Rs. 1975.7), Civil Engineering (Rs. 1322.6) and Health (Rs. 1979.8) with relatively lower CTC (per employee per day cost to council) are four top labor-intensive functions which covers 76% of municipal employees. These four functions also include 84% of muster roll employees whose total share in NDMC is as high as 37%.

8.1.5. Fourth, Electrical and education (middle and secondary) are typically different function due to (i) existence of discom-category in GNCTD and (ii) outside the obligatory list (for education) of NDMC functions. NDMC also has alternative institutional arrangement for part of senior secondary (Navyug) schools.

8.1.6. Fifth, the share of TMR/RMR employees is fairly high (in little over one third) whose productivity is low as compared to scope at grass-root level.

8.1.7. Sixth, the grass-root level units under health, horticulture, civil works are fairly diversified and overlapping leaving a vertical set-up which is not available as a single unit to a common man.

8.1.8. It is also noted that a system of career enhancement is not in place in a systematic and time-bound manner although in most cases it does not have a major financial burden. It is preventing the optimum utilization of power, capacity building transfer of skills and institutional memory.

8.2. The Key Issues

8.2.1. In the overall context of efficiency and productivity two important aspects need special attention. First, the vertical and top-heavy structure and second the high share of TMR/RMR employees. In other words how the city government can minimize the size of manpower in its direct control and use alternate institutional arrangements to have optimum productivity is a critical point for policy attention.

8.2.2. Further, the vertical structure of service delivery is fairly diversified at grass-root level based on different service centres for Civil, Building Maintenance, Roads, Street Hoardings, Horticulture, Health, Water, Sewerage, Solid Waste, etc. Each of them have separate support staffs including administration, finance and RMR / TMR etc.

8.2.3. At the same time lack of senior positions, promotional avenues and development of bottom up experience to guide respective departmental / functional activities are needed along with steps to preserve institutional memory.

8.2.4. Further, the concentration of establishment costs at HQ caused by a top heavy and vertical structure make a case for re-structuring.

8.2.5. The high share of RMR/ TMR employees and their productivity level also call for a follow-up policy to have (i) optimum efficiency, (ii) protect their interest and (iii) restrict the expansion of this category of employees.

8.3. Manpower Agenda for Transition into World Class Smart City

8.3.1. In the current phase of NDMC's transition into a world class smart city and a model city for Indian follow up in the sector, it is important to equip the manpower with the

emerging focus of new public management and governance with special reference to productivity efficiency and client orientation along with information management in a systematic and real time manner.

8.3.2. During the past few decades private sector has demonstrated intensive follow-up on these models. At the same time, public sector also has adopted them in relation to public services. Accordingly, a range of alternative arrangements, PPP (public private partnerships), outsourcing, right sizing and e-governance/information management have been applied among frontline cities in India and elsewhere.

8.3.3. Therefore, the manpower reforms are inevitable which should focus on a five-pronged strategy at NDMC such as:

- (i) HQ based functions / services.
- (ii) Divisional/Zonal Consolidation
- (iii) Alternative Institutional Arrangement
- (iv) Enterprise Resource Planning
- (v) Real Time Data Organisation and Updation

8.4. Headquarter Based Services

8.4.1. Headquarter based services / functions have become a focal point for a top-heavy and vertical structure of NDMC. This system needs to be diversified to use decentralization and alternative institutional arrangement (SPV/PPP/Trust) to improve interaction between client (public) and local governance.

8.4.2. Therefore, HQ based functions need to be rationalized and confined to a core unit of council, chairman office, secretary, CEO, HR, IT and finance along with HoDs of three functional units (Health, Civil and Horticulture).

