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DELHI DEVELOPMENT AUTHORITY
(MASTER PLAN SECTION)

PUBLIC NOTICE

S.O. (E). -The following extensive modifications which the Central Government/ Delhi Development Authority proposes to make to the Master Plan for Delhi (MPD) keeping in view the perspective for the year 2041 as Master Plan for Delhi-2041 (MPD-2041), under Section 11-A of DD Act 1957, is hereby published for public information. Any person having any objections/ suggestions with respect to the Draft MPD-2041 may send the objections/ suggestions via web portal: <http://online.dda.org.in/MPD2041> or in writing to the Commissioner- cum- Secretary, Delhi Development Authority, 'B' Block, Vikas Sadan, New Delhi- 110023 within a period of **Forty-Five (45) days** from the date of issue of this notice. The person making the objections or suggestions should give his/her name, address and telephone/contact number(s)/ E-mail ID which should be readable.

About MPD-2041

The Master Plan for Delhi is one of the key instruments that facilitates Delhi's development by assessing the present condition and guiding how to achieve the desired development. The anchor agency for the master plan is the Delhi Development Authority. Implementation of the Plan is the collective responsibility of all agencies involved in the development of Delhi, including the Central Government, concerned departments of the Government of the NCT of Delhi, service providers, landowning agencies, regulators, and local bodies among others.

The first Master Plan for Delhi was promulgated in 1962 under the Delhi Development Act of 1957, followed by the Master Plans of 2001 and 2021, each of which is an extensive modification of the respective previous plan document. These plans were prepared for 20 years' perspective periods and provided a holistic framework for planned development of Delhi.

The **MPD-2041** is a 'strategic' and 'enabling' framework to guide future growth of the city, built upon the lessons learnt from the implementation of the previous plans.

Structure of MPD 2041 document

The Plan document has been structured to enable sharing in the public domain via multiple media and provide the flexibility of adding or modifying the document. Each chapter has been assigned a code for ease of cross-referencing across the document; for e.g. HCP – 1 represents the chapter titled 'Managing public spaces better'. The Plan comprises of two volumes as given below:

- **Volume 1: Vision 2041 and Enabling Policy Framework** comprises of an introduction providing an overview of Delhi in present times, its global and regional positioning, estimates of population and various other projections for 2041. The Vision, Goals and Objectives of MPD-2041 are given in this Volume. Further, the volume contains six sections covering major policies of Environment, Economy (covers Trades & Commerce wholesale trade, industry and Government offices), Transport and Mobility, Heritage, Culture and Public Spaces, Shelter and Social Infrastructure and Physical Infrastructure.
- **Volume 2: Spatial Development Strategy and Action Plan** is divided into three sections. The first section contains all major strategies and detailed provisions, specific norms for guiding future spatial development of Delhi, covering both green field and brown field development in the city (land pooling area, green development area, regeneration of planned and unplanned areas, transit-oriented development, strategic regeneration etc.).
- The second section provides the Plan Monitoring and Evaluation Framework for the Master Plan with key performance indicators to monitor progress including an implementation framework for facilitating periodic review and course correction. The third section comprises of detailed development control norms and urban design guidelines for different types of development.

NOTE:

*Any new development/ projects/ reconstruction/ addition/ alteration etc. that come up after the notification of **MPD- 2041** shall follow policies and norms of the same. Any ongoing projects (under construction) at the time of notification shall be permitted as per norms of the previous plan i.e. MPD-2021. Projects yet to start construction will revise their plans as per the Master Plan in force, and will be given necessary time required for this.*

The following are in the public domain and public objections and suggestions have been invited. Any subsequent amendments to these will be suitably incorporated in MPD-2041.

- *Policy for Green Development Area*
- *Norms for Unauthorised Colonies*
- *Norms for parking*

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VOLUME 1

VISION 2041

AND

ENABLING POLICY FRAMEWORK

INTRODUCTION

The release of the Master Plan for Delhi- 2041 coincides with the 75th year of India's Independence. India is poised to become the third largest economy in the world by 2050 and its growth trajectory is increasingly being defined by cities that contribute 60 per cent of the GDP. The Government has increased the focus on urban development by embarking upon a comprehensive programme for planned urban development in 2014, designed to bring about a transformative change in the lives of people with inclusive, participative and sustainable approach.

A number of National Urban Missions have been launched by the Ministry of Housing and Urban Affairs (MoHUA). The focus areas cover almost the entire range of urban issues in Indian cities such as housing, urban services, environment and climate change, smart development, mobility, waste management, heritage, digital enabling and water security among others. In addition to this, the Government of India has come up with a number of standards, norms, model policies and frameworks that can be adopted and contextualised by cities to assess and monitor their situation in various sectors, such as, 'Ease of Living Index' or the 'Climate Smart Cities Assessment Framework'. There is special thrust on urban regeneration especially of unplanned and unsafe areas and people's health and livelihood.

Delhi has always been the showcase city in India, inspiring policies and projects in towns and cities across the country. MPD-2041 is closely aligned with the national level urban policies, and will play a major role in structuring the urban narrative in the coming years. Delhi is the seed-bed of new ideas and will continue to be the beacon of growth, a face of the 'new urban India'. Strategies of the Plan have been based on learnings from across the country with respect to implementation of various projects and schemes.

Delhi's global and regional positioning: Delhi is a globally competitive, thriving urban centre as well as a historic world city with unparalleled cultural wealth. As the capital of India, it is the seat of the National Government and at the same time functions as a union territory with a special status designated as the National Capital Territory of Delhi. The National Capital Territory of Delhi comprises of multiple local bodies that operate in separate jurisdictions. While, this unique governance structure leads to institutional complexity and challenges of multi-agency coordination, it also accords the city an unrivalled Regional, National and Global importance.

Delhi is quite prominent and one of the fastest growing megacities in the world, and according to international studies, it is the second highest performer and the fastest growing economy in Asia-Pacific. Delhi is also one of the leading start-up ecosystems in the world. It is one of the most important trade centres in India and Asia and the biggest and busiest logistics and trade hub in North India. Delhi needs to build on this potential and address issues such as pollution, degraded built environment, congestion, lack of safety and disparate living conditions, which are a threat to its market potential and global attractiveness.

Delhi is also considered among great historic cities of the world where buildings and monuments, including three world heritage sites and a living Walled City, which is a part of the Central Business District. Additionally, Delhi is one of the greenest cities in Asia and

a river city, located on the banks of Yamuna. Delhi is well-endowed in terms of built and natural heritage, and given its unique assets, its potential as a global cultural hub needs to be explored.

Delhi lies at the heart of the National Capital Region (NCR) (approx. 55,083 sq.km. in area), surrounded by four important cities from the states of Uttar Pradesh and Haryana. This urban agglomeration acts as the consumption and distribution centre for North India, accounting for 7-8% of the national GDP, with Delhi's contribution being more than 50%. Investments in the region grew by 95% in 2019. Delhi is the key redistribution centre due to the seamless connectivity and robust infrastructure. In future, functions of distribution and re-distribution may migrate from Delhi to the upcoming dedicated freight corridors and nodes. However, Delhi will retain its economic prominence as a front for business, trade and digital logistics, and as the primary driver of the regional economy.

The central NCR (CNCR) functions as a single socio-economic unit. It comprises mainly of Delhi, Gurgaon, Faridabad, Ghaziabad and Noida that demonstrate strong interdependencies with each other. Delhi Metro serves the entire CNCR and has a large share of inter-city trips and the upcoming regional rapid rail will further blur the city boundaries. With such strong connectivity, distance is no more a major factor for people in the NCR for deciding locations of work and home. Delhi needs to plan for its own future role as a city that offers a spectrum of choices for recreation, work, residence or short stay options. This can be done by developing Delhi's unique as well as niche assets and qualities to enhance its attractiveness as a global cultural and economic hub.

The NCT of Delhi is the largest city in the country in terms of area, spread across approximately 1486.5 sq.km. It comprises 367 villages, most of which are declared as urban. There are 11 districts, 33 tehsils/sub-divisions, 272 wards and five local bodies handling civic administration viz. North DMC, South DMC, East DMC, New Delhi Municipal Council and the Cantonment Board. Delhi is divided into 18 Planning Zones for ease of planning and management.

Delhi's demographic profile, population projections and development needs: Delhi is a highly preferred city in terms of employment, higher education and residence. The population of Delhi has grown at a high rate for the past seven decades. According to the Census of India, 1951-61, 1961-71, 1971-81, 1981-1991, 1991-01 and 2001-11, NCT Delhi recorded decadal growth rates of 52.44%, 52.91%, 52.98%, 51.45%, 47.03% and 21.20%, respectively. The growth rate has dropped in the last two decades both in terms of natural growth and migration. However, in absolute numbers, NCT Delhi accounts for about 1.39% of India's population and is one of the most populous cities in the world.

Delhi is a multi-cultural, cosmopolitan city with second largest in-migration in the country. Census 2011 recorded nearly 2.26 million migrants who had been residing in Delhi for a duration of 0-9 years. However, over the last decade (2001-11), the total migration into Delhi has reduced. The Economic Survey Report (2018-19) ascertains that substantial migration was from neighbouring states and the development of Gurgaon, Faridabad, Sonapat, Noida, Ghaziabad, etc., and employment promotion programmes by respective state governments have contributed to reduction of migration to Delhi. However, the absolute number of migrants is quite high and a comprehensive

understanding of their profile, purpose and duration for migration is critical to provision of housing, facilities and employment options.

Delhi experienced a high surge of population right after the independence and partition of India. In addition to the original residents of the city, many families established base in Delhi and many others migrated here for government jobs and other opportunities over time. Presently, a large proportion of Delhi's population has some roots here, comprising an entire generation that was born and brought up here. As per the Economic Survey of Delhi 2019-20, 30.3% of the population is from the age group of 15-30 years, making Delhi one of the cities with the highest young population in the world. With a high literacy rate (86.2%), Delhi also has a large educated workforce with about 1.1 million people between 15-59 years of age (2011). This highlights the need for opportunities and spaces for education, skilling and employment for youth as an imperative for talent retention and to create a skilled workforce for the city and the country.

Delhi's overall sex ratio and child sex ratio are below the national average although both have shown improvement since the last decade. While the share of population of women in the working age has increased since the last decade, the female labour participation rate is just 14.3%, five times lower than male workforce. The city has to focus on facilitating more women to join the workforce by providing safe and gender-friendly streets, public spaces and workplaces with adequate childcare facilities. It can be expected that financially independent women becoming a norm in Delhi may help improve the sex ratio, albeit indirectly.

Close to 30% of Delhi's population comprises of children and young people of 0-18 years age group indicating the need for Delhi to become a more child friendly city. Globally, holistic early development of children is considered paramount as an indicator of good quality of life, pertinent for children to grow up to be healthy and productive adults. It is thus imperative to provide infrastructure for children of all age groups and abilities in the city.

Delhi is highly urbanised. More than 97% of the population was urban in 2011 as compared to 53% in 1901. Presently, most people reside and work largely in the central, eastern, southern and north to central parts of the city. In the plan period 2021-41, the western and northern periphery of the city is slated for large-scale development. The density of the population has increased from 6352 persons per sq.km. in 1991 to 11,320 persons per sq.km. in 2011. Densities vary across the city and low density pockets are juxtaposed with highly dense unplanned areas, requiring a nuanced policy for regeneration in the city.

Delhi's population in 2041 is estimated at 30.9 million, 29.1 million and 27.8 million as per the high, medium and low growth scenarios respectively, based on growth assumptions across various parameters. Accounting for the decline in rate of growth in the last two decades, the medium growth scenario (29.1 million) has been adopted as the most likely estimate. This may need recalibration when the Census is updated. Table 1 shows five-yearly growth projections:

Five-year growth projections for Delhi

Year	Male (in million)	Female (in million)	Total (in million)
2021 (base year)	11	9.5	20.6
2026	12.2	10.4	22.6
2031	13.4	11.4	24.8
2036	14.6	12.3	26.9
2041	15.9	13.3	29.2

Two important shifts are likely in the demographic profile of the city. A significant increase is projected in the proportion of persons of working age (age group-25-60 years), indicating the need to create adequate employment opportunities and to harness the potential economic benefits presented by this demographic dividend. The analysis also indicates increase in the proportion of persons in the age group of 60 years and above. This, signals the need for specific provisions for the elderly in the Plan.

The previous Plan had estimated that 50% of the population increase would be due to migration. The growing needs of existing population and high land values have led to the growth of unplanned settlements in the city. Migration is estimated to contribute 41% of the population increase during the present plan period, highlighting the need for introducing new housing types that cater to the needs of different income groups and tenure requirements.

Baseline assessment for Delhi: In order to establish the present situation and assess gaps under various sectors, an extensive baselining exercise was conducted for MPD-2041, involving all the relevant stakeholder agencies. Data was collated from primary and secondary sources and studies were conducted for transport, accessibility, economy, heritage and unplanned settlements. About 200 experts contributed inputs towards different sectors and aspects of development in Delhi. All core agencies and departments of the central, state and local governments were involved in the baseline exercise. The baseline along with background studies and detailed analysis of trends and strengths, weaknesses, opportunities and threats (SWOT) brought to the fore key concerns regarding the city. These were corroborated by views received from citizens, stakeholders and experts who participated in public consultations and focussed group discussions held during plan preparation.

The opinions, views and aspirations of the people of Delhi were garnered through continuous engagement during the preparation of the Plan by partnering with CSOs, RWA federations, market associations, professional bodies, public campaigns etc., as well as through direct interaction with people. Dedicated online public consultations were held from September-November 2020, including sessions with youth, persons with disabilities, professionals, NGOs working on gender issues, people living in unauthorised colonies and slums, traders, industry representatives etc. A citywide outreach was attempted through these consultations, focussed group discussions, online web portal and social media, wherein over 5000 vision statements were received from the participants.

As part of the baseline, a review of the previous master plans was carried out to trace the trajectory of Delhi's development. MPD-2021 was reviewed in detail in order to extract lessons from its implementation. The Master Plan for 2021 recognized the need to facilitate participation of private sector in the development process in order to overcome challenges associated with land acquisition and improve efficiencies of land consolidation and development. It also introduced several new principles such as pooling of land, mix-use development, transit-oriented development, etc. MPD 2041 builds upon these innovative paradigms of the previous plan and introduces relevant policies to evolve a 'strategic' and 'enabling' framework that can nurture the future growth of the city.

Delhi, like most megacities of its size, has its potential and opportunities offset by issues of unsustainable urban form, degradation of built environment, mismatch between land use and transportation leading to unsustainable mobility patterns, proliferation of unplanned development, differential access to civic services across space and class, and a growth pattern that is in disharmony with the natural environment. The 2041 planning framework endeavours to address these issues in a holistic manner, build on Delhi's inherent strengths and harness opportunities to realise the real potential of the city. Some of the key focus areas that emerged from the baselining and public consultation exercises as well as from analysis of projections for population, resource availability and economic growth, are as follows:

Key focus areas for the Master Plan

- i. **Environment:** The city is quite green but these greens are inequitably distributed. The quality of greens also needs to be improved at many places. Moreover, Delhi suffers from consistently high levels of air, water and noise pollution. The Yamuna is also severely polluted. This is not only threatening the environmental assets and local biodiversity, but also the health of citizens.
- ii. **Water:** Delhi is a water scarce city and yet, the resource gets wasted due to systemic losses, lack of a conservation and reuse strategy. This has serious implications on growth prospects of Delhi as well as the basic need of water for day-to-day activities.
- iii. **Critical resources:** Delhi's consumption of power and generation of waste need to be reduced, both of which are one of the highest in the country. Existing efforts towards recycling of waste and shift to renewable energy have to be mainstreamed.
- iv. **Mobility:** There is availability of good quality public transport but the city has large number of private vehicles leading to congestion, unorganised parking, air pollution, etc. Last mile connectivity and infrastructure for walking and cycling to be provided for improving the mobility of citizens especially for persons with disabilities, the elderly and children.
- v. **Housing:** High land prices in the city have resulted in a mismatch between housing needs and housing supply. A large part of Delhi is unplanned with unauthorized colonies that fulfil the housing need by providing lesser expensive options of owned as well as rental housing. Due to poor quality construction and high built densities,

these developments are unsafe. There is a requirement for different typologies and tenures of housing.

- vi. **Built environment and public spaces:** Facilities and open spaces in the city have become inadequate with steady growth in population. The existing built stock in many areas is old and dilapidated. Public spaces have to be made universally accessible and safer. Therefore, there is a requirement of regeneration as well as strategic interventions to unlock latent potential of certain areas in the city.
- vii. **Heritage assets:** Delhi is a cultural capital and has a large number of heritage assets. Preservation of assets and their adaptive reuse are to be promoted for preventing degradation and loss of historic assets and fabric.
- viii. **Vulnerability:** Delhi falls in seismic zone four and is under high risk of earthquake incidents of fire outbreaks and flooding. High built densities, poor quality and age of built stock further increases the vulnerability. The COVID-19 pandemic brought into focus the need to create self-contained and mixed-use areas with decentralised infrastructure.
- ix. **Economic potential:** Delhi has to fully realise its niche role and potential as an economic hub. Specialty health and higher education are focus areas. Cleaner production, start-ups, innovation and cyber economies have to be promoted by providing a variety of flexible and shared spaces to entrepreneurs in addition to opportunities and good working conditions. Niche sectors such as specialty health, higher education, tourism and MICE, modern logistics and specialized trade also need to be promoted.
- x. **Monitoring and evaluation:** A common database need to be established at city level with multi-agency coordination and an integrated monitoring protocol needs to be set up. This will help monitor progress of the city and different sectors. This is imperative for the city and the Plan to enable periodic evaluation of progress and become adaptable to change and course correction. All agencies and stakeholders need to converge efforts to achieve good quality development.

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1.0 DELHI VISION 2041

1.1 Vision 2041

1.1.1 The vision is to “**Foster a Sustainable, Liveable and Vibrant Delhi**”

1.1.2 The following Goals will be pursued over the Plan period:

1.1.2.1 **Goal 1 (G1):** Become an environmentally sustainable city that provides a healthy environment for its citizens and is adaptable towards addressing impacts of climate change.

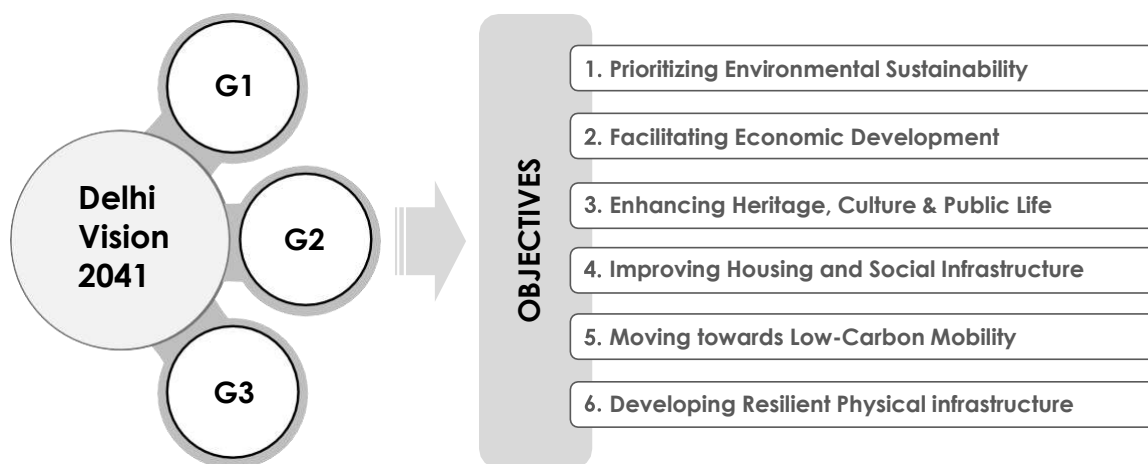
1.1.2.2 **Goal 2 (G2):** Develop a future-ready city that offers good quality, affordable and safe living environment with efficient mobility systems.

1.1.2.3 **Goal 3 (G3):** Emerge as a dynamic place for economic, creative and cultural development.

1.1.3 The Plan also acknowledges diversity and works towards creating an inclusive city that facilitates accessibility and opportunity for all.

1.2 Objectives for 2041

1.2.1 The Vision and Goals will be achieved through 6 objectives:



1.2.1.1 **Objective 1: Prioritizing Environmental Sustainability** –To prioritize environmental concerns for the development of Delhi and focus on rejuvenation of natural assets, reducing pollution, greening of built environments, supporting green economies like urban farming, and creating a diverse portfolio of natural and planned open spaces.

1.2.1.2 **Objective 2: Facilitating Economic Development** –To promote clean economies, facilitate a unique economic role for Delhi while ensuring

symbiotic linkages with NCR, improve the overall investment climate and support a variety of work and workspace typologies.

1.2.1.3 **Objective 3: Enhancing Heritage, Culture and Public Life**– To protect and enhance heritage and cultural fabric, build strong economic linkages and create opportunities for cultural experience, tourism and active public life.

1.2.1.4 **Objective 4: Improving Housing and Social Infrastructure** – To meet a variety of housing demands across different income groups and typologies, promote regeneration of older built fabric, fulfil demands for social infrastructure in dense areas of the city, and foster walkable mix-use neighbourhoods.

1.2.1.5 **Objective 5: Moving Towards Low-Carbon Mobility** –To encourage modal shift in favour of public and shared modes of transport, bring homes and jobs closer to mass transit, reduce vehicular congestion and provide efficient, affordable and green mobility options.

1.2.1.6 **Objective 6: Developing Resilient Physical Infrastructure** –To promote a sustainable approach towards use of resources like water and energy, facilitate adequate and uninterrupted services so that the city is ready in terms of digital infrastructure and resilience to shocks and disasters.

1.2.2 This forms the Enabling Policy Framework for the Master Plan. A distinct policy area is established for each of the 6 objectives for preparing development strategies. All policies, spatial development strategies and development control norms of the Master plan are designed to provide incentives/tools, regulatory provisions and guidance frameworks.

1.2.3 A summary of the key features included in MPD 41 for achieving the 6 objectives is given below:

Table 1.0: Key features of MPD 2041

Group	Feature	Chapter reference
Environment (Objective 1)	Comprehensive framework to treat green and blue assets (natural and planned) as green-blue infrastructure to facilitate better continuum and strategies for tackling pollution	ENV1, ENV2
	Protection and enhancement of natural assets with public interface	ENV2
	New city-level assets - greenways along natural drains, repurposing underutilised sites and wastelands as green-blue assets	ENV2
	Greening of plots/buildings and introduction to Green-Blue Factor (GBF) for plan approval	ENV2

	Improvement of parks and provision for special abilities parks	ENV2
	Dedicated Green Development Area for incentivizing large-scale implementation of green economies, clean energy generation and promoting green developments.	ENV2, DEV2
Economy (Objective 2)	Incentives for setting up clean economies	ECO
	Support for conversion of strategic industrial estates and District Centres into specialized clusters of knowledge, finance, services, culture or creative industries	ECO
	Facilitative norms for ancillary facilities like serviced apartments, working women's hostels, start-up hubs, shared workspaces, e-commerce, etc.	ECO
	Modernization of work centres through regeneration incentives	ECO, DEV3
	Promoting entry points of the city as hubs of hospitality, logistics and freight, health and education hubs	ECO
	Support for unorganised economies including waste workers, household industry, street vending, etc.	ECO
Heritage, culture and public life (Objective 3)	Identification of culturally significant areas in the form of heritage zones, archaeological parks and cultural precincts	HCP2
	Provisions for preservation, regeneration and adaptive reuse within identified zones and cultural precincts	HCP2
	Introduction of Heritage TDR	HCP2
	Implementation of active frontage, squares and plazas, street improvement, walkable plans for public spaces and safety	HCP1
Shelter and Social Infrastructure (Objective 4)	Regeneration of planned and unplanned areas	SSI1, DEV3
	Promotion of rental, small format and affordable housing (particularly close to mass transit)	SSI1
	Provision of, condominiums, hostels, student housing, worker housing, etc. close to work or education centres	SSI1
	Simplification of norms and categories for social infrastructure allowing for new uses and needs that may emerge. Mix use, vertical mixing and multi facility plots for improving availability and access	SSI2
	Introduction of tools like Amenities FAR and reduced norms to improve availability of facilities in dense areas	SSI2, DEV3
Mobility (Objective 5)	Unified institutional framework for mobility management	MOB1
	Transit-oriented development aligned with mass transit	MOB2, DEV4
	Identification of strategic mobility corridors.	MOB1
	Focus on improving walking and cycling.	MOB3

	Encouraging mainstreaming electric vehicles and other green mobility options	MOB1
	Variable parking norms linked to availability of public transport, earmarking space for electric vehicles, parking and parking management	MOB4
	Multi-modal integration (including development of multi-modal hubs) and facilitation of first and last mile connectivity	MOB2, MOB3
Physical infrastructure (Objective 6)	Integrated water resource management (combined policy for water supply, wastewater management and storm water management) for long term water security	INF1
	Rationalisation of supply norms for water	INF1
	Norms for decentralisation of wastewater treatment, recycling of wastes and maximum reuse of recycled water and solid waste	INF1, INF2
	Production and use of clean energy	INF3
	Provision for community level water harvesting and aquifer recharge facilities	INF1
	Promotion of green buildings	DEV1-4
	Provisions for digital and telecommunication infrastructure	INF3
	Disaster Management (earthquakes, fire and floods)	INF4

1.3 Key directions adopted for MPD-41

1.3.1 To nurture the future growth of the city and facilitate flexibility and ease of implementation of the various policies 5 key directions have been strategized.

1.3.2 **Holistic Spatial Development:** The Plan provides a unified spatial development strategy with variable distribution of densities and FAR based on factors such as proximity to city centre, environmental sensitivity, access to mass transit, and strategic potential as future hubs of living, working, recreation and public life. The proposed development spectrum is given below:

High FAR Mid/High Density

Transit-oriented Development Schemes

Central Business District

Urban Regeneration Schemes for planned and unplanned areas

Restricted Development

Areas under Environmental Protection

Mid FAR Mid Density

Development of new areas through land pooling

Low FAR Low Density

Development within areas earmarked for Green Development

- 1.3.3 **Strategic approach to development:** The Plan identifies certain strategic growth centres/corridors where incentives such as higher FAR etc., are provided. This will help target investments to potential hubs of future growth, and minimize the stress on constrained resources like water. Implementation of transferable development rights (TDR) will further complement this approach by concentrating unutilised FAR from various parts of the city within receiving zones/corridors that are strategic and have the required infrastructure.
- 1.3.4 **Mixed use development for optimal space/land utilisation:** The Plan marks a major shift from mono-functional land use planning to mix use. A built-space based approach has evolved from land-based distribution, allowing for mixing and co-location of compatible uses across the city, including vertical mixing within buildings. This will provide the required flexibility for improving availability of facilities within existing areas, thereby ensuring optimal utilisation of land. Mixed use development will also lead to reduction in trip lengths, vibrant and safer public areas.
- 1.3.5 **Private sector participation in development:** The Plan promotes private sector-led development through joint action of various stakeholders (pooling, amalgamation, joint planning and execution). This is a significant paradigm shift where development of new areas as well as regeneration of older brownfield areas shall be implemented through private initiative.
- 1.3.6 **KPI-based plan monitoring:** The Plan provides a robust monitoring framework that will facilitate tracking of larger city-level objectives through 20 key performance indicators. This shifts the focus of monitoring from creation of assets to assessment of impacts. For e.g. instead of monitoring number of STPs installed, the Plan will assess the status of pollution in water bodies. This will also enable periodic course correction to realign strategies and actions. (ref: PME)

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SECTION 1
ENVIRONMENT

BACKGROUND AND KEY POLICY CONCERNS

Delhi has a unique environmental landscape. On one hand, it has an abundance and variety of environmental assets in the form of the river Yamuna, the Aravalli Ridge, water bodies, forests etc.; and on the other, it constantly grapples with concerns like environmental degradation and pollution.

Environmental assets – green and blue

The city has made rapid strides in improving the green cover, nearly doubling it in the last two decades approximately from 150 sq.km in 2001 to 300 sq.km in 2017. Presently, it is among the greenest cities in the country with a mix of natural and planned greens. Almost 20% of the land area is under green cover, as per Department of Forests, GNCTD. Based on the categorization of the Indian Forest Act, 1927, Delhi has three kinds of forests. The Ridge is a reserved forest spread over an area of about 7784 Ha that constitutes nearly 5.2% of NCT of Delhi. The Ridge is categorized as a Regional Park in the master plan, permitting very restricted development and activities. The second category is comprised of 26 protected forests, with a total area of about 1658 Ha. Thirdly, 40 unclassified forests (about 1090 Ha) are maintained by Department of Forests, GNCTD as 'City Forests'. Additionally, there are more than 18,000 parks and gardens, which enhance the green quotient of the city and take the total area constituting open and green spaces close to 30%. Realizing the need to conserve and protect biodiversity, DDA has also developed seven dedicated biodiversity parks in different areas that serve as a model for conservation of urban biodiversity.

The distribution of green assets is uneven across Delhi, resulting in inequitable access in different areas. There is a need to enhance the quantum of green in certain dense areas where the per capita green is among the lowest in the country. Another area of concern is the quality of greens, as natural green areas are interspersed with invasive and alien species of trees that degrade the land; and therefore, should be replaced with native trees.

Delhi is also well endowed with blue assets. The most significant among these is the River Yamuna that has a historic, cultural, and spiritual connect with the city. The city has more than 4000 natural and constructed drains, out of which, 200 natural drains are spread across three drainage basins of Najafgarh, Trans Yamuna and Barapullah. Delhi also has more than 900 water bodies in the form of lakes, ponds and tanks as per Delhi Parks and Gardens Society. However, the area under blue assets has reduced over the past decade due to encroachment, pollution and natural drying up of water bodies. Rejuvenation of blue assets is one of the key actions required in the city.

Environmental pollution

A major cause of concern for Delhi is the poor air quality index throughout the year. A large fraction of air pollution in Delhi comes from outside its geographic boundaries, implying that regional level action would be necessary. Indigenous (within city) PM_{2.5} pollution is 26% and 36% during the summer and winter, respectively, out of which 45% is because of dust (Ministry of Heavy Industries and Public Enterprises). This

highlights the need for dust management during construction activities and enhancing dense forest cover. 20% of the total air pollution in Delhi is from the transportation sector. Rest is emissions from households, waste burning, industry and diesel generator sets.

Water pollution in the Yamuna and other water bodies, has resulted in disappearance of aquatic life and disturbed the water ecology. The 22 km stretch of Yamuna from Wazirabad to Okhla in Delhi, which is less than 2% of the river length, accounts for about 70% of the pollution load in the river. Despite being a perennial river, the Yamuna has no fresh water flow downstream of Wazirabad in the dry season. The flow in the river comprises of treated and untreated wastewater flowing through drains that fall into the river. 24 major drains including Sahibabad, Shahdara, Indrapuri, and Tehkhand drains that are responsible for most of the polluted outflow in the river, are monitored by DPCC. The strategies for preventing pollution of the river have to consider the floodplains, as encroachment or polluting activity in the flood plains increases the ecological damage and the potential flood hazards.

Noise quality levels are beyond the prescribed limit at all locations monitored by DPCC, both during the day and night. Delhi was ranked the third-noisiest city in the world in 2017 by the Worldwide Hearing Index.

Air, water and noise pollution is monitored regularly at various locations across the city and a number of strategies are being adopted by the government to address pollution, which is impacting public health. A clean, healthy and flourishing natural environment will help to offset the impact of climate change, make the city resilient and provide a more liveable and sustainable habitat to residents.

The legal and institutional framework for environment protection in Delhi is robust with relevant national and state laws & regulations for environment protection. A mix of strategies to be prepared for ensuring strict enforcement of regulations, addressing pollution, enhancing Delhi's green-blue quotient in terms of quantity, quality and accessibility create an enabling environment for protecting and nurturing the rich and diverse ecological heritage of Delhi.

This Section comprises of the following chapters:

ENV1: Addressing Pollution and Climate Change

ENV2: Enhancing Green Blue Infrastructure

- 2.1.1 Air and water pollution have a large geographical footprint. Multi-state efforts are required for addressing these issues comprehensively. Within the NCR, it will be critical for the member states to follow directions of the Regional Plan and the Environment Pollution (Prevention and Control) Authority, and explore collaborative actions for addressing pollution and climate change.
- 2.1.2 Similarly, water pollution can be addressed by ensuring that no untreated wastewater and industrial effluents are discharged into water bodies. Concerned state governments should also maintain adequate environmental flow in river Yamuna, to reduce pollution.
- 2.1.3 Concerned state governments should adhere to regulations and standards prescribed by the Central Pollution Control Board (CPCB), for key sources of pollution like biomass burning, polluting industries, vehicular emission norms, brick kilns, coal-based power plants, etc.
- 2.1.4 Delhi needs to address internal sources of pollution and mitigate impacts on public health. The causes and mitigation measures for pollution are closely inter-related with the issue of climate change and therefore most of the strategies will provide co-benefits for both of the areas of concern. Long-term improvement in environmental parameters will require a host of complementary strategies for improving green cover, and promoting clean industries, low-carbon technologies, sustainable mobility, green buildings, etc. This chapter provides a multi-sectoral approach to facilitate: -
- i. Reduced air, water and noise pollution from local sources
 - ii. Improved ability to cope with impacts of climate-related issues

2.2 Strategies for improved greening

- 2.2.1 Green and blue assets can absorb air, noise, water as well as soil pollution, and help in mitigating climate change impacts such as regulating rainfall patterns, reducing urban heat and flooding etc. Comprehensive strategies and actions towards improving Delhi's green-blue infrastructure are detailed in ENV2. Further, strategies to maintain a green buffer on Delhi's periphery and provide a regional level pollution sink, have been detailed in DEV2.

2.3 Promoting clean economic activities

- 2.3.1 Polluting industries as per list given at Annexure 1 shall not be permitted to operate within Delhi. The list shall be updated by GNCTD and DDA periodically, based on directives of concerned authorities. A joint action plan shall be developed by all concerned agencies to ensure that existing polluting industries in all the industrial areas are shifted or replaced with other economic activities.

Non-polluting economic activities, such as service industry and clean manufacturing, shall be encouraged and incentivised as detailed in ECO.

2.4 Minimizing vehicular pollution

2.4.1 Vehicular pollution is a major contributor to both air and noise pollution in the city. Detailed strategies for reducing the number of daily vehicular trips and encouraging use of public transport and active travel modes are provided in MOB2 and MOB3. Key strategies include:

- i) Adoption of mix-use and TOD for reducing the average trip lengths and bringing jobs and homes closer to transit networks.
- ii) Improving and encouraging public transport networks, creation of multi-modal hubs and regulatory measures such as congestion pricing etc.
- iii) Encouraging green mobility and active travel modes by improving pedestrian, cycling and EV infrastructure.
- iv) Migration to green fuels for public transport as well as IPT and other shared modes through appropriate incentives.

2.5 Other strategies

2.5.1 Pollution of surface water bodies and ground water to be addressed on priority:

- i) Water quality improvement to be taken up for river Yamuna, and various natural drains, lakes and baolis, by checking the outfall of untreated wastewater from surrounding developments. Concerned agencies to implement projects in this regard.
- ii) Steps shall be taken by DJB in coordination with the Irrigation and Flood Control Department (I&FC) to ensure time bound removal of existing pollutants using natural non-mechanized systems as per feasibility.
- iii) Water quality shall be monitored periodically along the entire length of drains by the Delhi Pollution Control Committee (DPCC) as per applicable procedures and protocols.

2.5.2 Unregulated dumping and disposal of solid wastes pollutes soil and water shall be regulated through the following strategies (ref: INF2).

- i) Dumping of solid and liquid wastes in any environmental asset of the city shall be strictly prohibited and penalised by concerned agencies.
- ii) Segregation of waste at source point to be adopted.
- iii) Local bodies shall develop a system to manage waste generated at large public gatherings and festivals held in open areas.
- iv) Waste reuse and recycling practices shall be mainstreamed by including such requirements as part of various development schemes.

2.5.3 45% of the indigenous PM2.5 is due to dust. The construction industry can play a major role in addressing this issue. Given that significant building construction activity is expected in the land pooling areas and as part of regeneration projects, the following provisions shall apply:

- i) All development projects shall follow dust mitigation measures in handling construction material and C&D waste. A Dust Management Plan

shall be submitted as per CPCB or any other guidelines. Construction sites shall be monitored regularly by the local bodies to ascertain the implementation.

2.5.4 The following mitigation measures shall be adopted across the city, and implemented on a priority basis within identified pollution, flooding or heating hotspots in the city:

- i) Pavements, roads and roofs shall be constructed/coated with light coloured material with high albedo value wherever possible. This can reduce local temperature by 3-5 degrees.
- ii) Road sections shall include appropriate trees and buffers to reduce air and noise pollution. Sustainable urban drainage components such as bioswales, rain gardens, etc., shall also be incorporated (including in residual areas below flyovers) to mitigate water logging.
- iii) Native species of trees and plants which act as pollution filters shall be included in the various greening initiatives. Miyawaki forests, smog absorption towers and other technological solutions may also be adopted for mitigating pollution at hotspots.
- iv) Higher Green Blue Factor (GBF) values i.e. higher greening requirements may be prescribed for future developments in areas identified as chronic pollution hotspots. Similarly, ground coverage may be restricted and pervious surface requirements may be increased in areas identified as flooding hotspots in the city.
- v) All new developments shall locate facilities like hospitals, schools, old age homes etc., away from high-speed traffic corridors.
- vi) A Noise Pollution Action Plan may be prepared and implemented by GNCTD based on the Noise Pollution (Regulation and Control) Rules (2000) or any other government recommended guidance framework. The number and spread of noise pollution monitoring stations in the city to be increased and appropriate noise reduction measures (plantation or noise barriers) may be implemented for immediate relief in noise hotspots.

2.5.5 A robust monitoring framework for tracking environmental parameters may be set up by DPCC.

- i) Data collected from such monitoring shall be regularly published through online platforms to improve awareness about these issues. Crowdsourcing of information may be explored for parameters like air pollution and noise levels, reporting on illegal dumping of solid and liquid wastes into greens and water bodies, etc.. This data can complement evidence obtained from monitoring stations and provide a granular spatial understanding of the sources of pollution and action required.

2.5.6 Citizens and other stakeholders play a critical role in managing pollution at the local level. All concerned agencies shall take steps to improve awareness, and provide adequate and reliable information to engage stakeholders as implementation partners.

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3.0 ENHANCING GREEN BLUE INFRASTRUCTURE

3.1.1 Delhi is one of the greenest cities in the country with abundant natural 'Green Assets' and 'Blue Assets' in the form of the Aravalli ridge, the Yamuna, forests, streams, drains, lakes and wetlands, as well as human-made assets like parks, *maidans*, ponds, *baolis*, etc. All green and blue assets and their inter-connected network is an essential infrastructure layer of the city that provides open spaces for citizens to enjoy and facilitate larger network benefits for biodiversity, microclimate and flood management. The master plan provides a framework for integrated management of 'Green-Blue Infrastructure' in the city envisaging the increase in:

- i) Net area under natural green-blue assets
- ii) Planned green spaces delivered as part of new projects in the city

3.1.2 The following four-pronged approach shall be implemented over the Plan period, combining efforts to preserve and enhance existing natural assets, create new city-level assets and increase the green-blue quotient within the built environment. This can provide the following benefits:

- i) Environmental – enhanced per capita greens, richer biodiversity, reduced heating and flooding, reduced pollution, improved resilience to climate change;
- ii) Health – cleaner living environments, active lifestyles, reduced burden of ailments and diseases (including mental health) and improved quality of life;
- iii) Socio-cultural – higher environmental awareness and closer connection of people with nature, availability of spaces for leisure, physical and social activity;
- iv) Economic – improved attractiveness as an investment destination, better productivity, reduced expenditure on health care, boost to green economies like urban farming, etc.

3.2 Preservation and improvement of natural green and blue assets

3.2.1 Many of the natural assets in the city such as the river, ridge, drains and water bodies are already notified as 'protected' or 'reserved' areas by concerned agencies.

- i) 'Areas under Environmental Protection' with delineated boundaries shall be provided by GNCTD and local bodies to DDA for the Database of Green-Blue Infrastructure detailed in Clause 3.5.1. In case of Yamuna, the delineation shall include its 1 in 25 year floodplain or any other criteria mandated by a competent authority.
- ii) Only restricted development shall be permitted within such sites (ref:DCN).

3.2.2 Comprehensive strategies shall be implemented for preserving and enhancing such sites.

- a) **Boundary protection:** through construction of fences or boundary walls as prescribed by concerned agencies or by providing pedestrian/cycle paths.
 - i) Eco-friendly materials/ techniques such as earth-berming with vegetation shall be used wherever possible as an alternative to boundary walls;
 - ii) Fences/walls shall be avoided where the boundaries are clearly demarcated by roads, bunds or natural features.

- b) **Improving quality of assets:**
 - i) Checking growth of invasive and alien species that cause land degradation or disturb water ecology. These will be replaced with indigenous flora and fauna that require less water and/or are effective for pollution control and suitable aquatic species to restore health of water bodies.
 - ii) Afforestation and tree transplantation may be taken up in identified areas as per feasibility; ensuring indigenous species that are compatible with the area and soil characteristics.
 - iii) The health of all environmental assets shall be monitored from time to time and steps shall be taken by concerned agencies for keeping the assets free from pollution and addressing the shortcomings if any.
 - iv) Enhancing biodiversity for conserving and preserving the ecosystems of Yamuna and the Aravalli Ridge.
 - v) DJB, I&FC and other concerned agencies shall implement rejuvenation of the river and lakes in the city. DJB to ensure that adequate quantum of treated wastewater, as per prescribed quality standards, is discharged into the river to maintain the prescribed environmental flow and make treated waste water available for lake/water body rejuvenation projects.

- c) **Enhancing people's connection with nature:** Public access to developed recreational sites shall be permitted without threatening the natural environment.
 - i) Specific areas and trails shall be identified as 'interactive zones'.
 - ii) Temporary activities such as active/passive recreation, exercise/yoga, nature classes, environmental research, picnics, camping, biodiversity tours, etc. shall be permitted within these areas. Amenities like toilets, drinking water fountains, resting places, visitor information centres etc., shall be provided wherever required/feasible.
 - iii) Public access shall not be permitted in any ecologically significant/sensitive features or areas (rocky outcrops, water bodies, nesting areas etc.).

3.2.3 **Special initiative for rejuvenation of Yamuna and its floodplains:** Like any river city, Delhi's history and cultural ethos is closely linked with the Yamuna and its floodplain. The Comprehensive River Development Plan prepared and anchored by DDA shall be a multi-agency initiative that shall guide protection of the floodplain with only restricted development.

- i) A 300 m wide green buffer where ever feasible shall be maintained along the entire edge of the river. Wild grassing or other suitable ground-cover vegetation shall be planted for 25-30m. from the river edge and trees may be planted beyond this grass belt.

- ii) River-people connect shall be encouraged by developing 75-100m wide greenways along the embankments for public access with provision of cycling and walking trails and other spaces for passive activities near the river. No permanent construction shall be permitted in the floodplain.(ref: DCN)
- iii) Socio-cultural activities shall be permitted only in specifically earmarked locations. Specific locations may be identified for permitting agriculture in the flood plains. Any adverse impact of these activities on the river shall be minimized by proper regulation of disposal of pooja material, immersion of idols, use of fertilizers, garbage disposal, etc. Only restricted construction shall be permitted in public areas such as ghats. Regular monitoring shall be ensured by manual and CCTV surveillance to check illegal construction, dumping of sewage or malba in the floodplain and river. No untreated sewage/ wastewater outfall shall be permitted in the river (ref: INF1)
- iv) Eco-system restoration shall be carried out by de-silting of the existing wetlands and restoring them for catchment of floodwater and creating new wetlands by developing and deepening the existing depressions into storage basins.
- v) Concerned agencies shall use different methods and media to enhance public awareness about the value of Yamuna and its floodplains.

3.2.4 Preserving eco-cultural assets: Delhi has a number of historical monuments located within or in close proximity to green and blue assets. Archaeological Parks are the best examples of such eco-cultural assets. Cultural Resource Management Plans (CRMPs) to be prepared to preserve and develop such eco- cultural assets. Historical gardens, water structures (baolis, wells, tanks) etc., to be taken up for rejuvenation by concerned agencies; re-establishing lostconnections with water systems and aquifers. (ref: HCP2)

3.2.5 Protecting Trees of Delhi: A Tree Directory shall be prepared by concerned agencies for their respective areas, identifying unique tree corridors or precincts, heritage trees, precincts with high carbon storage and sequestration rates, etc. Such trees/ tree clusters shall be protected and controlled in terms of planting of indigenous trees and integrated with cultural trails/ nature trails, etc.

3.2.6 Measures to reduce impact from surrounding development: The following norms shall apply to projects adjacent to Areas under Environmental Protection:

- i) All greenfield and regeneration projects located along drains or water bodies shall maintain a minimum mandatory buffer of 10m from the edge of the drain/ water body. A wider buffer as feasible may be mandated by the local body/DDA based on ground conditions. Landowners can consume entire FAR in the remaining plot. Compensation for providing land for buffers may be provided in case the remaining plot is rendered untenable for development after leaving the buffer.
- ii) Dumping of construction waste or outfall of sewage/wastewater from surrounding development shall be strictly prohibited in 'Areas under Environmental Protection' or their buffers.

- iii) Buildings shall be oriented to face the green and blue assets and maintain active facades in the form of balconies, windows, pedestrian entries, commercial or public frontages at the ground level, etc. Any mandatory public space requirements that have to be met as part of projects may be provided along the water body in the form of public promenades or parks.
- iv) Environmental Impact Assessment (EIA) shall be mandatory for new projects (as per prescribed guidelines) in close proximity of Areas under Environmental Protection.

3.3 Creation of new green-blue assets

3.3.1 'Green Development' on the city periphery: Green Development Area policy has been proposed for green belt villages and it permits restricted development and prescribes substantial proportion of land to be maintained as wooded area and green cover. (ref: DEV2)

3.3.2 Green buffers along drains as city-level Green Corridors (ref: DCN):

- i) Lands shall be identified along drains that can be maintained as natural green buffers. This land can include scrub land, existing buffers or floodplains or vacant government lands in all planned and unplanned areas. Additionally, all new projects shall provide such buffers.
- ii) Concerned agencies shall take up creation of green mobility corridors for creating a city-wide network of green-blue assets connected through pedestrian and cycling paths developed along the drains (ref: MOB3). The water in the drains shall be cleaned and no outflow of sewage or wastewater will be permitted. In-situ treatment for improving the water quality to be adopted.
- iii) The natural green buffers may be developed as wetlands and marshes for water-based ecologies, through bio drainage etc., groundwater recharge points or as sponges for flood water. At places where buffers are wide, they may be designed for active public use in the form of parks, spaces for yoga, active sports (without formal seating), open air exhibitions, performances and arboretums, community gardens, boating, restaurants, etc. Heritage trails may be integrated with the green mobility corridors .

3.3.3 Repurposing underutilized sites and wastelands as green-blue assets:

- i) Sites such as closed landfills, ash dykes in closed thermal power plants, abandoned quarries and mines have issues of toxicity, unstable nature of soil, etc. These sites may be converted into biodiversity parks, eco-parks, water bodies, etc., as per feasibility.
- ii) Circular economy strategies like processing/recycling of legacy wastes at landfills, repurposing and adaptive reuse of industrial structures artefacts may be adopted by concerned agencies.

3.3.4 Other initiatives:

- i) **Provision of planned greens:** In land pooling areas, existing plantations, wetlands, low-lying areas shall be included for development of public parks and aquifer recharge ponds in order to retain the drainage pattern.

Public greens shall also be contributed mandatorily by Regeneration and TOD Schemes as prescribed by the Plan. Vertical mixing of uses shall be encouraged within buildings so that more land can be opened up for parks and open areas. (ref: DCN)

- ii) **Provision of active recreation and sports facilities:** Sports facilities are required to be provisioned at accessible locations that are well connected to public transport and networks of walking and cycling. New sports facilities such as stadiums, district sports complexes, playgrounds, multi-purpose grounds etc. shall be created to encourage healthy living and active lifestyle among residents as well as provide infrastructure to enhance capabilities of sports persons for active participation in national and international competitive sports including Paralympics.
- iii) **Special greening projects:** Special projects such as biodiversity parks, amusement parks, children's adventure grounds, nurseries, etc., shall be taken up by all concerned agencies to provide multiple options of recreation for residents.
- iv) **Recharging Aquifers:** DDA and DJB shall undertake projects to facilitate groundwater recharge in critical zones by creating artificial water bodies utilising treated waste water.
- v) **All-abilities parks:** All-abilities parks shall be created across the city by earmarking land or retrofitting existing parks. These parks have to be designed for play and recreational activities especially catering to the needs of people with disability, elderly, toddlers and infants with caregivers.

3.4 Enhancing green-blue features in the built fabric

3.4.1 Existing local level parks and other planned greens shall be improved by local bodies/DDA or by RWAs/MTAs (Market Traders Association), community etc., through the following interventions:

- a) **Water sensitive urban design**
 - i) Storm water drainage shall be integrated within the landscaping and design of parks so that they may act as rainwater harvesting sumps.
 - ii) Impervious paved surfaces shall be replaced with semi-pervious paving material allowing groundwater recharge and reduction in local heating.
 - iii) In larger parks (community level and above), decentralised wastewater treatment facilities for the area/locality may be integrated into the landscape design and the treated water may be used for horticultural purposes or ground water recharging lakes. Dedicated space may also be provided for composting.
- b) **Improving functionality of parks**

- i) Dedicated tree plantation strategy shall be developed by DDA/local bodies for larger parks (community level and above) or a cluster of parks for mitigating air and noise pollution, reducing heat, creating comfortable micro-climate and providing shaded areas for recreation etc.
- ii) Activities like eateries, libraries/reading areas, outdoor performances, exhibitions, yoga and meditation, adventure trails for children etc., may be permitted in a regulated manner in larger parks. (ref: DCN).

3.4.2 **Greening of public areas:**

- i) All concerned agencies including DDA and local bodies shall ensure greening of streets RoW 18m and above. Such streets may be developed by creating avenue plantation of appropriate shade-giving, evergreen trees and landscaped areas for seating, green plazas, bio-swales along drains etc., to create a comfortable microclimate. Bridges and FOBs may also incorporate green elements on pillars, roofs, parapet etc. Such greening shall be taken up on a priority basis in areas where Walk Plans are being implemented (ref: MOB3).
- ii) All surface parking sites shall have 80% of the area as pervious or with pervious paving. Trees shall also be planted at regular intervals in such sites wherever feasible.
- iii) Respective agencies shall take up landscaping and plantation in residual spaces under flyovers, land along water pipelines, unpaved road sections etc. Some of these may be used by public if feasible.

3.4.3 **Encouraging greening:** Activities such as urban farming, community gardens, etc., may be encouraged in vacant private/public lands irrespective of land use of the plot. Z-farming/vertical farming shall also be a permitted activity within all use premises. Local bodies and DDA may also provide suitable guidelines and capacity building to communities/ RWAs/ schools/ other stakeholders for undertaking such activities. Mandatory wild grassing of all government owned vacant lands shall also be enforced.

3.4.4 **Green-Blue Factor for buildings and sites:** Green rating shall be mandatory for new developments as per UBBL to reduce energy consumption from mechanical heating/cooling and mitigate pollution. Additionally, development of green-blue features within plots/buildings in the form of roof gardens, terrace gardens, green walls, landscaped and/or pervious ground, etc. shall be encouraged in all development projects.

- i) A Green Blue Factor (GBF) shall be applicable on all new projects and developments. It is computed by combining the prescribed weightage of specific green and blue features provided in the site and building design.
- ii) Incentives and disincentives may be provided by local bodies for achieving a minimum GBF and for applying it on existing buildings.
- iii) All new projects and developments shall have to achieve a minimum value of the GBF as prescribed by the Plan.
- iv) Computation of GBF shall be done at plot level and shall be integrated as a condition for all building and layout sanctions.

3.5 Management of green-blue infrastructure

- 3.5.1 A Database of Green-Blue Infrastructure as part of the Delhi Spatial Information System by all the concerned agencies shall be maintained and mapping the existing and potential sites.
- i) The database shall be based on the typological classification of green and blue assets given at Annexure 2 and shall be made available to the public through the DDA website
 - ii) Information such as hydrology, topography, associated biodiversity, etc. may also be added over time to develop a rich resource for research and future planning. The Tree Directory may also be integrated into the database.
 - iii) A data-sharing protocol shall be set up to ensure that all concerned agencies provide data on a real-time basis or periodically to the database to keep it relevant and updated (e.g. building and scheme sanctions with GBF and public greens, afforestation, creation of new parks etc.). The data would help set baselines, plan and track new initiatives and assess the change in quantum and quality of green-blue assets.
- 3.5.2 Protection and enhancement of green-blue assets is a priority of the Plan. It is recommended that concerned agencies set aside own resources and explore other innovative funding mechanisms for carrying out greening initiatives. A dedicated Green Fund may also be created for this purpose.
- 3.5.3 Citizens and stakeholder groups shall be facilitated by concerned agencies to play a role in the protection and improvement of green-blue assets and develop community ownership and responsibility towards these shared resources and urban commons.

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SECTION 2

ECONOMY

BACKGROUND AND KEY POLICY CONCERNS

Delhi is one of the fastest growing urban centres of the world. It is the sixth largest contributor to the national GDP (7.1%) with a GDP growth rate that is 4% higher than the national average. Delhi serves as the economic core of the National Capital Region, contributing to more than 50% of the GDP of the region. The city is the region's largest commercial centre with strong linkages to national and global financial networks.

It has emerged as a leading start-up ecosystem with high literacy levels (86.2%), a young population (average age is expected to be approx. 35 years in 2041) and a sizeable proportion of the population of working age (total working population was 6.28 million in 2017-18 and is expected to grow to 10.7 million in 2040-41). Additionally, across all indices of tech literacy and access, creativity, ability to attract talent and average education levels, Delhi is ranked the highest among all states and UTs (MPI report). This indicates the need to foster innovation and create employment opportunities to harness the economic potential presented by this demographic dividend.

Delhi has retail, wholesale and warehousing hubs spread across the city. Being the country's capital, is a seat of government and quasi-government institutions, where headquarters of various national/multinational companies are located. It is a premier MICE, travel and hospitality business destination. The city also has a huge cultural capital that can be leveraged for promoting cultural (tourism, travel, F&B, etc.) and creative (media, design, arts, etc.) industries. It has also hosted mega events like the Asian Games (1982) and Commonwealth Games (2010)

Delhi also serves as a major industrial centre with 33 planned industrial estates, four flatted factory clusters, 1.75 lakh MSMEs (more than 90% micro enterprises) and 23 notified non-conforming industrial clusters. These industries along with household industries continue to generate employment for both skilled and unskilled workforce. The scale of industry has undergone fragmentation and a large proportion of the workforce is employed in small and micro enterprises and household industries. Over the past two decades, Delhi has experienced a shift towards the tertiary sector. Close to 83% of Delhi's income is from the tertiary sector and about 15% is from the secondary sector (NSS 2015- 16, PLFS (Periodic Labour Force Survey) 2017-18).

Given the rising concerns regarding pollution, shift towards cleaner economies such as IT/ITES, knowledge-based and hi-tech industries, entrepreneurial activities, realty markets, tourism, hospitality, logistics, transport, communication, tertiary healthcare and higher education is envisaged. The IT industry, in particular, is expected to grow and receive policy support.

Policies for economic development may be directed towards supporting small and micro enterprises and unorganized economies that provide employment, while ensuring migration towards cleaner, non-polluting economies. The construction sector can expect to triple its workforce by 2041 due to implementation of Land pooling and other development policies. The TOD policy and strong regional interdependencies will also generate employment in the transport, trade and retail sector.

Many erstwhile industrial spaces are undergoing a transformation into clusters of clean, service, knowledge, finance, and entertainment-oriented functions. This has blurred the boundaries between the commercial and industrial uses, and there is a need to facilitate diversification and modernisation of such mono-functional areas. Technological innovations like app-based services, warehouse-to-home models; remote working/ work-from-home, etc. are changing the nature and form of work spaces and associated requirements. The demand for co-working spaces is set to treble in the next 3 years and demand for large enterprises is expected to grow over medium to long-term. Improved digital and telecom infrastructure will promote growth of newer and niche economies and increase the share of data-enabled technologies in Delhi's GDP.

Shifting of wholesale and warehousing activities from the city centre to outskirts is an important concern for Delhi to reduce freight-linked congestion within the city. While some of these involving hazardous substances have shifted, other activities still continue to operate.

The informal sector is the largest employer in the city engaging approximately 70% of Delhi's workforce. There is a need to improve the quality of workspaces and opportunities for the sector. Within the informal economy, female work participation has increased. Due consideration towards provision of space for public conveniences, individual and groupwork as well as childcare etc., should be made. Initiatives by the state government and concerned agencies will be required to ensure upskilling of workforce over the plan period to create better opportunities for the informal workforce for incremental absorption into emerging formal economies.

The chapter formulates strategies for upgrading the existing spaces of economic production, i.e. trade and commerce, wholesale, industry, service and informal sector, developing new economic hubs that facilitate the shift towards cleaner and niche economies and enabling improved access to economic opportunities:

ECO: Places of Economic Production

4.0 PLACES OF ECONOMIC PRODUCTION

Chapter code
ECO

- 4.1.1 The Master Plan provides an enabling environment for harnessing the economic potential of Delhi and facilitating a variety of work and workspace typologies so that opportunities are created for public at large. It aims to facilitate balanced economic growth by supporting both formal and informal economies (inclusive economy), fostering non-polluting and environmentally-friendly economies (clean economy), and promoting economies that will help to establish a unique role for the city in the regional context (niche economy).
- 4.1.2 Strategies of the plan will facilitate the following:
- i) Creation of strategic hubs of high investment and high value business and services
 - ii) Optimized utilization of existing economic centres
 - iii) Migration of non-conforming economic activities to approved sites and/or uses
 - iv) Improved facilities for the informal sector

4.2 Approach for development and strengthening of economic centres

- 4.2.1 **Promoting clean economies:** The Plan focuses on improving existing core economic sectors, namely retail trade, wholesale and warehousing, logistics, manufacturing, government offices, banking and finance, shifting to clean economy and facilitating existing polluting industries to shift.
- i. **Knowledge and cyber economy:** Cyber economy, high-tech robotics and electronics, knowledge and innovation, research and development, etc.
 - ii. **MICE (Meetings, Incentives, Conferences and Exhibitions), Cultural and creative economy:** World class centres for MICE travel and hospitality, etc. tourism, design and fashion, publishing, F&B, media, visual/performing arts, etc.
 - iii. **Health and Education:** Tertiary healthcare, medical research and development, bio-tech, pharma research, higher education, etc.
 - iv. **Green economy:** Urban farming, horticulture, solar farms, theme parks, etc.
 - v. **Circular economy:** recycling and repair economy, wastewater reuse, recycled C&D waste products (like fly ash bricks, reclaimed asphalt pavement etc.), recycling of faecal sludge, recycling of e-waste, plastic waste, etc.
- 4.2.2 **Fostering Strategic Economic Hubs:** Strategic areas shall be developed as city level economic hubs. Holistic planning for improved public transport access, pedestrian connectivity and creation of public spaces shall be undertaken.

a) **TOD Nodes**

Areas around identified transit stations shall be developed as high-intensity mix-use nodes and may be developed as high-tech, logistics, hospitality, health and education clusters to cater to regional dependence on Delhi for various facilities.

b) **Business Promotion Districts**

- i) Identified existing Industrial Areas, District Centres and Institutional Areas or any other area with high potential for economic growth shall be notified by DDA to be developed as Business Promotion Districts (BPDs) having functions such as cyber hubs, clean-tech innovation clusters, media and design clusters, med-cities, edu-cities, MICE hubs, modern logistics hubs, etc.
- ii) BPD shall have minimum planning area of 10 ha. and shall be developed as per the provisions of Regeneration Schemes.

c) **Green Development Area (GDA)**

GDA shall be developed as a hub for green economy as per the provisions of the Green Development Scheme.

4.2.3 Diversifying mono-functional economic centres and regeneration: The plan will promote diversification of economic centres to accommodate the shift towards cleaner, tertiary sector economies and create thriving mixed-use employment destinations in the city. This would include supportive functions such as hospitality, working women's and men's hostels, rental housing and serviced apartments, spaces for leisure and entertainment, public spaces, etc.

4.2.4 Existing economic centres shall also be upgraded through regeneration and improvements in transit access, public space, quality of physical and digital infrastructure.

4.2.5 Facilitating New forms of Workspaces: A finer network of decentralized workspaces in the form of small warehousing for e-commerce, co-working spaces for start-up economy, etc. shall be facilitated. Additionally, the Plan will promote emerging new forms of work such as platform and gig economies. through creation of supporting amenities for the workers.

4.2.6 Fostering Night Time Economy (NTE):

- i) The concept of '24-hour city' is being promoted through Model Shops and Establishments (Regulation of Employment and Conditions of Services) Act 2015 as well as the NTE policy at the national level.
- ii) Nodes, precincts or circuits shall be identified for continuing work, cultural activity and entertainment at night to attract tourists and locals.
- iii) This will improve economic yield by extending the utilisation of work spaces, and safety in the city by promoting a vibrant night life.

4.2.7 Supporting the Informal Sector: The Plan provides adequate space norms and facilities for supporting informal economies.

4.3 Trade and Commerce

4.3.1 **Metropolitan City Centre (MCC)/ Central Business District (CBD):** Areas such as Connaught Place and its Extension, commercial areas in the Walled City and Karol Bagh have historically played the role of the CBD and continue to have high concentration of commerce, offices, businesses and socio-cultural facilities. The CBD area is constituted of different areas, each with unique built character, concentration of specialised activities and potential for future growth.

4.3.1.1 An area-based improvement approach shall be adopted for revitalizing the commercial core of the city.

- i) Connaught Place (CP) & CP Extension are iconic hubs characterized by heritage and landmark buildings, and a diverse mix of office, hospitality, entertainment, retail and business activities. An integrated improvement plan shall be prepared for improving the heritage buildings and public realm. Size of plots as per existing layout plan shall be maintained and no sub-division shall be permissible.
- ii) Mandi House has emerged as a socio-cultural hub with socio-cultural institutions, educational institutions, government offices, State Bhawans, etc. The institutional character of the area should be maintained and enhanced.
- iii) Pragati Maidan has assumed international and national significance due to its capacity to serve as a major exhibition and expo-centre. With the ongoing redevelopment of the area, it is expected to emerge as a MICE Hub. Adequate provisions for temporary accommodation, hospitality, parking and public spaces should be ensured in the area.
- iv) Indraprastha Estate is a vibrant hub of government offices and institutions. The area shall be maintained and promoted as an Institutional Hub. A comprehensive improvement plan should be prepared to address traffic congestion, enhance public realm and manage parking.
- v) Shahjahanabad (Walled City) is a Heritage Zone with concentration of large number of heritage buildings. Wholesale activities shall be shifted and cultural/retail activities shall be promoted in the area. All improvements and regeneration shall be taken up as per the provisions of HCP2 and DEV3.
- vi) Areas outside the Walled City include areas like Paharganj, Sadar Bazaar, Azad Market, Bara Hindu Rao, etc. A Regeneration Plan shall be

prepared for these areas. Specific economic activities such as hospitality districts, alternate sites for warehousing and wholesale, etc. may be planned. Any traditional bazaars or other areas of cultural value shall be identified and protected as part of the plan.

- vii) Karol Bagh has a mix of plotted residential areas as well as commercial areas. An integrated improvement plan shall be prepared for delineating areas where the plotted character needs to be protected and those where regeneration schemes may be permitted.

4.3.1.2 Comprehensive traffic and parking management plans, plans for improving walkability and creating cycling circuits, and encouraging NTE (Night Time Economy) shall be prepared and implemented.

4.3.1.3 Built-to-edge frontage should be framed as part of the comprehensive improvement plan of the area and implemented wherever feasible.

4.3.2 Hierarchy of Planned Commercial Areas

The Hierarchy of developed planned commercial areas are as follows:

- i) **District Centres (DCs)** have been planned as sub-CBDs to provide a wide range of financial services, retail, office, entertainment, IT/ITES, hospitality, shared and, and related uses. DCs located in proximity of public transit stations may be taken up for development as TOD Nodes .
- ii) **Community Centres (CCs)** provide for retail and leisure shopping, essential business establishments, office spaces, theatres, etc. and cater to the needs of the population at community level.
- iii) **Local Shopping Centres (LSCs) and Community Shopping Centres (CSCs)** include retail stores and personal service establishments which cater to frequently recurring needs. Such establishments are required in convenient locations near all residential areas and are provided as a part of gross residential use.
- iv) In land pooling areas, the development of commercial areas shall be as per the specific provisions of DEV1.

4.3.3 **Pre-1962 Commercial Areas:** Residential areas and streets/stretches declared as commercial areas/streets prior to the notification of MPD-1962 or where commercial use was allowed in MPD-1962 shall continue such use to the extent permissible in MPD-1962. Commercial activities existing from prior to 1962 in residential areas are also permitted subject to documentary evidence. Areas developed prior to 1962 that were not included in the Master Plan for Delhi (subject to documentary proof) having concentration of commercial activities, may continue as mixed use as per DCN. Such areas may also undertake regenerations per provisions of DEV3.

- 4.3.4 **Other Commercial Centres:** Other commercial centers includes notified Non-hierarchical Commercial Centre (NHCC), Shop-cum Residence Complexes (shop-cum-residence plots/ shop plots) later designated as CC/LSC/CSC and other existing shop-cum-residence plots. These areas shall be governed as per norms and regeneration to be as per DEV3.
- 4.3.5 **Commercial Streets/ Mixed Use Streets:** No new notifications shall be permitted as Mixed-Use Streets or Commercial Streets. Non-residential uses within residential areas shall be permitted as per provisions given in DCN. Local bodies/MTAs shall prepare plans for improving traffic management, parking and public spaces along existing streets. Streets below 9m RoW shall be considered by local bodies for pedestrianisation.
- 4.3.6 **Service markets:** To support low turnover, and space extensive shops for fruits and vegetables, service and repair, junk and scrap materials (kabari), hardware and building materials, automobile repair workshops, etc., all economic centres may reserve space for such facilities. as prescribed in DCN.

4.4 Hospitality

- 4.4.1 Delhi is emerging as an international centre of education, health care, tourism & leisure, sports and business, which require hotel facilities including Budget Hotels, guest houses, lodging and boarding houses, dharamshalas, hotels and serviced apartments catering to various economic groups.
- 4.4.2 The following shall be permitted:
- 4.4.2.1 Dharamshala, Budget Hotels, Guest houses, B&Bs, boarding lodging facilities shall be permitted as part of mixed use in residential areas.
- 4.4.2.2 Hotels/ serviced apartments are permitted as part of:
- i) socio-cultural facilities such as convention centres, socio cultural centres, etc.,
 - ii) commercial centres in Industrial and Wholesale Use Zones, and
 - iii) transport nodes (ISBTs, bus depots/terminals, multi-modal hubs, railway stations, airport, integrated freight complexes).
- 4.4.2.3 Hotels may also be developed through use conversion of plots with access from 30m RoW in industrial and wholesale use zones. The maximum ground coverage and FAR in such cases shall be as per the applicable norms/ sanctioned building plans, but in no case exceeding the permissible ground coverage and FAR of that use zone.

4.5 Wholesale Trade

- 4.5.1 Delhi is the biggest consumption centre in North India. It has also attained the status of a major distribution centre by virtue of its geographical location. With digital advancement, e-commerce has emerged as an important segment requiring new forms of warehousing services. The upcoming regional freight infrastructure likeDFC and DMIC is also likely to reduce Delhi's primacy as a distribution centre and result in transformations in existing forms of wholesale trade and warehousing.
- 4.5.2 Existing wholesale markets and IFCs shall be permitted to undertake regeneration as per provisions of DEV3. This will facilitate modernisation and capacity enhancement for meeting future requirements.
- 4.5.3 Wholesale and warehousing requirements for Land Pooling areas and GDA shall be met within IFCs. Mandis, storage and cold storage shall be permitted to developwithin the GDA as per specific norms(ref: DEV2).
- 4.5.4 Warehouses on plots of 1 ha and above with direct access from 30m RoW shall be permitted to have retail activity as per DCN to facilitate development of big boxretail.
- 4.5.5 IFCs shall include warehousing, godowns and wholesale units and other activities after providing operational requirements for freight and logistics.
- 4.5.6 Conversion of industrial plots to warehouses shall be permitted within industrial use zones as per DCN
- 4.5.7 All warehousing activities and wholesale storage within the old city shall be shifted to compatible areas such as industrial areas, IFCs or wholesale markets within a period of 10years. Concerned local bodies/ GNCTD may introduce incentive schemes for facilitating such relocation.
- 4.5.8 Regeneration of areas in close proximity to the old city such as Sadar Bazaar shall be permitted uses such as warehousing and hotels to cater to the requirements of the old city businesses.
- 4.5.9 **Unplanned/ Non-conforming godown clusters:** Several unplanned clusters of godowns/warehousing have developed across Delhi. Regularisation and planned regeneration of such areas shall be as per DEV3 and shall be completed within a period of 5 years. Clusters that do not participate shall be mandatorily shifted to identified industrial areas, IFCs or wholesale markets.

4.6 Industry

- 4.6.1 A list of existing planned industrial areas in Delhi is given at Annexure 3. Regeneration such areas shall be as per provisions given in DEV3. Such existing areas may also be taken up for area improvement by DSIIDC/local industry associations for parking, public realm, greening and development of common facilities such as CETPs.
- 4.6.2 Conversion to group housing, , PSP, commercial and warehousing use shall be permitted as per specific provisions given in DCN. Conversion to knowledge-based industries and vocational education centres shall be permitted to facilitate synergies between industry and academia. New forms of big box retail shall also be facilitated.
- 4.6.3 In order to facilitate start-ups and innovation clusters in industrial areas, co-working spaces shall be permitted on industrial plots up to 10% of the FAR. without any use conversion.
- 4.6.4 New industrial areas (proposed for development by DSIIDC and/or developed inland pooling areas) shall be developed as hubs of clean industry such as business parks, tech parks and cyber hubs, knowledge, R&D, cultural industry/media clusters.
- 4.6.5 Industries listed under prohibited category shall not be permitted in Delhi as given in Annexure 1. Any existing industrial units under prohibited category will need to shift outside Delhi or shift to clean manufacturing/production within a period of 5 years.
- 4.6.6 No industrial activity (including household industries) shall be permitted within Bungalow Zones (New Delhi & Civil Lines), the Ridge, River Bed (Zone-O), areas along water bodies, canals, sensitive areas from security point of view, reserved / protected forests, Cooperative Group Housing Societies, DDA housing, Group Housing excluding Janta flats, Government flats / bungalows / employer housing, etc.
- 4.6.7 **Pre-1962 Industrial Areas:** Industrial Areas, existing prior to 1962 or where industrial use was allowed in MPD-1962, shall continue to the extent permissible in MPD-1962, subject to documentary evidence. Any regeneration of such areas shall be as per the provisions of DEV3.
- 4.6.8 **Household industries:** Household industries shall be allowed to operate from residential premises as per provisions of DCN. A list of permitted household industries is given at Annexure 4 and 5.
- 4.6.9 **Unplanned/ Non-conforming Industrial areas:** Several unplanned industrial areas have developed across Delhi. Regularisation and planned regeneration of such areas shall be as per DEV3 and shall be completed within a period of 5 years. Clusters that do not participate shall be mandatorily shifted to identified areas.

4.7 Government Offices

- 4.7.1 Government of India, GNCTD and local bodies have their offices in Delhi. Most of the

offices and court complexes were setup immediately after Independence and have not fully utilised the land assets. This sector will continue to be a major economy and employment generator for the city.

- 4.7.2 Optimum utilization of existing government land shall be achieved through regeneration as per provisions of DEV3. This will facilitate the development of modern multi-storey office complexes with adequate facilities such as employee housing, commercial facilities, etc.
- 4.7.3 In the land pooling areas, as far as possible, the government offices and court complexes shall be developed as integrated office complexes and located along MRTS corridors.
- 4.7.4 Government office clusters and court complexes shall also be permitted within commercial and industrial areas. TOD projects may provide such facilities within the commercial component and as part of over station development thereby providing better mass transit connectivity.
- 4.7.5 Areas with government offices and court complexes shall be treated as a priority ATA (Active Travel Areas) (ref MOB3). Wherever feasible, provision of stack parking shall be provided.

4.8 Informal economy

- 4.8.1 Informal sector units locate themselves near commercial/industrial areas, wholesale, warehousing, PSP facilities, offices and transport hubs providing critical support services. The following provisions shall apply:
 - i) Vending zones for accommodating informal sector units shall be provided by various plots/layouts as per provisions of DCN. The provision of such units shall be ensured at the time of sanction of building plans / layout plans.
 - ii) Wherever feasible, clustering of informal activities shall be promoted and facilitated through appropriate infrastructure. Such clusters can be temporary like weekly markets or take more permanent forms such as teh- bazaari systems or theme-based Haats. Local bodies shall identify suitable sites for such clusters.
 - iii) Street improvements as well as development of new streets shall incorporate multi-utility zones as per Street Design Regulations for accommodating informal activities. The vending and no vending zones shall be clearly demarcated in plans prepared for identified Active Travel Areas (ref: MOB3).
 - iv) All designated spaces for vending shall be provided with public conveniences (including separate toilets for men and women, changing rooms, childcare facilities) and solid waste disposal arrangements.
- 4.8.2 Multi-use community work centres/ work spaces shall be provided as part of regeneration or improvement of unauthorized colonies, urban villages and slums, as per feasibility. (ref: DEV3)

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SECTION 3

HERITAGE, CULTURE AND PUBLIC SPACES

BACKGROUND AND KEY POLICY CONCERNS

Built Heritage: Delhi is one of the oldest inhabited cities in the world, and has been the site of numerous settlements over its history. There are large number of heritage assets and areas of concentrations having world heritage value and a unique palimpsest where culture and heritage integrate with public activity.

Delhi has world heritage sites, Centrally Protected Monuments, State Protected Monuments and other local listed heritage and non-listed heritage assets. Some of these heritage buildings and remains of national importance have been lost and are now untraceable. Heritage buildings notified by local bodies are mostly privately-owned and in active use by the occupants. Many of these are under severe threat due to disrepair, incompatible use and insensitive reconstruction of full/part asset. There is an urgent need for conservation and monitoring of all heritage assets.

Delhi's built heritage is largely concentrated in Zones A, C, D and F in the triangle formed between the Yamuna and the Ridge. A number of these have the potential to become unique cultural hubs for the city. Many of these are interlinked with natural assets like water bodies and forests, presenting opportunities for integrated planning. Today many of these historic areas have dense settlements and commercial activities, and face issues of encroachment with neglected heritage assets. with mixed use pattern Heritage areas like Shahjahanabad, Nizamuddin, Mehrauli, Tughlaqabad, Jahanpanah, Hauz Khas and Lutyen's Delhi contain some of the most important icons of Delhi's.

Delhi has to formulate strategies to utilise this strong cultural capital for boosting economy and fostering unique cultural and public spaces through instruments such as adaptive re-use. Although a number of boutique establishments, artist studios and other creative economies have located close to such sites in some urban villages, and initiatives such as art and cultural festivals, food walks, heritage walks etc. have emerged, but all these activities are sporadic in nature rather than being linked to enhancement of tourism and heritage experience in a systematic way. In addition to heritage assets, Delhi also comprises of landmark buildings (defunct industrial sites / power plants). There is need to acknowledge such assets as modern and industrial heritage of the city and bring them under the purview of conservation and cultural promotion.

Public spaces in Delhi: The city is dotted with a number of public spaces of cultural, social and economic significance. These are in the form of activity nodes and networks adding to a vibrant public life in Delhi. The public space typology of Delhi is very diverse, ranging from iconic city level hubs, parks and open spaces like India Gate, Central Park at CP and Nehru Park to large social and cultural facilities, traditional/historic bazaars of the walled city, theme sites like Dilli Haats, markets like Janpath street, emporia area on Parliament street, and local parks, chowks and streets. Apart from these, various spaces for creative arts such as Mandi House, water bodies, Yamuna floodplains and areas with concentration of heritage assets themselves form important elements of the cultural and public life of the city.

There is a need to enhance the public realm to make all public spaces and places safer, more inclusive and vibrant for all users especially for people with disability, pregnant women, elderly and children.

There is also a need to create a public space inventory for Delhi to identify (i)landmarks, iconic places and visual corridors that contribute towards the city's identity for enhancement of public experience and, (ii) areas/ streets for improvement and installation of facilities for people's convenience.

This section sets out strategies for conserving and leveraging the city's heritage and those for enhancing the public realm of the city in the following two chapters:

HCP1 – Managing Public Spaces Better

HCP2 – Managing Delhi's Heritage

5.0 MANAGING PUBLIC SPACES BETTER

- 5.1.1 The Plan aims to significantly address issues of safety, encroachment and lack of infrastructure associated with public spaces to foster a vibrant public realm in the city. This will provide numerous benefits across all three goals of the Plan with better walkability, public life, social cohesion, health, creativity and boost local businesses, retail, cultural economies.
- 5.1.2 The term ‘public realm’ is regarded as an essential urban common, comprising of shared public areas in a city that belong to everyone and are accessible to all. This Plan envisages the following with particular focus on three elements, *viz.* streets, public and private plazas/squares, parks and open spaces:
- i) Improved availability and experience of well-designed, safe and well-maintained public spaces across the city
 - ii) Improved interface between buildings and public areas with enhanced street-level activity and safety

5.2 Fostering city level hubs and networks for public life

- 5.2.1 An important strategy for improving public life in the city is to foster large, iconic public areas and landmarks that are a part of the image of the city. While the Plan identifies some new opportunities that can be created, many such areas already exist in the city and will need to be improved through better facilities and design for supporting a variety of public activity.
- 5.2.2 **City Hubs:** The following typologies of city-level hubs shall be developed/improved on priority basis:
- i) **Public waterfronts:** The Plan gives provisions for undertaking eco-sensitive rejuvenation of the Yamuna floodplains and strategies for creating greenways along buffers of drains. This will encourage sensitively designed new public spaces alongside water bodies in areas that were previously neglected. (ref: ENV 2; MOB 3)
 - ii) **Urban woodlands:** Delhi has large area under reserved and protected forest areas, that can offer excellent places for citizens to lead an active lifestyle and connect with nature. Respective land-owning agencies shall identify and develop ‘interactive zones’ for providing access to a variety of flora, fauna and natural environment. Reclaiming sites such as quarries, landfills, ash dykes, etc., as parks and natural habitats shall also be carried out continuously during the Plan period (ref: ENV 2).
 - iii) **Cultural hotspots:** Cultural hotspots such as Shahjahanabad, the Central Vista and India Gate lawns, Connaught Place, Hauz Khas, Mehrauli, etc. are places of intense public activity, attracting locals as well as tourists. Other specific hubs with a concentration of socio-cultural activities shall be identified (e.g. Mandi House, Lodhi Institutional Area and Art precinct, Dilli Haat, Dastakaar Haats, etc.). Efforts shall be made to improve the public realm in and around such sites.

- iv) **Transit hotspots:** World over iconic airports and transit stations have formed an important part of public memory and public life of cities. The Plan has provisions for development of transit nodes as hubs of mix use and public activity and for creation of such imageable landmarks. (ref: MOB2 and DEV4)
- v) **Market places:** People associate with many of Delhi's diverse markets for special products and experiences. These markets including DistrictCentres and Community Centres can become Active Travel Districts with pedestrianised stretches for enhanced shopping experience. (ref: MOB3)
- vi) **Recreation hubs:** Development of various green entertainment hubs, performance and concert spaces, weekend destinations, theme parks, etc., is anticipated in the Green Development Area, which will add to the inventory of city-level public spaces. (ref: DEV2)

5.2.3 **City level circuits:** Public space networks form an important strategy for fostering a safe and vibrant public realm. The Plan identifies numerous opportunities in Delhi for creating green corridors, heritage and cultural circuits or even temporary festival circuits. An indicative list of potential circuits is given in **Annexure 6**. Such circuits shall be taken up for improvement of public facilities for walking, resting and social interaction, for facilitating cultural and/or creative economies and themed events, etc. (ref: HCP2; MOB 3)

5.2.4 **Nightlife Circuits (NCs):** Night time economies (NTE) and an active night life are important for improving safety, reducing congestion by staggering activities, utilising spaces for different activities optimally, and improving productivity for formal as well as informal economic activities.

- i) Streets or areas such as cultural precincts, areas with concentration of heritage assets, areas in the Central Business District, etc. that have a vibrant nightlife presently shall be priority nodes of Nightlife Circuits (NCs).
- ii) Local bodies, Tourism Department and other concerned agencies shall identify NCs and permit extended timing for hotels, restaurants, socio-cultural activities, entertainment, sports facilities, retail stores etc., to function in the night as per stipulations.
- iii) Concerned agencies shall work jointly in identified NCs to facilitate adequate illumination, security and easy access by public transport. Special metro lines and bus routes may be permitted to operate at low frequency during night time.
- iv) All new constructions/redevelopments along identified NCs shall be incentivized to create active frontages.
- v) Concerned agencies can collaborate with artists' collectives, cultural groups, resident's groups, youth groups, market and vendors associations and weekly markets etc., to organize seasonal or cultural festivals, themed night walks, etc.to promote NCs.

5.2.5 Innovative mechanisms of financing public space improvements through advertising, short-term leasing of public spaces, use of CSR funds, etc., may be explored by concerned agencies.

5.3 Improving local public spaces

5.3.1 **Public life on streets:** Streets occupy approximately 20 percent of the total land in Delhi and are the most ubiquitous form of public space in the city. The Plan focuses on leveraging this potential and reclaiming streets as places for people

- i) Walkability shall be facilitated across the city providing barrier-free environment with adequate street infrastructure, shading, and public conveniences as per the Street Design Regulations in Annexure 7.
- ii) Public life on streets shall be further improved by creating opportunities like street vending zones, accessibility to all types of users, pedestrian crossings and public plazas as per Clause 5.3.2.

5.3.2 **Public Plazas:** Plazas range from neighbourhood chowks and nukkads to institutional forecourts, city squares and piazzas, and form important pause points along movement networks.

5.3.2.1 Plazas of the following types shall be encouraged in the city:

- i) Standalone plazas– These can be in the form of forecourts of buildings, and may be on-ground as well as elevated levels.
- ii) Corner plazas along streets – These may be developed at the intersection of streets. The plot edges or building edges may be chamfered or inverted or recessed creating corner plazas for spillover of commercial/institutional uses.
- iii) Mid-street plazas – These may be created by recessing plot lines or building edges along a street, particularly in front of public buildings.

5.3.2.2 Plazas shall be planned as part of layout plans in all greenfield and brownfield layouts/schemes as per prescribed norms for different types of development.

5.3.2.3 In case plot area is provided for development of public plazas, FAR for such area shall be permitted to be utilized in the remaining plot.

5.3.2.4 Plazas shall be provided as part of all transit station projects at ground, concourse or other elevated levels to facilitate public movement and act as spill over areas.