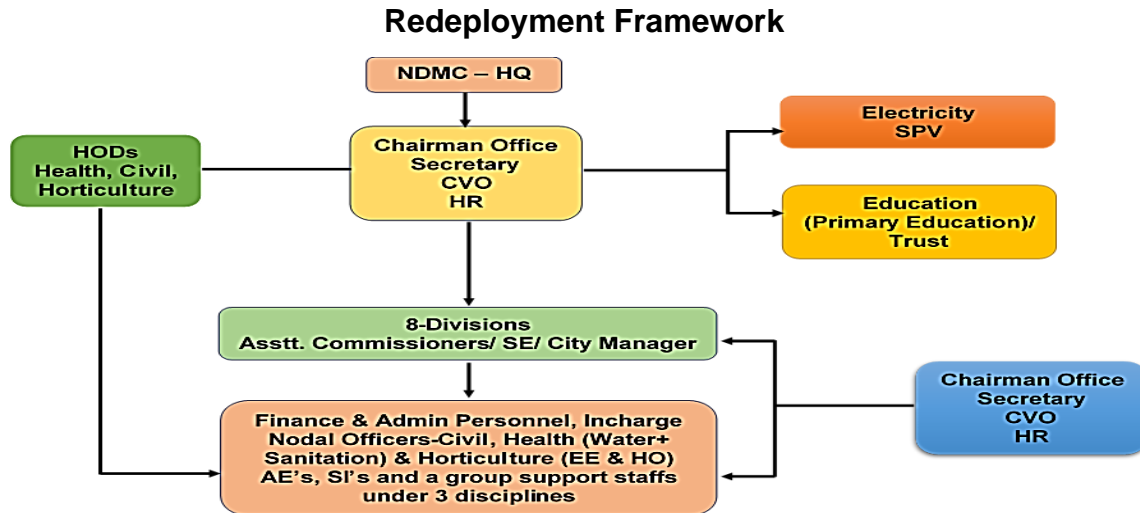
8.4.3. Electrical and Education can have SPV and Trust respectively under overall control/ownership of NDMC. (Chart 8.1 and 8.2)

8.4.4. Accordingly, specific actions suggested are as follow.

- a. HQ should be a focal point of management control and planning at different levels of operations for a vertical coordination with respective units to be created in a decentralised manner under unified command at each zonal level having common jurisdiction different from the current system of stand-alone units.

- b. The departmental 'head' (HoD) at HQ should operate to facilitate procedural and approval, monitoring performance assessment tasks for respective employees in the overall system of municipal governance.

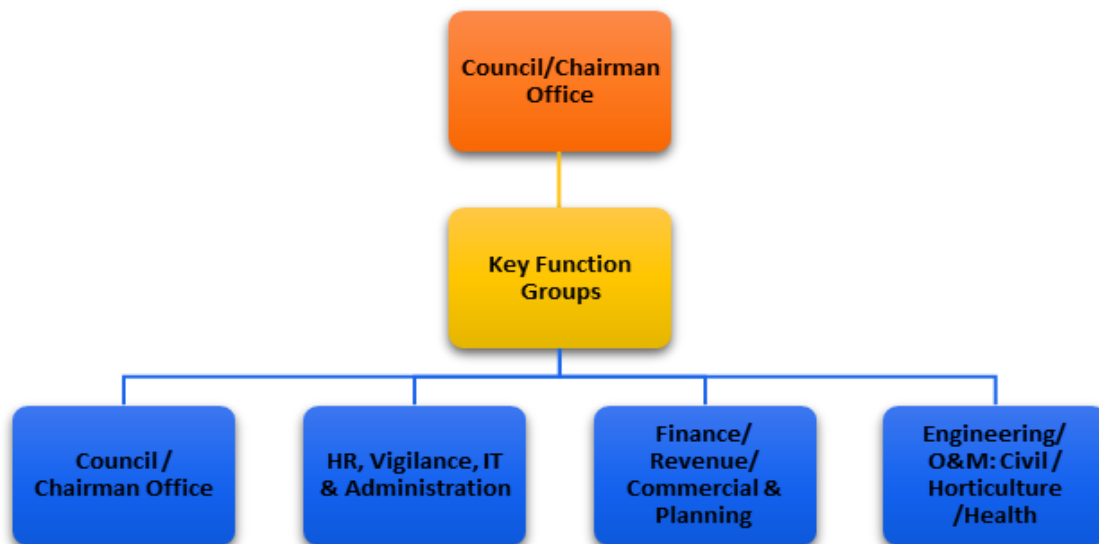
Chart 8.1



- c. The number of departments at HQ should be minimised to Chairman / office, council, vigilance, HR / Administrative / IT and finance (Chart 8.2).

Chart 8.2

Functional Distribution of HQ activities

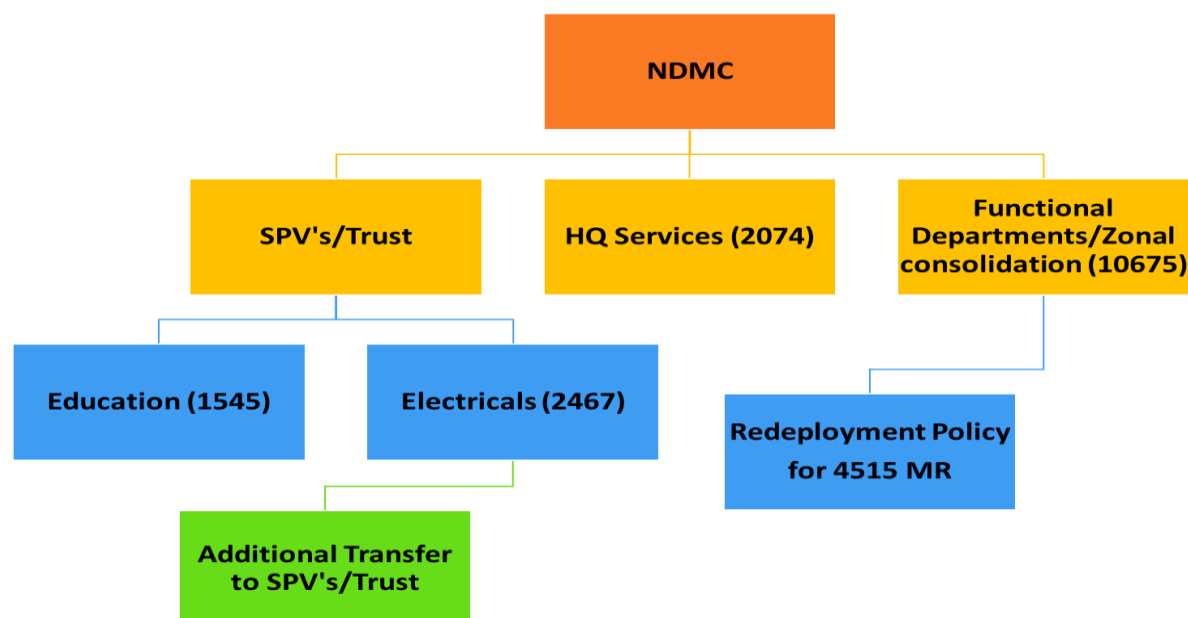


- d. 2074 HQ base employees may be restructured under four major categories of Chart 8.2 whereas 4012 employees under education and electrical could be assigned to respective SPV's. Remaining 10675 employees should be placed as per detailed Employee Deployment policy.

Table 8.1
Redeployment Frame-work

Typology of Placement	No. of Employees	Functional Distribution
SPV/Trust (Electricity & Education)	4012	Details to be worked out by respective SPV/Trust
HQ Based Activities	2074	(i) council Office, (ii) HR, Vigilance, IT & Administration, (iii) Finance/ Revenue/ Commercial & Planning, (iv) Engineering/ O&M: Civil / Horticulture /Health
Decentralised Division/Zones	10675	Divisional/Zonal consolidation (Administration & Finance, Architecture & Horticulture, Civil Engineering and Health) under unified command headed by Assistant Commissioner/ Urban Manager/ Superintendent Engineer