5.3.2.5 Public Plazas shall remain un-gated and open to general public at all times.

5.3.3 **Activity programming:** Appropriate programming through activity-generating uses plays a vital role in ensuring vibrant and safe public areas with eyes on the street. Stronger relationships between public areas and surrounding buildings shall be promoted through the following:

5.3.3.1 **Norms for flexible mix of uses and vertical mixing** as proposed in the Plan, promote a mix of activities within plots/buildings resulting in areas remaining active for longer periods during the day. Public uses such as libraries, book stores, retail, post offices, etc., to be mandatorily placed on lower floors with easy access from the street.

5.3.3.2 **Active Frontage:** A certain percentage of active frontages in the form of arcades, colonnades, shopfronts, pedestrian entries/ exits, plazas, access points, transparent shop windows etc., shall be maintained along roads with RoW of 18m or more as part of regeneration projects (ref: DEV3). In greenfield areas such active frontage shall at least be maintained along 24m. streets. Buildings along such edges shall be built-to-edge as per applicable norms. In places where boundary walls are permitted, care should be taken to maintain visual connectivity with the street (Annexure 7).

5.3.3.3 MUZs, subways and public/private plazas shall be programmed with kiosks, informal vending, public art, performance etc. Attractive play elements, water features, street furniture, charging points, reading corners, etc. can greatly enhance the quality of public spaces by providing pause spaces along movement corridors.

5.3.4 **Local parks:** A hierarchy of parks, greens and open spaces for meeting different types and scales of needs shall be implemented in greenfield, as well as brownfield areas. Multi-use of grounds within schools or other public institutions as community parks after school hours may also be encouraged.

5.3.5 **Privately-owned public spaces (POPS):** The Plan promotes development of POPS that shall remain private property and be maintained by the owner/developer, but provide open public access during regulated hours at ground or elevated levels within buildings.

- i) Such spaces shall be considered free of FAR. Developers shall be permitted to locate activity generating uses around such areas but no kiosks or commercial use shall be permitted within the designated public area.
- ii) Such spaces shall be over and above the commercial spill over spaces or private open spaces created by developers for commercial use. This shall also not compensate for any open space requirements that have to be mandatorily provided by landowners/ developers.

5.4 Other interventions for improving public spaces

5.4.1 Provisions of fire safety shall be ensured in all public spaces and evacuation areas shall be identified by concerned authority in proximity of all congregation spaces and public buildings to be used in the event of any disaster.

5.4.2 **Public Art:** Temporary public art installations and street performances shall be encouraged in public spaces. Residual spaces such as subway crossings and space under flyovers may be activated through such interventions, ensuring that users are not inconvenienced. The guidelines on Public Art Policy as prepared by DUAC to be followed.

5.4.3 Citizens and other stakeholders can play a major role in public space management through initiatives such as conducting regular audits of public areas in terms of accessibility, safety and illumination, needs of specific user groups, etc., and sharing these with concerned agencies. Concerned agencies may also gather public opinions by integrating public space user surveys as part of the active travel and other smart applications.

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6.1.1 'Heritage' comprises tangible elements (monuments, buildings, streets, gardens, etc.) as well as intangible ones (festivals, traditional craft products, art forms, etc.) of historical and associated cultural value. The Plan adopts a holistic approach and envisages improvement of heritage assets as well as cultural hubs in the following manner:

- i) Conservation and/or adaptive reuse of heritage assets.
- ii) Provision of infrastructure, quality of life and economic vitality in historic areas.

6.2 Conservation of heritage assets

6.2.1 Location of all heritage assets that are maintained by respective agencies, shall be integrated with the GIS- based Delhi Spatial Information System. The list of the heritage assets shall be updated every 5 years in order to assess their condition and take the necessary steps towards conservation.

6.2.2 Conservation and management of national and state protected monuments, buildings and any development within the regulated and prohibited areas shall be as per relevant Acts/laws. Comprehensive Cultural Resource Management Plan of each area /site including infrastructure upgradation, visitor amenities etc. shall be prepared and implemented in consultation with the local community.

6.2.3 The Authority may identify any other buildings/clusters of heritage/cultural value including old markets, pre-1962 structures, isolated premises such as school adjoining Jama Masjid, Presentation Covent School, Church at Kashmere Gate, municipal offices at old Hindu College complex etc., where additions/ alterations shall be within the overall frame of conservation on a case to case basis.

6.2.4 Owners of heritage buildings that are listed by local bodies can avail the following incentives to ensure conservation and sensitive use/reuse of such assets:

- i) Alterations shall be permitted in these buildings, based on the grade of the building.
- ii) Adaptive Reuse of structures shall be permitted as per Clause 6.2.4.
- iii) Incentive FAR shall be offered as per Clause 6.2.5.
Enabling provisions by local bodies and concerned agencies as per Clause 6.2.6.

6.2.5 **Adaptive Reuse:** Heritage buildings identified by the local bodies are mostly privately-owned and in active use by the occupants. In such buildings, the constituent owners shall be encouraged to conserve such buildings and make adaptive use/ reuse of such assets in conformity with the historic context. Introduction of any new compatible use/s shall be permitted within heritage

buildings as notified by local bodies for which separate Regulations shall be formulated.

- i) In heritage buildings where adaptive re-use is being planned, the provisions of UBBL may not be insisted upon for measurements as these buildings and structures have already been built.
- ii) Construction of temporary structures for activities such as informal markets, food courts, cultural events, etc. shall be permitted in open areas within the site, subject to permission from local bodies and Delhi Fire Services wherever applicable.

6.2.6 **Heritage TDR:** Owners of heritage buildings notified by local bodies shall be compensated for loss of development rights. The unutilised FAR shall be calculated using the permissible FAR on the respective land use. Owners shall also be eligible to an incentive FAR of 20 for preservation and upkeep of the heritage property retaining its original heritage character and fabric.

- i) The total FAR (unutilised and incentive) shall be awarded in the form of TDR (transferable development rights) that can be utilized in identified TDR Receiving Areas (ref: DCN).
- ii) The TDR Certificate shall be issued by DDA; only after due repairs and improvement of the property have been made and relevant certification obtained from concerned agencies.
- iii) Local bodies/concerned agency shall levy penalty in case of failure to meet committed repairs and maintenance or in case of damage to heritage value of the building.

6.2.7 **Other enabling provisions:**

- i) Local bodies may set up Heritage Cells that will manage heritage assets, monitor status of their upkeep, delineate cultural precincts, promote complementary economic/ cultural activities, conduct festivals, walks etc., facilitate adaptive reuse projects and set up a Heritage Fund to support these initiatives. Such a Heritage Cell may identify other landmark modern and industrial heritage buildings/part buildings/sites
- ii) Concerned agencies shall facilitate owners of heritage properties to undertake conservation of their heritage structures. A portal shall be developed by each agency with information of list of heritage structures, empanelled technical experts with expertise in heritage buildings, artists, executing agencies, information on projects being taken up, identified potential investors etc.
- iii) Concerned agencies shall also implement programs for education and sensitization and support initiatives such as heritage walks to be undertaken by local bodies / concerned agency.
- iv) CSR Funding may be promoted to adopt /conserve and manage the Heritage assets.

6.3 Heritage and cultural clusters in the city

6.3.1 Three types of heritage/ cultural clusters are identified in the city,

- i) **Heritage Zones:** Heritage Zone is an area, which has significant concentration, linkage or continuity of buildings, structures, groups or

complexes, united historically or aesthetically by plan or physical development etc. The following areas are identified as Heritage Zones:

- a) Walled City of Shahjahanabad
- b) Lutyen's Bungalow Zone (LBZ)

Annexure 8 as listed should be part of Heritage

- ii) **Cultural Precincts:** A Cultural Precinct represents a concentration of fragmented heritage, both tangible and intangible with architectural, historical, cultural and associational values within a defined area connected to each other by streets and cohesive built form. Such precincts may be separate or part of Heritage Zones. Annexure 8 is the indicative list of cultural precincts.
- iii) **Archaeological Parks:** Archaeological Park is an area distinguishable by heritage resource and land related to such resource, which has potential to become an interpretative and educational resource for public in addition to value as a tourist attraction. Archaeological Parks shall be defined based on evaluation of the pertinent aspects like form, design, materials and substance, use and functions, tradition and techniques, location and setting, spirit and feeling and other internal and external factors attraction. The designated Archaeological Parks in Delhi are:
 - a) Mehrauli Archaeological Park
 - b) Tughlaquabad Archaeological Park
 - c) Sultan Garhi Archaeological Park
 - d) Indraprastha Archaeological Park
 - e) Northern Ridge Archaeological Park

The above list is indicative and more Heritage Zones, Cultural Precincts, Archaeological Parks may be added by concerned agencies.

6.4 Strategies for heritage zones and cultural precincts

6.4.1 **Shahjahanabad as a cultural enterprise hub:** The walled city is the historical core and business centre of the city, rich in both tangible and intangible heritage. The World Heritage site of Red Fort is located here besides numerous notified heritage assets. Its unique fabric comprises of *katras*, bazaars, historical markets, streets and vistas as well as intangible cultural experiences like festivals, poetry, traditional craft products, cuisine, and textiles, etc. that are unique to Delhi. However, the area faces numerous challenges such as continued wholesaling, warehousing and polluting/hazardous economic activities, and traffic congestion due to movement of goods, dilapidation of buildings, lack of infrastructure and ad-hoc and insensitive transformations leading to disruptions in the built fabric. A multi-agency coordinated initiative shall be taken up for revitalization of the area during the Plan period:

- i) All Cultural Precincts within the walled city shall be delineated within 2 years. SRDC/concerned local body shall prepare and implement plans for all such precincts as per Clause 6.4.3. Support may be provided to owners

of heritage buildings to undertake conservation / adaptive reuse as per Clauses 6.2.3-6.2.6.

- ii) The local body shall prepare a plan for the area identifying all major markets, commercial and mixed-use streets. All noxious industries and hazardous trades, godowns and wholesale activity generating freight movement shall be removed from the zone and shifted to designated areas in the city within a period of 10 years. Old markets such as Lajpat Rai market shall be retained as prescribed in previous plans. Existing activities may continue in the form of retail. The clustering and agglomeration of inter-connected retail activity associated with old city and as identified by local body shall be promoted.
- iii) To encourage the development of the area as a cultural enterprise hub, uses such as artist studios, performance spaces, museums, libraries, cafes, music venues, co-working spaces, craft centres, hotels, B&B facilities shall be permitted in plots with access from minimum 6m road, irrespective of applicable land use. (ref: DEV3)
- iv) The fine grain fabric and street morphology of Shahjahanabad is critical to its character and shall be retained. Henceforth, group housing typology and stilt parking shall not be permitted. However, reconstitution of larger areas (such as at sub-zone level) shall be permitted for purposes of integrated area improvement and regeneration. All regeneration within the walled city shall be as per the specific development and urban design controls provided. (ref: DCN)
- v) Walled City is a node for night life circuits in the city. (ref: HCP1)
- vi) The local body and other concerned agencies shall facilitate/ implement the following area improvement initiatives.
 - a) A traffic management plan shall be implemented for the walled city, identifying vehicular thoroughfares, pedestrianized areas and streets, NMT routes, limits and timings for service vehicles, common parking areas for residents and tourists, and commuter dispersal plans around metro stations that serve the walled city.
 - b) Active travel shall be promoted in the area and it shall be a priority ATD providing facilities for walking, cycling, PBS etc. (ref: MOB3).
 - c) No more open spaces in the walled city shall be taken up for creation of MLCPs as a large number of metro stations are closely located in the area. Any existing surface public parking sites shall be maintained as pervious areas. All statutory clearances shall be obtained.
 - d) Area level plans for katras, bazaars etc., shall be prepared in consultation with residents and stakeholders for identifying common public areas to be used for evacuation during emergencies as well as need- based provision of socio-cultural facilities and installation or improvement of services and utilities.
 - e) Decluttering of overhead wires that increase the risk of fires shall be remedied through appropriate technological solutions (ref: INF4).

6.4.2 Lutyen's Bungalow Zone: This area comprises of the seat of the central government including important assets like Rashtrapati Bhawan, Parliament House, India Gate, Supreme Court, Delhi High Court, North and South Block, Cabinet Secretariat, Prime Minister's Office, offices of various central ministries,

museums, art galleries and bungalows that serve as government residences. LBZ has its own unique character with wide tree lined avenues, Central Vista, roundabouts, big private and public gardens, and significant examples of colonial architecture.

- i) Development-oriented norms shall be formulated by the concerned agency for regeneration of the LBZ without compromising on its heritage value and aesthetic character.

6.4.3 Provisions for Cultural Precincts: The following provisions shall apply:

- i) Delineation of boundaries for listed Cultural Precincts (on the basis of principles formulated for this purpose) shall be carried out by the local body and shall be delineated in the Zonal Plans.
- ii) Cultural Resource Management Plan (CRMP) shall be prepared by local body/concerned agency for each precinct, incorporating urban design and built form controls. Wherever feasible, active frontage at the ground level shall be encouraged along the main streets of the precincts. Socio- cultural activities shall be promoted within the precincts.
- iii) The streets and street networks that form a part of the precincts shall be treated as priority ATDs for street improvement and development of facilities such as PBS and NMV.
- iv) Green Corridors along natural drains that connect different heritage assets or precincts shall be developed as eco-cultural corridors with adequate amenities for tourists.
- v) Heritage trails/walks shall be encouraged in the Precincts. Such trails may be integrated with Nightlife Circuits and cultural festivals to increase their vitality. (ref: HCP1)

6.4.4 Provisions for Archaeological Parks: CRMP shall be prepared, emphasising conservation of built heritage amidst the natural heritage. The Plan shall identify all potential resources such as historic structures, gardens, orchards, open water bodies, step wells, baolis etc. and provide specific urban design controls required for sensitive development of the site.

- i) Archaeological Parks have the potential to become tourist hubs with passive leisure activities. The natural historic ambience of these sites shall be preserved by sensitive landscape design
- ii) Restaurants/ cafes, libraries, kiosks, interpretation/exhibition/training centres, tourist information centres, souvenir stores and public conveniences shall be permitted as per norms.
- iii) Adaptive reuse of structures as identified in the CRMP may be taken up as per feasibility.
- iv) Temporary structures constructed with eco-friendly material may be permitted for a limited period (subject to clearances) for hosting festivals, events, farmers' markets, exhibitions, etc. Temporary public art and installations shall also be encouraged.

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SECTION 4

SHELTER

AND

SOCIAL INFRASTRUCTURE

BACKGROUND AND KEY POLICY CONCERNS

Housing:

The development of land and housing in Delhi has largely been the prerogative of the public sector, with limited private participation. Such processes have not kept pace with the growing demand for housing. The high cost of land in the city has also resulted in making housing unaffordable. As per Socio-Economic Survey of Delhi, GNCTD, 2018-19, 85% population requires affordable housing options. This mismatch has resulted in proliferation of unauthorised colonies (UCs) and slums, and densification of existing urban villages to accommodate such housing needs. Some of the area in the city have been developed without provision of proper infrastructure catering to a large population. As per Census 2011, almost 10.8% of the population lived in slums occupying 0.5% of the city's total area. Such areas suffer from poor quality of built stock, inadequate services, lack of amenities and open spaces, and lack of proper access even for disaster mitigation putting them at high risk in case of fires, earthquakes & other calamities.

In order to improve these areas, the Government has initiated the process of providing land rights to residents of identified UCs, through the National Capital Territory of Delhi (Recognition of Property Rights of Residents in Unauthorized Colonies) Act, 2019. Approach is to focus on improvement in the overall quality of life, as well as that of the housing stock. For improvement of slums, in situ slum rehabilitation schemes shall be implemented, thereby reducing threat of evictions. In addition to the compromised structural quality, the housing stock is also congested, with more than 60% households (household size of 5) occupying one-room or two-room dwelling units. This hampers productivity, overall well-being and social relationships of family members. Housing demand estimations have taken this into consideration.

Around 28.4% of households live in rental accommodation (Census, 2011) and it is estimated that the number would have increased over the last decade. 32.3% of the population are migrants (Socio-Economic Survey of Delhi, GNCTD, 2018-19) and prefer rental housing due to low entry and exit costs. Most of this rental housing demand is being catered by unplanned settlements, with issues of tenure insecurity and compromised living conditions. There is a need to address the housing needs of students, single working men and women, migrants, etc. through affordable housing, rental housing, hostels, studio apartments, serviced apartments, dormitories, etc.

The NCT of Delhi has a sizeable portion of housing stock (both public and private) which is unoccupied and/or unsold. 11% of the Census Houses (including houses used as residence and residence-cum-other-uses) in Delhi are vacant (Census, 2011). There is a potential to bring such stock back into circulation through rental options.

Delhi is well connected to the NCR region, and regional housing developments especially in the affordable housing segment will continue to complement Delhi's shelter needs, given the differences in cost of land. This inter-dependency needs to be factored into the

strategies for determining the tenure options and typologies for housing development in Delhi.

Based on the Census 2011 data, the housing demand for Delhi (2011-2041) is estimated to be 34.5 lakh dwelling units, assuming an average household size of 4.5 persons. The housing demand has been calculated by considering factors such as housing backlog, new demand generated due to increase in population, homeless population level of congestion in the existing dwelling units, the condition of the existing stock (obsolescence) that would need replacement and the availability of the vacant housing stock in the city. It should be noted that this does not take into the account any changes in housing stock post-2011 due to lack of data. The projections will therefore have to be recalibrated during subsequent plan reviews by taking into account the data available through Census 2021.

Social Infrastructure:

Delhi has a robust infrastructure serving the health, education, safety and security and socio-cultural needs of its residents as well as the region, with facilities both at the district/ zonal/ sub-zonal level and at the neighbourhood level.

This section sets out strategies for improving provision of housing and social infrastructure in the following chapters:

SSI1: Strategizing shelter

SSI2: Provision of social infrastructure

7.0 STRATEGIZING SHELTER

7.1.1 The Plan provides a comprehensive framework for meeting the projected housing requirements over the Plan period. It facilitates both improvement in existing housing stock as well as creation of new housing inventory through regeneration of existing areas and planned development of greenfield sites. It also addresses the challenges and specific requirements of unplanned areas in the city.

7.1.2 Strategies of the plan will facilitate the following:

- i) Improved availability of housing options by providing affordable rental housing, etc.
- ii) Enhanced built environment, safety and quality of life in old and unplanned areas

7.2 Overall approach for improving housing supply

7.2.1 Future housing supply in Delhi shall be met through:

- i) large scale development of sectors in the greenfield areas of the city using the model of land pooling. Identified land pooling areas have the potential to develop 17-20 lakh dwelling units;(ref: DEV1)
- ii) development of low density and low FAR residential areas within the Green Development Area (ref: DEV2).
- iii) regeneration of existing areas, both in terms of improvement of existing stock and creation of new units through densification (ref: DEV3).
- iv) utilisation of increased permissible residential FAR (residential FAR has doubled since MPD-62) as part of reconstruction of plots will also contribute substantially.

7.2.2 A paradigm shift is envisaged in the supply scenario, with the private sector leading the development/redevelopment of housing over the plan period. Public agencies shall play the role of a 'facilitator' and ensure ease of doing business, through appropriate regulatory environment.

7.2.3 All housing areas shall be developed as complete neighbourhoods with requisite local facilities within walking distance. Such facilities shall be provided as part of Residential layout.

7.2.4 In order to address the housing needs of the migrant population across all income groups, rental and affordable housing shall be promoted within the city, particularly in areas closer to transit. Public projects for TOD or large-scale regeneration may especially focus on creating such affordable rental housing options. Incentives shall also be offered for encouraging the private sector to provide rental housing.

7.2.5 Given the limited availability of land, housing supply shall be maximized by ensuring the development of small format housing of 40-60 sq.m.

7.3 Housing in new development areas

7.3.1 Development in the land pooling areas provides opportunities for creating multiple housing typologies. Development of rental housing (including affordable rental housing) shall be promoted. At the sector level, 25% of the net residential FAR shall be utilised for creating small-format housing.

7.3.2 On Low Density Residential Plots (LDRP), residential typology of low density residential dwelling units, retirement homes, assisted living for elderly and those with special needs, etc., shall be permitted.

7.4 Regeneration of existing planned residential areas

7.4.1 Regeneration will enable optimal utilisation of urban land to create new housing, and also to improve the quality of housing and transform each area into self-sustained resilient neighbourhoods with equitable access to civic amenities and recreational spaces.

7.4.2 For all planned residential areas, other than government-owned housing and slum rehabilitation schemes, regeneration would primarily be a private sector-led initiative. Amalgamation of plots and FAR-linked incentives shall be permitted.

7.4.3 Group housing shall be preferable as part of regeneration schemes and such projects shall provide affordable housing as per MPD provisions.

7.5 Regeneration of existing unplanned residential areas

7.5.1 **Unauthorised Colonies (UCs):** Regeneration of UCs shall be as per the provisions of DEV3. Settlement-level improvements will be required to make all parts of the settlement accessible for emergency vehicles like ambulances and fire tenders.

- i) Appropriate incentives and relaxations in norms shall be provided for facilitating amalgamation and joint regeneration of areas.
- ii) Given that the residential density in these areas is high, therefore, amenity FAR as an incentive may be provided for creation of facilities as per Urban regeneration norms.

7.5.2 Concerned agencies and landowners shall ensure protection of their lands within land pooling areas, GDA and other vacant lands in the city to prevent further growth of UCs and unauthorised construction activity of any kind.

7.5.3 **Urban Villages:** have emerged as islands of unplanned growth in the city. They have similar issues to UCs and have emerged as major hubs of rental housing. Many of the

urban villages are also of heritage importance and will need a mix of regeneration and conservation strategies. Specific regulations for development and regeneration of urban villages shall be formulated by DDA within 2 years of notification of this plan.

7.6 Housing for urban poor

- 7.6.1 Slums/JJ clusters on tenable sites shall be improved through in-situ slum rehabilitation or area improvement schemes. Relocation shall be considered only in case the underlying site is untenable.
- 7.6.2 **Resettlement colonies:** Resettlement colonies are facing issues of accessibility, lack of adequate services and poor quality of construction and dilapidation. These colonies shall be taken up for regeneration as per the provisions of DEV 3.

7.7 Promoting rental housing

- 7.7.1 Metropolitan cities across the world maintain a diversified rental housing stock providing residents and migrants tenure flexibility, geographical mobility and affordability (low entry and exit cost). Given the high cost of land in developed parts of the city this also ensures availability of housing for a variety of income groups closer to their workplaces, thereby minimizing trips distances.
- 7.7.2 Public agencies shall develop a proportion of their housing inventories in the form of rental housing. This may be of various forms such as service apartments, dormitories, etc. A mix of rental options such as affordable rentals with controlled rents, market rental units, rent-to-own models may be explored. Public agencies may also consider bringing their unsold/vacant public housing stock into the rental market to ensure utilization of such assets.
- 7.7.3 **Affordable Public Rental Housing (APRH):** DDA and other concerned public agencies may take up dedicated APRH projects on public lands close to activity centres (industrial areas, educational hubs, etc.) to improve the availability of affordable rental stock.
- 7.7.4 The large number of EWS housing units created as part of group housing projects provide opportunities to improve the availability of affordable rental housing stock. Suitable models may be explored for facilitating the same. Employer Housing projects of government agencies may be exempted from provision of EWS housing after approval of competent authority.
- 7.7.5 In order to improve management of such rental assets, public agencies may seek the services of Rental Management Agencies and housing aggregators. An online portal giving information regarding availability, location, rentals, etc. shall be created.

- 7.7.6 Incentives shall also be offered for encouraging the private sector to implement rental housing or other non-ownership formats like serviced apartments, workerhousing, etc. as follows:
- i) Industrial areas and warehousing/freight complexes shall develop affordable rental housing units by utilising 15% additional FAR.
 - ii) Rented housing shall be promoted as part of Group housing projects.
 - iii) Rental housing shall be permitted and encouraged in all greenfield, reconstruction and regeneration projects in the city.
- 7.7.7 Enabling environment for rental housing shall be further improved by revision of prevailing rental acts/laws/rules.

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8.0 PROVISION OF SOCIAL INFRASTRUCTURE

Chapter code
SSI2

8.1.1 Social infrastructure covers a wide range of public and semi-public (PSP) facilities including health, education, socio-cultural facilities, safety and security infrastructure, communications, distributive facilities and other functions. Planning, development and delivery of social infrastructure is done through multiple service providing agencies. The Plan provides a framework for enhancing the adequacy and accessibility of high-quality social infrastructure that caters to the needs of all stakeholders.

8.1.2 Strategies of the plan will facilitate:

- i) Improved availability and accessibility of social infrastructure
- ii) Increased flexibility to introduce new uses/functions as per changing needs

8.2 Key strategies for improving availability of social infrastructure

8.2.1 Optimal use of available land/space for social infrastructure:

- i) Flexibility is provided to develop social facilities as part of built-up area through vertical mixing. This will help to create facilities in areas where adequate land is not available.
- ii) Local level facility plots shall be treated as 'multi-facility plots' that can be utilised for co-location of compatible facilities as per requirements. Such plots shall be allowed enhanced FAR to accommodate multiple uses.
- iii) PSP sites shall be permitted to use a part of the FAR for supporting uses. This will facilitate better utilization of available community facilities such as multipurpose halls, socio cultural centres etc.

This strategy will ensure adequate provision of facilities, thereby improving quality of life and facilitating decentralised, self-sufficient areas.

8.2.2 **Protection and enhancement of existing facilities**

- i) Regeneration schemes shall be permitted to include facility plots within the scheme area to facilitate improvement of facilities. The DE will have to provide for equal or more facilities as per norms in the new design.
- ii) Redundant/ underutilized/ unused social infrastructure plots shall be permitted to migrate to other PSP uses. This will ensure that limited PSP land resources are fully utilised.

8.2.3 **Ensuring facilities for all**

8.2.3.1 Facilities for children, women, elderly, people with special abilities and families from economically weaker background are to be provided as per DCN.

8.2.3.2 All new facilities and public conveniences shall be developed/ designed to ensure accessibility and ease of use. Existing facilities may be retrofitted to ensure the same.

- 8.2.3.3 PSP facilities shall also be created in inadequately served unplanned areas through:
- i) Reduced norms for plot area, setbacks etc. /built-up area for essential social infrastructure like primary health and education.
 - ii) Amenities FAR shall be provided over and above the permissible FAR of regeneration scheme for unplanned areas. Such FAR shall be mandatorily utilised for developing essential facilities.

8.3 Hierarchy of Social infrastructure

- 8.3.1 The Plan provides for the following population linked hierarchy of social infrastructure
- i) **Local level:** Facilities catering to the day-to-day needs of the local population, shall be adequately distributed at 10,000 population.
 - ii) **Community level:** Community level social infrastructure shall serve a population up to 1 lakh.
 - iii) **Sub-city level:** Larger level facilities which shall serve population up to 5 lakh and shall be distributed at sub-city level.
 - iv) **City level:** City level social infrastructure shall cater to the city as well as the region.

8.4 Types of Social Infrastructure and Facilities

8.4.1 Healthcare

- 8.4.1.1 Emerging needs in healthcare services shall be addressed by provision of adequate facilities as follows:
- i) General, specialty healthcare, alternative medicine and para medical service.
 - ii) Care facilities for elderly, persons with disabilities and for people with special needs, facilities for physical and mental healthcare, de-addiction centres/ drug-rehabilitation centres, after-care centres etc.
 - iii) Clusters of tertiary healthcare and related R&D facilities

8.4.2 Education

- 8.4.2.1 A two-pronged approach is adopted for development of education facilities:
- i) Ensure availability/ access to school-level education in all areas;
 - ii) Integration of higher education with skill development opportunities for employment, emerging economic sectors and industry requirements;
 - iii) Enhance availability of education and training facilities for children and persons with disabilities or special needs as per provisions of the Rights of Persons with Disabilities Act, 2016;
 - iv) Give special emphasis to provision of early learning and child-care facilities to ensure holistic development of infants and toddlers and provide support to families and working women.

- 8.4.2.2 All new schools in Delhi shall be integrated (i.e. from pre-primary to higher

secondary level) and all-inclusive (with respect to the requirements of children with special needs). Schools for children with special needs may be permitted as a standalone facility.

- 8.4.2.3 Clusters of higher education and knowledge industry that are emerging as important economic sectors for Delhi shall be promoted within industrial areas, BPDs and TODs.

8.4.3 **Socio-cultural facilities**

- 8.4.3.1 In order to reinforce Delhi's prominence as a cultural hub, the Plan proposes to create new destinations (convention/ interpretation centres, theatres, museums, etc.) as well as experiences (cultural precincts, economic hubs, etc.).

- 8.4.3.2 Such city level socio-cultural uses will be permitted as part of archaeological parks, and green buffers along natural drains. Large format performance spaces and convention facilities shall also be permitted in the Green Development Area.

- 8.4.3.3 Local level socio-cultural facilities shall be strengthened to serve diverse needs such as those of senior citizens, youth, families, etc. Multi-purpose spaces will accommodate the local needs for skill development centres/ training centres/ gathering spaces/ libraries/ child-care facilities, etc.

8.4.4 **Safety and Security Infrastructure**

- 8.4.4.1 Ensuring law and order and safety against crimes and accidents as well as emergency services is the responsibility of multiple agencies such as Delhi Fire Services, Delhi Police, Delhi Traffic Police and Delhi Disaster Management Authority. Such facilities need to be appropriately distributed across the city, accordingly decentralisation of such facilities at local and sub-city/ city levels is recommended.

- 8.4.4.2 Training facilities/security camps, parade grounds, etc. that require larger areas are also proposed as part of city level infrastructure.

8.4.5 **Postal and Telecommunication facilities**

- 8.4.5.1 The Post and Telecommunication infrastructure has transformed extensively over the last two decades. The concerned departments/agencies shall assess the current utilization of allocated land/ built space and explore possibilities for better utilisation of land.

8.4.6 Distributive facilities

8.4.6.1 Facilities like milk, fruit, vegetable are day-to-day requirements at local level. In addition, the PDS facilities/ fair price shops may be provided in close proximity.

8.4.6.2 Sub-city and city level facilities for supply of PNG, LPG, and other fuels etc., used for domestic purpose, shall be permitted in compatible use zones.

8.4.7 Cremation-Burial- Cemetery facilities:

8.4.7.1 Provision of facilities under this category is based on the needs of different faith groups. The Plan encourages adoption of innovative approaches for making such facilities more eco-sensitive (gas-fired/ electric/ green, cremation facilities) and provides appropriate space for accommodating the same. Burial grounds for animals to be located separately.

8.4.8 Public Conveniences

8.4.8.1 Public conveniences shall be developed as prescribed in UBBL and as per provisions of Advisory on Public and Community Toilets issued by Central Government (2018). Such facilities shall be sensitive to the needs of children, women, elderly and persons with special abilities and also accommodate child care facilities.

8.4.8.2 Public conveniences shall be permissible in all use zones and shall also be improved as part of improvements in street infrastructure.

8.4.9 Other Community facilities

8.4.9.1 Other community facilities such as religious facilities, care centres, old-age homes, orphanages, women homes, corrective/ remedial facilities, juvenile homes, observation centres, detention facilities, etc shall be provided as per plan.

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SECTION 5
TRANSPORT AND MOBILITY

BACKGROUND AND KEY POLICY CONCERNS

Delhi is the core of the NCR with strong regional interdependencies with the surrounding towns (Gurgaon, Noida, Greater Noida, Ghaziabad and Faridabad) in terms of housing, employment, higher education and health facilities, and other goods & services. This leads to large-scale regional movement of people and goods on a daily basis, resulting in severe stress on existing transport infrastructure of the city. New developments in adjoining urban centres and upcoming regional infrastructure in the form of Integrated Freight Complexes (IFCs), International Airport at Jewar, industrial corridors like Delhi Mumbai Industrial Corridor (Western) and Amritsar Kolkata (Eastern), Dedicated Freight Corridors etc., will significantly impact the commuter and freight movement patterns and these need to be factored into the transport strategies for the city.

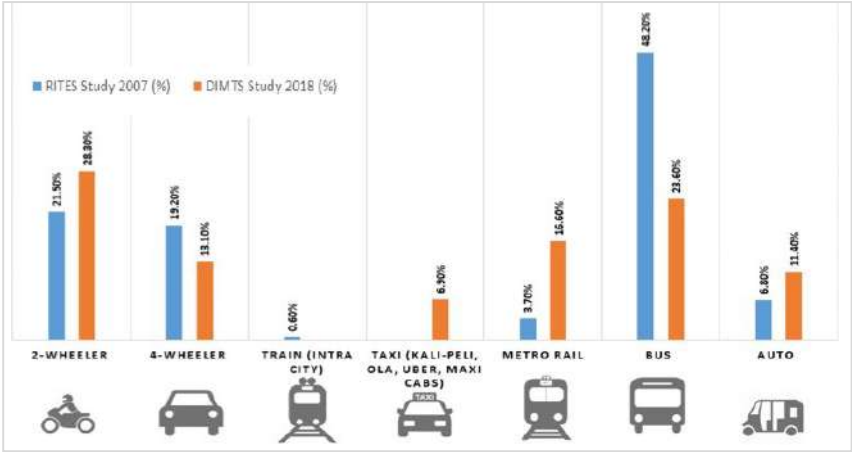
The inception of the metro has brought the CNCR towns closer. However, despite the metro playing a significant role in transporting people within the CNCR, roads providing regional connectivity within Delhi indicate high levels of congestion, high traffic flow, and excessive delay and queuing on roads.

According to the Delhi Economic Survey Report (2019-20), although the annual growth rate for the vehicle sales almost halved to 4.4%, the count of vehicles in Delhi has more than doubled to 643 per thousand population in 2019-20 from 317 in 2005-06. Among other issues, the increase in number of vehicles has manifested in increased demand for parking. The issues of parking strategies, with equal emphasis on parking demand management, are to be addressed.

Delhi has a very high share of daily active travel (walking and cycling) trips, constituting 42 per cent of the total trips. However, in the last decade, the share of walk trips has shown only a negligible increase and cycle trips have reduced by nearly a third. Most of Delhi's roads are also not

conducive for pedestrian and cyclist movement due to unequal road space distribution and lack of adequate infrastructure. In 2018, more than half of the fatal road accidents in Delhi involved pedestrians and cyclists. Road safety has emerged as one of the important concerns in Delhi, and measures to create a safe walkable

Modal Split of Motorised Trips



and cyclable environment are urgently required.

Delhi has a robust public transport network in the form of metro, ring rail and bus services. Apart from intra-city trips, the metro caters considerable long distance regional trips also, with maximum footfalls seen on the Yellow, Blue, and Red lines that connect Delhi to the neighboring towns of Gurgaon, Noida and Ghaziabad, respectively. Buses are the preferred and most accessible mode of public transport due to affordable pricing and network coverage. Ring Rail, a part of Delhi's legacy infrastructure, is being used for transporting freight and is presently running at only 50% of its potential passenger ridership. While the Ring Rail plays a significant role in freight transport and keeps almost 20,000 trucks off Delhi's roads, its role in transporting people needs to be re-imagined.

New mobility trends show that people are shifting towards app-based mobility options as it offers flexibility of mobility and provides an alternative to owning a private car. Emergence of these shared mobility options complemented by the expansion of the metro network, is gradually changing mobility choices made by commuters from private ownership to shared or public transport-oriented options.

Public transport system of Delhi needs further integration at institutional level, spatial level and at systems level; to provide a seamless travel experience to the commuters. Institutional integration could be enabled by a larger mandate, efforts towards achieving spatial integration (land use & transport integration, multi modal integration, last mile connectivity, etc.) and systems integration (bus route rationalization, Intelligent Transport Systems including unified ticketing, command and control center for better traffic management, etc.), have been initiated, but need to be reinforced.

The upcoming High Speed Rail (HSR) Corridor, Regional Rapid Transit System (RRTS), construction of bypass/peripheral roads, etc., will serve to redefine regional mobility and decongest Delhi.

Additionally, the TOD Policy provides Delhi with a unique opportunity to redevelop and densify strategic areas and improve public transport accessibility. The Electric Vehicle Policy of GNCTD is also a step towards promoting green mobility options in Delhi and reducing carbon footprint. Mobility trends in future will lean towards Electrification, Shared Mobility, Mobility on Demand and Autonomy; therefore, it becomes important for Delhi to change gears from building for transport to managing travel demand. The land pooling areas in Delhi will also offer the opportunity for improvement of last mile connectivity to the upcoming mass transit network in these areas.

Considering the projected population growth for the horizon year, Delhi is estimated to generate 46.2 million trips daily (excluding walk trips), with an average per capita trip rate of 1.58. The total number of trips has been estimated based on the following assumptions:

- 50% of the population would be living within the transit influence zones by 2041. The mixed-use development in these zones will reduce the need to undertake a trip and proximity to the transit node would encourage a shift towards PT.
- Large section of the population would be working from home considering a larger shift towards service sector by the horizon year of 20 years.

By 2041, the Plan envisages Delhi to achieve a modal split of 80:20 in favor of public and shared transport. This will require a 1% increase in the public and shared mode trips every year and an equal reduction in private vehicular trips.

This Section comprises of the following chapters with framework for coordinated planning and execution of mobility initiatives to improve the efficiency of the transportation system as a whole. It also provides different strategies for improving regional and local connectivity and transport infrastructure, enabling modal shift in favour of shared modes, enhancing facilities for walking and cycling, optimizing parking requirements and facilitating better parking management:

MOB 1: Improving connectivity and transport infrastructure

MOB 2: Shifting from private to shared mobility

MOB 3: Making Delhi walkable and cyclable

MOB 4: Managing Parking in Delhi

9.0 IMPROVING CONNECTIVITY AND TRANSPORT INFRASTRUCTURE

Chapter code
MOB 1

- 9.1.1 The mobility network of Delhi needs to constantly evolve and respond to the new developments in adjoining urban centres and upcoming regional transport and logistics infrastructure, impacting the commuter and freight movement patterns of the city. The city also needs to address internal challenges for providing access to newly urbanized areas, reducing congestion, revitalizing underutilized transport infrastructure, encouraging walking and cycling, etc. Importantly, mobility trends in the future will be characterized by increased use of clean fuels, implementation of technologically advanced transit systems and artificial intelligence for traffic and parking management. There is a need to gear up for such transformational changes and implement efficient and sustainable mobility solutions in the city.
- 9.1.2 The regional and city-level strategies presented in this chapter envisage the following:
- i) Enhanced inter-city and intra-city commuter and freight movements
 - ii) Improved utilization of land assets associated with transportation
 - iii) Substantial migration to smart and green mobility solutions

9.2 Improving regional connectivity

- 9.2.1 **Rail:** The railways connect Delhi to the rest of the country through five major railway stations, namely New Delhi, Old Delhi, Hazrat Nizamuddin, Anand Vihar Terminal and Delhi Sarai Rohilla. Station redevelopment of the existing railway stations will improve the multi-modal traffic flows and commuter movement around the station areas. Interchange facilities shall be developed between railway stations and proximate ISBTs, bus terminals, metro or RRTS stations, etc. in the form of multi-modal transit hubs. Over station development controls of the transit-oriented development for identified sites is being permitted to provide better transit and passengers facilities at these terminals. (ref: DEV3)
- 9.2.2 **Air:** The international and domestic air passenger movement is catered to by Indira Gandhi International Airport and Palam Airport. This airport has an annual passenger footfall of 67.3 million. With the inception of the International Airport at Jewar, it can be anticipated that some of the passenger and freight traffic will get diverted from IGI Airport. The connectivity between these two airports, Delhi and the new Airport at Jewar need to be strengthened through road-based and, metro-based connectivity.
- 9.2.3 **Mass Rapid Rail:** Strategic corridors of the Delhi Metro shall be implemented to further improve the connectivity of the NCR cities. The Regional Rapid Transit System (RRTS) and High Speed Rail Corridor will play a major role in decongesting various entry points into the city and further reinforce the strong interlinkages between Delhi and the surrounding region for economic activities, housing and other services. RRTS stations within Delhi to be located in close proximity to existing railway terminals/stations, metro stations and ISBTs and have direct interchange facilities for seamless

travel of commuters. Wherever feasible such stations to be integrated with other local mass transit stations as multi-modal transit hubs (ref: MOB 2).

The **Inter-State Bus Terminals (ISBTs)** serve as important regional connectivity nodes of the city. These nodes need to be improved by creating interchange facilities with other transit stations as multi-modal transit hubs, wherever feasible. (ref:MOB2). All future proposals for ISBTs preferably be located at entry points of the city on National Highways with robust multi-modal connectivity with rest of the city.

9.3 Institutional framework for integrated mobility management

- 9.3.1 An efficient urban transport system requires high level of coordination at all levels of planning, implementation and day to day operations at both city and regional level. The previous plan recommended setting up of a **Unified Metropolitan Transport Authority (UMTA)** for this purpose. This Plan endorses this proposal and further recommends that the possibility of creating such an authority should be examined in a time bound manner.
- 9.3.2 Till such time that UMTA is constituted, an interim Coordination Committee shall be set up under the GNCTD, with representation from all transport agencies/ departments, traffic police and local bodies. UTTIPEC shall provide technical support to the Committee.
- 9.3.3 The UMTA/Coordination Committee ensure a 'comprehensive approach' and adopt an 'incremental outlook' towards mobility management, focusing multi-agency priorities and investments. This may include creation of a common fund and platform for joint action.
- 9.3.4 The UMTA/Coordination Committee shall be responsible for commissioning and implementing the Comprehensive Mobility Plan (CMP), coordinating the projects and actions of different agencies and implementing various multi-agency projects for adopting smart solutions.