Chart 8.3
Manpower Allocation Framework



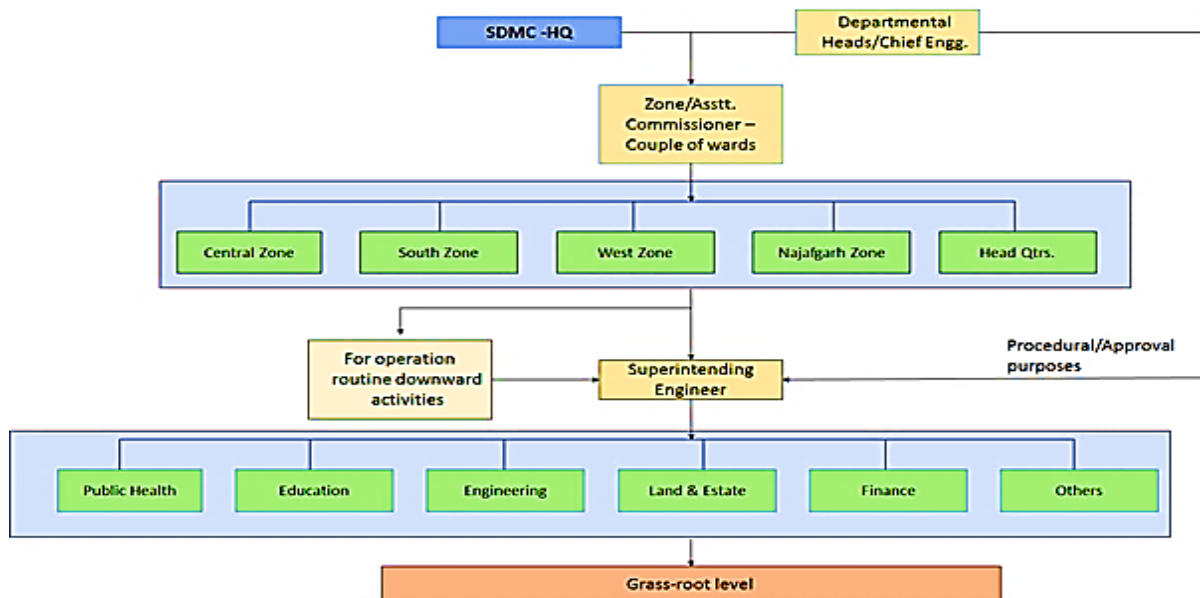
8.5. Divisional Integration and Consolidation of NDMC Employees

8.5.1. Deployment of 10675 employees should be done at selected divisions / zones to consolidate managerial services in a decentralised manner. The pool of employees working under Horticulture, Health and Civil should be reorganized into a select number of unified functional points to be identified as division/zone of NDMC. (Chart 8.1)

8.5.2. Currently different departments of NDMC (civil, health, horticulture, etc.) have service centres to cater to the need of respective functions at grassroot level. They do not operate as a single focal point to have synergy and horizontal coordination to address requirement of a common citizen. Therefore, a system of divisional and consolidation at grass root level (somewhat similar to South Delhi Municipal Corporation system; (Chart 8.4) is needed in which public health, education, engineering, land and building, finance is placed horizontally under the control of Assistant Commissioner. It is therefore suggested that:

- a. Different departments should be converged at the level functional units may be called as divisions / zones. (Chart 8.4)

Chart 8.4
SDMC Service Delivery at Grass Root Level



- b. Some (6-8) division /zones under unified command of Urban manager / Assistant Commissioner should be established at the level of SE (Superintendent Engineers) or equivalent wherein different functional positions such as Executive Engineer, Assistant Engineer, Junior Engineer and Health Officer, Health Inspector, etc. should be created along with necessary manpower for finance and administrative/support. (Chart 8.1)
- c. The current strength of employees including 6237 RMR and TMR should be reallocated under respective main functional units.
- d. The number of 'Beldar' and other support staff should be identified for each of the functional unit.
- e. The reporting system should be coordinated by zonal/departmental head through divisional head. This will ensure citizen centricity who will know who is in-charge of the city in their respective area (Chart 8.2). Therefore,

the pool of employees working under Horticulture, Health and Civil should be reorganized at unified functional point to be identified as division/zone of NDMC.