9.4 Comprehensive Mobility Plan

- 9.4.1 Efficiency of urban transport is heavily dependent upon seamless integration between various road-based, rail-based, intermediate public transport (IPT) and walking/cycling systems. A Comprehensive Mobility Plan (CMP) shall be prepared for Delhi to achieve systemic integration across all levels and modes of urban transport. The CMP shall be aligned with the provisions of MPD 2041 and shall provide a detailed road map for achieving the transformative agenda of 'moving towards low-carbon mobility'.

9.5 Strategic Transport Corridors

- 9.5.1 To improve high-speed connectivity to/from important regional destinations and decongest traffic within the city (particularly due to regional traffic) following strategic transport corridors were identified to be implemented in this plan period. These

corridors shall be strategic links or extensions of existing/proposed arterial road alignments as given below:

Table 9.0: Strategic Links & their benefits

Proposed links	Benefits
<p>Strategic link 1 Northern extension of UER II (Tikri Kalan border – Rohini – Bawana – Narela – Ramzanpur), extending to Loni-Baghat Expressway in Ghaziabad</p>	<ul style="list-style-type: none"> ○ facilitate freight movement by connecting locations generating urban freight traffic that are in close proximity to UER II (FCI godown at Narela, Bahadurgarh IFC, Narela IFC, industrial belt in Bahadurgarh and Kanjarwala (proposed), Bawana Industrial area and DSIDC Narela), with similar trans-river facilities such as Loni ICD, Hindon Airport, and Dadri ICD. ○ establish connectivity between residential areas in Delhi (Narela, Rohini, etc.) and Ghaziabad (Tronica City and Rajnagar) with employment centres (industrial areas in Delhi and NCR). Improved accessibility to residential areas in Ghaziabad would cater to the affordable housing demand in Delhi. ○ decongest NH-1 (GT Road), Outer Ring Road, Signature Bridge and Wazirabad Bridge, by providing alternate route to connect Sonipat with Ghaziabad (Sonipat – Narela – Kundli – Alipore – Loni – Shahdara).
<p>Strategic link 2 Southern extension of UER II (Dwarka to Tughlakhabad), extending to NOIDA-Greater NOIDA expressway (as per site feasibility)</p>	<ul style="list-style-type: none"> ○ facilitate freight movement in Delhi by connecting Convention Centre Dwarka to cargo handling terminal of IGI, and onwards to Tughlakhabad goods terminal and railway station. This route could be extended further to connect to similar facilities in NOIDA (Dadri IFC, NOIDA SEZ and Industrial areas of Greater Noida and Yamuna expressway) ○ establish direct connectivity from IGI Airport to Jewar/Noida International Airport ○ decongest NH-2, Kalindi Kunj Bridge and DND Flyover, by providing alternate route to connect Greater NOIDA with IGI Airport (Greater Noida – Noida – IGI Airport) and by diverting the Delhi-bound traffic from Faridabad
<p>Strategic link 3 Bahadurgarh to Bijwasan (Tikri Border Metro</p>	<ul style="list-style-type: none"> ○ establish connectivity between the industrial areas of Gurugram with Delhi and the upcoming Bahadurgarh Industrial Area. ○ establish connectivity to IGI Airport from Bahadurgarh and

<p>Station - Jharoda Kalyan - Dasana Bus Stand Metro Station - Najafgarh - Chawla - Dwarka Sector-22 Metro Station - Bijwasan Railway Station), extending to HUDA City Center Metro Station via Dhundhera and Gurugram Sector-18 (Udyog Vihar)</p>	<p>Gurugram through interchange at Dwarka Sector-22 metro station.</p> <ul style="list-style-type: none"> ○ establish connectivity between south-west part of Delhi and the proposed RRTS station at Gurugram Sector-18 (Udyog Vihar). ○ improve access to Bijwasan Railway Station from Dwarka, land pooling zones and Gurugram
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9.5.2 These links depend upon inter-state coordination to develop the alignments/ stretches that fall within the jurisdiction of neighbouring states and to be treated as priority corridor projects and development of full links shall be pursued through inter-state agreements.

9.5.3 The strategic links shall be developed as transit-priority corridors to facilitate movement of passengers and freight.

9.5.4 Any new road-based trans-city connectors that facilitate thoroughfare movement through the city shall be discouraged, as they act as disincentives for the use of the eastern and western peripheral expressways and result in congestion within the city. Mass transit systems shall be permitted for developing high speed trans-city corridors, as per feasibility.

9.6 Development and improvement of intra-city road network

9.6.1 Delhi is planned on a ring-radial pattern with a hierarchical road network. Broadly, the road network is designed for regional, intra-city and local traffic. The following hierarchy of roads shall be followed:

- i) **National Highways** (60–90m ROW): National Highways Authority of India (NHAI) should incorporate the Street Design Regulations (ref: Annexure 7) while developing, widening, improving national highways passing through Delhi. All the National Highways within the city shall be access controlled upto the Delhi border and follow the design regulations of city roads.
- ii) **Arterial Roads** (30 – 60m ROW): Arterial roads provide long distance mobility connecting one part of the city to another, carrying heavy volume of traffic of all modes. Existing roads of less than 24m ROW that are functioning as arterial roads on ground may be continued with necessary improvements for enhancing movement.
- iii) **Collector roads** (12 – 30m ROW): Collector roads provide connections between local areas and also connect local streets to arterial roads. Existing roads of less than 12m ROW functioning as collector roads on ground may be continued

with necessary improvements for enhancing movement.

- iv) **Local Streets** (ROW < 12 m): These are intended for local use with ROW of 12 m or lesser. Such streets may be designed as a mix of slow moving traffic (through traffic calming measures), pedestrian or NMT priority streets or completely pedestrianized streets.
- 9.6.2 All new roads shall be developed as per Street Design Regulations (ref: Annexure 7). Wherever possible, existing roads shall also be improved to meet the requirements given in the Regulations.
- 9.6.3 All categories of roads shall be developed as per full cross-section proposed in the master plan or as part of approved layout plans.
- i) Wherever possible, collector and local roads shall be cleared from all impediments and developed as per standards & Street Design Regulations.
 - ii) Area level parking management (ref: MOB4) shall be taken up to reduce encroachment of carriageways by on street parking and ensure effective utilization of road capacity.
- 9.6.4 All new arterial roads (including NHs, UERs, etc.) shall include space for multi-modal high-capacity public transportation systems as part of the RoW. The transit stations shall include plazas and open spaces for incorporating spill over of commuters. Space for provision of utility ducts for various services shall also be made in the RoW in existing and new road stretches as per feasibility.
- 9.6.5 Road safety audits of urban roads in Delhi should be in line with the vision of Ministry for Road Transport & Highways for creating a safe travel environment for pedestrians and cyclists. Strategies towards achieving this goal have been detailed in MOB3.

9.7 Enhancement of city-level public transport systems

- 9.7.1 Network integration would be the key to develop a sustainable and need-responsive public transport system for Delhi. The networks of all public transport modes shall be planned such that they operate harmoniously as a single system to provide transport services, in a complementary manner. Integrated network planning and route rationalisation shall be planned under the CMP and executed by concerned agencies in a coordinated manner. First and last-mile connectivity shall be encouraged through walking, cycling and demand-based sustainable shared modes (e-rickshaws, auto-rickshaws, cabs, cycle-rickshaws, etc.).
- 9.7.2 **Metro, RRTS and other mass rapid transit systems:** Mass Rapid Transit System (MRTS) shall be defined as any system with the capacity to carry more than 5,000 Peak Hour Peak Direction Traffic (PHPDT) having dedicated right of way.
- 9.7.3 The Delhi Metro supported by bus system shall form the primary MRTS. The upcoming RRTS network will also support intracity trips. It is expected that more than 50% of the developed area of the city (excluding land pooling areas and green development

areas) shall be within walking distance from metro stations, after completion of Phase IV and Phase V, which are in the pipeline. Ridership of this extensive infrastructure can be substantially increased through improvement in last mile connectivity (ref: MOB3) and by implementing initiatives suggested for improving the uptake of public transport (ref: MOB2).

- 9.7.4 Other forms of MRTS such as Metro Lite/ Metro Neo or LRT systems, Bus Rapid Transit (BRT) system or any other system that meets the definition given in Clause 9.7.2 shall be developed as per specific site context, projected ridership, etc. to supplement the rail-based MRTS.
- 9.7.5 The following strategic MRTS corridors should be developed over the next plan period:
- i) Extension of metro corridor from Rithala Metro Station (Red Line) to Narela connecting the Bawana Industrial Area, Narela Industrial Area, residential areas developed by DDA at Narela and proposed RRTS station at Kundli.
 - ii) Extension of metro corridor from Dhasana Bus Stand Metro Station (Grey Line) to Najafgarh-Daurala Road via Dwarka Metro Station and further extending to AIIMS campus at Jhajhar. The proposed link would provide direct connectivity between Zone L (land pooling area) and Najafgarh vide Dwarka Metro Station on Blue Line and IGI Airport. It would also make the new AIIMS campus at Jhajhar accessible to the citizens of Delhi.
- 9.7.6 In order to provide mass transit connectivity to land pooling areas, an incremental approach shall be implemented. BRT systems or high speed bus routes shall be implemented during the course of development of sectors facilitating movement from these areas to various parts of the city. Metro rail systems may be implemented along specific corridors. UER-II shall be specifically targeted for development of MRTS to provide trunk connectivity across all land pooling areas.
- 9.7.7 **Bus systems:** The larger outreach of the bus system shall be leveraged to provide high quality road-based public transport, provide accessibility to inadequately served areas, also act as a feeder for MRTS systems.
- i) Bus routes shall be rationalised to connect to Metro/ RRTS stations as well as provide better, more frequent services to areas with low Public Transport Accessibility Levels (ref: MOB2).
 - ii) Concerned agencies shall plan and operate exclusive feeder bus services (RTVs, metro feeders, etc.) for areas where city bus service is low and operate special routes serving the land pooling areas as and when sectors develop.
 - iii) Quality improvement initiatives (information systems, associated infrastructure like bus shelters, O & M of buses, inclusion of special services catering to special needs, premium routes, etc.) may be adopted for improving the service levels. (ref: MOB2).

9.8 Regeneration of Transport Infrastructure

- 9.8.1 **Ring Rail** is a legacy infrastructure of Delhi and it plays a significant role in freight transport. However, the passenger ridership is low. In order to increase its ridership

accessibility improvements may be implemented for the major halt stations by creating public plazas, providing walking and cycling infrastructure, and installation of proper signage. Interchange facilities may be planned for integrating Ring Rail stations with existing metro stations. The Ring Rail alignment connects areas of heritage, ecological assets of Delhi and many commercial areas, a special hop-on and hop-off service may be considered for movement of tourists.

9.8.2 Underutilized transportation properties/structures and land in Delhi offer a significant opportunity to optimally utilise these properties/land and maximise non-fare box revenue. The following strategies shall be implemented:

i) Bus depots and terminals shall be modernized and monetised as multi-level bus parking facilities, along with commercial or facility development; (ref:DCN). This will increase the parking capacity of the depots and terminals as well as enable land value capture. The use of bus terminals and depots for development of public parking along with parking of public buses, private buses should be explored for specific project sites.

9.8.3 Over station and over-tracks development shall be permitted at railway/metro/RRTS stations and depots as per TOD. (ref: DEV4).

9.9 Freight logistics and distribution network

9.9.1 Freight movement constitutes a major part of Delhi's urban traffic and has high environmental costs. The Eastern and Western Peripheral Expressways are expected to substantially reduce thoroughfare freight traffic using city roads. With digital advancement and emergence of e-commerce, freight demand is anticipated to increase, along with increased demand for logistics and warehousing facilities in the city.

9.9.2 The CMP for Delhi shall plan for freight and provide detailed strategies for decongesting urban roads, improving freight movement and connectivity to, logistics and warehousing hubs in the city. The CMP shall include recommendations for improving the capacity of freight movement through rail-based transport (leveraging the Rail/Ring Rail infrastructure) and for developing efficient interlinkages with the regional IFCs proposed by NCRPB under the Functional Plan 2031.

9.9.3 IFCs/ICDs are major employment centres with high footfall. The CMP shall make specific recommendations for improving connectivity (including public transport) of such facilities with the rest of the city.

9.9.4 New Integrated Freight Complexes (IFCs) shall be developed as multi-functional spaces integrating various logistics, warehousing and freight-related needs. Modernisation of existing IFCs shall be incentivized through appropriate incentives for regeneration (ref: DEV3). New IFCs, if any, shall be preferably located on the National Highways (NHs) and align with the freight distribution network of the city.

9.9.5 Supporting e-commerce distribution network: Due to emergence of e-commerce, the need for a new layer of 'warehousing to home' distribution and storage network has emerged at a local level. In order to facilitate organized growth of e-commerce, uses

such as warehousing facilities, distribution centres, etc. shall be allowed in wholesale markets, IFCs and industrial areas. These facilities shall establish a hub- and-spoke network within the city and optimize vehicle kilometres travelled in freight distribution. Use of electric vehicles/ NMVs for last mile distribution shall be encouraged.

9.10 Electric-mobility

9.10.1 E-mobility is gaining momentum in Delhi and it is envisaged that through policy push, incentives, and infrastructure provisions, usage of e-vehicles will eventually gain precedence over fossil fuel-based vehicles. The following strategies shall be implemented to achieve this:

- i) Public charging infrastructure for Electric Vehicles shall be made available throughout the city at various public places, on-street parking areas and public parking sites. This may be enhanced incrementally based on trends in market share of e-vehicles and based on the estimated traffic in a grid block. In the absence of design standardization of charging equipment, kiosks with multiple charger models shall be made available at all public charging stations.
- ii) Fuel stations, metro station parking, railway parking areas, authorised on-street parking or other government-owned parking shall be retrofitted with EV charging infrastructure. All new fuel stations allocations shall have mandatory space allocated to electric charging infrastructure.
- iii) Provisions for an environmentally safe and efficient battery recycling eco-system shall be made by the concerned agencies.
- iv) Land required for setting up separate/exclusive battery recycling centres shall be provided by the concerned agencies in their respective areas.

9.11 Intelligent Transport Systems for smarter transportation

9.11.1 Intelligent Transport System (ITS) shall use data repository and artificial intelligence to play a major role in improving the efficiency and coordination amongst different transport modes/systems in the city.

- i) A Mobility Data Repository (MDR) should be set up for Delhi, where reliable and accurate data pertaining to traffic volume and O-D trends, accident hotspots, congestion, freight traffic, etc. can be made available in an integrated framework. Data collated from different transit agencies shall be standardised and regularly updated through surveys and information.
- ii) Smart solutions through ITS will enable use of real-time data for forecasting and mitigating potential challenges, use of predictive technologies for dynamic and efficient management of public transport fleet operations, system integration, and providing real-time information to commuters, to enhance the resilience of transportation systems.
- iii) Utilisation of ITS for pre-warning and minimising response time of emergency vehicles (ambulance, fire tender etc.) by ensuring uninterrupted movement from source to destination.

10.0 SHIFTING TO SHARED MOBILITY

- 10.1.1. An important objective for the plan period is to build on Delhi's extensive public and shared transport infrastructure and networks and to reduce dependence on private vehicles to facilitate 'efficient' mobility for its citizens. A two-fold efficiency shall be pursued, i.e. (i) minimizing the time and effort required for undertaking a trip from origin to destination (point-to-point mobility), and (ii) ensuring that the trip is completed with a low carbon footprint (green mobility). This will be achieved by moving more people towards using shared modes of transport that include public transport like bus and rail as well as intermediate public transport, app-based services, etc. Strategies such as transit-oriented development, upgrading the service levels of non-private transport, and strict regulatory measures to discourage use of private vehicles, shall be implemented envisaging the following:
- i) Reduced share of private transport as a proportion of the total motorized trips in the city.
 - ii) Improved efficiency of commuter movement in the city in terms of average number of motorised trips per capita, average trip time and average trip length.

10.2 Synergy between Land use and Transport

- 10.2.1. The Plan shall promote integration of land use and transport by optimizing the density and mix of homes, jobs and facilities closer to public transit points such as metro and railway stations, multi-modal hubs, major bus terminals, etc. Such development with improved access to transit stations shall encourage more people to use public transport for their everyday travel needs.
- 10.2.2. Land use and transport integration shall be implemented through the following strategies:
- i) **Intense mix-use development at TOD Nodes:** Select strategic transit stations, referred to as TOD Nodes (ref: DEV4) shall be developed with higher norms for FAR and permissible mix of uses. The norms shall only be applicable within an identified influence zone (notional radius of 500-800 m), which shall be planned for improved walkability and last mile connectivity. TOD Nodes shall include selected major transport junctions like ISBTs, major Railway and RRTS stations, metro interchanges and other select stations, identified for their potential as future economic and cultural hubs.
 - ii) **Regeneration Schemes in Transit Influence Zone:** In order to facilitate the implementation of TOD principles across the city and not only at select TOD nodes, specific norms for mixed use, parking, ground coverage and built-to-edge active frontage shall be permitted within 500 m radius of all other transit stations for all regeneration projects. However, the permissible FAR and other norms for such projects shall be as per Regeneration Policy for Delhi. This will allow creation of vibrant and active station areas without additional FAR/built space stressing the infrastructure. (ref: DEV3)

iii) **TDR receiving zones along new high-speed transit corridors (UER):** In land pooling areas (ref: DEV1), flexible location and loading of entitled FAR shall be permitted in a sector, allowing for concentration of higher FAR along the urban extension roads (UERs).

10.2.3. All these transit oriented developments shall be designed to ensure denser street networks, better public areas and active public frontages to ensure safer, walkable and vibrant areas throughout the city.

10.3 Improving public transport & shared modes

10.3.1. An important strategy for encouraging people to choose public or shared modes of transport is to improve their reliability and accessibility associated with efficient level of service. While improvements in shared modes shall continue to be largely driven by private service providers, public transport requires substantial improvements.

10.3.2. **Public Transport Accessibility Levels:** A detailed analysis of Public Transport Accessibility Levels (PTAL) shall be adopted for the city. This shall be operationalised through an expert agency to be updated and notified from time to time. PTAL mapping will help evaluate the public transport outreach and spatially distinguish high-accessibility areas from low. The analysis shall include all shared modes with fixed routes and fixed fares, including contract IPT modes such as Gramin Seva, autorickshaws, maxi cabs, RTVs, etc., apart from buses, metro rail and their feeder services. Based on such an analysis the entire city can be divided into the following grades of PTAL:

Table 10.0 : PTAL Grades

PTAL	Access Index Range
0 (Worst)	0 - 2
1	2 - 3
2	3 - 5.5
3	5.5 - 7
4	7 - 8.5
5	8.5 - 12
6	12 - 20
7	20 - 30
8 (Best)	30 and above

- i) All future improvements in public transport infrastructure and proposals for area improvement shall be based on this assessment. The CMP for Delhi (ref: MOB 1) shall include a detailed road map for achieving at least a PTAL Grade of 4 across all areas in the city by 2041.
- ii) The analysis may also assist in identifying areas with high PTAL values and high density but low public transport ridership. This can facilitate further action in the form of fare rationalisation, improved accessibility, strategic developments, etc. by DDA/local bodies and concerned transit agencies.

- 10.3.3. **Fare rationalization:** In order to improve the utilization of public transport for short and medium distances, frequent intra-city trips, increased ridership in high- density areas, and fare rationalisation may be considered by concerned agency.
- 10.3.4. **Express public transport routes:** DTC and MRTS Agencies shall consider planning of express routes, connecting high footfall stations/destinations such that the number of stops /halt stations during the journey are minimized and the travel time is optimized. (ref: MOB1)
- 10.3.5. **Premium bus services:** Convenience (ease of access and reliability) and comfort (climatic comfort and quality of facilities) are some of the major reasons why people continue to use private transport. Premium bus service operation needs to be explored along identified high frequency routes in the city that connect home to work centres. These may be designed as a mix of regular fixed-routes, shuttle services as well as on-demand app-based services.
- 10.3.6. **Special services:** The Plan targets at night time economies to promote higher economic productivity as well as increasing the availability of vibrant and safe public spaces at night. DMRC and DTC to be encouraged to operate low frequency night time services along specific earmarked routes and networks across the city for special events/festivals as per feasibility.
- 10.3.7. **Improvement in quality of bus services:**
- i) Upgradation of bus shelters shall be undertaken by Delhi Transport Infrastructure Development Corporation (DTIDC) to include universal accessibility features, audio visual public information systems, CCTVs, distress buttons for emergencies, water kiosks and public conveniences.
 - ii) A reliable and real-time passenger information system (PIS) to be implemented to provide information on routes, timetable, arrival times, travel time, connections, incidents, delays, fares and discounts.

10.4 Integrated Multi-Modal Transport System

- 10.4.1. Passenger trips between origin and destination may comprise of single mode or multiple modes of travel. The Plan shall facilitate seamless and efficient point-to-point mobility for all citizens through the entire journey.
- 10.4.2. Network integration across different modes will play a major role in achieving such seamless connectivity. An Integrated Multi-Modal Transport strategy to be prepared as part of the Comprehensive Mobility Plan, providing recommendations for harmonising timings, frequencies and routes amongst different modes. Development of Multi-Modal Transport Hubs (MMTH) shall be an important aspect of implementing MMI strategies. (ref: MOB1)
- 10.4.3. **Multi-Modal Transport Hubs (MMTH):**
A number of high footfall transit nodes in Delhi have multiple modes located at one location such as railway stations, ISBTs, RRTS stations and metro stations. These shall be developed as Multi-modal Transit Hubs (MMTH), in earlier plan referred as

Metropolitan Passenger Terminal or Integrated Passenger Terminal which are eligible for development norms as per DEV4.

- i) The UMTA/Coordination Committee shall be responsible for bringing together all concerned transit agencies to undertake coordinated planning and execution of the MMTH projects. A joint MMTH-level layout plan shall be prepared to ensure seamless integration across all modes. Agencies may also undertake joint ventures by amalgamating their lands where multiple modes could be integrated into the same building or complex. (ref: MOB1)
- ii) In case of non-contiguous land parcels separated by features such as railway tracks, roads, nallahs, etc., integration of buildings using connectors like skywalks, subways etc. to be permitted, provided adequate clearances are maintained to ensure unhindered operations of various modes (ref: DEV4).
- iii) A special focus of all MMTH projects shall also be towards facilitating first and last mile connectivity. All such interfaces shall be kept well illuminated, safe and vibrant at all times of the day through adequate provision of retail, vending zones, food and beverage outlets, public amenities like toilets and drinking water fountains, etc.
- iv) Being the focal point of transportation networks, MMTHs will have high potential as hubs for mixed-use development.
- v) Three locations, namely Anand Vihar-Karkardooma, Kashmere Gate and Nizamuddin-Sarai Kale Khan shall be developed as Multi-Modal Transit Hubs (MMTH). DDA or other concerned agencies may identify other such locations to be developed as MMTH in the future.

10.4.4. **Multi Modal Integration (MMI) at all stations:** Seamless integration across various modes to be facilitated at transit stations (metro, RRTS, railway station, Ring Rail) and major bus terminals in Delhi.

- i) MMI plans, including pedestrian/cycling facilities shall be prepared and implemented by respective transit agencies for efficient traffic and commuter dispersal.
- ii) The following minimum facilities shall be provided at all locations:
 - a) Within 100 m of every alighting point: pedestrian spill over plaza, vending zone, bicycle parking and renting station.
 - b) Up to 300 m of centroid of alighting points: bus stops, IPT stand, pick-up/drop location for private cars or on-demand IPT.
 - c) Up to 500 m of centroid of alighting points: Public parking sites (park and ride facilities) and public amenities as per norms given in SSI2 and the Street Design Regulations. Parking space for various modes shall be based on user profile and adjoining activities/land use. For instance, metro stations in close proximity of educational centres and industrial areas shall have more ECS assigned to bicycles and two wheelers.
- iii) Adequate land shall be made available for implementing MMI plan by the respective land owning agencies.
- iv) For all new transit stations and MMTHs, MMI shall be planned and implemented as part of the design.

10.4.5. **Technology-based interventions for facilitating MMI:**

- i) App-based integration of different modes will be critical for achieving seamless transfer from one mode to another. Transport Department, GNCTD may develop a smart mobility application covering real-time information on available route choices, available modes and their associated fare, frequency, estimated travel time, etc. The smart mobility app shall be integrated with the ITMS developed for the city (ref: MOB1).
- ii) A unified ticketing system or smart mobility card shall be implemented covering major modes like railway and bus transport. Other shared modes like IPTs, on-demand cabs, etc. may also be considered for integration.
- iii) A common fare management system may be developed by seeking partnerships amongst the various private service providers and transit agencies. This can facilitate further incentives and fare subsidies to users who move from one mode to another.

10.5 **Disincentivising private transport**

10.5.1. It will be critical to complement the various initiatives aimed at increasing the use of shared modes with hard regulatory strategies focused on disincentivising private modes of transport. This Plan proposes following three major strategies that are aimed at curbing the use of private vehicles.

10.5.2. **Congestion pricing:** Road owning agencies in consultation with Traffic Police shall notify specific areas in the city as congestion pricing zones. These may include TOD Nodes (ref: DEV4), Business Promotion Districts (ref: DEV3), Walled City Heritage Zone (ref: HCP2), and the CBD (ref: ECO). Use of technology in the form of RFID tagging etc. may also be explored. by the concerned agencies for management of congestion pricing.

10.5.3. **Parking demand management:** Restricting the availability of public parking at work centres, entertainment or cultural hubs, markets, etc. can be a major deterrent to private trips. The following strategies along with strict enforcement of parking rules shall be implemented using parking as a demand management tool:

- i) Supply of public parking (on-street and off-street) within an area would be associated with its public transport accessibility level (PTAL). Areas with high PTAL shall have lower public parking supply (ref: MOB4).
- ii) Parking charges to be used as a tool for disincentivising private transport usage. Dynamic pricing for peak and off-peak periods, on- and off-street parking (through higher parking charges) to be utilised to decongest areas with high PTAL and/or high vehicular footfall.

10.5.4. **Prioritizing pedestrians and cyclists:** Concerned agencies, in coordination with the Traffic Police, shall identify specific areas with heavy footfall such as tourist hotspots, markets, etc. with high PTAL levels as 'pedestrian only' zones. Tactical urbanism measures to convert streets into fully pedestrian zones for specific time durations to be encouraged, so that overall traffic flow is not hampered. (ref: MOB3)

11.0 MAKING DELHI WALKABLE AND CYCLABLE

- 11.1.1 Delhi's high active travel potential needs to be leveraged and enhanced for people to choose active travel, not only as an affordable mobility option but also as one that is comfortable, safe and accrues health and environmental benefits to the individual and the city.
- 11.1.2 The existing networks have to be strengthened on priority, utilising green-blue networks (ref: ENV2) in the city as alternative active travel routes, creating safe pedestrian and cycling networks both for short and long distances and reinforcing public awareness about the benefits of active travel. Implementation of strategies for promoting active travel shall facilitate the following:
- i) Increased access to green and safe mobility with options and opportunities to undertake active travel.
 - ii) Increased proportion of active travel (walking and cycling) trips in Delhi.

11.2 Street design for promoting active travel

- 11.2.1 Active travel shall be promoted by designing an urban environment where more people choose it as a preferred means for both 'destination travel' i.e. to work, school, place of worship, stores, theatres, public transit etc., as well as 'recreational travel' i.e. for leisure or exercise.
- 11.2.2 Streets shall be designed to ensure equitable distribution of road space and safe mobility for users of all ages and abilities, prioritise barrier-free movement for pedestrians and cyclists, and provision of enabling infrastructure to create an ecosystem for active travel. Existing streets shall be incrementally retrofitted to serve pedestrians and cyclists better. Pedestrian walkways/ footpaths shall be provided mandatorily in new development areas.
- 11.2.3 The following key components shall be included as part of the design of all new road infrastructure and for improvement of existing roads, taking into consideration the hierarchy of roads:
- 11.2.3.1 Provision of barrier-free and continuous NMT network infrastructure such as footpaths, cycling tracks, etc., for providing shorter and comfortable routes.
 - 11.2.3.2 Points of conflict of pedestrians or cyclists with motorised vehicles shall be minimised through the following infrastructure provisions, as per the patterns of active travel characteristics:
 - i) Pedestrian and bicycle crossings shall be at-grade as far as possible. Carriageways shall incorporate traffic calming elements.
 - ii) Subways or foot over bridges, should be cross-programmed through commercial activity, public art, street performances etc., to ensure a safe and vibrant environment.

- iii) Installation of pedestrian signals shall be preferred over grade-separated crossings to ensure ease of use for pedestrians, wheelchair users, and cyclists. Pelican crossing system shall be installed near schools and other major pedestrian crossings, especially for children, elderly and people with disabilities.
- 11.2.3.3 Provision of street furniture i.e. benches and other seating, garbage bins, signage, public utilities, e.g. restrooms, child care rooms, changing rooms and drinking water spouts at regular intervals, etc.
- 11.2.3.4 Earmarking of Multi-Utility Zones (MUZs) and placemaking to accommodate street vendors and kiosks, spaces for public art and other public activities to create active and aesthetically attractive spaces for street life and activity.
- 11.2.3.5 Improved shading during day and illumination during night for safety of pedestrians and cyclists by providing:
 - i) appropriate shade-providing and pollution-filtering trees of native species and other landscaping elements, as well as green features such as pervious surface, bio-swales, etc.
 - ii) adequate street lighting and illumination to ensure safety and security. Preferable incorporation of pedestrian-scale lighting in addition to ambient illumination.
 - iii) bus shelters with bicycle parking, bays for pick-up and drop-off for private vehicles, taxis and IPT to enhance inter-modal shifts.
- 11.2.4 All walking and cycling infrastructure, and street improvements will be based on design standards and guidelines prescribed in the Street Design Regulations (ref: Annexure 7). Compliance with the Harmonised Guidelines and Space Standards for Barrier Free Built Environment for Persons with Disability and Elderly Persons 2016 of MoHUA shall be ensured to facilitate accessibility to the elderly, children and persons with disabilities.

11.3 Active Travel Areas (ATAs) and Walk Plans

- 11.3.1 Active Travel Areas shall be identified by concerned agencies around high activity nodes in the city and Walk Plans shall be prepared and implemented in these areas to improve pedestrian and cycling infrastructure.
- 11.3.2 Walk Plans shall be made for at least an area within a radius of 400–500m (5-10 minutes walking distance) around any specific destination node such as a heritage precinct, a market, existing residential colonies etc. Actual delineation of area under a Walk Plan shall be based on ped-sheds and/or desire lines. Concerned agencies shall integrate these plans with their respective plans for traffic management, MMI, station dispersal plans etc.
- 11.3.3 All new developments/projects within land-pooling sectors, TOD and Regeneration Schemes, other special projects shall be treated as ATAs and the layout approval would mandatorily require preparation of Walk Plans.

- 11.3.4 Existing areas with intense retail commercial activity or exceptionally high pedestrian footfall, weekly markets and areas identified for night economy may be identified as ATA by concerned agencies for part or complete pedestrianisation. (ref: ECO and HCP1).
- 11.3.5 Walk Plans may also be prepared for existing residential colonies, markets etc. by the local bodies or RWAs and other stakeholders. These shall be linked to any proposals for creating Parking Management Areas or green-blue infrastructure/networks in the area.
- 11.3.6 All ATAs shall be connected with major roads (with dedicated cycle tracks and footpaths) that are in close proximity to create continuous city-wide networks.
- 11.3.7 Areas identified for Walk Plans in the Walkability Regulations shall be developed and implemented on priority basis.
- 11.3.8 ATAs may be identified by concerned agencies from time to time for which Walk Plans may be prepared and implemented.

11.4 City level Active Travel networks

- 11.4.1 Continuous active travel networks shall be created for roads of more than 30m RoW. Certain identified routes with existing or anticipated high share of cyclists, pedestrians and those connecting different activity centres, shall be developed as strategic active travel corridors.
- 11.4.2 **Cycling Highways:** Certain corridors shall be identified and developed as cycling highways facilitating long distance active travel across the city.
- 11.4.3 **Green Mobility Corridors:** These are exclusive pedestrian and cycling pathways proposed to be created along natural drains and the River Yamuna (ref: ENV2) as city level dedicated corridors. In addition, these corridors connecting cultural hubs or Strategic Active Corridors in the vicinity shall provide shorter routes and ensure safety of the pedestrians and cyclists.

11.5 Other strategies for promoting active travel

- 11.5.1 **Tactical Urbanism:** Implementing agencies can use Tactical Urbanism or *pop-up urbanism* measures for temporarily retrofitting a street section to prioritise pedestrian and NMT movement by reserving lanes, pedestrianizing street stretches, etc. It is recommended that feasibility of all proposals for creating pedestrian and/or cycling infrastructure be tested on ground before street retrofitting works of permanent nature are undertaken.
- 11.5.2 **Micro-mobility:** Battery-operated e-bikes and other green-mobility options may be encouraged. Parking provision and PBS systems for such vehicles in ATAs and along Strategic Active Corridors must be encouraged to serve the elderly as well as people with

restricted mobility.

11.5.3 Citizen Engagement: All concerned departments/agencies may design awareness campaigns and public engagement strategies for proposed projects and plans to boost consensus building for active travel interventions and induce change in travel behaviour.

- i) Concerned agencies, local bodies etc. may undertake dedicated campaigns for various citizen groups including school children, women, elderly and people with disability to raise awareness about benefits of active travel, traffic rules, regulations and penalties, pedestrian first principle, etc.
- ii) Active travel may also be promoted as a mobility choice to ensure social distancing in the times of disease outbreaks or pandemics.

11.5.4 Employing Technology for Active Travel: Technology and networking can effectively enable active travel and enhance experience and safety of pedestrians and cyclists:

- i) Smart applications shall be developed by concerned agencies to provide information regarding walking and cycling routes, tours, marathons, greenways, heritage trails, location of public facilities, PBS with real-time availability, popular destinations/ eateries and upcoming cultural events. Special applications may be developed for people to rate routes and areas for walkability and cyclability and reporting related issues;
- ii) Smart sensors for Ambient Air Quality Index (AQI) measurement can be set up at traffic signals to provide real-time air quality information to citizens;
- iii) Energy generating tiles may be used for footpaths and paved areas. The energy (coupled with solar energy) can be used to power street lights as well as provide charging points for mobiles and other electronic gadgets near seating or resting spots;
- iv) State-of-the-art surveillance technology can be employed to ensure safety of pedestrians and cyclists, adherence to traffic rules and prevention of vandalism of street furniture.

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12.0 MANAGING PARKING IN DELHI

12.1.1 Low-carbon mobility is one of the imperatives for Delhi. In line with the Environment Pollution (Prevention & Control) Authority for the National Capital Region and the National Urban Transport Policy, 2006 and in order to utilise land optimally, the parking strategy will focus on demand management of existing parking, through re-organisation of parking facilities and maximising their use. Strict enforcement of parking rules and regulations will be essential for managing parking and contribute towards inducing modal shift in favour of public transport and shared modes. The parking strategy of the master plan envisages rationalised supply of public and private parking adjusted with levels of accessibility to public transport and shared modes, and availability of parking.

12.2 Guidelines for a city-wide parking strategy:

The following guidelines and strategies shall direct overall parking provision in the city:

- i. **'User pays' principle:** Users of all personal motor vehicles (PMVs) (except NMT) have to pay for use of authorised parking facilities/spaces/streets.
- ii. **Rationalise parking supply:** Supply of public parking (on-street and off-street) within an area and ECS norms within a use premise to be rationalised as per the public transport accessibility level (PTAL) and the availability of parking infrastructure.
- iii. **Pricing of parking:** Parking charges shall be used for reducing the demand for on-street parking and increasing usage of off-street parking (especially MLCPs). Congestion pricing (through higher parking charges) shall be utilised to decongest areas with high PT access and/or high vehicular footfall volume (commercial areas, mixed-use streets, work centres, etc.).
- iv. **Maximise parking utilization:** The use of parking facilities and captive ECS shall be maximised by treating parking spaces as shared resource. Staggered peak hours of different uses may also be explored to manage parking demand and increase parking turnover. Parking capacities of off-street parking sites can be increased by utilising mechanised stack parking.
- v. **Adequate provision of parking for all modes:** Parking supply in the city shall consider the parking demand for not only PMVs but also for other modes such as utility and emergency vehicles, shared modes (IPT, feeder modes, etc.), freight vehicles, cycles etc.

12.3 Parking Management Area Plan (PMAP)

- 12.3.1 Consistent with the Delhi Maintenance and Management of Parking Places Rules, 2019, a comprehensive area-based approach shall be adopted for supply and/or management of parking in an area/ locality.
- 12.3.2 Parking Management Areas (PMAs) shall be delineated to implement parking related interventions for managing demand, regulating available parking and reducing associated externalities. PMAs shall be identified and delineated by the concerned local bodies in consultation with local residents, market associations, Traffic Police, Transport Department of GNCTD, etc.
- 12.3.3 Parking Management Area Plans (PMAPs) shall be prepared for PMAs. These plans shall include strategies for parking management, parking charges, ITS application and enforcement of the plan.
- 12.3.4 For government designated PMAs, the Transport Department of GNCTD shall be the core agency for preparation of PMAP in consultation with the road owning agencies and local stakeholders. Experts/ consulting firms/institutions may be engaged to expedite the process of PMA delineation along with RWAs, market associations, transport operators and/or trade associations, etc. may undertake preparation of PMAP for an identified area.
- 12.3.5 For areas of strategic significance like BPDs, TODs, etc., PMAPs shall be integrated with their respective improvement plans , Regeneration Plans, IZPs, etc.

12.4 Management of Public Parking

- 12.4.1 Public parking includes all authorised on-street and off-street parking, including MLCPs and is provided by the local bodies/ private entities at various locations across the city, and by transit agencies near stations. In areas with high PTAL and traffic congestion zones, public parking supply shall be regulated through exponentially high parking charges and discourage the use of the personalised vehicles.
- 12.4.2 All public parking shall be designed as per the prescribed standards and guidelines and Parking reserved for persons with disability shall be free of charge.
- 12.4.3 Open areas (tot-lots, parks, playgrounds) and ecologically sensitive areas (rivers, lakes, floodplain, forest, ridge etc.) or any other kind of open space with public benefit shall not be utilized for development of parking (surface/underground/multi-level)
- 12.4.4 Parking charges for public parking to be dynamic and variable rates shall apply across the city and at different times, to spatially distribute the parking demand. Concerned agencies to ensure that streets with high level of activity and congestion are priced higher than other places. These charges may be subsidised for green fuel vehicles.

12.4.4.1 Parking charges can be temporarily increased for air pollution control during periods of severe pollution as per Graded Response Action Plan for Delhi - Ministry of Environment, Forests & Climate Change.

12.4.5 Provision of on-street parking

- i) On-street parking shall be provided such that it does not hinder the circulation of pedestrians and vehicles. 'Parking' and 'no-parking' zones shall be clearly demarcated and on-street parking defined by use of suitable signages and pavement markings. To optimise space, parallel on-street parking shall be preferred over angular/ perpendicular parking.
- ii) On-street parking shall be provided in close proximity to high-footfall uses such as hospitals and schools, public offices, etc., Adequate pick up/ drop off arrangements shall be made within such plots.
- iii) Appropriate allocations shall be made for two-wheelers and four-wheelers at all on-street parking locations.
- iv) On-street public parking for personalised motor vehicles shall not be provided at the following locations:
 - a) On roads less than 12 m and above 60m RoW. This can be relaxed for unplanned areas.
 - b) Up to a distance of 250 m from any transit station/hub like metro stations, RRTS stations, suburban rail stations, ISBTs, etc.
 - c) On fully pedestrianised streets.
 - d) Under flyovers and overpasses to avoid fire hazards
- v) On-street public parking shall be discouraged within 1000 m distance from an existing MLCP, and shall be priced exponentially higher than the MLCP.
- vi) **On-street parking in residential areas:** The aim is to gradually eliminate all on-street parking in residential areas and reclaim this space as public commons, creating safer and more vibrant neighbourhoods. Regeneration of residential areas will enable reorganisation of parking and accommodating parking needs within property premises. A phased approach towards regulating on-street residential parking may be adopted as given below:
 - a) For residential colonies/localities, RWAs may prepare PMAPs after assessing the parking demand, for earmarking areas for on-street parking. Parking supply can be maximised by use of stack parking.
 - b) Local bodies may consider a system of leasing parking permits for part use of public on-street parking space to the residents/RWA of an area.
 - c) A policy linking registration of new vehicles to availability of owner parking facilities may also be considered.

12.4.6. Provision of off-street parking:

Off-street parking facilities mainly serve long-duration parking needs of users like shopkeepers, office goers, public transit users, etc. Wherever feasible, off-street parking solutions (surface parking, roof parking, stack parking, multi-level car park and underground parking) shall be adopted.

- a) Developing off-street parking facility is land and capital intensive, and shall be developed only with consultation and consensus of all concerned agencies/stakeholders. It can be developed on PPP basis.
- b) Off-street parking area/facility shall be located in close proximity to high-footfall uses such as hospitals, public offices, etc., in order to supplement the parking need. Direct access to adjacent buildings from off-street parking area/facility shall be provided wherever possible.
- c) Off-street parking may be equipped with facilities like PBS with e-bikes and bicycles, and parking for IPT and taxis.
In case of a notified TOD node, off-street public parking facility shall preferably be provided outside the Intense Development Area, to serve as a 'park and ride' facility.
- d) In order to make construction of MLCPs financially feasible, up to 25% of the gross floor area shall be used for commercial/office space. The parking demand generated from the permissible commercial/ office space shall be limited to 25% of the total ECS of the MLCP.
- e) 80% of the area under surface parking shall be paved with pervious paving.

12.5 Management of Private Parking

12.5.1 Private parking is provided within the premises of privately-owned properties. This parking is provided as per the parking standards, prescribed for each use premise (ref: DCN). Parking standards are provided in the form of Equivalent Car Space (ECS) and include parking for all types of vehicles i.e. cars, scooters, cycles, light and heavy commercial vehicles, buses, etc.