- f. As the functional unit will cater to a couple of functions, the support staff (RMR/TMR) will require suitable training on respective services which they are expected to provide during their job/assignment. A frame work of revised training to TMR/RMR may be designed.
- g. Recruitment of RMR/TMR may be stopped with immediate effect.
- h. If required, the functional units should identify necessary services for outsourcing where ever necessary as per ERP.
- i. A separate study on outsourcing of activities is recommended at the level of functional units. It should cover potential scope of outsourcing under different tasks.
- j. At the same time a rotation policy of employees including RMR / TMR should be initiated at all the divisional / zonal units.

8.6. Alternative Institution Arrangement

8.6.1. The two functions namely education (middle/secondary) and electricity are typically different then remaining categories of NDMC services. They are not normally handled by city governments directly. Hence, these two deserve special attention.

EDUCATION

8.6.2. Whereas primary education is an obligatory function of NDMC, the middle / secondary education is not part of core municipal functions of NDMC as per the NDMC Act, 1994. It is also important to note that the Pupil to Teacher Ratio (PTR) is marginally high in the primary education (29) and substantially low in the middle and secondary education (23) as compared to norms of 30 and 35 as per CBSE (Central Board of Secondary Education) and UDISE (Unified District Information System for Education) respectively. Among individual schools, the PTR has further scope of consolidation.

8.6.3. Therefore, NDMC should initially confine its activities to nursery and primary education only as indicated in the 'Act'. The activities under education function in NDMC should be minimised in a phased manner to transfer education function to a suitable/alternative institution. Specific actions in this connection may include:

- a. Nursery/Primary and Middle/Secondary schools' education should be separated from each other.

- b. Nursery or Primary education should be confined to NDMC area only whereas the number of middle and secondary schools should be reduced to suitably absorb students from NDMC schools / areas.
- c. A separate trust in line with the arrangement for Navyug Schools may be created for secondary school education.
- d. Wherever feasible start 2nd shift for secondary / senior secondary schools as already applied in the other public sector schools in GNCTD. It will enable merger of existing schools.
- e. Give preference / restrict the admission to secondary schools to the students from NDMC area / pass out from NDMC owned primary schools.
- f. Identify space available from restructuring of schools through 'Assets Management study' to follow a social and economic agenda of NDMC drawn from schedule XII of constitution of India. It should particularly include the activities under NULM (National Urban Livelihood Mission).
- g. The space can be utilised to carryout activities similar to city livelihood centre / productivity centre such as training (cover educated unskilled), skill promotion/upgradation, high-tech oriented start-ups and networking (convention centre/community centre / seminar promotion, etc.)
- h. The activities under a to g above should be handed over to a trust as per suitable TOR to be framed after an asset management study.
- i. It may also be examined whether to include Primary Education also under above arrangements.

ELECTRICITY DEPARTMENT

8.6.4. Electricity is being provided by city government in a different model of management. The part of NCTD has DISCOMS (Distribution Companies) Mumbai Municipal Corporation has a separate entity known as BEST (Brihanmumbai Electric Supply and Transport) for electricity supply. Accordingly, 'electrical' function of NDMC needs specific modification such as:

- a. The department to be converted into SPV (Special Purpose Vehicle) a fully owned company of NDMC. Being Smart City NDMC already has a mandate to create SPV. Therefore, the new SPV for Electrical may be constituted in line with guidelines of smart city.
- b. The SPV should have healthy competition with the other two DISCOMS in Delhi in terms of performance indicators such as line losses etc.
- c. A separate study may be carried out to work out modalities to send NDMC employees to SPV in a similar manner as was adopted for employees of