12.5.2 Parking norms prescribed in DCN, shall be rationalised subject to the following conditions:

- i) If a property is located within 500m radius of an MLCP, the parking requirement (ECS) for that premise/property shall be reduced by 10 percent. This shall not be applicable to exclusively residential properties (i.e. it will apply to commercial and mixed use streets). For MLCP deductions, minimum 50% of the plot area shall fall within the prescribed distance.
- ii) Based on the Public Transport Accessibility Level (PTAL) value, parking norms as per DCN shall be reduced by the following applicable percentage deductions:

Table 12.0: Percentage Deduction in Parking Norms as per PTAL

PTAL	Access Index Range	Residential	Commercial	Industrial	PSPs
0 (worst)	0 - 2	0	0	0	0
1	2 - 3	0	0	0	0
2	3 - 5.5	10	5	5	10
3	5.5 - 7	20	10	10	20
4	7 - 8.5	20	20	20	20
5	8.5 - 12	20	20	20	30
6	12 - 20	20	30	30	30
7	20 - 30	30	30	30	30
8	30 and above	30	30	30	30

- a) PTAL deduction shall be as per the Access Index Range of the plot.
- b) For plots falling in multiple Access Index Range, deductions of Access Index Range with maximum area on the plot shall apply.

12.5.3 For area falling within the influence zone of notified TOD nodes, ECS norms as per the TOD Policy shall be applicable. (ref: DEV 4)

12.6 Regulating parking for other modes

12.6.1 Goods vehicles: Goods movement is closely linked to location of wholesale markets, type of produce/item, existing distribution system etc. Adequate area for parking of freight vehicles shall be identified near commercial and industrial areas, IFCs, ICDs, etc. by concerned local bodies/agencies. During restricted entry time, parking for goods/ freight vehicles shall be provided outside toll gates/plazas.

- i) Parking for vehicles used for e-commerce shall be provided by the respective e-commerce company at the warehousing and distribution facility.

12.6.2 Shared modes: Parking of shared modes such as IPTs, private buses, taxis, etc. may be prioritised in all authorised parking areas.

- i) All MMI plans shall make adequate provisions for short duration parking of shared modes, and drop off and pick up areas.

12.6.3 Buses: All buses shall be parked at their designated depots. If capacity of these bus depots is inadequate for existing or future demand, these depots may incrementally be converted into multi-level parking. For interstate buses, adequate idle parking provision shall be made within the ISBTs.

12.6.4 School transport: Most schools in Delhi do not have adequate space for parking school transport (buses and vans) within their premises. These vehicles are parked on the carriageway of roads causing vehicular congestion and unsafe conditions for children. Following measures are recommended to mitigate this problem:

- i) All existing and new schools shall provide space for pick up, drop off and parking of school transport within their premises.

12.7 Parking in the Walled City

12.7.1 Concerned local body shall prepare PMAPs for various areas within the Walled City to address congestion, make streets safer for pedestrians and contain movement of motorised vehicles to certain roads/areas only.

12.8 Smart Parking Space Management

12.8.1 Smart apps may be developed to give users real-time information of capacity and occupancy of on-street and off-street parking facilities, nearest available parking spot(s) and charges. All off-street facilities shall deploy digital display at their entrances to show the availability of parking spots.

12.8.2 App-based platforms can also facilitate use of parking (including privately owned parking spaces) as a shared resource.

12.8.3 Many junk vehicles are parked/abandoned around the city, and occupy scarce road-side space. Local bodies and the Traffic Police shall ensure that such vehicles are taken to scrapyards within a definite time frame.

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SECTION 6

PHYSICAL INFRASTRUCTURE

BACKGROUND AND KEY POLICY CONCERNS

Water Supply:

The water supply and distribution in Delhi is largely managed by the Delhi Jal Board (DJB). In areas under the New Delhi Municipal Council (NDMC) and Delhi Cantonment, DJB supplies water in bulk while NDMC and Delhi Cantonment manage the distribution. In areas not covered by the distribution system, DJB provides water through tanker service.

Delhi is a water scarce city and pressure on available water resources has increased manifold due to population growth wasteful consumption and systemic loss of water. There are visible accounts of decline in groundwater levels, heavy pollution in Yamuna river and frequent waterlogging instances across Delhi. Lakes and other water bodies, are not functioning effectively as recharge structures, majority of rainwater is not harvested, limited sewerage network restricts the capture of generated wastewater and treated wastewater is minimally reused. As Delhi is predominantly dependent upon external sources for fresh water, the continuous increase in future demand may out perform the supply. There are some long-term possibilities, which concerned authorities may explore to procure raw water through inter-state agreements, for meeting the city's future requirement. Delhi is steadily moving towards alarming levels of water scarcity and to achieve water security in Delhi, the current supply-oriented water management approach needs to be replanned.

Water security for Delhi shall be a function of water and water-related environmental services from sustainability point of view. An Integrated Urban Water Management (IUWM) approach can be adopted for Delhi where water supply, wastewater management and storm water drainage shall be interconnected for having 'water-linked infrastructures' in an urban water cycle. Surface water, rainwater, wastewater and groundwater are considered here as four access points of water that have to be managed together. The focus is on reducing reliance on surface water and ground water and realizing the potential of the non-traditional sources of water for future waterneeds of Delhi. The IUWM approach, maximizes efficient water use.

The estimated water demand for Delhi is as follows:

Year	Population (millions)	Demand criteria* (GPCD)	Availability from all sources (MGD)	Total demand (MGD)	Deficit (MGD)
2020	19	60	935	1140	141
2031	29.1	60	-	1746	-
2041	29.1	50	-	1455	-

*Includes domestic, commercial, industrial demand and that for fire services, etc.

However due to the limited availability of raw water to Delhi, DJB targets of demand of potable water for domestic use needs to be rationalized and progressively reduced to 50 GPCD (225 LPCD) and supplemented by using non-potable recycled water of desired quality standard for non-potable purposes. Water demand for industrial and horticulture/gardening/agriculture purposes to be fulfilled from recycled waste water

of desired quality standards. Potable water demand for the projected population of 29.1 Million @ 50 GPCD works out to be 1455 MGD.

Wastewater Management:

In Delhi, wastewater is managed both by a sewage distribution network system and onsite sanitation system in the form of septic tanks. DJB is responsible for the entire value chain of sanitation network that includes collection, treatment and disposal of wastewater. Approximately 45% of Delhi is not covered by sewerage system and sewage generated from the remaining area flows through a number of surface drains into the river. However, apart from the planned areas, DJB is also extending sewer lines in the unauthorized colonies of Delhi. DJB has also planned decentralised waste water treatment system and other sludge management systems to avoid dumping of untreated sewage into the drains. In areas where laying sewer lines is not possible, DJB has planned to capture the untreated effluent from the 108 sub-drains through a parallel system of Interceptor Sewer Project (ISP), targeting to trap and treat 242 MGD of untreated effluent before it lands into the river.

With the rise in population and demand for water, the total generation of wastewater is expected to be around 1200 MGD by the year 2041. The present treatment capacity is about 597 MGD which has to be upscaled substantially and the load on centralized treatment system can be substantially reduced by deploying strategies for decentralized treatment at the plot/scheme level. Treatment and reuse of treated wastewater is also a potential opportunity to reduce the water supply-demand gap.

Drainage: The drainage morphology of Delhi is defined in a large measure by the Aravalli foothills and connected outcrops. Under these influences, an easterly storm water movement is indicated from the higher elevations in the West towards Yamuna in the East. Delhi has been demarcated into six drainage zones namely (i) North Zone, (ii) West Zone, (iii) Central North West and South East Zone, (iv) Central South and South East Zone, (v) East Zone, and (vi) South Zone. Eleven different agencies namely Irrigation and Flood Control, Public Works Department, South Delhi Municipal Corporation, North Delhi Municipal Corporation, East Delhi Municipal Corporation, New Delhi Municipal Council, Delhi Development Authority, Delhi State Industrial and Infrastructure Development Corporation, Delhi Cantonment, National Thermal Power Corporation Limited and UP Irrigation own and manage the storm runoff emanating from the entire urban expanse of Delhi which is carried by about 426.55 km of natural drainage lines and about 3,311.54 km of engineered storm water drains.

To alleviate the flooding conditions in various parts of the city, storm water drainage infrastructure to be made efficient. So, it is pertinent to apply corrective spatial strategies to address the deficient drainage infrastructure and introduce low cost flood-prevention measures such as water body rejuvenation, using parks for rainwater harvesting etc. Further, solid waste and sewage needs to be managed so that flow of storm water is not hindered.

Solid Waste Management (SWM):

The trend of solid waste generation in Delhi has been rising for the last several years. The management of municipal solid waste (MSW) in Delhi is under the jurisdiction of the local bodies. The local bodies have categorized Delhi into 12 zones for solid waste management. Non-municipal waste includes e-waste (electric, electronics, battery waste), biomedical waste, hazardous waste and construction and demolition (C&D) waste. In Delhi, non-municipal waste is processed at units authorised by Delhi Pollution Control Committee (DPCC), to monitor its management. The Ministry of Environment, Forests and Climate Change has notified separate rules for management of waste and these shall be strictly implemented.

In Delhi, the critical part of the waste is the municipal solid waste (MSW). Approximately 55% of the MSW generated in the city ends up in 3 Sanitary Landfill Sites (SLFs). The low SWM efficiency of Delhi is a result of low waste segregation and recycling (processing) efficiency. Considering the current trends of per capita waste generation, the total quantum of municipal solid waste (MSW) generated in the city is expected to increase substantially, from 12,350 TPD to 18,915 TPD by 2041.

Year	Population (million)	MSW generated (@650 gm/capita)	Collected waste (TPD)	Current processing capacity (TPD)	Waste sent to landfill (TPD)
2020	19	12,350	10,500 (85% efficiency)	45%	4,725
2041	29.1	18,915	-	-	-

The municipal corporations adopt different methods to manage waste, The overview of solid waste management infrastructure in Delhi is as follows:

Sl. No	Facility	Location	Capacity	Managed by
1.	Composting Plants	1. Okhla	200 TPD	IL & FS
		2. Bawana	700 TPD	North DMC through DMSWSL
2.	Waste to Energy Plants	1. Bawana	1500 TPD	North DMC
		2. Okhla	1800 TPD	SDMC
		3. Ghazipur	1300 TPD	EDMC
3.	C&D Processing Plants	1. Burari	2000 TPD	North DMC
		2. Shastri Park	500 TPD	EDMC
		3. Ranikhera	150 TPD	DMRC
4.	Landfills	1. Bhalaswa	70 Acres	North DMC
		2. Ghazipur	70 Acres	EDMC
		3. Okhla	46 Acres	SDMC

The land fill sites have already exceeded their capacity, and shall have impact on the city's SWM infrastructure. Strategies for reducing per capita waste generation, increased processing, recycling capacity and decentralised management are to be addressed.

Power Supply, Communication and Gas Infrastructure:

Power supply in Delhi is managed under four broad categories—generation, holding, transmission, and distribution. The per-capita power consumption in Delhi is more than 1561 units per annum as against the national average of 1122 units 2016-17. Delhi's electricity utilization pattern is characterized by 52% for domestic use followed by 26% for commercial use, 12% for industrial use and 10% for others (agriculture/ landscape maintenance/ transport infrastructure maintenance etc.). Delhi's peak demand has doubled in the last 10 years, growing faster than the population of the city. The power transmission network in Delhi consists of four 400 KV and thirty-six 220 KV substations. The existing network consists of a 400 KV ring around the periphery of Delhi interlinked with the 220 KV network spread across the city. Delhi currently has an annual power consumption of 30,197 Mus. The total installed capacity is 7479.01MW and out of the total installed capacity, 78 % of power is purchased while the rest 22% of the installed capacity is within Delhi. The composition of existing installed capacity is powered by sources of generation such as Coal (59%), 28% Gas (28%), Hydro (10%) and Solar (3%).

The overarching national policy through the assigned Renewable Purchase Obligation (RPO) as well as the state level solar policy 2016 sets out targets to meet about 20% of power consumption from renewable sources by 2022. Delhi has to meet roughly 50.5%¹ of its power consumption from renewable sources by 2041 to fulfil the national level targets set by MNRE. As per the trends indicated by Department of Power, GNCTD, the power consumption demand by 2041, is projected to reach 63,389 MU. Peak demand is likely to double and increase up to 19,070 MW. Based on this it is estimated that the total installed capacity would also need to be increased threefold up to 21,930MW(15% over and above the estimated peak demand).

Year	Population (million)	Power consumption demand (MU)	Peak demand (MW)	Overall installed capacity (MW)
2019	19	33,082	7,409	7,901
2031	24.7	47,167*	12,269**	14,110
2041	29.1	63,389*	19,070**	21,930

* assuming power consumption growth rate as 3%

Digital infrastructure and services are increasingly emerging as key enablers to Delhi's growth. The wide spread usage of ICTs and internet has notably driven majority of the app-based economy and services. Apart from public agencies, the private sector plays an extensive role in servicing the city. Delhi needs to align its telecommunication

¹Based on further projection of MNRE, GoI target of 450 GW renewable energy installed capacity by 2030

infrastructure and targets in adherence to National Digital Communication Policy 2018 and Telecom Right of Way Rules 2016.

In 2019, Delhi had over 57 million telecom connections, of which 54 million were wireless connections provided by both private and public agencies. The public sector (MTNL) constitutes about 46% share of wireline connections and only about 4.3% of the wireless connections. Overall tele-density of NCT of Delhi is substantially higher than the national level average. Delhi has close to 32 million internet subscribers supported by an extensive network of telecom towers, majority of which are privately managed.

Gas Infrastructure: Indraprastha Gas Limited (IGL) is authorized and responsible to lay the network for the distribution of natural gas in the National Capital Territory of Delhi. Natural gas is widely used by transport sector as Compressed Natural Gas (CNG), by the domestic and commercial sectors as Piped Natural Gas (PNG) and by industries as R-LNG supply. The use of natural gases in different forms will considerably bring down the pollution levels in Delhi. Around 25% of total households are connected by piped gas network. However, more than 50 percent of NCT of Delhi has been identified as technically unfit for augmentation of PNG networks by IGL.

By 2030, Central Government is targeting to make India a gas based economy thus aiming to push the share of natural gas in energy basket from present 6% to 15%. Delhi shall lay greater emphasis on using cleaner fuels such as PNG & CNG and discouraging the use of polluting fuels. IGL projections indicate that Delhi will need an estimated 7.32 MMSCMD gas volume by 2025 and it is planned to set up 110 new CNG stations by 2025 to meet this demand.

Disaster Preparedness and Resilience: Delhi falls in seismic zone IV & V and is extremely vulnerable to natural disasters like earthquakes and floods as well as human induced disasters such as fires, industrial and chemical hazards, floods, building collapses, road accidents, water logging, etc.

The city has been experiencing floods of various magnitudes in the past due to floods in the Yamuna and the Najafgarh Drain system. The Yamuna crossed its danger level (fixed at 204.83m) twenty-six times during the last 35 years. Since 1900, Delhi has experienced nine major floods in the years including the recent ones in 1995, 1998, 2010 and 2013.

According to Delhi Fire Service statistics, Delhi had more than 75,000 fire incidents during the last five years resulting in more than 1,500 deaths, injuries to more than 7,600 persons and loss of property valuing more than Rupees 176 crores. These incidents include five major, twenty-five serious and ninety-nine medium fires. During the last 5 years, Delhi has also witnessed a 49% increase in the number of fire incidents in JJ colonies and more than 70% of these cases are estimated to arise from electrical causes (mainly short-circuiting). Majority of the building stock in Delhi is characterised by buildings which are unsafe due to rampant unauthorised constructions and non-compliance with building byelaws. Gas leakages and electrical faults have been identified as main causes for fire incidents in Delhi.

The 'Delhi Disaster Management Plan' (DDMP) prepared by Delhi Disaster Management Authority (DDMA) has identified and listed the vulnerable areas, colonies, settlements in Delhi for various type of disasters and also recommends periodic safety audits for structural safety, fire safety, electric safety etc., to be conducted by local bodies and concerned agencies to create disaster preparedness for Delhi.

In the next twenty years, the infrastructure in Delhi will face an unprecedented pressure and therefore, has to be both responsive to emerging needs and resilient to shocks and stresses. Therefore, the focus is to create a sustainable and resource- efficient environment by enabling provision of robust and resilient infrastructure services.

This section gives strategies for water supply and sanitation, sustainable and efficient waste management, clean energy, robust digital, communication and gas based infrastructure, disaster preparedness and resilient Delhi in the following four chapters:

INF1 - Making Delhi water secure: water, wastewater and drainage

INF2 - Managing solid waste efficiently

INF3 - Power, Gas and Telecommunication-Digital infrastructure

INF4 - Disaster preparedness and resilience

13.0 MAKING DELHI WATER SECURE: WATER, WASTEWATER AND DRAINAGE

Chapter code
INF1

13.1.1 Delhi's development potential is closely linked to the availability of water. The city is highly dependent on external sources of water and the available quantum is inadequate for meeting future demands. Achieving long-term water security is therefore one of the major focus areas envisaging the following:

- i) Sustained availability of adequate water that meets prescribed quality standards for fulfilling current and future needs,
- ii) Improved resilience to flooding.

13.1.2 The plan advocates an integrated urban water management approach and provides inter-connected strategies in the three major water-related infrastructure sectors, namely water supply, sewerage and drainage. While interventions under this approach can incrementally move the city towards being water secure continued efforts shall be made by concerned authorities to procure raw water through inter-state agreements for meeting the city's requirement.

13.2 Reducing the demand for fresh water

13.2.1 As per DJB service plan, the per capita norms for water supply are to be reduced from 60 GPCD to 50 GPCD by rationalising and earmarking fresh water supply only for potable uses. Water supply shall be reduced further in new developments. The demand management strategies to implement this reduction are detailed in this chapter.

13.2.2 **Water supply rationalisation to address water scarcity:** Water supply in new developments under the various policies of this Plan will be controlled to minimize additional stress on water resources:

- i) Development within land pooling sectors will be sustainable in terms of water demand and water conservation features shall be built into the sector layout and building design. Per capita water supply shall be restricted to 40 GPCD in land pooling areas (ref: DEV1).
- ii) Water demand in Green Development Area is anticipated to be met mostly by treated wastewater. (ref: DEV2)
- iii) Regeneration schemes and TOD Schemes shall receive no additional water supply over and above the existing requirement except for any vacant land/s within the scheme for which additional water supply at 50 GPCD shall be provided.

13.2.3 **Treated wastewater for non-potable uses:** 100% treatment and maximum reuse of wastewater shall be encouraged in existing developments and mandatory in new developments:

- i) Decentralised wastewater treatment systems with dual piping shall be mandatory for approval of any new development/ project with discharge more than the minimum threshold as per UBBL.

- ii) In Green Development Area, it shall be mandatory for all plots/ GDA Schemes to install individual or shared decentralized treatment units irrespective of quantum of discharge.
- iii) Decentralised treatment units may be installed as a shared facility for single or multiple buildings/plots or for scheme/ sector layout. Built structures created only for installing such facilities shall be free of FAR and ground cover requirements.
- iv) Shared systems may also be installed at a cluster level for plotted developments or a group of buildings.
- v) Provision of using treated waste water with separate pipes for potable water supply and for recycled water shall be mandatory for all new developments as per UBBL.
- vi) Provision of dual piping before providing any new water connections.
- vii) All existing government, PSP and commercial buildings/plots (except local level facilities) with discharge above the minimum threshold prescribed by UBBL shall migrate to decentralised wastewater management and dual piping in a time bound manner as per feasibility.
- viii) DJB may facilitate existing residential consumers to migrate to water recycling features.

13.2.4 **Low water consumption plumbing fixtures:** Installing low water consumption plumbing fixtures as prescribed by the UBBL to conserve water shall be mandatory for the following developments:

- i) All new developments and regeneration projects.
- ii) All existing government, commercial and PSP buildings/plots (except local facilities).

13.2.5 All concerned agencies shall encourage citizens and different stakeholders towards adapting water-sensitive behaviour for long term water sustainability.

13.3 Optimizing bulk reuse of wastewater generated in the city

13.3.1 DJB and concerned agencies shall ensure treatment of all wastewater generated in the city as only treated waste water shall be permitted to be discharged into drains or water bodies. This will require augmentation of treatment capacity, maximum collection of waste water through better coverage of unsewered areas, installation of interceptor sewers and implementation of other suitable methods.

13.3.2 DJB shall ensure availability of treated wastewater for maximum reuse and shall prepare a phasing plan for incrementally increasing the wastewater reuse incorporating the following bulk uses:

- i) Discharge of treated water to the river as per the requirements of environmental flow prescribed by the authorized agency from time to time.
- ii) Rejuvenation and continuous maintenance of water quality in the various lakes and water bodies of the city.
- iii) Ground water recharge by using treated wastewater by developing aquifer recharge ponds and lakes in the Yamuna floodplain greenways along natural drains, biodiversity parks and land pooling areas.

- iv) Usage of treated wastewater for horticulture, irrigation, bus/metro/railway carriage and vehicles cleaning, road cleaning etc., and as far as possible, also for firefighting and construction purposes. Developments within GDA shall also use recycled water in bulk (ref: DEV2). It shall be mandatory to use treated wastewater for industrial processes, and use of potable water shall not be allowed for the same.

13.4 Maximizing retention of storm water

13.4.1 Another important intervention is to reduce storm water runoff and maximise the use of rain water, either directly through storage or indirectly through ground water recharge.

13.4.2 The following strategies shall be implemented:

- i) In all new developments, large parks and open spaces shall be located in low lying areas to ensure recharge and prevent construction in flood prone sites.
- ii) Rainwater harvesting shall be permitted as common shared recharge infrastructure in greenfield or regeneration layout plans.
- iii) Developments within GDA shall be encouraged to create large-scale storage for direct use of storm water for meeting the needs of horticulture.
- iv) Improvement of pervious surfaces throughout the city by adopting water sensitive urban design (WSUD) principles for all new layout plans and area improvement projects. Elements such as bio-swales, vegetated filters, pervious storm water drains, raingardens, semi-pervious pavements and public parking areas, etc. shall be adopted in public areas as per ground conditions (ref: ENV1 and HCP1).
- v) The design of storm water networks in new areas shall ensure that at least a proportion of the stormwater is directed/discharged into existing/suitable ground water recharge sites.
- vi) Bio drainage may be used at certain locations to design buffers of rivers, natural drains and lakes to create natural sponges for the city during monsoons. (ref: ENV2)

13.4.3 Strategies for ground water recharge shall be complemented by strict regulation for ground water extraction. Extraction from borewells other than those registered with DJB shall be considered illegal.

13.5 Improving efficiency of water systems

13.5.1 Delhi's water availability and demand management strategies can be greatly enhanced by bringing in several system improvements which includes:

- i) Reducing non-revenue water (NRW), adopting 24X7 continuous water supply and smart metering.
- ii) Providing metered water connection to individuals households in unplanned / unauthorised colonies.
- iii) Implementing telescopic water pricing to disincentivise irresponsible use of water.

- iv) In dense colonies, where implementation of sewerage network is not possible, DJB shall set up institutional mechanisms for periodic cleaning of the septic tanks and faecal sludge management. Existing STPs can be used for treatment of sullage and DJB shall set up a mechanism for transfer and treatment of sullage to STPs. The by-products of wastewater treatment shall be suitably treated through post-processing and recycled for road building or any other suitable use.

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14.0 MANAGING SOLID WASTE EFFICIENTLY

14.1.1 Delhi's commitment towards sustainable development hinges to a great extent on the ability to conserve its resources and manage waste efficiently. The city generates more waste than it is able to process in an environmentally sustainable manner. This gap needs to be bridged to move from being "wasteful to resourceful". A common strategic framework has been envisaged for creating sustainable and efficient waste management systems and adopting circular economy principles:

- i) Substantial proportion of waste managed locally
- ii) Improved quantum of waste recovered as resource
- iii) Waste processed and disposed with least environmental impact

14.1.2 This chapter makes separate provisions for both types of solid waste i.e. municipal solid waste (MSW) and non-municipal waste generated in Delhi.

14.2 Managing Municipal Solid Waste locally

14.2.1 MSW is managed by concerned local bodies in their respective areas. Local bodies shall fully implement the provisions of SWM-2016 guidelines (and any revisions thereafter) in addition to the recommendations of the master plan.

14.2.2 Managing waste in closest proximity to where it is generated accrues multiple benefits such as better control over segregation of waste at source/locality, better integration of locally active informal waste workers, engagement of local communities and RWAs, MTAs etc., and catalysing circular economy of reuse and recycle.

14.2.3 Creating 'Minimum Waste Localities' (MWLs)

- i) Localities (residential areas, housing societies, colonies, apartments, markets, etc.) where all the wet MSW is managed within their boundaries through eco-friendly solutions such as composting, bio-methanation etc. shall be called MWLs.
- ii) The dry recyclable MSW generated in MWLs shall be sent to Material Recovery Facilities (MRF) or processing plants located within or in close proximity to the locality. All non-municipal waste i.e. e-waste (electric, electronics, battery waste), biomedical waste, hazardous waste and construction and demolition (C&D) waste etc., shall be sent to government authorised processing centres. Only inert waste, if any, shall be permitted to be disposed at centralised landfill facilities.
- iii) All new development coming up within Land Pooling, Regeneration Schemes or Green Development Areas shall be developed as MWLs. (ref: DEV1, DEV2, DEV3)
- iv) All local bodies shall facilitate the transition of existing localities under their jurisdiction to MWLs by involving RWAs, MTAs and local informal waste pickers and transporters etc.

- 14.2.4 The following strategies shall be implemented to enable creation of MWLs:
- i) RWAs/MTAs and local communities, in consultation with concerned agencies, may dedicate some portion of large parks (neighbourhood park and above hierarchy) for composting, bio-methanation or any other innovative eco-friendly solution for processing wet waste.
 - ii) Wet waste from properties that are bulk waste generators (hotels, restaurants, malls, etc.) shall be processed and segregated at source within the premises or transported to authorized composting plants.
 - iii) Local bodies shall ensure that waste is collected, managed and treated in closest proximity to its generation in unplanned settlements (including JJ clusters) and. Sites for local treatment shall be identified in consultation with residents/RWAs.
 - iv) To target long-term behavioural change and raise awareness, local bodies may incentivise good practices of sustainable waste management, and collaborate with NGOs, CBOs etc.

14.2.5 **Repurposing waste infrastructure:** Local bodies shall strategize existing infrastructure and resources to manage maximum quantity of MSW.

- i) Dhalaos with sufficient capacity and space can be repurposed to serve as Material Recovery Facilities (MRFs) at local level, providing area for segregation of wastes and recovery of recyclables.
- ii) In the land pooling areas, provision for separate MRFs shall be made.
- iii) Local waste pickers and 'kabari valas' may be engaged by local bodies or RWAs for developing MWLs and leveraging existing recycling networks for paper, glass, metal, and plastic.
- iv) With reduction in the amount of waste being transported, local bodies may incrementally use transportation vehicles for other purposes.

14.3 Minimising environmental impact of MSW

14.3.1 The following measures shall be implemented to minimize the environmental impact of MSW:

- i) Delhi's reliance on landfills for waste disposal to be reduced significantly. Existing landfill sites to be incrementally reclaimed as green/recreational areas. Legacy waste at these sites to be salvaged in a phased manner as per the CPCB Guidelines for Disposal of Legacy Waste 2019 (old MSW).
- ii) Incentives/ disincentives recommended by National Resource Efficiency Policy (NREP)-2019 shall be suitably adopted for Delhi.
- iii) No new landfill sites shall be permitted in Delhi. All permissible mechanisms for disposal shall be explored and based on assessment of its impact on environment. Any new landfill (if proposed) shall mandatorily adopt sanitary landfilling techniques for disposal of inert waste.
- iv) Local bodies and private agencies are encouraged to explore and adopt any other innovative environmentally friendly waste processing techniques in the future.

- v) Littering in public areas and dumping of waste in water bodies, parks, green areas and open land shall be strictly prohibited.

14.4 Management of non-municipal wastes

- 14.4.1 Non-municipal waste such as e-waste (electric, electronics, battery waste, etc.), biomedical waste, hazardous waste and construction and demolition waste, shall be managed with strict compliance to the rules notified by the Ministry of Environment, Forests and Climate Change (2016). Additional authorised facilities for processing such waste shall be provisioned as follows:
- i) Medical waste and Common Bio-Medical Waste Treatment Facilities (CBWTFs) should be provided as per requirement.
 - ii) With the coming up of IT/ITES and other digital economies, new technologies such as e-vehicles, the quantum of e-waste is likely to increase, accordingly provision for disposal to be made.
 - iii) The capacity of authorised C&D waste processing plants shall be enhanced and new processing plants may be provisioned wherever feasible.

14.5 Optimizing Waste as a Resource

- 14.5.1 All agencies involved in waste management shall adopt principles of reduce, reuse and recycle (circular economy), consider waste as a resource and facilitate an environment for development of waste-related industries.
- i) Use of C&D recycled products shall be mandated in accordance with C&D waste Rules- 2016. Reuse of C&D waste generated on site for all redevelopment projects and use of recycled C&D products in all new development projects shall be mandatory to the extent possible.
 - ii) Large scale composting farms shall be encouraged in the notified Green Development Area (GDA) for composting of bio-degradable waste. The compost may be utilized within GDA or rest of the city for various green uses.
 - iii) Recycled waste products and compost that meet quality standards may be promoted by the concerned agencies for a robust waste to wealth eco-system in Delhi and the region.

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15.0 PROVISION OF POWER, GAS, TELECOM AND DIGITAL INFRASTRUCTURE

Chapter code
INF3

15.1.1 Delhi needs to build world class digital network infrastructure and shift to clean energy to become a sustainable city and enhance its global competitiveness. The following have been envisaged in this regard:

- i) Enhanced production and increased use of renewable energy.
- ii) Robust and adaptable city-wide digital infrastructure and connectivity.
- iii) Improved infrastructure for power and gas.

15.2 Shifting to renewable energy and efficient power consumption

15.2.1 In light of global warming and climate change, it is imperative to develop a plan to enable the transition from conventional sources such as fossil fuels towards clean energy sources.

15.2.2 A Renewable Energy Plan shall be prepared for Delhi to identify potential renewable energy generation areas within Delhi along with strategies and projects to meet the targets outlined by Ministry of New and Renewable Energy, Government of India.

15.2.3 Delhi has a high potential for generation of solar energy, therefore, the following strategies may be adopted for scaling up the production of solar energy in Delhi:

- i) Solar farms shall be encouraged in the 'Green Development Area' in line with "The Agriculture-cum-Solar Farm Scheme" of Delhi. Power purchase agreement based models may be adopted to incentivise landowners to set up solar farms on their agricultural lands. (ref: DEV 2)
- ii) Delhi has a number of canals that can be utilised for harnessing solar energy as per feasibility. The canal owning agencies may leverage this potential for generation of solar energy.
- iii) Government buildings and institutional campuses with a roof top area above 500 sq.m to install solar PVs as per Delhi Solar Policy 2016 and Net Metering Regulations, 2014.
- iv) Large scale public facilities such as airports, metro stations, railway stations, inter-state and city-level bus stations/depots, stadiums etc., may progressively meet majority of their power requirements through solar and other renewable energy.
- v) Any excess power generated (after meeting on-site requirements) may be fed into the grid,

15.2.4 The following strategies may be adopted to enhance the usage of solar energy in buildings and public spaces:

- i) Solar-based LED lighting to be used for roads, parks and public places. These shall be implemented as part of area improvement projects by concerned agencies such as Walk Plans and MMI.
- ii) Installation of solar PVs shall be encouraged in all plots with roof area more than 100 sq.m and solar assisted water heating shall be promoted as

per UBBL. Installation of the same to be made mandatory for all new constructions and linked to building permissions.

- iii) DISCOMS shall undertake installation of smart meters in a phased manner for all existing buildings, and mandatorily for all new constructions.
- iv) The practice of differential pricing for power supply may be adopted by DERC to encourage increased solar usage during peak hours, to reduce the peak load and improve system efficiency.

15.2.5 Modular star rated electrical appliances and electrical fixtures to be mandated in buildings for higher energy efficiency.

15.2.6 Thermally comfortable and energy-efficient buildings shall be promoted according to the UBBL and Energy Conservation Building Code 2018. The following shall be considered while planning and designing of projects:

- i) Climatology, wind flow, drainage, presence of water body in close vicinity..
- ii) Development of green blue green features within plots for all new developments (ref: ENV2).
- iii) Existing buildings may be retrofitted in order to improve their thermal comfort. Retrofitting may include provision of shading, ventilation, insulation etc.

15.2.7 All concerned agencies may adopt the following strategies for managing peak load demand:

- i. promote mixed use,
- ii. permit select commercial/ recreational spaces to function for 24 hrs and promote night economy.
- iii. Setting up large public screenings of sporting and other events etc.
- iv. Examine feasibility of shared heating and cooling systems
- v. Use vacant office building/ schools etc., for night parking and EV charging.
- vi. Promote EV battery swapping during peak hours and permit EV charging only during non-peak hours.

15.2.8 All concerned agencies and departments, DISCOMS, EE&REM and BEE to run awareness campaigns to sensitize the construction community and the end-users towards the environmental and economic benefits of using solar panels.

15.3 A digitally enabled and connected city

15.3.1 Delhi requires adequate infrastructure provisions to support higher service levels like network of 5G and above, full city fibre coverage, and integration of city's digital systems with IoTs (Internet of Things), Artificial Intelligence (AI), Cloud Computing and Big Data etc. for effective urban management of Delhi.

15.3.2 With increased level of digitalization, data centres may be setup to meet the need for data storage, server management, etc. Such data centres may be developed by public and/or private agencies as per norms.

- 15.3.3 Digitally unified command and control centres may be set up by the local bodies as key drivers for effective urban management, especially traffic, safety, disaster response etc.
- 15.3.4 Connectivity through fibre-optics is considered to be more efficient in terms of internet speed and reliability of services. “Fibre First Initiative” of NDCP 2018 and regulations of ROW Policy 2016 will facilitate augmentation of telecom infrastructure. Implementation of optic fibre shall be through collaborative models involving state government, local bodies and private sector as required for provision of shared telecommunication infrastructure.
- 15.3.5 Smart poles may be installed in public areas, comprising of CCTV cameras, air pollution monitoring sensors, telecom antenna, Wi-Fi hotspots/ microcells, solar lighting, public address and messaging systems, emergency call box etc., which shall be connected to the digital systems of city agencies.

15.4 Improving infrastructure for power and gas supply

15.4.1 Power Infrastructure:

- i) Major transmission network to be planned within the RoW of proposed master plan roads as per feasibility and shall adhere to safety norms of overhead and underground transmission lines as per norms prescribed by CEA .
- ii) All new sub-stations in Delhi to be developed as gas insulated sub-stations as per feasibility, as roughly 50% lesser land area is required as compared to traditional air insulated sub-stations
- iii) All new 11KV power lines to be integrated underground within the road cross sections of land pooling zones as per technical and financial feasibility.

15.4.2 Digital and Telecommunication Infrastructure:

- i) Optic fibre is a public utility and space for this has to be provided in all street sections of 12m RoW and above as per feasibility. On streets less than 12m, optic fibre cabling shall be laid within the street section wherever possible or retrofitted as per existing conditions.
- ii) Telecom installations and associated in-building solutions to be promoted in all new buildings and development.

15.4.3 Gas Infrastructure:

- i) Future gas pipelines to be integrated within RoW of 12m and above.
- ii) Provision of piped gas connections at household level to be promoted for all new buildings and developments.

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16.0 DISASTER PREPAREDNESS AND RESILIENCE

- 16.1.1 Delhi has to develop resilient systems that can withstand, respond to, adapt and recover in the event of unpredictable disasters, shocks, chronic stresses. Like any other megacity, Delhi also faces a wide range of varied risks such as climate change impacts, earthquakes, fires, floods, disease outbreaks, pandemics, and other threats.
- 16.1.2 In Delhi, the impact of such risks increases manifold when coupled with the intrinsic issues such as presence of a large number of dense unplanned areas with dilapidated or poor building stock and high densities. This makes a large part of Delhi highly vulnerable to disasters as these areas are likely to bear large losses in terms of life and property at the time of any such event.
- 16.1.3 The plan aligns with the state and national regulations on disaster mitigation and preparedness and takes a three-pronged approach in terms of reducing risks and vulnerabilities: mitigating the impact, being prepared to respond to disasters by building state of the art resilient infrastructure and systems, and facilitating an aware citizenry. Delhi will become future ready and resilient by striving for:
- i) Enhanced resilience for natural disasters- specifically earthquakes
 - ii) Reduced vulnerability from fires and urban floods
 - iii) Improved ability to respond to all types of disasters and risks

16.2 Building resilience and preparedness for natural disasters

- 16.2.1 **Reducing Seismic vulnerability:** Delhi is located in the national seismic Zones IV and V, in which, earthquakes can cause 'high damage'. The city sits on two fault lines, namely Mathura and Delhi-Moradabad fault lines. Delhi Disaster Management Authority (DDMA) has prepared seismic micro-zonation for Delhi and identified high, medium and low risk zones. In order to reduce vulnerability and minimize the damage to life and property caused by earthquakes, following strategies can be adopted:
- i) Dedicated Structural Audits to be carried out across the city, and all buildings in Delhi shall duly undergo audit as per the dedicated protocol/s established by DDMA and concerned local bodies.
 - ii) The structural/safety audit as defined by Government of India shall be prioritized in high risk zones, vulnerable localities, public buildings with high footfall, buildings with response units (fire, police, integrated control centres etc.), and essential infrastructure.
 - iii) The safety audit protocol shall provide details of procedure and parameters for the audit, frequency of the audit and information for strengthening and retrofitting buildings.
 - iv) In case of buildings and infrastructure, for which strengthening and retrofitting has been recommended by the audit, compliance shall be ensured.
 - v) Structural design of all new buildings and structures shall adhere to the guidelines for seismically compliant buildings as per UBBL.

- vi) Base isolation, hydraulic dampeners and other such structural features may be adopted by concerned agencies to make critical infrastructure of transport, water, fuel etc., seismically resilient.
- vii) Concerned agencies may identify areas/localities that are at risk of incurring tremendous damage in the event of a natural disaster. Such areas may be facilitated to undergo mandatory retrofitting or redevelopment to ensure safety of the residents. Regeneration Schemes proposed in high risk zones may be given priority over other projects by concerned agencies.

16.3 Reduced vulnerability from other disasters

16.3.1 Reduced risk from fires: Industrial, commercial units and households in dense settlements are highly susceptible to the hazard of fire. In order to minimize fire risk in the city:

- i) All buildings with functions involving highly inflammable material shall get mandatory clearance from the Fire Department and adopt safety precautions. Mixing of such uses with residential or PSP functions shall not be permitted.
- ii) The Delhi Electric Vehicle Policy, 2020 by GNCTD, for promoting electrical vehicles needs to be reinforced with clear guidelines regarding storage, charging, use, and disposal of EV batteries, which are a potential fire hazard.
- iii) The Delhi Fire Services can adopt the use of mobile fire hydrants and other state of the art fire-fighting gear, in areas where fire tender cannot reach.
- iv) Buildings identified as 'vulnerable to fire' by DDMA and concerned agencies shall be retrofitted with fire prevention and mitigation measures as per UBBL and norms of the Delhi Fire Services.
- v) Department of Power, local bodies and other concerned agencies shall take joint action to ensure electrical safety in identified vulnerable areas in a phased manner, by ensuring safety from electrical faults in buildings. Area level fire safety shall also be ensured especially in the Walled City, urban villages and other dense areas by taking care of exposed overhanging wires and cables in the streets.

16.3.2 Reduced incidences of urban flooding and water logging: The frequency and intensity of urban flooding and water logging has been on a steady rise in Delhi, due to rapid urbanisation. This is likely to worsen due to climate change impacts. Strategies for augmenting the green cover and water-sensitive urban development - shall be taken up. Additionally, the following strategies shall be adopted:

- i) All natural and engineered drains shall be kept free of obstructions and encroachments with regular desilting and disposal of silt of drains.
- ii) Local bodies may earmark certain parks and gardens in flood prone areas to serve as flood detention sinks as identified in the Drainage Master Plan of the I&FC department.

- iii) Large-scale storm water capture projects in the Yamuna floodplain shall be undertaken by concerned agencies, with the dual objective of flood control and trapping fresh water for augmenting supply. Such projects shall ensure strict environmental compliance and cause no damage to the river.

16.3.3 Reducing vulnerability to pandemics:

- i) Mixed use development and vertical mixing of compatible uses within plots shall be promoted in the city, facilitating availability of all services, work centres and homes within close vicinity of each other. This will facilitate self-sufficient isolation zones as required.
- ii) Decentralised workspaces shall be promoted in the form of co-working spaces, shared workspaces within slum rehabilitation projects, support for home-based work, etc. Additionally common community spaces shall be promoted to be utilised for providing refuge spots, common kitchens, quarantine spaces etc., at the time of emergency.
- iii) Development of large green areas, mandatory creation of open areas, public spaces and plazas in new developments, and reducing built densities through planned regeneration will support requirements of social distancing during pandemics, while providing an active public realm during normal times.
- iv) Development of adequate affordable rental or ownership housing options for the poor, worker housing, hostels for women and men, etc. shall be promoted to reduce crowding within dwelling units and support migrant housing in the city.
- v) The plan facilitates creation of multi-facility plots (particularly in dense unplanned areas) that can be used temporarily repurposed along with other government facilities during times of disaster.
- vi) Better habitat design and green rated developments shall be promoted to reduce the dependence on mechanical ventilation systems, which pose a threat during air-borne epidemics.

16.4 Managing effective response to disasters and risks

16.4.1 DDMA may set up a state of the art ICT enabled Delhi Disaster Response Force (DDRF) for effective response at the time of a disaster or an unpredictable event. This force can be supported by government departments and agencies as well as hospitals, CSOs etc. This force shall carry out regular risk assessment exercises, receive and transmit early warning signals, converge all necessary protocols to be followed at the time of occurrence and activate all response systems.

- i) A disaster response protocol shall be developed for Delhi, outlining the procedure to be followed for different types of disasters.
- ii) All service providing agencies shall develop emergency response plans and guidelines to ensure that there is minimal impact on delivery of these essential services during times of disaster.

- iii) Dedicated evacuation spaces and refuge spots for residents shall be designated in all localities, especially in dense areas.
 - a) Evacuation spaces to be open to sky areas where people can gather at the time of an event such as fire, earthquake etc. These can be parks, multi-purpose grounds, other open spaces etc.
 - b) Refuge spots can be any internal spaces identified by RWAs/ local bodies to provide alternate locations for unhealthy/unwell residents at the time of contagious disease outbreaks. Such spots should be publicly accessible facilities.
- iv) DDMA shall also develop a post-disaster rehabilitation strategy. All departments of GNCTD, local bodies and DDA shall develop a system for regular assessment of disaster risk for Delhi.

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VOLUME 2

FRAMEWORK FOR SPATIAL DEVELOPMENT AND PLAN MONITORING

SECTION 7

SPATIAL DEVELOPMENT FRAMEWORK

This section provides detailed 'spatial Development Policies' that will guide the future development of Delhi over the plan period in greenfield as well as brownfield areas. Four major policy areas shall be covered as follows:

- DEV1 - Development of new areas through Land Pooling**
- DEV2 - Development within Green Development Area**
- DEV3- Urban Regeneration**
- DEV4- Transit-oriented Development**

17.0 DEVELOPMENT OF NEW AREAS THROUGH LAND POOLING

Chapter code

DEV1

17.1.1 Land Pooling is a new paradigm for urban development, wherein the private sector will play an active role in assembling land and developing physical and social infrastructure. Owners or groups of owners will pool land parcels for development as per prescribed norms and guidelines, making them partners in the development process. For integrated planning of a sector, the land required for development of roads, utilities, greens and other infrastructure shall be made available to DDA and service providing agencies as per approved/notified plans. Such areas are envisaged to be world class, 'smart' and sustainable neighbourhoods, sectors and zones, planned and executed as per the availability of water, power and other infrastructure.

17.1.2 Regulations in this regard provide further details for development of such lands and the process for the same.

17.2 Applicability

17.2.1 The policy shall be applicable in identified land pooling areas as notified by DDA/Government from time to time, except:

- i) Green Development Area
- ii) land under unauthorized colonies (which are yet to be regularized);
- iii) built up Lal Dora areas (abadi), notified extended Lal Dora of villages;
- iv) lands under litigation including lands under acquisition proceedings, till the case is settled;
- v) land where DDA or any other government agency has issued NOC, or where the plan stands approved for development by any other government agency at the time of notification of this policy and its regulations;
- vi) land under notified forests/government land (use undetermined) and any other scheme of Government of NCT of Delhi for which change of land use is under process under Section 11(A) of the Act at the time of notification of these regulations;
- vii) pre-existing institutions which have been considered for regularization or are still under examination by the Government;
- viii) land under roads natural drains, natural water bodies, heritage sites, flood and irrigation department, railways and airport.

17.2.2 If any of the landowners who have lands listed under sub-clauses (ii) and (vii) above wish to participate, they must clear all encumbrances before expressing their willingness.

17.2.3 All remaining lands, other than those mentioned in Clause 17.2.1, shall form the "Developable Area" that can be taken up for pooling.

17.3 Guiding Principles

- 17.3.1 Pooling of land shall be done on the basis of delineated sectors (as defined in the Regulations) and the required modification in the Zonal Development Plan shall be based on the approved Sector Plan as per the provisions of MPD.
- 17.3.2 Landowners with any size of land in identified land pooling areas may register and express their willingness to participate as per the application process specified in the Regulations.
- 17.3.3 A minimum of 70% contiguous land of the developable area within the sector, free from encumbrances, shall be pooled to make the sector eligible for development. This will ensure unified planning, servicing and subdivision/share of the land in a sector. When such minimum contiguity is achieved in a sector, DDA shall intimate all the constituent landowners forming part of the contiguous land in the sector to form a consortium. Isolated land parcels of 2 ha and above falling in a sector, that are not a part of 70% contiguous land shall also be eligible for being part of the Consortium provided they can be integrated with the sector layout.
- 17.3.4 Of the pooled land, the Consortium will retain maximum 60% and hold the remaining minimum 40% on behalf of DDA, to be surrendered (free of encumbrances) to DDA/ service providing agencies, as and when required, for development of city level physical infrastructure, recreational, industrial and public/semi-public (PSP) facilities as per the norms of this plan. Each landowner will surrender land proportionate to the area of land pooled, for provision of such facilities.
- 17.3.5 The 60% land shall be utilized by the Consortium for development of residential, commercial, public and semi-public facilities and physical infrastructure.
- 17.3.6 The Consortium will mutually decide a formula for redistribution of developed land/ built space, or any other form of fair exchange as part of an "Implementation Plan" and convey the same to DDA with the consent of all landowners.
- 17.3.7 The final development of the 60% land shall be taken-up by the Consortium only after obtaining the necessary approvals. The 60% land can also be developed as separate sub-projects by those landowners/ group of landowners who have chosen to work as separate Developer Entities (DEs), only after the overall integrated planning has been completed by the Consortium and all due approvals have been obtained. The DE can be:
- i) An individual land owner who has pooled one or more parcels of land in the sector, adding up to a minimum of 2 ha;
 - ii) A group of land owners who have collectively pooled one or more land parcels adding up to a minimum of 2 ha who have voluntarily grouped together, through a valid and legally enforceable agreement for taking up development;

- iii) An entity (developer/business/corporate entity) representing a group of landowners who have pooled one or more land parcels adding up to a minimum of 2 ha, through a legally binding agreement.

The limit of 2 ha has been set to ensure adequate return of land for development.

- 17.3.8 Adequate provision of EWS housing shall be ensured in the new development area and provided as per MPD.
- 17.3.9 External Development Charges (EDC) shall be applicable on the entire area of pooled land to cover the actual cost of providing city-level infrastructure.
- 17.3.10 Land parcels in a sector that remain un-pooled may be allowed to develop at a later stage subject to:
 - i) Workability of the proposed layout plan in terms of accessibility and other functional requirements.
 - ii) Making 45% land available for city level infrastructure/facilities or as determined by the Authority from time to time.
 - iii) Payment of updated applicable EDC for infrastructure and services.

17.4 Role of DDA and/or Government

- 17.4.1 Ensure smooth and fair implementation of the Policy.
- 17.4.2 Delineation of sector boundaries and overall planning of the land to be utilized by DDA and service providing agencies for provision of city level physical infrastructure, recreational, industrial and public/semi-public (PSP) facilities.
- 17.4.3 Facilitation of the entire process of planning and development by DEs/Consortiums through a Single Window System for application, verifications, approvals, licenses, etc. in a time bound manner, as specified in the Regulations.
- 17.4.4 Overall monitoring of provision of relevant infrastructure for water supply, sewerage, drainage, power, transportation etc., by service providing agencies in a time bound manner.
- 17.4.5 Acquisition of any land, which has not been offered under Land Pooling and is required for effectuating development in any sector, in accordance with law. The cost of such acquisition shall be borne by the DEs/Consortiums.

17.5 Role of DE/Consortium

- 17.5.1 A Consortium of constituent landowners will be created for unified planning, servicing and subdivision/ sharing of the land or any other defined action for development of sectors under land pooling as per prescribed norms and guidelines.
- 17.5.2 Development and finalization of the Implementation Plan with the approval of all constituent landowners as per Clause 17.3.6.

- 17.5.3 Preparation of layout plans and detailed site plans for the 60% land as per the Planning norms, through a consultative process involving all DEs/ landowners.
- 17.5.4 Undertaking watch and ward of the land to be surrendered (free of encumbrances) to DDA/ service providing agencies, as and when required.
- 17.5.5 Timely payment of External Development Charges (EDC) to DDA and service providing agencies towards the cost of developing public infrastructure and services, through the Single Window System and as per timelines specified in the Regulations. EDC shall be payable on the total pooled land.
- 17.5.6 Seeking necessary approvals of layout plans, detailed site plans and other drawings, through the Single Window System established by DDA.
- 17.5.7 Time bound development of all internal roads and other related infrastructure such as water supply lines, power supply, rain water harvesting, sewage treatment plant, and parking, including provision of multi-level parking facilities wherever required, falling in its share of the land
- 17.5.8 Time bound development and maintenance of the entire development as per approved layout plan, including all the local level facilities i.e. open spaces, roads and services, till the area is handed over to the concerned Local Bodies for maintenance. The deficiency charges, if any, shall be borne by the DEs/Consortiums at the time of handing over of the services to the local bodies.
- 17.5.9 Time bound transfer of the share of built-up space/land to constituent landowners/DEs as mutually agreed in the Implementation Plan.
- 17.5.10 Ensure development of the prescribed built-up space/dwelling units for EWS Housing component as per provisions of this Plan. Sale and Disposal of EWS housing stock shall be as per the Plan.
- 17.5.11 Bearing the cost of acquisition of land acquired by DDA as per law for the public purpose of ensuring the planned development of infrastructure in the Zones and Sectors where the Land Pooling Policy is applicable.

17.6 Development Norms

17.6.1 The following conditions shall apply for development:

- i) A minimum of 40% of pooled land in every sector shall be reserved for city level infrastructure and other use (surrendered to DDA and service providing agencies, as and when required). DDA's share of Industrial and PSP land use (refer table 17.1) in sector shall be allowed to be clubbed with adjacent sectors to meet the requirements of providing city/zonal level facilities. A maximum of 60% of pooled land in every sector shall be available to DE/Consortium for development. The distribution of land uses shall be as follows:

Table 17.1 Distribution of land uses in Land Pooling areas

Land Use	Area of Pooled Land	
	Minimum 40%*	Maximum 60%
Gross Residential	--	53%
Commercial	--	5%
Industrial	4%	--
Recreational	16%	--
PSP	8%	2%
Roads and circulation	12%	--

* The 40% of land in each sector can be utilized for any use as per the requirement. There shall be no bar for DDA to use fix percentage in a particular sector. However, the overall percentage of a zone will be as per the table above.

17.6.2 Division of Gross Residential areas and provision of facilities shall be as per norms in the Plan. Land requirements for provision of internal roads/ infrastructure/ services (including water supply lines, power supply, rainwater harvesting, STP, etc.) as earmarked in the layout plan will be met equitably by all the landowners/DEs.

17.6.3 50% of the plots earmarked for local level health and education facilities, within the Gross Residential Use (53%) in a sector, to be returned to DDA for allotment to government agencies/ departments.

17.6.4 Amalgamation and sub-division of city level PSP plots as well as commercial plots shall be permitted. Minimum area requirements as per the Plan shall be applicable for development of any use premise. The DE/Consortium may also adopt innovative ways for achieving a vertical mix of uses (residential, commercial, PSP and industrial) within a building.

17.7 Additional Development Controls

17.7.1 Variance in Applicable FAR at Sector Level:

- i) The prescribed FAR limit for different land uses at sector level shall be computed as per the table below:

Table 17.2 FAR limit for different land uses at sector level

S.N.	Land Use	FAR	Total area that can be built as per FAR*
1	Residential	200	200 x Net residential land (Net Residential land to be a maximum of 55% of Gross Residential land on which a mix of Group Housing and Plotted Housing typology is allowed on fulfilling the layout and plot level controls as per Clause 17.7.4 and 17.7.5.[A])
2	Commercial	150	150 x 5% of pooled land [B]
3	PSP	225	225 x 10% of pooled land [C]
4	Industrial	200	200 x 4% of pooled land [D]
			Total area that can be built as per FAR at sector level [T]= A + B + C + D

* Notes:

- a) In addition, mandatory FAR of 15% over and above the maximum permissible residential FAR shall be available to the DE/Consortium only for provision of EWS Housing. EWS requirements to be calculated for the entire permissible residential FAR (irrespective of housing typology);

- b) Permissible FAR for social infrastructure and utilities (up to local level to be provided under gross residential component) shall be calculated over and above the residential FAR on the basis of population norms of MPD;
 - c) Distribution of PSP land use between Consortium/DE and DDA shall be as per Table 17.2. PSP plots shall avail the FAR as per the prevailing Master Plan provided that the total PSP FAR in the sector does not exceed [C] mentioned above. and TDR, if applicable
- ii) FAR loading can be varied across different plots without exceeding the total applicable FAR for a sector except in sectors where TDR will be utilised, whereby higher FAR can be utilised along major roads, around identified transit stations or other identified locations.
 - iii) In case there is a shortfall/variation in return of 60% land to the Consortium due to site conditions or planning considerations, the Consortium/DEs shall be permitted to utilise their respective FAR.
 - iv) Gram sabha lands shall be integrated into the overall layout plan for the sector. Utilisation of such lands shall be as follows:
 - a) DDA may participate in the land pooling as a Developer Entity; (part of developable area)
 - b) DDA may develop such lands to meet specific needs/gaps of respective sectors. In such cases they shall not be considered part of the pooled land for computation of FAR as per table 2 and shall be developed for different use premises as per norms. (not part of developable area)

17.7.2 Variance in applicable FAR shall be permitted through the following options:

- i) Exchange of land uses within sectors:
 - a) For Consortiums– sector-level Commercial and/or PSP area under its share can be increased up to 30% each with an equivalent reduction in total area that can be built as per Residential FAR.
 - b) For DDA an exchange of up to 30% shall be permitted between sector-level PSP and Industrial area under its share;
- ii) Utilisation of TDR shall be permitted only in the identified TDR receiving areas.

17.7.3 Mix of Uses/Vertical Mixing:

- i) Vertical mixing (VM) of identified land uses shall be allowed within plots and buildings to enable mix-use in building typologies and hubs, to create innovative green layouts and facilitate the provision of adequate public facilities. The controls and mix of uses for VM shall be as follows:
 - a) Mix of uses/VM shall be permitted in approved VM plots, identified in the sector Layout Plan, where the overall FAR on such plots shall not exceed 400.
 - b) The loading can be in the form of same land use or identified compatible land use/s as per sub-clause (g) below.
 - c) Mixing of identified uses is permitted in any proportion in the form of different buildings within a plot, or vertical mixing of floors within buildings or both.

- d) Requirements w.r.t open spaces, facilities, parking, entries/ exits and service cores, etc. within the identified plot shall be as per norms of the Plan or applicable regulations.
- e) Separate entry/exits and service cores shall be provided for each use. Additional requirements, if any, due to utilisation of TDR shall be fully met within the plot itself.
- f) Mixing/ Vertical Mixing of recreational parks, hospitals, health facility, university campuses, utilities, fuel stations and correction/ penal facilities of any kind shall not be permitted.
- g) Mixing shall only be permitted for compatible uses as follows:
 - Non-manufacturing industries like service industry (IT/ITES, BPO/KPO, etc.), packaging and logistics, and non-polluting MSME units can be combined with PSP and commerce.
 - Schools can only be combined with residential use premises. Other educational institutions can be combined with clean industries such as those mentioned above.
- h) Surplus land (if any) due to use of VM shall be utilized for active greens such as urban farming, nurseries, gardens.

17.7.4 Layout Controls in land pooling sectors

- i) Layout Plan shall indicate the following:
 - a) use zones/ use premises as per the Plan.
 - b) redistributed plots returned to DE/Consortium , and
 - c) VM plots, mix of uses and respective FAR for all individual redistributed plots at the sector level.
- ii) Applicable FAR and other controls of various use premises falling under Residential, Commercial and PSP and industrial land use and VM Plots shall be as per Plot level controls laid down in Clause 17.7.5 and it shall be ensured that the cumulative area that can be built for all the plots does not exceed the permissible limits set out in Clause 17.1.1 except in sectors where TDR is being utilized.
- iii) Isolated land parcels of 2 ha or more shall have a minimum access of 18m RoW for inclusion in the layout plans of the sector.
- iv) EWS block requirements shall be met by DEs individually or developed as a separate area/s on a consolidated basis, preferably close to transit stations.
- v) At least 15% of the residential FAR (A) in the Sector as per Clause 7.1 shall be utilized for development of small format dwelling units of 40-60 sq.m.
- vi) Local level facilities shall be provided in the form of separate plots as per norms of the Plan, or within Group Housing plots. Where such facilities are within Group Housing plots:
 - a) FAR for the facilities will be over and above residential FAR of 200.

- b) Any open space requirements for such facilities as per master plan shall be provided within the plot.
- vii) Road Layout
- a) The sector road network shall incorporate the road hierarchy and Street Design Regulations of the Plan. Cycling and walkability network shall be a mandatory requirement.
 - b) All major roads (24m and above) shall be provided with underground utility ducts for accommodating trunk services.
 - c) At least 50% of the area under collector roads shall be developed with minimum 24m RoW.
 - d) Existing revenue roads and phirni roads acting as major movement corridors within a sector shall be improved and/or widened and integrated into the sector layout, if feasible.
 - e) Direct vehicular or parking entries/exits shall be avoided on roads of 24m RoW and an alternative vehicular access to be developed as part of layout.
 - f) The new development shall maintain continuity with existing movement networks of approved or built planned development.
- viii) Buffers: In addition to all other mandatory buffer requirements, the Consortium/DEs and public agencies shall maintain buffers along major natural drains as per DCN.
- a) Such buffers shall be used for developing parks of various hierarchies or the edges shall be protected by providing pedestrian/cycling streets.
 - b) Buildings on the edges of buffers of natural drains shall maintain active facades in the form of balconies, windows, pedestrian entries, shop-fronts, plazas, etc. facing towards the buffer.
- ix) Public Plazas: The layout shall incorporate public plazas of various scales to improve the availability of public spaces. Development of plazas shall be regulated as follows:
- a) Public plazas of minimum 2000 sq.m shall be planned at all major intersections of arterial-to-arterial roads as part of the sector Layout Plan.
 - b) All mass transit stations shall provide 20% of the plot area as a single open access public plaza for spillover of passengers and Multi Modal Integration.
 - c) All plots above a size of 1 ha shall also provide 10% of the plot area as mid-street or corner public plazas. FAR for the area under such plazas given within plots, shall be loaded on the remaining plot.
- x) Active Frontage:
- a) Active frontage shall be maintained along roads with RoW of 24m or more.
 - b) A setback of 3m shall be maintained with greens and tree plantation, with built-to-edge development for 70% of the building edge. At least 50% of such built-to-edge frontage shall be kept active on the

ground/podium floor by using arcades, colonnades, shop-fronts, pedestrian entries, plazas, etc.

c) These requirements will only be applicable on commercial, industrial and PSP plots as well as VM plots;

xi) Sustainability features:

a) All projects within land pooling areas shall achieve mandatory Green Blue Factor of 0.2 (refer DCN).

b) Physical infrastructure in the Sector shall ensure the following:

- 100% treatment and maximum reuse of treated wastewater
- Segregation and 100% reuse of green waste;
- Meeting 10% of the sector's energy demand through renewable sources like solar;
- Optimum retention of storm water for direct reuse and recharge of groundwater as per applicable norms.

Multiple sectors/schemes may come together to meet these sustainability requirements.

17.7.5 Plot and Building Controls

i) The following controls will apply for different kinds of plots outlined below:

	Controls	Residential plot - plotted housing	Residential plot - group housing	PSP/Comm ercial/ Industrial Plots	VM Plot
1	Minimum plot area	- Only cluster developments on minimum land of 5000 sq.m permitted* - Sizes of plots shall range between 100-300 sq.m - EWS units to be provided as separate block either within the cluster or jointly with other DEs	3000 sq.m	As per norms of the Plan for various use premises	5000 sq.m
2	Maximum FAR	As per MPD, provided the overall FAR for the cluster (i.e. 200) is not exceeded**	200	As per norms for various use premises	400
3	Maximum ground coverage	As per MPD	Up to 33%	As per norms for various use premises	Up to 50%
4	Mandatory road	- Not permissible on RoW of 18m and	18m RoW at least on	As per norms of the	- Collector road of

	access	above - Overall cluster to have access from min 12m road. Individual Plots may be provided access from 9m road.	one side	Plan for various use premises	24m or above at least on one side - Mandatory alternate access from 12m RoW
5	Setbacks	As per MPD	1. As per MPD for different Plot Sizes of respective land uses. 2. For Plots on 24m ROW and above, Front setback shall be as per Clause 17.7.4(x). 3. Side and Rear setbacks shall be subject to requirements of height and ventilation as per building bylaws/ NBC.		

* All facilities, local access roads and decentralised infrastructure for solid waste and wastewater management shall be accommodated within the cluster development.

**In case the computed built area for a plot is less than that permitted in a lower category plot, the maximum built area of the lower category shall be permitted.

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18.0 DEVELOPMENT WITHIN GREEN DEVELOPMENT AREA

18.1.1 The Green Development Area (GDA) Policy provides an integrated framework for development in the following areas of Delhi:

- i) Green Belt – land along the NCT of Delhi boundary up to a depth of one peripheral revenue village boundary, wherever possible.
- ii) Low-Density Residential Area (LDRA) – Area of the villages notified for low density development and having concentration of farmhouses, termed as Low-Density Residential Plots or LDRPs.

18.1.2 The Policy will encourage ‘green development’, which shall be characterised by lower FAR and large wooded and landscaped areas, to:

- i) foster city-level hubs for green living and recreation, create green jobs and economies,
- ii) encourage production of food and other natural produce to improve food security and meet horticultural needs.
- iii) create a regional environmental buffer, reduce impacts of air pollution, urban heating, improve predictability of rainfall and combat threat of desertification.

18.2 Applicability

18.2.1 The extent and boundary of GDA shall include the areas of villages notified as Green Belt and LDRA. However, the extent and boundary of GDA may vary based on actual delineation on ground.

18.2.2 All existing and future development shall be governed by the provisions of GDA, superseding the earlier provisions for Green Belt and LDRA.

18.2.3 The Policy shall not be applicable in the following areas:

- i) Land under unauthorized colonies (which are yet to be regularized);
- ii) Land under litigation including lands under acquisition proceedings, till the case is settled;
- iii) Land parcels falling in built up Lal Dora areas (abadi), notified extended Lal Dora of villages;
- iv) Land where DDA or any other government agency has issued NOC or where the plan stands approved for development by any other government agency at the time of notification of the GDA Regulations;
- v) Land/ property where a court order has been issued for eviction/vacation of premises in favour of Government or DDA or local bodies;
- vi) Land falling within protected monument/area under the provisions of the Ancient Monuments and Archaeological Sites and Remains Act, 1958 as amended from time to time;

- vii) Land under notified forests/government land (use undetermined) and any other scheme of Government of NCT of Delhi for which change of land use is under process under Section 11(A) of the Act at the time of notification of the GDA Regulations;
- viii) Pre-existing institutions which have been approved or considered for regularization or are still under examination by the Government;
- ix) Land falling within the RoW of approved and notified infrastructure such as existing/proposed master plan roads, major trunk water supply and sewage lines, HT lines, transport and other essential infrastructure;
- x) Land under natural drains, natural water bodies, heritage sites, flood and irrigation department, railways and airport;
- xi) Farmhouses falling in notified forest land or in regional park area (other than farmhouses built on privately owned land in the regional parksanctioned up to 07.02.2007 subject to orders of Supreme Court of India in this regard).

Landowners of lands listed under Clauses (i) and (ii) above may participate under this Policy only after clearing all encumbrances from the land.

18.3 Guiding Principles

- 18.3.1 Provide a comprehensive framework defining permissible uses, activities / mix of activities and FAR for proposed uses / activities / mix of activities for green development. Mixing of these uses/ activities shall be permitted.
- 18.3.2 Provide environmentally sustainable development options to enable the landowners to achieve the economic value of lands.
- 18.3.3 Provide connectivity and infrastructure for physical and functional integration of the areas within and around GDA.
- 18.3.4 The activities permitted within GDA, shall be with the prescribed FAR and Mandatory Wooded Area.
- 18.3.5 Three grades of green development shall be permitted in the GDA as per Clause 18.4.1.
- 18.3.6 Development of land within the GDA shall take place through private initiative on individual plots or larger scheme areas pooled by constituent land owners.
- 18.3.7 Trunk Infrastructure shall be developed as follows:
 - i) DDA/ Service Providing Agencies (SPA) can develop infrastructure against payment of EDC by landowners.
 - ii) Private entity can develop infrastructure on the basis of plan approved by DDA/Service Providing Agencies (SPA).

18.4 Applicable Norms

18.4.1 The following grades of development shall be permitted:

Table 18.1: Grades of development permitted in GDA

	Grade - 1	Grade - 2	Grade - 3
A. Permissibility			
1.Minimum Land Area	min. 600 sq.m	4000 sq.m	10,000 sq.m (1 ha)
2.Minimum Access Road	6 m ROW	Plot must be accessible from 12 m RoW, of a continuous length equivalent to at least 15% of the perimeter of the plot	Plot must be accessible from minimum 30 m RoW, of a continuous length equivalent to at least 15% of the perimeter of the plot
3.Green Rating*	Not required	Entire scheme shall meet minimum Green Ratings of GRIHA 3 or equivalent	Entire scheme shall meet minimum Green Ratings of GRIHA 3 or equivalent
4.Activities Permitted	<ul style="list-style-type: none"> • Agriculture, Horticulture, Floriculture, Forestry • Smriti vans, Burial Grounds, Cemeteries and Crematoriums • Composting facility • Natural wastewater treatment facility • Solar fields and other renewable energy installations 	<ul style="list-style-type: none"> • Farmhouses • Open air markets/mandi (e.g. farmers' market, handicraft or used goods markets) • Zoological parks and Aviaries • Sports facilities • Primary and secondary education facilities • Healthcare facilities (including veterinary 	<ul style="list-style-type: none"> • Higher education campuses (including vocational training) • Non-polluting work centres like cyber and knowledge industry, Research & Development, • Agro processing and packaging, cold storage • Green Houses • Convention and

		facilities) <ul style="list-style-type: none"> • Resorts, motels and clubs • Storage facilities, showrooms and repair workshops/ service centres to be permitted on 18 m RoW and above. • Green Houses • All Grade 1 uses permitted with FAR as prescribed under Grade 1 • Animal Husbandry • Socio-cultural facilities 	exhibition centres <ul style="list-style-type: none"> • Concert Spaces, stadiums**, cultural performance spaces, museums, art galleries • Amusement parks (except water parks that will not be permitted within GDA). • All Grade 1 & 2 uses permitted with FAR as prescribed under Grade 1
B. Development Control Norms			
1. Permissible FAR	FAR: 5 (with minimum 30 sq.m and maximum 200 sq.m of built up area on any size of land)	FAR: 20 (with additional purchasable FAR of 10)	FAR: 60 (with additional purchasable FAR of 20)
2. Maximum Ground Coverage	5%	10%	20%
3. Mandatory Wooded Area	No requirement	15% of plot area	45% of plot area
4. Setbacks***	3 m setback on all sides	10 m front setback and 5 m. setbacks on remaining sides. This may be relaxed as per Clause 18.5.1(iv)	10 m setback on all sides.
5. Basements	Not permitted	Permitted only under built structures within permissible FAR	Permitted only under built structures within permissible FAR
6. Parking	• 5% of plot area to	• 10% of plot area	• 10% of plot area

Provisions****	be earmarked for surface parking (to be kept unpaved)	to be earmarked for surface parking (to be kept unpaved)	to be earmarked for surface parking (to be kept unpaved)
7.Paved Surfaces	<ul style="list-style-type: none"> • Paved surfaces shall not exceed 5% of the plot area after utilising the ground coverage. • Water absorbent paving material to be used in 50% paved area. 		

* Grades 2 and 3 developments shall also adhere to any other greening norms prescribed by DDA.

** Stadiums shall be permitted a maximum FAR of 40.

*** All structures falling along National Highways to adhere NHA norms.

**** Except in case of plots proposed for events/gatherings where minimum parking requirements shall be as per local body policy.

18.4.2 Compatible mix of activities are allowed provided permissible FAR and access conditions are met as per Clause 18.4.1.

18.4.3 All developments shall adhere to prescribed green ratings and any violation of these norms shall be penalized. All GDA schemes must achieve a mandatory GBF of 0.4. Incentives may be provided for achieving higher than prescribed GBF.

18.4.4 Greenhouses, solar fields and other renewable energy installations fields shall be permitted under all grades, provided the total area under these installations is not more than 30% of the plot (after excluding the Mandatory Wooded Area as applicable).

18.4.5 Maximum 20% of the permissible FAR can be utilised for supporting facilities like small shops, restaurants or office. (ref: DCN)

18.4.6 All schemes shall be designed as ecologically self-sustaining units as follows:

- i) 100% decentralized treatment and maximum reuse of wastewater.
- ii) 100% on site processing of all green waste and animal waste.
- iii) 30% of the on-site energy requirements are met through renewable energy.
- iv) Optimum on-site trapping of storm water through mandatory rainwater harvesting, unlined storage ponds and reservoirs as part of landscaping and urban design.
- v) These facilities of composting and recycling can be developed as shared facilities.

18.4.7 The following shall be permitted/allowed:

- i) Levy any entry or access fees, rentals;
- ii) Option for rental/lease models for implementation and management;
- iii) Sub-divide their land and sell/lease plots as part of farmhouse or theme farming clusters, etc.;
- iv) Use the agricultural, forestry or other produce from the land commercially.

18.4.8 Change of grade of development is permitted, provided all conditions are met as per Clause 18.4.1. The Mandatory Wooded Area shall be increased as per the grade change. However, under no condition shall this area be reduced once approved under a certain grade.

18.4.9 DDA shall identify ecologically sensitive areas (e.g. low-lying areas, potential sites for ground water recharge, existing areas of high tree density, etc.), where only Grade 1 development shall be permitted.

- i) Owners of such lands shall be compensated in the form of TDR that can be utilised within identified receiving areas.
- ii) In case a portion of the plot falls under ecologically sensitive area, it can be utilised to meet the Mandatory Wooded Area requirements. The remaining plot may be used for any Grade of activity, as per Clause 18.4.1. In such cases, the compensatory TDR will only be awarded to the extent of land falling under ecologically sensitive area.
- iii) The norms for public gathering, events and functions shall be as per the policy of the concerned local body.

18.5 Special Conditions for Farmhouses

18.5.1 The following conditions shall be met for farmhouse developments:

- i) New farmhouses shall be permitted in the form of standalone plots or farmhouse clusters. Standalone plots shall be permitted on minimum 12 m RoW. In farmhouse clusters, the internal roads shall be 9 m RoW, the cluster access should be from 12 m RoW.
- ii) Existing farmhouses constructed on private lands (till the date of notification of this Policy) with minimum access of 9 m, shall be regularised under Grade 2.
- iii) Where RoW is less than 9 m, all landowners along the street shall provide land to fulfil the access conditions, however the permissible FAR shall be applicable as per the original plot. In case this is not feasible, a minimum of 6 m RoW shall be provided with appropriate road geometrics as given in UBBL/IRC to ensure smooth movement of emergency vehicles.
- iv) Existing Farmhouses that do not meet the setback requirements for Grade 2 developments, shall provide setbacks on front and any one side of at least 5 m.

18.5.2 Other norms applicable for all farmhouse developments:

- i) Maximum built up area for a farmhouse plot (whether standalone or part of a cluster) shall not exceed 3000 sq.m irrespective of plot size.
- ii) Height of the built structures shall not exceed 12 m.
- iii) Basements in existing farmhouses that exceed the permissible FAR shall be regularised upon payment of requisite regularization charges up to the maximum extent of permissible ground coverage.
- iv) In addition to permissible FAR, 2 dwelling units of 30 sq.m each for community service personnel shall be permitted per 4000 sq.m of land area (up to a maximum of 5 such dwelling units per farmhouse plot).
- v) Watch & ward guard unit will be permitted adjacent to boundary or entrance gate up to a maximum of 20 sq.m as per UBBL free from FAR and setback norms.
- vi) Sub-division of plots shall be permitted not less than 4000 sq.m with an

independent access from minimum 9 m RoW.

18.6 Provision of Infrastructure and Connectivity in the GDA

- 18.6.1 DDA shall prepare a GIS-based Integrated GDA Plan (IGP) in coordination with SPAs. The IGP will be a structure plan (with no pre-identified land uses) indicating the following:
- i) Excluded areas (as given in the Regulations to this Policy);
 - ii) Eco sensitive areas;
 - iii) Major access roads that will provide connectivity to the GDA. This will include all Master Plan, zonal plan roads and any local or revenue roads.
- 18.6.2 The alignment of Master Plan and Zonal plan roads passing through Green Development Area shall be adhered to.
- 18.6.3 Development of zonal roads shall be undertaken by concerned authorities to ensure connectivity to GDA. Land requirement for such roads shall be met through a pooling process as detailed in the GDA Regulations and suitable incentives such as TDR may be provided.
- 18.6.4 Landowners shall provide land for social infrastructure and utilities such as police stations, fire stations, fuel stations, sub-stations, telecom towers, etc., as per local needs. The norms including road access conditions, setbacks etc. specific to the particular facility need to be adhered to. All such facilities can be developed on any land in the GDA as per permissibility in master plan and as per notified GDA Regulations.
- 18.6.5 Provision of trunk infrastructure for water, power and telecommunications shall be as per the Regulations to this Policy.

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19.0 URBAN REGENERATION

- 19.1.1 A large number of areas in Delhi were developed between 1940-1970, resulting in an old built stock. Many of these areas are in a dilapidated state, in need of regeneration and can be utilised more optimally. These areas have different characteristics, needs, potentials and constraints, highlighting the requirement for a nuanced strategy for regeneration across the city.
- 19.1.2 The strategy is to use regeneration as a planning and design tool for renewing ageing and unsafe building stock and improving the quality of life of people living and working in these areas. It will also facilitate provision of physical and social infrastructure, revitalisation of historically and culturally significant areas, enhancement of the public realm, and strategic development in select areas by unlocking their latent potential.

19.2 Guiding principles

- 19.2.1 **Nuanced framework** to address different contexts ranging from planned residential neighbourhoods and economic centres, to dense unplanned areas.
- 19.2.2 **Flexible framework** with the option of using a mix of instruments for regeneration of an area, namely, retrofitting, reconstruction or full/partial redevelopment, provided that the requirements of structural safety, sustainable services and improved walkability are met. Reuse of existing good quality-built stock is a sustainable circular economy approach to construction.
- 19.2.3 **Integrated framework for regeneration** allowing amalgamation and reconstitution of plots to achieve integrated planning, creation of well-proportioned open spaces, improvement of road networks, walkability and sustainable site design.
- 19.2.4 **Incentivised framework linked to public outcomes**, providing incentives such as higher FAR or relaxed norms/charges on the condition that the project will fulfil public purpose for example, creation of new public spaces and parks, sustainable development etc.
- 19.2.5 **Strategic development framework** to unlock the value of high potential areas in the city and achieve a better urban form over the long term (25-30 years), with higher FAR, densities and mix of uses concentrated closer to public transit nodes and networks and facilitate development of strategic hubs.

19.3 Applicability

19.3.1 This **Policy shall** apply to all existing developed areas, except the following:

- i) Areas under natural greens and water bodies, drains and buffers and any other areas identified for environmental protection
- ii) Zone 'O'
- iii) Green Development Area
- iv) Land Pooling Area
- v) TOD Nodes
- vi) Monument Prohibited Area and notified heritage sites/plots
- vii) Civil Lines Bungalow Area (as per layout plan of North Delhi Municipal Corporation & DDA)
- viii) Lutyen's Bungalow Zone (as per layout plans of NDMC, L&DO)
- ix) Embassies/ Diplomatic Enclaves/ Foreign Missions

19.3.2 **Regulations** for Regeneration shall be prepared and notified within 6 months of notification of the Plan.

19.4 Reconstruction at Plot level

19.4.1 All buildings in Delhi, except heritage buildings and illegal structures, are permitted individual plot level reconstruction as per applicable development control norms. Regeneration FAR shall only be available for plots that fulfill the conditions of this Policy (including preparation of Regeneration Plan as per Clause 19.5).

19.4.2 The following typologies shall only be permitted reconstruction or addition/ alteration at plot level as per the following provisions:

19.4.2.1 **Plotted residential development** shall be permitted individual plot level reconstruction utilising the prevailing FAR for plotted housing as per MPD.

- i) Small sized plots may amalgamate only up to an area of 64 sq.m.

19.4.2.2 **Mixed Use Streets/ Commercial streets:** plot-level reconstructions as per norms for residential plotted development shall be permitted.

- i) Linear amalgamation of single line of plots along the street shall be permitted, provided that individual plots are 500 sq.m. Continuous active frontage shall be maintained along the street. Such schemes shall provide parking requirements within the plot.
- ii) Additional FAR of 10% of permitted FAR shall be provided for stack parking.

19.4.2.3 **Non-Hierarchical Commercial Centres/ designated CCs/ designated LSCs/ designated CSCs/shop-cum-residence plots:** shall be permitted to undertake plot-level reconstruction according to permissible plotted residential FAR.

- i) The permissible ground coverage shall be as per footprint of the existing structure, circulation space and open area shall be retained.

- ii) In shops with shared walls, property owners may come together and undertake reconstruction at block or street level.
- iii) Maximum two adjacent plots/ properties can be amalgamated.

19.4.2.4 **Plots with non-heritage buildings in Shahjahanabad** shall be permitted plot level reconstruction as per the following conditions:

- i) The grain of the fabric and street morphology shall be preserved. The existing circulation pattern may be improved without restructuring.
- ii) Plots shall be eligible for FAR as per norms for residential plotted housing. Maximum permissible height shall be 12m. Plots that are unable to utilise the permissible FAR shall be eligible for TDR.
- iii) Existing basements at plot level can be used for storage. No new basement shall be permitted in any building.
- iv) Permissible ground coverage shall be the same as existing.
- v) Built-to-edge frontage shall be maintained along access roads and no stilts shall be permitted in the Walled City Heritage Zone.
- vi) Mandatory ECS norms shall not be applicable in the Walled City Heritage Zone, and minimal parking shall be permitted for residents only.
- vii) Amalgamation shall be permitted only up to a maximum of 2 plots with non-heritage structures.
- viii) Local level commercial activities shall be permitted on ground floor. Entire building may be permitted to have retail, guest house, boarding and lodging, socio-cultural facilities, repair shops, restaurants, etc shall be permitted, if access from minimum 6m road is available.
- ix) Norms for social facilities shall be as per Clause 19.10.4.2
- x) No projections/ chajjas/ balconies shall be permitted in structures facing streets less than 6m wide.

19.4.2.5 Integrated Regeneration Plans with specific building and urban design controls shall be developed on a case to case basis for special areas in Karol Bagh, area outside walled city and any other areas identified by the Authority from time to time.

19.4.2.6 **JJ Resettlement Colonies:**

- i) Plot level reconstruction shall be permitted with amalgamation of plots up to a maximum of 64 sq.m.
- ii) Regeneration Scheme shall be permitted for the entire area under a JJ Resettlement Colony as per the norms for Slum Rehabilitation.

19.5 Regeneration Plans

19.5.1 For comprehensive planning, Regeneration Plans (RPs) covering larger area shall be prepared. Thereafter separate Regeneration Schemes may be designed and implemented for single or multiple plots.

19.5.2 RPs shall demarcate a public road grid/network of 18-24m roads @ approximately 500m c/c to provide access and circulation. Additional infrastructural requirements shall be provided in the RP.

- 19.5.3 RPs may be prepared by DDA or by any Developer Entity (DE) interested in undertaking Regeneration Scheme/s. RPs prepared by DEs shall be submitted to DDA or local body under whose jurisdiction the area falls for approval. DEs may also approach DDA to prepare RP for a particular area where more than one Regeneration Scheme is identified.
- 19.5.4 RPs shall be approved for an area of minimum 4 Ha or any area with well-defined boundary:
- 19.5.4.1 RP of an existing approved layout plan or a pocket/ block/ other sub-division having well defined boundaries shall be considered. Direct access from minimum 18m RoW along one longer edge is mandatory. For e.g. a pocket or sector in a group housing colony or a sub-division of an industrial layout.
- 19.5.4.2 RPs for LSC, CC, DC and integrated office complex shall be prepared for the entire approved layout.
- 19.5.5 On approval of the RP, smaller areas within the RP can submit for individual Regeneration Schemes after meeting the following requirements:
- 19.5.5.1 Minimum prescribed access conditions are met.
- 19.5.5.2 Regeneration Schemes shall not be permitted on vacant land. At least 50% of the cumulative FAR (permissible at the time of construction) on the Scheme area should be built up at the time of submission of the scheme for regeneration. This condition shall not apply to strategic areas i.e. TOD Schemes, Business Promotion Districts or any other strategic area notified by the Plan.
- 19.5.6 Roads and public facilities shall be provided in all Regeneration Schemes as per approved RP.