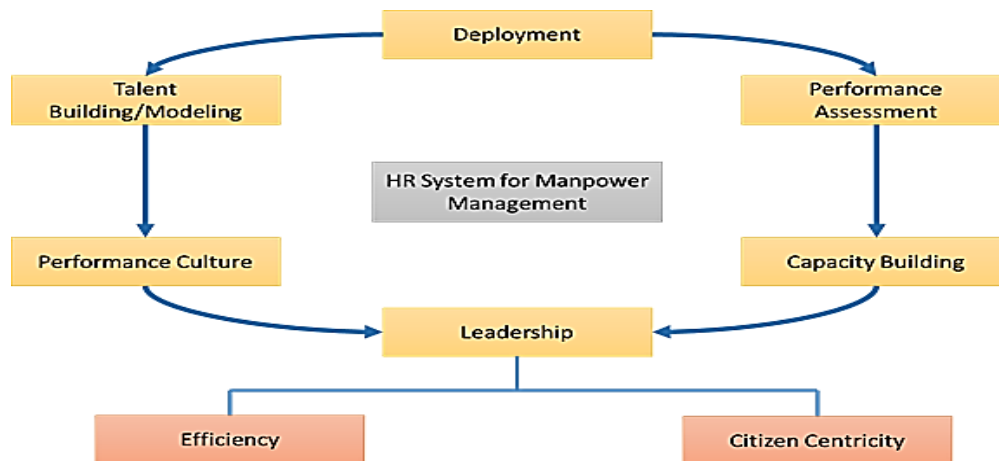
DESU (Delhi Electric Supply Undertaking) to go to respective DISCOM in NCTD.

8.7. Enterprises Resource Planning

8.7.1. Employee Deployment Policy should be part of ERP to cover all the 16761 employees of NDMC. Accordingly:

- a. A detailed ERP (Enterprise Resource Planning) should be done covering. Assessment, Deployment, Rotation, Performance Evaluation, Capacity Building and Resource Efficiency and Citizen Centric delivery of services. (Chart 8.4).
- b. Performance assessment on part of ERP should be three-fold i.e. KPI (Key Performance Indicators), Reporting and follow up (Chart 8.5). Accordingly, HR system should be tuned to address emerging requirements for effective delivery of managerial services (Chart 8.5).
- c. Create suitable positions (Career Enhancement System) to develop NDMC's own cadre giving a chance to vertical growth to existing manpower and build institutional capacity and memory in a sustainable manner. This could be done without having much impact on financial burden on NDMC.
- d. The possibility of sending TMR/RMR in addition to existing number of such employees in education and electrical should also be examined. There could be scope of employment in the potential skill centres which may be established in the space to be identified in the asset management study of NDMC schools.
- e. The deployment of staff should be minimised and assessed in a periodic manner along with their performance and workload and potential options for redeployment. This should be regular nature of activity.
- f. A well-defined training & capacity building plan for both on the job and outside training should be developed.

Chart 8.5
ERP for Manpower Management



8.8. Real-time Data Organization and Updation

8.8.1. As is generally known about municipal management, it is noted in NDMC also that the nature and volume of information/data is largely segregated, adhoc and irregular and does not provide a consolidated and bottom-up assessment for necessary analysis. For instance, budgetary description of functions specifies 32 departments whereas personnel resource division brings together the manpower data under five main areas of functions namely (i) Education, (ii) Architecture & Horticulture, (iii) HQ based services, (iv) Electrical, (v) Civil and (vi) Health.

8.8.2. Further, the information on deployment and performance of staff is not maintained in a real time manner at grass-root level. Once reorganisation is done as above, the information system could be developed in a real time manner which may include

- a. Each division to prepare a task assigned format at grass-root level.
- b. Daily follow-up in a computerised recording which should include:
 - Attendance
 - Complaint Received
 - Work Attended
 - Work Done
 - Feedback
- c. WhatsApp groups may be diversified and strengthened to monitor (b) above.
- d. Capacity Building Framework should be followed as per a well-defined plan covering Total Budget of Department, Budget for CB and Training, Annual Plan

and Monthly Progress, CB should include Exposure Visit, on the job training (Handholding) and Classroom training.

9. Finally, if NDMC has to develop as a role model for smart cities in India, it needs to take up a series of reforms to have optimum use of existing manpower in the overall context of 'efficiency' and 'productivity'. These include reorganization of manpower, creation of subsidiaries (SOUs/ Trusts), Enterprise Resource Planning (ERP) covering redeployment, performance assessment system and capacity building of NDMC employees.