19.6 Norms for Regeneration Schemes in planned layouts

- 19.6.1 Regeneration Schemes shall have access from road of minimum 18m RoW. Amalgamation shall be permitted only for plots with the same gross land use. Reconstitution of plots may be done for the entire scheme area.
- 19.6.1.1 All schemes shall be permitted to use a mix of strategies to undertake regeneration as per clause 19.2.2.
- 19.6.1.2 Public areas such as roads, open spaces, drains, etc. may be included for integrated planning provided that public roads are less than 18m RoW and public drains with width of less than 5m, and public parks not bigger than 'tot-lots' not hampering the access to the adjoining plots. Such areas shall not consider for computation of permissible FAR and ground coverage.
- 19.6.1.3 Reconstitution of plots shall be permitted. Reconfiguration of existing roads and open spaces shall be permitted, provided that:
- i) the reconfigured layout provides equal or more area under roads and open spaces. In areas where a fine network of streets already exists, it shall be preserved as far as possible.
 - ii) due approval has to be obtained from the concerned public agencies for

reconstitution of public parks and roads. Reconstituted public areas shall be handed over to the concerned public agency and remain open to public. there is zero or minimal damage to existing trees.

19.6.1.4 Regeneration schemes shall receive no additional water supply over and above the existing requirement except for Schemes with vacant land/s for which additional water supply may be provided on a case to case basis. The additional requirement shall be met by recycling of water and tapping of rain water.

19.6.2 Minimum area for a Regeneration Scheme shall be 3000sq.m. This shall be relaxed to 2000 sq.m. for Cooperative Group Housing Societies and 1000 sq.m. for Industrial plots.

19.6.3 The following segmented Regeneration FAR shall apply to Regeneration Schemes.

No	Factor for calculating incentive Regeneration FAR	Scale of development (minimum 3000 sq.m.but lesser than 1ha)*	Scale of development (minimum 1 ha but lesser than 4ha)	Scale of development (4ha and above)
1	General Regeneration Factor (available to all Regeneration Schemes)	1.1X**	1.15X	1.2X
2	Sustainable Urban Services (SUS) Factor (additional FAR available for implementing requirements 2A and 2B given below)			
2A	Green Rating***	0.15X (if platinum/5 Green Rating is achieved)		
2B	20% public open green space	Not applicable	0.05X	
3	Age Factor (additional FAR only available to schemes with 50% buildings older than 40 years)	0.1X		
Maximum incentive Regeneration FAR		1.35X	1.45X	1.5X

* for industrial and cooperative group housing plots, the minimum scheme area shall be as per Clause 19.6.2

**X stands for the current permissible FAR for each plot being included in the Regeneration Scheme

***Any green rating system as approved by Government from time to time.

19.6.4 The following shall apply to Regeneration Schemes:

19.6.4.1 Different premises within the Scheme shall be permitted additional uses as per the DCN.

19.6.4.2 Good quality EWS housing shall be provided within the Regeneration Scheme as per the norms of the Plan. The EWS FAR shall be over and above the residential FAR, calculated as 15% of the maximum permissible residential FAR in the scheme. The requirement for EWS housing shall be met as a separate well-designed area within the Scheme with low/mid-rise, high-density built form, with access to the public greens and social facilities.

- 19.6.4.3 For Schemes of less than 3000 sq.m. area, the option of collective provision of prescribed EWS housing on an alternate site may also be explored.
 - 19.6.4.4 10% of the area of the Scheme shall be mandatorily developed as a single consolidated Green Public Space for public use and handed over to the local body/DDA. In case Schemes of 1 ha and above, this requirement may be met by providing multiple parcels that are usable to the community as public space, with at least one parcel of 1,000 sq.m.
 - 19.6.4.5 All Regeneration Schemes shall achieve a GBF factor of 0.2 (ref: DCN).
 - 19.6.4.6 All schemes located along drains or water bodies shall maintain minimum mandatory buffers and building orientation as per ENV2.
 - 19.6.4.7 All Schemes of plots more than 1ha shall provide public plazas as per HCP1. Corner plots on major roads shall mandatorily provide corner plazas.
 - 19.6.4.8 Active frontage shall be maintained along all roads of 18m and above RoW.
 - i) A setback of 3m shall be maintained with built-to-edge development for 70% of the building edge. At least 50% of such built-to-edge frontage shall be kept active on the ground/ podium floor by using arcades, colonnades, shop-fronts, pedestrian entries, plazas, etc. Residential schemes shall maintain at least 20% active frontage.
 - ii) Buildings shall be recessed beyond a height of 10m or after two floors.
- 19.6.5 In case of residential schemes:
- 19.6.5.1 Plots earmarked for local level facilities (except senior secondary schools) can be included in the scheme with approval of concerned agencies. In such cases, equivalent facilities of the same type and area/pro rata basis as per norms shall be provided in the scheme.
 - 19.6.5.2 At least 5% of the permissible FAR shall be utilised for provision of additional local facilities. Schemes of 4 ha or more shall be eligible to provide city level PSP facilities as per prevailing norms.
 - 19.6.5.3 5% of the FAR may be utilised for commercial activities (as permitted in CSC and LSC).
 - 19.6.5.4 Such PSP and commercial uses as given in Clauses 19.6.5.2 and 19.6.5.3 may be developed through vertical mixing.
 - 19.6.5.5 Increase in the number of dwelling units shall be permitted in the scheme area (even in case of cooperative group housing societies for which relevant regulations/act may be amended by the Registrar of Societies).
- 19.6.6 In case of Regeneration Schemes within 500m radius of transit stations (except those declared as TOD Nodes), the following shall be permitted:
- 19.6.6.1 Ground coverage up to a maximum of 50%
 - 19.6.6.2 Parking norms as applicable in TOD Schemes
 - 19.6.6.3 Residential Schemes may utilise up to 10% of the permissible FAR for provision of PSP facilities

19.7 Strategic Regeneration

- 19.7.1 Business Promotion Districts (BPDs) shall be promoted as strategic economic and cultural hubs. RP shall be prepared for the entire area identified as BPD.

19.7.2 Schemes within BPDs shall be developed as per Clauses 19.6.1 and 19.6.4. higher Regeneration FAR shall be provided for such schemes as per the following table:

No	Factor for calculating incentive Regeneration FAR	Scale of development (minimum 5000 but lesser than 1 ha)	Scale of development (minimum 1 ha but lesser than 4 ha)	Scale of development (4 ha and above)
1	Base Regeneration Factor (available to all Regeneration Schemes within BPDs)	1.2X*	1.3X	1.4X
2	Sustainable Urban Services (SUS) Factor (additional FAR available for implementing requirements 2A and 2B given below)			
2A	Green Rating	0.15X (if platinum/5 Green Rating is achieved)		
2B	20% public open green space	Not applicable	0.05X	
3	Use Promotion (USP) Factor (additional FAR only available for implementing non-residential uses)	0.2X	0.2X	0.2X
Maximum incentive Regeneration FAR		1.55X	1.7X	1.8X

*X stands for the 'Base FAR' i.e. the current permissible FAR for each plot being included in the Regeneration Scheme.

19.7.3 7.3 Schemes within BPDs shall be permitted maximum 275 FAR at Scheme level and additional 25 FAR in the form of TDR.

19.8 Integration of undeveloped private land parcels

19.8.1 There are some privately owned land pockets in Delhi that have remained outside the purview of planned development up till now due to reasons such as denotification from acquisition, exclusion from acquisition, legal encumbrances, etc. Planned development of such land pockets shall be as per "Regulations for Enabling the Planned Development of Privately Owned Lands".

19.9 Regeneration of Unplanned Areas

19.9.1 A number of Delhiites live and work in unplanned and/or unauthorized areas, characterized by poor condition of buildings, inadequate accessibility (particularly during emergencies) and inadequate physical and social infrastructure. However, these areas have also emerged as high density, mix-use hubs, providing affordable options for housing, micro, small and medium enterprises. Many heritage urban villages are also reinventing themselves as centres of high-end retail and cultural economies. There is a need to reinforce this potential, while incrementally improving safety standards, infrastructure and quality of life in these areas.

19.9.2 Four broad typologies of unplanned areas have been identified in the city. Provisions for regeneration have been provided for each type:

- i) Unauthorized Colonies (UCs), including Regularized Unauthorized Colonies and those identified for regularization (19.10)
- ii) Urban Villages, including notified Lal Dora and Extended Lal Dora areas in the city (refer Clause 19.10.6)
- iii) Slums and JJ Clusters (refer Clause 19.11)
- iv) Non-conforming industrial areas (refer Clause 19.12)
- v) Non-Conforming Godown clusters (refer Clause 19.13)

19.10 Regeneration of UCs

19.10.1 UCs/part UCs shall be taken up for improvement in the following ways:

- i) Constituent land/property owners or RWAs can come forward with a UC Regeneration Scheme. Such schemes shall be considered as independent layouts for layout and building sanctions and may be proposed in any of the UCs, with or without regularized layouts.
- ii) UCs may alternatively apply for regularization of their existing layouts as per Regulations. Once the layout is approved, individual land/property owners may proceed for building plan sanction.

19.10.2 **UC Regeneration Schemes:** UCs/part UCs that wish to implement a UC Regeneration Scheme shall come forward as a Developer Entity (DE) and submit a scheme as per processes set out in the relevant Regulations. The following norms shall apply:

19.10.2.1 The scheme area shall have direct access from an existing road of 12m RoW (for atleast 15% of the perimeter of the scheme). This condition may be met by providing area for road widening, provided that the scheme includes an entire road stretch that connects with a road of minimum 12m ROW on at least one side.

19.10.2.2 Four types of schemes can be proposed:

- i) Level 1: 2,000 – 3,000 sq.m. consolidated land area
- ii) Level 2: 3,000 – 5,000 sq.m. consolidated land area
- iii) Level 3: 5,000 – 10,000 sq.m. consolidated land area
- iv) Level 4: More than 10,000 sq.m. consolidated land area

19.10.2.3 A large proportion of the prescribed setbacks shall be utilised for development or widening of roads. This shall not only improve accessibility within the UC but also provide opportunities to adjoining unplanned areas to come up with UC Regeneration Schemes by fulfilling the minimum access condition. As such all land for public roads shall be handed over to the concerned local body whenever required.

19.10.2.4 DEs shall ensure that the scheme has a regular shape and boundary. Linear amalgamations of single line of plots along a road shall not be permitted, unless the individual plots are 750 sq.m. or more in area.

19.10.2.5 Two or more adjoining UCs/ part UCs may be brought under a single UC Regeneration Scheme. A scheme may also include additional area outside the boundary of the UC if the land/property owners on both sides agree to plan in an integrated manner. This additional area shall not be more than 25% of the scheme area and MPD norms as per land use shall apply on this area for calculation of FAR.

19.10.2.6 Public areas such as roads, open spaces, drains, etc. may be included in Level 3-4 schemes for purposes of integrated planning. However, the area under such public facilities shall not be considered for meeting minimum area requirements or computation of FAR and ground coverage. Such areas may be reconfigured as part of the final layout provided all general conditions mentioned in Clause 19.4.5 are followed.

19.10.3 FAR for Regeneration Schemes in UCs:

19.10.3.1 FAR for a UC Regeneration Scheme shall be calculated as follows:

Area of plot (sq.m.)	Permissible FAR*
Up to 175	350
175 up to 250	300
250 up to 750	250
750 up to 1500	225
1500 and above	200

*In case the computed built area for a plot is less than that permitted in a lower category plot, the maximum built area of the lower category shall be permitted

19.10.3.2 In order to improve the availability of facilities in UCs, a special Amenities FAR will be available as an incentive regeneration FAR:

Level of UC Regeneration Scheme	Amenities FAR	Regulating conditions
Level 1	20	Secondary schools and city-level facilities shall not be permitted
Level 2	30	
Level 3	40	All PSP uses permitted, provided that open space requirements are met. Separate entry/exit and service cores shall be provided for city-level facilities.
Level 4	50	

19.10.3.3 Permissible scheme FAR shall be the sum of FARs of all constituent land parcels with additional incentive FAR in the form of Amenities FAR.

19.10.3.4 The base land use for all schemes shall be Residential.

- i) While standard MPD FAR of 200 shall be considered Base FAR and be free of any regularization charges, all additional Scheme level FAR will have to be purchased by the DE at rates prescribed by DDA. Such charges shall be waived for every affordable rental housing unit of 60 sq.m. created by the DE and maintained at regulated rents for a period of 15 years. Such properties shall be part of a public rental housing inventory and all rental transactions for such properties shall be executed through a portal created by DDA for the purpose.
- ii) 5% of the final scheme FAR shall be mandatorily utilised to provide local level commercial and PSP facilities. The DE shall have the option of utilizing up to 15% of the FAR for such facilities.

19.10.4 Other development norms for Regeneration Schemes in UCs:

19.10.4.1 The following other development norms shall apply:

Parameter	Level 1	Level 2	Level 3	Level 4
Ground coverage	Up to 50%	Up to 50%	Up to 40%	Up to 40%
Minimum Setback as per edge condition*	- 2m on 12m and above ROW - 4.5 m on sides with access from less than 12m ROW - 6m on all sides adjoining existing built-up			
Public space**	10% as a single plot	10% as a single plot	10% as plot for public purpose including at least one plot of 500 sq.m.	10% as plot for public purpose including at least one plot of 1,000 sq.m.
Parking	1.0 ECS/100 sq. m.			
Land for social infrastructure ***	-	5% to 15% based on the existing infrastructure already available within a radius of 1 to 3 km		

*setbacks shall be kept hindrance free at all times and be made available for road widening/construction as and when required

**shall have access from minimum 9m RoW and shall be transferred to the local body. Local body may utilize such public space for provision of parks, plazas or installation of utilities as per requirement.

***shall be provided as one consolidated land parcel with access from minimum 9m RoW and shall be transferred to the local body. Local body may utilize the land for provision of schools or multi-facility centres (including healthcare facilities, community halls, basti vikas kendras, police posts, child-care centres, early learning centres, small-scale non-polluting economic activities, community green-waste recycling, dhalaos or material recovery centres, informal markets, etc.)

19.10.4.2 The following norms shall apply for provision of social infrastructure as part of UC Regeneration Schemes:

Facility*	Facilities built on separate plot			Facilities provided through vertical mixing	
	Minimum Plot Area (sq. m.)	FAR	Ground Coverage (%)	Minimum built up area (sq. m.)	Additional conditions
Primary School	800	120	30	960	Open space requirements to be met
Senior secondary school	2000	150	35	3000	Open space requirements to be met

Any other local facility	500 – 1000 in the form of Multi Facility Centres	120	30	600s	Health facilities with a maximum of 50 bedded facility (@60 sq. m./bed) can be created
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19.10.4.3 Once a UC Regeneration scheme is approved, implementation may be permitted for smaller blocks of minimum 3,000 sq.m in case of level 4 schemes.

19.10.5 Layout Plan approval of existing UCs shall be as per the Regulations.

19.10.5.1 Once the layout plan has been approved, applications for individual plot-level building plan sanctions can be submitted to the concerned local body.

19.10.5.2 The land use of all approved plots shall be 'Residential'. However, to ensure provision of local level facilities within such UCs, the following shall be permitted

- i) Plots measuring 100 sq.m. or more and falling on 9m RoW shall be permitted to utilize up to 100% of the residential FAR for providing local level facilities (except secondary schools) as per the norms for vertical mixing given in Clause 19.2.12 above.
- ii) Up to 5% of commercial shall be permitted on all plots with access from minimum 6m RoW.
- iii) Such uses shall be permitted as part of 'as is' approvals as well as plot level reconstructions

19.10.6 **Affluent UCs:** Affluent UCs as identified by the Central Government shall be eligible for layout plan approval and development of Regeneration Schemes as per prescribed norms

19.11 In Situ Slum Rehabilitation Schemes

19.11.1 The following norms shall apply for in-situ slum rehabilitation schemes.

19.11.1.1 Group housing norms with a minimum plot-size of 2000 sqm (on a min. RoW of 9m) shall be permitted. Maximum density of 900 DUs/ha permitted on residential component of the land.

19.11.1.2 Minimum 60% of the site shall be utilised to provide housing for the identified beneficiaries (@25-40 sq.m. per DU) and maximum 40% shall be remunerative component.

19.11.1.3 The scheme should be designed in a composite manner with an overall maximum FAR of 400 on the residential component of the land. FAR of 300 shall be applicable on the remunerative component of the land with mix of uses.

19.11.1.4 Local facilities shall be provided as part of residential FAR as per the population accommodated under the project/scheme. To support the livelihood of the occupants and create new job opportunities, mandatory 10% of permissible FAR of residential component shall be utilised for creation of commercial and industrial activities. Such facilities may be accommodated as part of vertical mixing. Service floors shall also be

permitted for use as community work centres, provided no permanent structures/fixtures are created.

- 19.11.1.5 Commercial activities permitted in Community Centres (in projects with ROW of minimum 18m) and District Centres (in projects with ROW of 30m or more).
- 19.11.1.6 Common parking is to be provided for residential component at 0.5 ECS per 100 sqm of floor area which can be relaxed wherever required. Parking for remunerative purposes shall be as applicable for the relevant land use.
- 19.11.1.7 Innovative financing mechanisms such as TDR and/or Viability Gap Funding may be utilised to ensure that the social development objectives of such schemes are prioritised while ensuring adequate remuneration to private partners. Possibility of clubbing of multiple schemes may also be examined for this purpose.
- 19.11.1.8 Specific situations may require clubbing of scattered squatters with JJ sites in the neighbourhood to work out an overall comprehensive scheme.

19.12 Regeneration of unplanned industrial areas

- 19.12.1 Besides the planned Industrial Areas, GNCTD has notified clusters of Industrial concentration in non-conforming areas for redevelopment (Annexure 9). More than 70% plots in such clusters have industrial activities.
- 19.12.2 The redevelopment process involves preparation of redevelopment plans for widening of roads, laying of services, development of open space and parking etc.
- 19.12.3 In practical terms, these areas are deficient in terms of services and endanger the environment. The redevelopment of such areas needs to be based on clearly defined parameters in terms of the types of industries which may be permitted, spatial planning norms and environment related conditionalities regarding the provision of essential infrastructure with the participation of the owners/entrepreneurs in a systematic manner.
- 19.12.4 Keeping in view the existing realities, as well as the imperatives of planned development, the following norms shall apply for redevelopment of clusters of Industrial Concentration in Non-Conforming Areas:
 - i) Non-conforming clusters of industrial concentration of minimum 4ha contiguous area, having more than 70% plots within the cluster under industrial activity/use may be considered for redevelopment on the basis of actual surveys. After notification of such clusters by GNCTD, the redevelopment scheme shall be prepared by the concerned local body / land owning agency.
 - ii) The cluster should have direct approach from a road of at least 18 m RoW.
 - iii) Formation of Society and any other such entity shall be mandatory to facilitate preparation of redevelopment plan, pollution control and environmental management, development of services, parking and maintenance.
 - iv) Only permissible industries having clearance from DPCC shall be permitted.
 - v) Amalgamation and reconstitution of plots shall be permissible for redevelopment.
 - vi) All the units shall have to obtain the statutory clearances. The industrial units

- shall have separate electric connections.
- vii) Other stipulations include:
- a. About 10% area is to be reserved for circulation / roads / service lanes.
 - b. About 10% of semi-permeable surface for parking and loading / unloading areas.
 - c. About 8% of the cluster area shall be reserved for parks / greens.
 - d. About 10% of total area to be reserved for infrastructure requirements like CETP, Sub-Stations. Pump House, Fire Station, Police post, etc. as per the norms.
 - e. About 3% area shall be permitted under commercial use.]
 - f. Preparation of plans for water supply by DJB / Central Ground Water Authority (wherever required) along with requirement for pumping stations, storage tanks, ground water recharging / rainwater harvesting; and drainage plan
 - g. Plots measuring more than 100 sq.m to have access from minimum 9.0 m. RoW; and plots measuring less than 100 sq.m to have access from minimum 7.5 m. RoW.
 - h. Common parking to be provided for plots below 60 sq.m, and designated in the layout plan whereas for plots above 60 sqm front setback of minimum 3m shall be provided without boundary wall for parking and loading and unloading.
 - i. Alternatively, the Society may adopt the option of preparation of layout plan/Redevelopment scheme based on the land distribution. as stipulated in the DCN
- viii) Other provisions/development control norms shall be applicable as prescribed. Depending upon ground conditions, the Technical Committee of DDA may relax in the norms up to 10%.

Note: *These facilities mentioned at 12.4.7 (a, b, c, d) shall be provided subject to availability of land within Industrial cluster or in the surrounding area.*

19.12.5 The regeneration work may be undertaken by the societies voluntarily or by the concerned local body/agencies. In case the agencies take up the redevelopment work, they shall collect the charges from the individual industries directly. Requisite charges for change in land use, enhanced FAR and land (wherever applicable) would be required to be paid to the concerned agency.

19.12.6 The regeneration scheme shall be prepared within a period of 2 years of notification of the plan. Scheme shall be completed with the time period of 3 years after approval of scheme. Clusters, which fail to complete the redevelopment proposals within the specified period specified, shall have to shift to other conforming industrial areas and the units functioning in non-conforming clusters shall have to close down. In such cases, the licensing authority will not renew/ issue the licenses to industrial units without obtaining land use clearance from the competent authority. No new licenses will be issued in non-conforming areas, without obtaining land use clearance.

19.12.7 The following areas shall not be eligible for industrial clusters redevelopment scheme: Bungalow Zones (New Delhi & Civil Lines), the Ridge, River Bed (Zone-0), areas along

water bodies, canals, sensitive areas from security point of view, conservation & heritage areas, reserved / protected forests, DDA flats, Cooperative Group Housing Societies, Government flats / bungalows / employer housing etc. and their immediate proximity.

19.13 Norms for Redevelopment of godown clusters in non-conforming areas

19.13.1 The National Capital Territory of Delhi Laws (Special Provisions) Second Act- 2011 provides for formulation of “policy or plan for orderly arrangement regarding schools, dispensaries, religious institutions, cultural institutions, storages, warehouses and godowns used for agricultural inputs or produce (including dairy and poultry) in rural areas built on agricultural land and guidelines for redevelopment for existing Godown clusters (including those for a storages of non- agricultural goods) required to cater to the needs of the peoples of the National Capital Territory of Delhi”

19.13.2 There are large number of godowns, food grain, marbles and other goods have come into existence in the rural area of Delhi last time in earlier MPD, village Lal Dora, extended Lal Dora etc., The NCT of Delhi (Special Provisions) Act 2007 Further extended upto 2023 provide formulation of policy. The following norms shall be applicable to stand alone and godowns cluster.

- i) Stand along godowns:- Stand along godown plots which do not form part of big cluster shall be governed with the following conditions.
- ii) Stand-alone godowns (storage of non-polluting / non-hazardous materials) shall be allowed on minimum 30 m RoW.
- iii) In village abadi (lal dora area) and extended lal dora areas, storage godowns of non-polluting / non-hazardous materials shall be allowed on:
 - a) 9 m. RoW with plot size up to 300 sq.m (7.5 m in case the road is defined / approved by the Revenue Department.)
 - b) 12 m. RoW for plot size above 300 sq.m.
- iv) These godowns shall be allowed subject to fulfilment of parking requirements within the plot and NOC from Delhi Traffic Police and Delhi Fire Services of GNCTD.
- v) Facility for loading / unloading from the vehicles shall be provided within the plot.
- vi) Owners of standalone godowns shall get the plans approved a definite time period. The owners of plots falling in nonconforming areas and existing godowns located on less than 30 m RoW will have to shift to the other conforming areas / godown clusters by 31.12.2023. Such godowns functioning in non-conforming areas shall have to close down within the above said time period.

19.13.3 Non-conforming godown cluster: Non-conforming cluster of godown / warehousing activities of minimum 2 ha contiguous area and having concentration of more than 55 percent of the plots within the clusters may be considered for regeneration of area identified on the basis of actual surveys.

19.13.4 After notification of such clusters by the local bodies / GNCTD, the regeneration scheme will have to be prepared by the society (to be formed by the land owners) based on following norms/ conditions and thereafter approval by concerned local body.

- i) The cluster should have direct access from a road of minimum 30m RoW.
- ii) Formation of group or society shall be mandatory to facilitate preparation of regeneration scheme / plan, development of services, parking and maintenance, pollution control and environment management.
- iii) Amalgamation and reconstitution of plots shall be permissible for regeneration within the scheme area.
- iv) Owners of the godowns shall have to obtain the requisite statutory clearances from the concerned agencies, wherever necessary. After approval of the Layout Plan for regeneration by the society, the identified clusters will be processed for change of land use on receiving the proposal from local body.
- v) Other stipulations shall include:
 - a. About 10% area is to be reserved for circulation / roads / service lanes.
 - b. About 10% area of semi permeable surface for common parking, idle parking and loading / unloading areas.
 - c. About 10% of the area to be reserved for associated infrastructure requirement such as Electric Sub-stations, Fire Station, Police Post, servicing, lodging and Boarding and informal market areas etc. as per the norms.
 - d. Preparation of Plan for water supply from DJB / Central Ground Water Authority (wherever required) along with requirement for pumping stations, storage tanks, ground water recharging / rainwater harvesting and Drainage plan as per norms.
 - e. About 8% of the area shall be reserved for parks / green buffer.
 - f. Utilities such as ESS, underground water storage tank, rain water harvesting system, solar heating / lighting systems etc. will be provided within the plot.
 - g. All plots within the scheme should have direct access from minimum 12 m RoW.
 - h. Other provisions / development control norms shall be applicable as prescribed.

Note: Subject to availability of land for these facilities mentioned at v) (a, b, c, e) within godown cluster or in the surrounding area be considered.

- vi) Requisite conversion charges and any other levies as decided by the Government from time to time (wherever applicable) would be required to be paid to the concerned authority.
- vii) Regeneration plans of individual clusters will have to be prepared by the society and thereafter approved by the concerned local authority / MCD. The redevelopment shall be completed within three years from the date of approval of the plans.
- viii) Clusters, which fail to complete the regeneration proposals within the period specified as above, shall have to shift to other conforming areas and these godowns functioning in non-conforming clusters shall have to close down. In

such cases, the licensing authority will not renew the licenses to such godowns without obtaining land use clearance from the competent authority. Further, no new licenses will be issued in non-conforming areas, without obtaining land use clearance.

19.13.5 Other conditions

19.13.5.1 Development control norms for the godown plot incorporating the risk-based classification as per Table 3.2 of UBBL 2016, shall be as follows:

Plot Size (in sq. m.)	Max. Gr. Coverage (%)	Max. FAR	Max. Height	Parking
Up to 500	70	140	Below 15 m	Common parking to be provided in case of plots upto 300 sq.m. 3 ECS / 100 sq.m. of floor area for plots above 300 sq.m.
Above 500 - 2000	60	120	Below 15 m	
Above 2000 - upto 10,000	50	100	Below 15 m	
Above 10,000	40	80	Below 15 m	

Notes:

1. Wherever the building regulations are given for different categories of plots, the covered area and the floor area shall in no case be less than the permissible covered area and floor area respectively for the largest size of plot in the lower category.
2. Conformity to fire safety norms based on Risk based classification as per UBBL 2016; Delhi Fire Services Act.
3. Common parking shall be provided for plots up to 300sqmt. size and front setback shall be provided without boundary wall for use of parking and loading / unloading purposes.
4. For plots above 300 sq.m, provision for parking and loading / unloading shall be made by the owners within their plots.
5. Provision / use of basement shall be as per the stipulations of MPD-2021.
6. Workroom / Office (not exceeding 25% of the permissible FAR) related to godown activity within godown premises shall be allowed in a covered permanent structure with proper arrangements of dust and pollution control subject to clearance from statutory bodies.

19.13.5.2 The remaining plot owners shall be allowed to continue with existing use or conversion to godowns or any permissible use as per provisions stipulated in the MPD / UBBL / policy guidelines and after obtaining clearances / permissions from all statutory bodies.

19.13.5.3 All the Regeneration Scheme under these guidelines shall conform to all the statutory provisions and Master Plan stipulations / UBBL, 2016.

19.13.5.4 The concerned local body and the stakeholders will work out the mechanism for the recovery of stipulated levies / charges.

19.13.5.5 In case of surrender of land for road widening, the FAR of the original plot will be permissible.

19.13.5.6 The implementation of these regulations be brought out by the Local Body as part of user-friendly Guide covering the Frequently Asked Questions (FAQs) for such projects.

19.13.5.7 The following areas shall not be eligible for godown clusters regeneration schemes: Bungalow Zones (New Delhi & Civil Lines), theRidge, River Bed (Zone-O), areas along water bodies, canals, sensitive areas from security point of view, conservation & heritage areas, reserved/protected forests,

DDA flats, Cooperative Group Housing Societies, Government flats/bungalows/employer housing etc. and their immediate proximity.

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20.0 TRANSIT ORIENTED DEVELOPMENT

20.1.1 Transit-Oriented Development (TOD) is an innovative urban paradigm that involves leveraging existing and upcoming public transit infrastructure and associated large number of users, to ensure sustainable mobility and optimize utilisation of land through compact mixed-use development.

20.1.2 A TOD approach in Delhi will help in bringing people and jobs closer to mass transit and lead to much needed integration of land use and transport in the city. It will result in compact, walkable, mixed-use developments within influence zones of transit stations. This is a critical paradigm shift that can potentially improve public transit ridership, reduce vehicular congestion, and reduce greenhouse emissions and pollution in the long term.

20.1.3 TOD is also an important strategy for unlocking the latent economic potential and land values in the city. It will facilitate the development/regeneration of select nodes/areas in the city through planned intensification of uses and activities, infusion of new infrastructure and improvements in the public realm. This will also allow the city to capitalise on the large-scale investments being made into public transit infrastructure - Metro Rail, Regional Rapid Transit System (RRTS), etc., by facilitating the improvement of old housing stock in addition to creation of new housing stock and economic centres around strategically located transit nodes and opening up opportunities for value capture.

20.1.4 The following key outcomes shall be targeted through the TOD Policy for Delhi.

20.1.4.1 **Optimised density and diversification of uses and activities:** This will be facilitated through higher FAR norms and compact mixed-use development, with augmentation of infrastructure by respective service providing agencies, and application of norms for green buildings and environment conservation. Such an approach will result in achieving an optimum mix of activities and higher job densities close to public transit systems, unlock the development potential of these areas and facilitate value capture.

20.1.4.2 **Enhanced mobility:**

- i) Pedestrian and NMT friendly environment - providing highest priority to pedestrians and NMT, through various strategies such as traffic management plans, street improvements, creation of a fine network of pedestrian and NMT routes and restricted and high- priced public parking.
- ii) Modal shift in favour of public transport through multi-modal integration, enhanced walkability and last mile connectivity.

- 20.1.4.3 **Improved public realm:** Generation of a vibrant and safe public realm for all age groups, with barrier-free universal access, achieved through place-making strategies for creation of public plazas and open/green spaces, multi-utility zones, spaces for public art, etc.
- 20.1.4.4 **Multi-modal integration:** Integration of rail and road-based systems which may include metro, rail/ rapid rail, bus/ BRTS and intermediate public transport (IPT) including feeder services, taxis, auto-rickshaws & private modes including non-motorized transport (NMT) such as cycle- rickshaws, bicycle, pedestrian, etc.

20.2 Applicability of the Policy

20.2.1 DDA will identify TOD Nodes and release maps showing the delineated TOD Planning Area for each TOD Node. The TOD Policy will only be applicable in the influence zones of such TOD Nodes. The Policy will **not** be applicable in the following areas or as notified by DDA from time to time:

- i) Land under drains, natural water bodies, notified forest, any other environmentally protected areas
- ii) Zone 'O' and buffers
- iii) Green Development Areas
- iv) Villages notified under the Land Pooling Policy
- v) Monument Prohibited Area
- vi) Civil Lines Bungalow Area (as per layout plan of North Delhi Municipal Corporation & DDA)
- vii) Lutyen's Bungalow Zone, Chanakyapuri (as per sub-zone D-13 of Zone-D)
- viii) Walled City
- ix) Land under Embassies/Diplomatic Enclaves/Foreign Missions
- x) Unauthorised colonies

20.3 Guiding Principles

20.3.1 This framework will provide higher norms for FAR and mix of uses. In order to manage the impacts of such developments and maximise the opportunities, the Policy will be implemented strategically in select TOD Nodes with high development potential. This will enable the creation of well-planned growth centres, developed as per sustainability principles, capable of developing into future economic drivers and cultural hubs for the city.

20.3.2 DDA will undertake a rapid assessment of the development potential of the various transit nodes in the city and identify a limited number of TOD Nodes on the basis of their strategic importance and ease of implementation.

- 20.3.2.1 Such transit nodes shall be along Metro Rail, Railway, RRTS or any public transit system having the capacity to carry 5,000 or more peak hour per direction traffic (PHPDT) with a dedicated carriageway.

20.3.2.2 Strategic nodes will be identified on the basis of the following broad considerations:

- i) The nodes shall have sites that can be readily taken up as TOD Schemes (adding up to a minimum of 8 ha), such as vacant or underutilised government lands, government housing, commercial centres, industrial estates, etc. Availability of such sites will ensure that trigger projects can be taken up on priority to provide the necessary impetus for other projects to come up in the node;
- ii) They shall have a good mix of green field and/or low-density brown field sites;
- iii) Their location shall be strategic – either as economic/cultural hubs for the city or as potential triggers for development/regeneration of under-developed areas in the city.
- iv) They shall be amenable to augmentation of infrastructure such as water supply, sewerage, etc.

20.3.3 Additionally, further TOD nodes may be considered only if adequate interest has been expressed by constituent land/ property owners i.e., at least 8 ha of land is proposed to be developed in the form of a single or multiple TOD Schemes. A joint application shall be made to DDA comprising of the following:

- i) Map showing the sites proposed to be developed as TOD Scheme/s,
- ii) List of landowners with details of location and area of land proposed under the TOD Schemes,
- iii) Letters of consent from all the land and property owners involved.

DDA shall examine such proposals and may consider such nodes for inclusion under the Policy.

20.3.4 DDA/DE will prepare an IZP for the delineated TOD Planning Area of concerned TOD Nodes. IZPs prepared by DEs shall be submitted to DDA for approval. DDA may appoint expert consulting firms/institutions to expedite the process of IZP preparation.

20.3.4.1 In case two or more TOD Nodes are in close proximity with overlapping TOD Planning Areas, such areas shall be planned as an integrated IZP.

20.3.4.2 The IZP shall integrate any other plans or schemes proposed for the area such as plans for enhancing walkability, street improvement, Parking Management Area Plans, etc. Any Multi-Modal Integration (MMI), station area development projects proposed around the transit stations by concerned transit agencies shall also be considered while preparing the IZP.

20.3.4.3 The IZPs may be updated/revised over time (as required) to reflect the changes due to development activity, to meet the needs of the area.

20.3.5 All lands and properties within the respective Influence Zones will be eligible to undertake development as per the norms of this Policy, provided they fulfil the requirements for undertaking TOD Schemes as per applicability. Interested land owners may apply as a DE by preparing a TOD Scheme as per procedures set out in the Regulations.

20.3.6 While participation under the TOD Policy is voluntary, the Development Control Norms of this Policy can only be availed by participating through approved TOD Schemes. Constituent Land/property owners within the TOD Nodes who do not participate in the TOD Policy shall only be permitted to undertake reconstruction/additions/ alterations to their existing buildings as per the permissible FAR without taking into account TOD benefits. They shall also not be eligible to avail the norms of any other policies of DDA, unless specifically stated otherwise.

20.4 TOD Schemes

20.4.1 TOD Schemes must fulfil the following criteria in order to be eligible:

20.4.1.1 A TOD Scheme must cover a minimum area of 1 ha. TOD Schemes may fully or partly fall within the Intense Development Area of a TOD Node. In any case:

i) At least 25% of the scheme area shall fall in the Intense Development Area

ii) The entire scheme area shall fall within the TOD Planning Area.

20.4.1.2 A TOD Scheme must be accessible from an existing road having a minimum ROW of 18m, of a continuous length equivalent to at least 15% of the perimeter of the scheme.

20.4.2 Plots earmarked for Housing area and Neighbourhood level PSPs (except senior secondary schools and parks) can be included within TOD Schemes, provided that the underlying land belongs to the DE/constituent landowners of the DE. In such cases, equivalent facilities of the same type and of the same area shall be provided in the scheme. These facilities shall be over and above the mandatory PSP requirements prescribed under this Policy.

20.4.3 Public areas such as roads, open spaces, drains, etc. may be included in the TOD Scheme for purposes of integrated planning provided the following conditions are met:

20.4.3.1 Public roads (less than 18m. RoW)

20.4.3.2 Public drains (not more than 5m. width)

20.4.3.3 Public parks (not exceeding the open space hierarchy of 'tot lots' as per the Plan.)

However, the area under such public facilities shall not be considered for meeting the minimum scheme area requirement for computation of permissible FAR/ ground coverage.

20.4.4 Amalgamation and reconstitution of plots (including Housing Area and Neighbourhood PSPs) will be permitted for all TOD Schemes. Reconfiguration of existing roads and open spaces within a TOD Scheme area shall be permitted, provided that:

20.4.4.1 The reconfigured layout provides equal or more area under roads and open spaces. In areas where a fine network of streets for pedestrian movement already exists, it shall be preserved as far as possible.

20.4.4.2 Due approval has been obtained from the concerned public agencies incase of public parks and roads. Such public areas shall be handed over to the concerned public agency and remain open to public at all times.

20.4.4.3 There is minimal damage to existing trees.

20.4.4.4 The areas under existing public parks as per Clause 20.4.3.3 (if any) shall be preserved and shall not be counted towards the minimum Green Public Space requirement of the Scheme.

20.4.5 In case of brown field sites, increase in the number of dwelling units shall be permitted under this Policy (even in case of cooperative group housing societies for which relevant regulation/act may be amended the Registrar of Societies). However, reducing the existing number of dwelling units shall not be permitted in a TOD Scheme.

20.4.6 Development under TOD Schemes can be a mix of new development, partial/full reconstruction and partial/full retrofitting of existing structures.

20.4.7 TOD Schemes may comprise of plots under different land uses/ use premises. The permissible mix of uses for each plot in a TOD Scheme depending upon the assigned land use/use premise shall be as per the Table below:

Table 20.1: Mix of Uses / Distribution of FAR in TOD

Land use/ use premise of plot as per ZDP/ Layout Plan	Permissible Mix of Uses (distribution of FAR in TOD Scheme)			
	Minimum % of FAR for Residential uses	Minimum % of FAR for Commercial uses	Minimum % of FAR for PSP and/or utilities	Other uses
Residential	50%	10%	20%	Other uses* are permitted up to 20%.
Commercial	30%	50%	10%	Other uses* are permitted up to 10%.
Industrial	30%	10%	10%	Remaining 50% of FAR to be for Industrial use.
Government	30%	10%	10%	Remaining 50% of FAR may be for any Government use.
Transportation	30%	10%	10%	Remaining 50% of FAR may be for any use* after meeting all operational requirements for transportation facilities.

PSP (only housing and neighbourhood level PSP plots allowed as per Clause 20.4.2)	The FAR for such plots shall be entirely utilised for PSPs and/or utilities in the TOD Scheme.
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** This remaining FAR can be utilised as a mix of residential, commercial and PSP in any proportion as per project requirement.*

20.4.8 Any plot falling under notified mixed use/ commercial streets that are part of TOD Scheme shall be developed as per norms specified for 'Residential' in Table 20.1.

20.4.9 FAR and mix of uses will be separately calculated for each constituent plot in a TOD Scheme. The overall mix of uses for a TOD Scheme shall be a sum total of the mix computed for each constituent plot. The DE shall have the flexibility to utilise such overall mix on the entire reconstituted scheme area as per design considerations. The prescribed mix can also be achieved through vertical mixing of uses within buildings, provided that:

20.4.9.1 Only non-manufacturing industries (service industry like IT/ITES, BPO/KPO, etc.) and non-polluting MSME units are combined with other uses like residential, commercial and institutional,

20.4.9.2 Educational institutions, anganwadis, creches, old age homes, etc., are not combined with hospitals, penal institutions such as correction facilities, jails, etc. or manufacturing and/or warehousing facilities,

20.4.9.3 Facilities as mentioned above shall mandatorily be developed on the lower floors, preferably with access to open spaces of the TOD Scheme,

20.4.9.4 Separate entry/exits and service cores will have to be provided as required in buildings with vertical mix of uses, complying with statutory requirements of prevalent UBBL.

20.4.10 For plots falling under transportation land use as a part of TOD Scheme, following areas shall be included for calculation of FAR, ground coverage, minimum scheme area and mix of uses:

20.4.10.1 Area of the platforms of transit stations including land under tracks only for the length of the platform.

20.4.10.2 In case of depots, operational areas including land under tracks within such plots.

Over station and over tracks development shall be permitted in these areas. Over station development shall be limited to the length of the platform.

20.4.11 Commercial FAR can be utilised to provide -activities permitted in Community Centres (in TOD Schemes with ROW of 18 to 30m.) and District Centres (in TOD Schemes with ROW of 30m. or more).

20.4.12 The DE shall provide the following mandatory public areas as part of TOD Scheme layouts:

20.4.12.1 Green Public Space:

- i) 20% of the area of the amalgamated plot shall be developed as Green Public Space for public use. The DE shall design and develop this in the form of parcels that are usable to the community as public space, with at least one parcel of 2000 sq.m. Such greens shall be kept un-gated, have direct access from a major ROW (18m. or above) on at least one side and shall be handed over to the concerned local body for maintenance. No parking or basements shall be permitted under such greens.
- ii) Additional 10% green/recreational area shall be developed by the DE for exclusive use of the occupants. This may include plazas, tot-lots, green spaces, gardens, common areas, etc., that can also be provided on top of basements, podiums, terraces, etc. The extent of podium area used for this purpose shall not be included for computation of ground coverage.
- iii) In case of transportation land use, where it is not feasible to create Green Public Space at ground level in TOD Schemes that have large area under tracks, this requirement may be met through podium level public greens. Such greens shall be maintained by the concerned transport agency.

20.4.12.2 Public road network: DE shall provide additional roads/streets for public use within the TOD Scheme as per the following norms.