Annexure I

**STUDY ON
MANPOWER REQUIREMENTS IN VARIOUS
DEPARTMENTS OF NDMC**

**Data Sheet for
Preliminary Assessment and Preparation of Inception Report**

Sponsored by



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NEW DELHI MUNICIPAL COUNCIL

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**INDIAN INSTITUTE OF PUBLIC ADMINISTRATION
IP ESTATE, RING ROAD,
NEW DELHI**

November 2017

Study on Manpower Requirements in Various Departments of NDMC

Requisite Information and Documents for Preliminary Assessment and Preparation of Inception Report

1. Organisation Structure of NDMC

Chart – giving departments, functional heads etc.

2. Contacts – List of Key Officials

3. Functions carried out by NDMC – Linkages between functions & departments

4. Basic statistics:

a. Area, Population, estimation of floating population and map indicating wards

b. Municipal assets and their valuation, No. of Properties (residential and commercial)

c. Service level statistics:

i. Water supply

ii. Sewerage and drains

iii. Total Waste generation, collection, and treatment

iv. Length of drains and road network (high, medium and low-density areas)

5. Department wise requirement of staff (sanctioned)

6. Department wise deployment of staff in a tabular form

Department: level-wise (A, B, C & D)

Sanctioned Post	Deployment			
	All	Regular	Temporary	Daily Wages

7. Recruitment Rules and Job description, compensation package, promotion policy, placement rules, job rotation policy and follow-up.

8. Key Performance Indicators (KPIs) for departments if any,

9. Monitoring and follow-up system including GPS/IT enabled tools for different departments

10. Citizen feedback and involvement through e-Governance mechanism, IT platform/Apps/ website.

11. Recent incidence (last three years) of capacity building programmes conducted within and outside NDMC

12. Department wise revenue income and expenditure (actuals) last three years

13. Budget for last four years

14. Department-wise expenditure on (i) salaries, (ii) other establishment costs and (iii) O&M.

15. Department wise annual expenditure on (i) carry forward tasks, (ii) current liabilities (last three years) separately for O&M and investment (capital projects).

16. Current level of outsourcing – department wise

Department	Outsourcing	Amount paid	No. of employees deployed by department	Estimated Amount of expenditure on Municipal System or replacement value by municipal system if used

17. Current level of PPP on different functions

DBOT (Design Build Operate & Transfer)	
DBFOT (Design Build Finance Operate & Transfer)	
BOT (Build Operate & Transfer)	
Licensing on PPP mode	

18. T&C, MoU etc. on major PPPs

19. List of civil society organisations – involved with NDMC and the nature of interaction

20. Existing Reports (till now) on Manpower assessments, deployment etc. if any.

21. Copies (last three years) of Annual Reports

Annexure II

Persons Contact

Sl. No.	Name	Designation	Department	Contact Number	Email Id	Address
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3	Sh. K. P. Singh	Director	Horticulture	9891220990		13th Floor
4	Sh. Jintender Kaushik	Asstt. Director (Lodhi Garden)	Horticulture	7290062439		Lodhi Garden
5	Sh. Praveen Kr Rana	Section Officer (Lodhi Garden)	Horticulture	7290062457		Lodhi Garden
6	Sh. Raj Kr Aggarwal	AAO	Horticulture	9968213670		12th Floor
7	Sh. V. K. Pandey	Chief Engg-I	Electricity-I	9868951220		
8	Sh. Surender Kumar	Executive Engineer(E)Tech-I	Electricity-I	9810285758	eep11.elect@ndmc.gov.in	17th floor
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11	Sh. Chaman Lal	Sup. Engg.	Electricity-II	7290067091		
12	Sh. Bachhan		Electricity-II	9910358340		
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14	Sh. Vijaypal	DEO	Education	9891155182		8th Floor
15	Sh. S. K. Jha	CE (I) & (II)	Civil Engineering	23341521		16th floor
16	Sh. B. L. Meena	EO Civil-II	Civil Engineering	9013400061		
17	Sh. Z. I. Khan	EO Civil - I	Civil Engineering	9891485871		
18	Sh. A. A. Tazir	Director	Power, Commercial, Event Management and Public Relations	9870575995	director.commercial@ndmc.gov.in , director.power@ndmc.gov.in	5th floor
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21	Sh. Vinay	AAO	Budget (Accounts)	8800922822		