- i) Road networks to be planned with a vehicular route network of approximately 250m. c/c and pedestrian network of approximately 100m. c/c.
- ii) Based on ground conditions, this may be relaxed up to a maximum of 10%.

20.4.13 City-level PSP plots (community or zonal PSPs and secondary schools) cannot be part of any TOD Scheme. However, in order to meet the additional requirement for health, education and other PSP facilities to cater to the enhanced densities in TOD Nodes, any such PSP plots (greater than or equal to 1 Ha) falling entirely within the TOD Planning Area shall be permitted to apply as stand-alone TOD Schemes. Such schemes can avail an additional FAR of 1.5 times the existing permissible FAR up to a maximum of 500. The following additional conditions shall apply:

20.4.13.1 Mix use norms shall not be applicable to such sites, and the existing use premise shall be retained.

20.4.13.2 In case of school plots, the existing area under playgrounds shall be retained or increased within the same plot.

20.4.13.3 ROW of the adjoining road shall not be less than 30m.

20.4.14 TOD Schemes falling in two TOD Nodes (where the influence zones of such TOD Nodes are adjacent and contiguous) can be considered for approval, provided they meet all other conditions under this Policy.

20.4.15 Joint ventures for station area development or development of multi-modal transit hubs may be considered between multiple transport agencies. Such projects shall be designed to ensure integration between various transport services and may be designed as part of the same building/ complex for seamless commuter movement. Wherever feasible, concourse level integration between TOD Scheme developments and mass transit stations shall be ensured, and the cost for the same shall be borne by the DE.

20.4.16 DE shall execute the development in accordance with the provisions detailed in the TOD Regulations.

20.5 Development Control Norms for TOD schemes

20.5.1 The Development Control Norms of this Policy shall be applicable to all TOD Schemes and prevail in case of conflict with any other policy/provisions within the Plan. Development under TOD Schemes can be a mix of new development, partial/full reconstruction and partial/full retrofitting of existing structures. The strategy to be adopted shall be detailed by the DE as part of the TOD Scheme submission and approved as per the process laid out in the Regulations.

20.5.2 FAR

20.5.2.1 The FAR for a TOD scheme shall be calculated as the sum of FAR calculations for all constituent plots. FAR entitlement for each constituent plot shall be calculated as follows:

- i) The FAR shall be 1.5 times the existing permissible FAR on the plot or 300, whichever is more.
- ii) The maximum FAR limit for any plot included in TOD Schemes shall be 500.
- iii) Larger TOD Schemes with an area of 4 ha and above, having direct access from roads of 30m. RoW, will be eligible for FAR of 500 on all constituent plots, if feasible.

20.5.2.2 While consumption of the entire entitled FAR is not mandatory, the following shall be ensured by all TOD Schemes:

- i) Minimum FAR utilisation shall be equivalent to the existing permissible FAR for each of the plots.
- ii) Overall proportion of mix of uses shall always be maintained.

20.5.2.3 In case of TOD Schemes that include existing service lanes/ public roads/ public drains/ public parks, etc., land under such areas shall not be considered for computation of FAR.

20.5.2.4 Any public amenities provided as part of the development such as public toilets, bridges, etc. shall be free of FAR, subject to the condition that they are maintained regularly by the DE and remain open and accessible to public at all times of the day, failing which, the concerned local body shall take over the same.

20.5.2.5 TOD Schemes that are not able to utilise the permissible FAR due to height restrictions, may be allowed relaxations in ground coverage and setbacks without compromising the area to be maintained under Green Public Spaces and subject to fire safety requirement.

20.5.2.6 Larger TOD Schemes (4 ha and above) with direct access from 30m. or above RoW shall be considered TDR receiving areas and utilise TDR as per DCN.

20.5.3 Size of dwelling units

20.5.3.1 There is no restriction on the size of residential units for accommodating existing dwelling units within the TOD Scheme.

20.5.3.2 In order to encourage affordable and non-ownership housing (rental housing, student housing and hostels) within TOD Schemes, the following

norms shall apply:

- i) The residential FAR remaining after accommodating existing number of dwelling units, shall be used for providing dwelling units of size up to 60 sq.m.
- ii) In case a TOD Scheme comprises of plots with no existing residential development, at least 50% of the residential FAR shall be used for developing dwelling units of size up to 80 sq.m.
- iii) In case of TOD Schemes comprising of a mix of existing built-up and vacant plots, the final mix of dwelling units in the TOD Scheme will be derived on a pro-rata basis as per above provisions.

20.5.4 Ground Coverage and setbacks: Norms for setbacks and ground coverage shall apply to the entire TOD Scheme boundary, as part of the reconstituted plan for the scheme area.

20.5.4.1 Maximum ground coverage of 40% shall be permitted.

20.5.4.2 The following setbacks shall be maintained:

Table 20.2: Setbacks in TOD Schemes

Type of plot edge	Setback
Public road of 18m. and above RoW	<ul style="list-style-type: none"> • No setback • At least 90% of the building line shall be built-to-edge
Roads of ROW < 18m. or site edge facing parks, natural drains, forest, etc.	<ul style="list-style-type: none"> • 6m. setback • The setback to be kept unblocked at all times for public movement.
Shared edge with adjoining plot	<ul style="list-style-type: none"> • Trees/plantation for noise reduction and utilities like fire hydrants shall be permitted

20.5.4.3 **Active frontage** includes arcades, colonnades, shopfronts, pedestrian entries/ exits, plazas, access points, transparent windows etc.

- i) At least 50% of frontage along 18m. ROW streets, and at least 10% frontage along all other streets (including public streets) shall be maintained as active frontage.
- ii) No projections (balconies, awnings, etc.) shall be allowed beyond the built-to line.
- iii) All vehicular entries shall be from side streets. In case of sites where no side streets are available, at least 1 road with ROW of 12m. or more will have to be provided as part of the TOD Scheme.
- iv) Commercial frontages shall have minimum 50% transparent facade (untinted) at ground floor level. Residential frontages shall have balconies/verandas and active spaces facing public ROWs.
- v) The ground floor of all parking structures / podiums or stilts must be lined with active frontage facing the main streets.
- vi) All buildings shall be recessed by 10m. beyond the height of 10m or after two floors. Any further recess required for providing adequate light and ventilation shall be maintained.

20.5.5 **EWS Housing:** DE shall provide good quality EWS housing within the TOD Scheme as per the norms of the Plan. The EWS FAR shall be over and above the residential FAR, calculated as 15% of the maximum permissible residential FAR in the scheme. The requirement for EWS housing shall be met as a separate well-designed area within the Scheme with low/mid-rise, high-density built form, with access to the public greens and social facilities.

20.5.6 **Parking:**

20.5.6.1 TOD Schemes shall provide 1 Equivalent Car Space (ECS) per 100 sq.m. of covered area, with mandatory 5% of the parking area earmarked for bicycles and wheelchairs.

20.5.6.2 DE shall provide at least 50% of all parking facilities within TOD schemes as 'public parking' facility.

20.5.6.3 At least 10% of the parking area shall be equipped with charging points for electric vehicles as per prescribed policy/ UBBL.

20.5.7 **Other controls**

20.5.7.1 **Other building controls:**

i) Building design shall ensure that all dwelling units have natural ventilation and receive direct sunlight in at least one habitable room.

ii) Adequate noise reduction measures shall be incorporated where buildings are adjacent to mass transit stations.

20.5.7.2 **Location of various use premises:**

i) PSP and commercial uses shall be located on lower floors with adequate public frontage.

ii) Facilities such as creches, day care centres for children and elderly shall be provided as part of the TOD Scheme. Such facilities shall be located on a public road created within the scheme with access to public greens planned within the scheme.

20.5.7.3 **Norms for Public Roads within TOD Scheme:**

i) All new roads (including facilities like street furniture, lighting and illumination and public conveniences) shall be as per Street Design Regulations (Annexure 7) and integrate fully with any proposals for MMI, walking and cycling as per the IZP for the TOD Node.

ii) Separate child care rooms, changing spaces for cyclists and drinking water fountains shall be included within the design of public conveniences.

iii) Cycle parking facilities shall be provided at every 100m. interval along the network. These can be calculated as part of the mandatory ECS requirement.

iv) The public road network within TOD Schemes can be partially covered through walkways, bridges or building blocks, provided that:

o The covered length does not exceed 1/3rd of the total length of the network

o Such walkways, bridges or building blocks provide a clear height of 8m from the highest point of the road section.

v) TOD Schemes that include metro stations within the scheme area, shall create pedestrian plazas for congregation/ spill over on ground or at the concourse level as feasible. Such schemes must also include multi-modal

integration facilities for IPT, buses, drop-off for private vehicles, etc. as part of the design.

- vi) The road network shall be kept active at all times through appropriate public activity programming along the edges such as vending zones, plazas, shops, restaurants, open spaces, etc.

20.5.7.4 **Sustainability Features:**

- i) TOD Schemes shall meet all greening norms notified by DDA at the time of approval of the Scheme. Greens and public spaces within a Scheme shall be interconnected to form green-blue and public space networks as far as possible.
- ii) Each TOD Scheme shall ensure the following:
 - o 100% treatment and maximum reuse of wastewater;
 - o Segregation and reuse of 100% green waste;
 - o At least 10% of the energy demand should be met through renewable sources like solar
 - o Optimum retention of storm water for direct reuse and recharge of groundwater as per applicable norms.
 - o Only permeable materials are used for surface parking and open plazas.

Multiple schemes/DEs may come together to meet these sustainability requirements.

- 20.5.7.5 **Universal Barrier - Free Access** - All public spaces, roads, Green Public Spaces, parking areas, buildings, etc. within TOD Schemes and all area improvement works taken up as per the approved IZPs shall be designed for barrier free universal access as per Harmonised Guidelines and Space Standards for Barrier Free Built Environment for Persons with Disability and Elderly Persons, 2016 of the Ministry of Housing and Urban Affairs, Government of India.

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SECTION 8

PLAN MONITORING AND EVALUATION

21.0 MONITORING FRAMEWORK

Chapter code
PME

- 21.1.1 The master plan is a long-term perspective framework for guiding city development. It is critical for the strategies in the Plan to adapt and align with the changing needs and ensure that the provisions remain relevant and effective for achieving the vision and goals identified for the development of the city. This will require a robust monitoring framework to periodically take stock of the key performance indicators, timelines, and action points.
- 21.1.2 The on-ground progress of implementation of various policies of the master plan shall be monitored continuously, thereby reducing time lags in data procurement and analysis. A detailed review shall be conducted every five years and the master plan shall be modified if required.
- 21.1.3 Such a dynamic framework will be supported through the following multi-pronged approach:
- i) **KPI-based Evaluation:** An evaluation framework comprising of various key performance indicators (KPIs) is proposed to measure the effectiveness of the plan. The KPIs are focused on measuring larger outcomes for the city and will help in undertaking course correction for achieving the goals and objectives.
 - ii) **Multi-agency Coordination:** This will comprise of various coordination committees, with members from multiple concerned agencies. These committees will take stock of the progress, facilitate inter-agency coordination, and address hurdles (if any) for implementation.
 - iii) **Data Sharing and Management:** A data protocol shall be defined to decide the process, particulars and periodicity of sharing of data by concerned agencies, to ensure collation required data for supporting plan monitoring.
 - iv) **Dedicated Monitoring Unit:** An interdisciplinary team will be set up at DDA for monitoring the progress of the Plan.
 - v) **Implementation support:** In order to facilitate proper implementation, the business processes associated with implementation of various spatial policies (ref: Section 7) shall be streamlined through single window systems, robust grievance management frameworks and real-time tracking. Technical support shall also be provided to stakeholders for implementation of various projects/schemes.

21.2 Evaluation framework

- 21.2.1 Delhi's progress towards achieving the vision and goals envisioned for the Plan period shall be measured through the following Key Performance Indicators (KPIs):
- i) Reduction in Indigenous Air Pollution
 - ii) Water Pollution Control
 - iii) Green Cover Enhancement
 - iv) Rejuvenation of Water Bodies

- v) Flood Risk Reduction
- vi) Wastewater Reuse
- vii) Groundwater Augmentation
- viii) Reducing Landfill Stress
- ix) Converting Waste to Wealth
- x) Share of Renewable Energy in Total Usage
- xi) Seismic Compliance
- xii) Safety Against Fire Outbreaks
- xiii) Share of Small Format Housing in New Housing Stock
- xiv) Slum Rehabilitation
- xv) Shift towards Public Transport
- xvi) Adoption of Electric Vehicle
- xvii) Human Development Index
- xviii) Heritage Conservations
- xix) Vibrancy of Public Streets
- xx) Female Participation in Workforce

21.2.2 Details of these indicators are provided in Annexure 11.

21.2.3 These indicators will contribute to three key indices linked to the goals of the master plan:

21.2.3.1 **Environmental Sustainability Index:** that corresponds to Goal 1 (G1) of the Plan

21.2.3.2 **Built Environment Index:** that corresponds to Goal 2 (G2) of the Plan

21.2.3.3 **City Vitality Index:** that corresponds to Goal 3 (G3) of the Plan

21.2.4 The KPIs will contribute to computation of these indices as follows:

21.2.4.1 Ten core KPIs contribute to the Environmental Sustainability Index. These are *Reduction in Indigenous Air Pollution; Water Pollution Control; Green Cover Enhancement; Rejuvenation of Water Bodies; Flood Risk Reduction; Wastewater Reuse; Groundwater Augmentation; Reducing Landfill Stress; Converting Waste to Wealth; and Share of Renewable Energy in Total Usage*. Additionally, two cross-cutting KPIs, namely, *Shift towards Public Transport*, and *Adoption of Electric Vehicles*, also contribute to this Index.

21.2.4.2 Six core KPIs contribute to the Built Environment Index. These are *Seismic Compliance; Safety against Fire Outbreaks; Share of Small Format Housing in New Housing Stock; Slum Rehabilitation; Shift towards Public Transport; and Adoption of Electric Vehicles*. Additionally, a cross-cutting variable in the form of *Flood Risk Reduction* also contributes to this Index.

21.2.4.3 Four core KPIs contribute to the City Vitality Index. These are *Human Development Index, Heritage Conservation, Vibrancy of Public Streets, and Female Participation in Workforce*.

21.2.4.4 An overarching **Delhi Liveability Index** shall also be developed for assessing the overall progress of the city in implementing the Plan. This will be computed by using the progress against all 20 indicators.

21.2.4.5 All KPIs are quantitative, and shall be measured against desired targets for each 5-year period between 2021-41. The three coordination committees indicated in Clause 21.3 shall be responsible for setting these desired targets within the first year of plan implementation. The targets shall be set in consultation with the various concerned departments/agencies.

21.3 Multi-agency coordination framework

21.3.1 Three monitoring committees, namely, Environmental Sustainability Committee (ES-COM), Built Environment Committee (BE-COM) and City Vitality Committee (CV-COM) shall be set up to monitor the progress achieved against the three goals of the Plan. The committees shall have representatives from concerned departments/agencies and shall be chaired by a senior officer from DDA.

21.3.1.1 The ES-COM shall lead the monitoring of the progress made against actionable items in chapters ENV1, ENV2, INF1, INF2, INF3, INF4, and take stock of the KPIs related to the Environmental Sustainability Index.

21.3.1.2 The BE-COM shall lead the monitoring of the progress made against actionable items in chapters SS1, SS2, MOB1, MOB2, MOB3, MOB4, and take stock of the KPIs related to the Built Environment Index.

21.3.1.3 The CV-COM shall lead the monitoring of the progress made against actionable items in chapters ECO, HCP1, HCP2, and take stock of the KPIs related to the City Vitality Index.

21.3.2 Sub-committees may be formed under the ES-COM, BE-COM and CV-COM to facilitate the working of the committees. The committees may also direct concerned agencies to prepare detailed Action Plans and Special Projects for achieving the targets.

21.3.3 An annual progress report shall be developed by each monitoring committee, highlighting the status-quo with respect to the on-ground implementation of the Plan and suggesting measures for course correction as required.

21.3.4 The three monitoring committees shall report on an annual basis to a high- powered Apex Review Committee, chaired by the Lieutenant Governor of Delhi. The Apex Committee shall review the annual progress reports, provide coordination support and suggest amendments to the Plan as required.

21.3.5 An annual multi-agency workshop may be organized by DDA to discuss any implementation issues being faced by different agencies, review road maps and take stock of overall progress and future plans and projects.

21.4 Data sharing and management

21.4.1 The Apex Review Committee shall finalize a list of key data points that need to be monitored and shared by each agency periodically for estimating the KPIs. A formal data sharing protocol shall be set up for all concerned agencies indicating the data points, metrics and standardized units, sources and methods for data capture,

periodicity of reporting, etc. This shall be mandatorily followed by concerned agencies.

- 21.4.2 A dedicated web portal shall be set up by DDA for the concerned agencies to upload the data pertaining to each KPI, which will be made accessible to the committees monitoring the respective KPIs.

21.5 Plan Monitoring and Review Unit at DDA

- 21.5.1 A dedicated Plan Monitoring and Review Unit (PMRU) shall be set up at DDA comprising an interdisciplinary team of professionals to carry out the various supportive tasks required for plan implementation.

- 21.5.2 The PMRU shall perform the following indicative tasks:

- i) Develop a data bank based on information received from different agencies.
- ii) Prepare annual review reports based on the data received/compiled.
- iii) Manage the GIS database of the master plan (Delhi Spatial Information System) including updating the database with real time inputs from different agencies, on ground surveys, CLUs, etc.
- iv) Manage the online citizen portal developed by DDA as per Clause 21.6.2.
- v) Conduct or commission studies to evaluate key trends, issues and challenges on a wide range of topics.
- vi) Act as a technical support unit to the Apex Review Committee.

21.6 Implementation Support

- 21.6.1 DDA shall set up online single window mechanisms to support smooth implementation of the various spatial development policies (ref: Section 7) of the Plan. The portal shall act as a one-point facility for making applications, participating in schemes, tracking the status of approvals, etc.

- 21.6.2 DDA shall also develop and maintain an online citizen portal for providing information on a regular basis, as well as for responding to queries made by the citizens. An online dashboard with real time analysis of data and reporting on various milestones/ achievements may be included within the portal.

- 21.6.3 DDA and other government agencies may provide technical assistance and handholding support to stakeholder groups such as RWAs, market traders associations or civil society organizations for conceptualizing, designing and executing various area improvement projects both within planned and unplanned areas of the city.

- 21.6.4 DDA and other government agencies shall ensure continuous engagement with different citizen groups such as women, youth etc., and stakeholders to understand and assess impacts of plan implementation on ground; obtain feedback and solicit views; suggestions on various projects and initiatives planned for the city and to provide opportunities and avenues for citizen-driven innovation.

21.6.5 DDA shall also develop simple to understand FAQs and IEC material, guidelines for topics such as improving public spaces through community action, greening of built environments, etc. and make such material available to public through its online portal.

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SECTION 9

DEVELOPMENT CODE & DEVELOPMENT CONTROL NORMS

22.0 DEVELOPMENT CONTROL NORMS

Development Control Norms are special provisions that regulate development within the framework of the land use plan and policies contained in the Plan. These apply to all plots/integrated schemes/areas and is envisaged to improve the quality of built and natural environment by promoting appropriate development on all sites.

Any development, extension, change of use, new or existing, use conversion, site alteration, relocation, reconstruction and any building or other structure shall be governed by these norms

22.1 Land Use Plan for Delhi 2041

22.1.1 Land Use Plan for Master Plan for Delhi - 2041 (MPD – 2041) has been prepared on GIS (Geographic Information System) platform considering the existing ground/ site conditions. Delhi has been divided into 18 Planning Zones. In the base map various issues such as change of Land Uses notified by Central Government till date, overlapping issues of Zonal boundaries, continuity of existing/ proposed roads, rectification of actual size and shapes of Land Uses/ Use Zones as per actual site condition, refinement of Zonal Plan Boundaries have been resolved and incorporated in the Master Plan.

22.1.2 Mapping of the NCT of Delhi will also be updated from time to time to have valuable data with respect to ground situation, to detect and prevent unauthorised development including encroachment on public land and facilitate the protection of greens.

22.1.3 In order to control the development, the areas have been identified into 27 Use Zones in the Development Code. These Use Zones have been classified broadly in nine categories of Land Uses namely Residential, Commercial, Industrial, Recreational, Transportation, Utility, Government, Public & Semi - Public Facilities and Green Belt & Water Body. The development in these Use Zones would be carried out in accordance with the regulations as laid down in the Development Code and respective chapters.

22.2 Zonal Development Plans

22.2.1 The NCTD has been divided in 18 Planning Zones (Divisions) designated 'A' to 'P' (except Zone 'I') in the Master Plan 2041.

22.2.2 The Zonal plans shall act as link between the Layout Plan and Master Plan. The development schemes and layout plans indicating various use premises shall conform to the Master Plan / Zonal Plans.

22.2.3 In absence of Zonal Plan of any area, the development shall be in accordance with the provisions of the Master Plan. No urban activity shall be permitted without

change of land use / modification to the Master Plan as per the Delhi Development Act, 1957.

The Zone wise approximate area is as given below:

Table 22. 1: Zone Wise Area

S. No.	Zone	Name of Zone	Area (Ha.)
1	A	Walled City + Other than Walled City (OWC)	540.65+628.42=1169.07
2	B	City Extn. (Karol Bagh)	2317.05
3	C	Civil Line	3991.73
4	D	New Delhi	6657.30
5	E	Trans Yamuna	8567.96
6	F	South Delhi-I	11088.82
7	G	West Delhi-I	12311.22
8	H	North West Delhi-I	5452.84
9	J	South Delhi-II	15519.67
10	K-I	West Delhi-II	6461.91
11	K-II	Dwarka	5708.44
12	L	West Delhi-III	22108.97
13	M	North West Delhi-II	5594.68
14	N	North West Delhi-III	14015
15	O-I*	River Zone (Active floodplain)	6295.00
16	O-II*	Riverfront (Regulated)	3638.36
17	P-I	Narela	9623.26
18	P-II	North Delhi	8128.92

Note: *The above areas are approximate and as per GIS. The re-delineation & rezoning of the zones can be done with the approval of the Authority.

22.3 Land Use and Use Zones

22.3.1 The National Capital Territory of Delhi is divided into nine (9) Land Use categories as mentioned in the Table 22.2. Each Land Use category is assigned number of Use Zones, which shall be further subdivided into required number of Use Premises. Any one of the Use Zones may be located at one or more than one places as shown in the Land Use Plan. The boundaries of various pockets of use zones are defined in Land Use Plan.

Table 22. 2 : Land Use and Use Zones

S. No.	Land Use	Use Zones	
1	Residential	RD*	Residential Area
		RF	Foreign Mission

S. No.	Land Use	Use Zones	
2	Commercial	C1	Retail Shopping, General Business and Commerce, District Centre, Community Centre, Non-Hierarchical Commercial Centre
		C2	Wholesale & Warehousing, Cold Storage and Oil Depot
		C3	Hotels
3	Industrial	M1	Manufacturing, Service Industry and Repair Industry
4	Recreational	P1	Regional Park
		P2	City Park, District Park, Community Park, Multi-purpose grounds
		P3	Historical Monuments / Archaeological parks
		P4	Green Buffers
		P5	Sports Facilities/Complex
5	Transportation	T1	Airport
		T2	Terminal/Depot - Rail/MRTS/Bus/Truck, Yards
		T3	Circulation - Rail/MRTS/Road/RRTS/High Speed Rail
6	Utility	U1	Water (Treatment Plant etc.)
		U2	Sewerage (Treatment Plant etc.),
		U3	Electricity (Power House, Sub-Station etc.)
		U4	Solid Waste (Treatment, etc.)
		U5	Drain
		U6	Other Utilities
7	Government	G1	President Estate and Parliament House
		G2	Government Office Complex / Courts/ PSUs
		G3	Government Land (Use undetermined)
8	Public and Semi-	PS1	Health, Education and Research University / University centre, College, Social -

S. No.	Land Use	Use Zones	
	Public		Cultural, Socio Cultural Complex/ Centre, Police / Police Headquarter / Police Lines, Fire stations / Disaster Management Centres, Religious, Burial Ground /Cemetery/ Cremation
		PS2	Transmission Site/Centre
9	Green Belt and Water Body	A1	Green Belt
		A2	River Zone (Active floodplain), water bodies and natural drains

Note:

1. *Land use of Village Abadi (Lal Dora / firni) and Extended Lal Dora, as notified by Revenue Deptt., GNCTD, located in any use zone is residential.
2. Mixed Use Zone in the Land Use Plan may consist of more than one Use Zone.

22.4 Spatial Development

22.4.1 Spatial development shall be governed through specific spatial development policies (DEV 1,2,3,4) for greenfield and brownfield areas.

22.4.2 The Plan identifies Overlay Zones, such as Business Promotion Districts (BPD), Transit oriented Development (TOD), Land Pooling Area, Green Development Area. These zones will enable specific type of development as per applicable norms set out in the spatial development policies.

22.5 Sanction of Plans

22.5.1 Layout Plans / Site Plans and Building plans shall be approved by the Local Bodies and Authority in their areas of jurisdiction.

22.5.2 Authority / Local Body(s) shall be empowered after levying penalty to compound deviations from limits of coverage/ FAR to the extent of 5% of the permissible coverage and FAR, subject to maximum of 13.5 sqm. in building(s) / premises at the time of considering the completion / occupancy certificate. In Group Housing schemes and Public & semi-public facilities, 5% FAR beyond permissible FAR can be compounded by the authority / Local Body at the time of considering the completion/occupancy certificate.

22.5.3 Wherever required, the Technical Committee of the DDA shall formulate policy guidelines for the sanctioning of layout plans, comprehensive/ integrated schemes and re-generation schemes as identified. The Technical Committee shall be empowered to call for the plans from the development organisations / Local Bodies and would give directions / recommendations wherever necessary. Old redevelopment schemes shall be termed as regeneration schemes.

22.5.4 Any change in the location, boundaries and predominant use of use premises shall be duly approved and incorporated in Layout Plan.

- 22.5.5 Layout Plans already approved by the Authority or any other local authority concerned in accordance with law shall be deemed to have been approved. An area in respect of which there is no approved Layout Plan shall be governed by the provisions of the Master Plan / Zonal Development Plan.
- 22.5.6 The service plans corresponding to all layout plans/ integrated schemes, for provision of physical infrastructure like water supply, sewerage, drainage, etc., shall conform to municipal byelaws/ service providing agency.
- 22.5.7 Conversion charges / other levies as prescribed by the Government from time to time shall be payable wherever land use conversion is enabled at premise level by the Master Plan / Zonal Plan or any other Regulations.
- 22.5.8 In case of spatial development, the minimum area prescribed for planning and approval shall be as per applicable policy.
- 22.5.9 Requisite Plans as prescribed under various policies shall be a mandatory requirement for layout and building plan approvals.
- 22.5.10 The provision of requisite social infrastructure within residential use zone, shall be governed by the norms for local level of 10,000 population, as per Table 22.2a

22.6 Hierarchy of facilities

For the purpose of devising an equitable and planned development the essential as well as support facilities need to be provided at different level of development hierarchies ranging from local level to city level. The planning standards for all required facilities are as below

Table 22.2 a Hierarchy of facilities

LEVEL	FACILITIES	NO. OF PLOTS	PER UNIT AREA	TO BE PROVIDED	
				LOP	ZDP
Local Level Pop: Upto 10000	Non-bedded Health Facility	1 @ 10,000	Min. 800 Sqm	√	
	Learning Centre/ Creche	1 @ 10,000	Min. 500 Sqm	√	
	School (Type-I)	1 @ 10,000	Range- 2000-4000 Sqm	√	
	School (Type-II)	1 @ 10,000	Min. 4000-8000 Sqm	√	
	Socio-Cultural facility (Type-I)	1 @ 10,000	Range 800 - 2000 Sqm	√	
	Other Community Facility (Type-I)	2 @ 10,000	Min. 400 Sqm	√	
	Local Level Play Area	1 @ 10,000	Min. 5000 Sqm	√	
	Traffic and Police control room	As per requirement	Max. 25 Sqm		
	Police Post	As per requirement	Max. 150 Sqm	√	

LEVEL	FACILITIES	NO. OF PLOTS	PER UNIT AREA	TO BE PROVIDED	
				LOP	ZDP
	P&T facility (Type-I)	As per requirement		√	
	Milk Booth/ Milk, Fruit & Vegetable Booth/Delhi Milk Supply Booth/ Fair Price Shop	1 @ 5,000	As per standard design of the concerned department	√	
	Tot lot	40 @ 10,000	Min. 125 Sqm	√	
	Local level parks	1 @ 10,000	Minimum 1 ha	√	
	Three wheeler & Taxi Stand	1 @ 10,000	Min. 400 Sqm	√	
	Bus Terminal	1 @ 10,000	Min. 1000 Sqm	√	
	Convenience Shopping Centre	1 @ 5,000	Min. 1000 Sqm	√	
	Local Shopping Centre	1 @ 10,000	Min. 3000 Sqm	√	
	Service Market	1 @ 10,000	Min. 2000 Sqm	√	√
	Informal Sector Market	1 @ 10,000	Min. 1000 Sqm	√	
Community Level Pop: Upto 1 Lakh	Non-bedded Health Facility (Veterinary)	1 @ 1 Lakh	Min. 300 Sqm	√	
	Health Facility (Small)	6 @ 1 Lakh	Min. 1000 Sqm	√	
	Hospital	3 @ 1 Lakh	Range-0.2 to 1.5 ha	√	√
	Socio-Cultural facility (Type-II)	2 @ 1 Lakh	Min. 1000 Sqm	√	
	Police Post	1 @ 1 Lakh	Max. 2500 Sqm	√	
	Fire Post	1 @ 1 Lakh	Max. 2500 Sqm	√	
	Night Shelter	1 @ 1 Lakh	Min. 100 Sqm	√	
	Community Sports Centre	1 @ 1 Lakh	Range- 1.0 to 3.0 ha	√	
	Community Park	1 @ 1 Lakh	Min. 3.5 ha		√
	Community Multipurpose Ground	1 @ 1 Lakh	Min. 2.0 ha	√	√
	LPG godown including booking office	As per requirements	Min. 600 Sqm (As per provisions of the applicable standards of PESO)	√	
	Bus Terminal	1 @ 1 Lakh	Min. 1000 Sqm	√	
	Parking space for parking of buses, LMVs, IPTs, etc.	2 @ 1 Lakh	Min. 3000 Sqm	√	
Community Centre	1 @ 1 Lakh	Min. 2.0 ha	√	√	
Sub- City Level Pop: Upto 5 Lakh	Hospital	3 ½ @ 5 Lakh	Min. 1.5 ha	√	√
	De-addiction/ Rehabilitation Centres	1 @ 5 Lakh	Min. 2000 Sqm	√	
	Veterinary hospitals	1 @ 5 Lakh	Min. 2000 Sqm	√	

LEVEL	FACILITIES	NO. OF PLOTS	PER UNIT AREA	TO BE PROVIDED	
				LOP	ZDP
	Special Schools	4 @ 5 Lakh	Min. 2000 Sqm	√	
	Research & Development Centres	1 @ 5 Lakh	Min. 4000 Sqm	√	√
	Institute	1 @ 5 Lakh	Min. 4000 Sqm	√	√
	College	2 @ 5 Lakh	As per UGC/AICTE Norms		√
	Socio-Cultural facility (Type-III)	1 @ 5 Lakh	Min. 5000 Sqm		√
	Other Community Facility (Type-II)	5 @ 5 Lakh	Min. 1000 Sqm	√	
	District Sports centre	1 @ 5 Lakh	Range- 3.0 to 10.0 ha		√
	Police Station	2 @ 5 Lakh	Max. 1.0 ha	√	√
	Fire Station	2 @ 5 Lakh	Max. 1.0 ha	√	√
	Disaster Management Unit	1 @ 5 Lakh	Range- 0.5 to 1.0 ha		√
	Cremation Ground	1 @ 5 Lakh	Min.-5000 sqm	√	
	Electric Crematorium	1 @ 5 Lakh	Min.-5000 sqm		√
	District Park	1 @ 5 Lakh	Min. 25 ha		√
	District Multipurpose Ground	1 @ 5 Lakh	Min. 4.0 ha		√
	Bus Terminal	1 2 @ 5 Lakh	Min. 2000 Sqm	√	√
	Bus Depot	1@ 5 Lakh	Min. 4000 Sqm	√	√
	Fuel Station	As per requirement	As per DCNs	√	
	District Centre	1@ 5lakh	Min. 10 ha	√	√
City Level	Medical College	As per requirement	As per Medical Council of India and Veterinary Council of India Norms		√
	Veterinary Institute	As per requirement	Veterinary Council of India / Ministry norms		√
	University Campus including International Education Centre (IEC) /	As per requirement	As per UGC/AICTE Norms		√
	Socio-Cultural facility (Type-IV)*	As per requirement		√	
	City Level Sports: Divisional Sports Centre*	1 @ 10 Lakh and above	Min. 10 ha		√
	Other Community Facility (Type-III)	As per requirement	Min. 2000 Sqm	√	√
	Other Community	As per requirement			√

LEVEL	FACILITIES	NO. OF PLOTS	PER UNIT AREA	TO BE PROVIDED	
				LOP	ZDP
	Facility (Type-IV)				
	District Jail	1 @ 50 Lakh	Min. 2 ha		√
	Police Lines	As per requirement	Max. 1 ha		√
	District Police Office and Battalion	As per requirement	Max. 1 ha		√
	Police Training Institute/ College	As per requirement	Max. 5 ha		√
	Police Firing Range	As per requirement	Max. 5 ha		√
	Police camp	As per requirement	Max. 5 ha		√
	Fire Training Institute	As per requirement	Max. 5 ha		√
	Disaster Management Centre	As per requirement	Max. 5 ha		√
	P&T facility (Type-II)	2 @ 20 Lakh	Min. 2500 Sqm		
	P&T facility (Type-III)	As per requirement			√
	Burial Ground	1 @ 10 Lakh	Min. 1 ha		√
	Cemetery	1 @ 10 Lakh	Min. 1 ha		√
	Burial Ground for Animals	1@ 10 Lakh	Min.-2000 Sqm		√
	City Park	2@10 Lakh	Min. 40 ha		√
	City Multipurpose Ground	1@10 Lakh	Min. 8.0 ha		√
	Bus Depot	As per Requirement			√
	Fuel Stations	As per requirement		√	
	ISBT	As per Requirement	Min. 10 ha		√
	Wholesale	1@ 10 lakh	Min. 8.0 ha		√
* Upto 200 ha to be reserved in Land pooling areas wherever possible					
UTILITIES					
Water Supply and Sanitation					
LEVEL	FACILITIES	NO OF PLOTS	PER UNIT AREA	LOP	ZDP
NA	Sewage Treatment Plant (STP)				
	STP (with SPS & EPS) - upto 5 MGD (22.7 MLD) capacity	As per Requirement	650 Sqm /MLD		
	STP (with SPS & EPS) - capacity above 5 MGD (22.7 MLD)	As per Requirement	1,100 Sqm /MLD	√	√
	Sewage Pumping Station (SPS)	As per Requirement	50 Sqm		
	Effluent Pumping Station (EPS)	As per Requirement	50 Sqm		

LEVEL	FACILITIES	NO. OF PLOTS	PER UNIT AREA	TO BE PROVIDED	
				LOP	ZDP
Water Treatment Plant (WTP)					
	WTP - 80 MGD (363 MLD)	As per Requirement	300 Sqm /MLD	√	√
	WTP - 40 MGD (182 MLD)	As per Requirement	400 Sqm /MLD	√	√
Underground Reservoir with Booster Pumping Stations					
	5 ML Capacity	As per Requirement	700 Sqm /ML	√	
	50 ML Capacity	As per Requirement	600 Sqm /ML	√	
Solid Waste Management					
Local Level	Area for segregation of waste and parking of utility vehicles (previously: Dhalao)	1 @ 10,000	200 Sqm	√	
Sub-City Level	Material recovery facility (semi-automatic): 200 TPD	1 @ 5 Lakh	6,000 - 8,000 Sqm	√	
City Level	Material recovery facility (automated) : > 10,000 TPD	1@ > 20 Lakh	10,000 - 20,000 Sqm	√	√
Power					
Local Level	Electric Sub-Station 11 KV	1 @ 10,000	40 Sqm	√	
Community Level	Electric Sub-station 66 KV	2 @ 1 Lakh	2,500-4,000 Sqm	√	
Sub-City Level	Electric Sub-station 220 KV	1 @ 5 Lakh	7,000-10,000 Sqm	√	
City Level	Electrical Sub-station 400 KV	1 @ 20 Lakh	4.0 ha	√	√

22.7 Designated Use Zones and Use Premises

22.7.1 Each Use Zone comprises of several Use Premises that are distinct. The Use Premises further comprise of compatible activities and these can be developed either as standalone plots (assigned for each Use Premise) or in form of integrated/ comprehensive schemes (like District Centres, Community Centres, etc.).

- i. Each Use Premises shall be permitted to have specific Uses / Use activities.
- ii. The location and boundaries of each use premises shall conform to as specified in the Layout Plan.
- iii. Any change in the location, boundaries and predominant use of use premises due to any reason whatsoever and duly approved shall be incorporated in layout plan.

22.8 Residential

A. Use Premises and Definitions

Table 22. 3 : Use Premises and Definitions - Residential

S. No.	Use Premise	Definition
1	Group Housing	A premise of size not less than 3000 sqm (2000 sqm. for slum/ JJ rehabilitation area/Special Area/Village (Lal Dora/Firni) /Extended Lal Dora) comprising of residential flats with basic amenities like parking, park, convenience shops, public utility etc.
2	Plotted Housing*	Premise for one or more than one dwelling unit(s) and may have on it one or more main building block and other accessory block for garages and service personnel.
3	Studio Apartment	Premise for residential flats with carpet area** 40-60 sq.m units.
4	Dharamshala or its equivalent	Premise providing temporary accommodation for short duration.
5	State Bhawan/ State Guest House	Government owned premise for providing the transit accommodation for the guests of State Government and Central Government.
6	Affordable Public Rental Housing	Premise for temporary accommodation facilities with residential flats and dormitories with common amenities with or without dining facility.
7	Slum Rehabilitation Scheme	Premise for residential flats provided for beneficiaries as part of slum area resettlement/ rehabilitation.
8	Hostel	A premise in which residential accommodation in the form of rooms is provided.
9	Rain Basera (Night Shelter)	A premise having the facility for providing the night accommodation to individuals without any charges or with token charges. It may be run by local government or voluntary agencies***
10	Guest House, Lodging & Boarding House	A premise providing temporary accommodation for short durations.
11	Low Density Residential Plot	Existing farm houses in urban extension regularised as per Policy and new Low Density Residential Plots to be permitted in the Green Development Area.
12	Foreign Mission	Premise for the Foreign Mission.

Note:

1. *Pre 1962 plotted double storied flats shall be treated as Residential Plots.
2. *Bed and Breakfast accommodation may be a permissible activity in residential plot/ flat, if registered under the Scheme notified by Ministry of Tourism, GoI/ GNCTD from time to time.
3. ** Carpet Area definition to be taken as per RERA
4. ***As land is a constraint, the endeavour should be to optimally utilize the land for creating multipurpose facilities in residential and PSP plots. Night shelter should also be made in

existing buildings and in new proposed constructions within the Railway Terminals, Bus Terminals, Wholesale/Retail markets, Freight Complexes, Police Stations etc. by the agencies concerned such as Railways, Health, Industry, DTC, Police, etc., wherever available, with suitable modifications into night shelters as well as by adopting innovative concepts such as integrated complex with commercial space on the ground floor and night shelter on the first floor.

B. Permissible Activities

Table 22. 4 : Use Premises and Activities Permitted: Residential

S. No.	Use Zone Use Premise Activities Permitted	Residential Area (RD)					
		1 Group Housing	2 Plotted Housing	3 Studio Apartment	4 Dharamshala or its equivalent	5 State Bhawan/ State Guest House	6 Affordable Rental Housing
1	Residence (Plotted)		✓				
2	Residential (Flats)	✓		✓			✓
3	Retail Shops (on ground floor with an area up to 20 Sq.m. each)	✓		✓	✓		✓
4	Mixed use activity	✓	✓				
5	Society Office / Registered RWA Office	✓	✓	✓	✓	✓	✓
6	Community Room/ Basti Vikas Kendra	✓		✓			✓
7	Crèche / Day Care Centre/ Anganwari	✓	✓	✓			✓
8	Senior Citizen Recreation Room	✓		✓			✓
9	Recreational Club/ Hall	✓		✓			✓
10	Swimming pool	✓		✓			
11	Religious	✓		✓			✓

12	Dormitory				✓		✓
13	Guest Room				✓	✓	
14	Dining Area			✓	✓	✓	✓
15	Watch and Ward Residence (20sqm)	✓		✓	✓	✓	✓
16	Conference Hall and related facilities					✓	
17	Government office					✓	
18	Souvenir shops					✓	
19	Restaurants					✓	
20	ATM	✓			✓	✓	
21	Staff Residential Accommodation					✓	
22	Garage		✓				
23	Fair Price Shop						✓

C. Development Control Norms

Table 22. 5 : Group Housing

Use Premise	Minimum Plot Area	Maximum Ground Coverage	FAR	Min. ROW (M)	Height (M)
Group Housing	3000 sq.m.	33.33% (in case of addition/ alteration of existing DUs for availing balance FAR, ground coverage upto 40% may be allowed)	200	18	NR (Subject to clearance from AAI/ Fire Dept. and other statutory bodies)

Other Controls

- i. The upper limit of density will be taken as 200 DUs/ha (900pph) with flexible Dwelling Unit sizes to achieve optimal utilization of land. The Central Government in consultation with the DDA may relax density and other norms for public housing and projects of national importance.
- ii. Group Housing plots in Special Area / Village (Lal Dora / Firni) / Extended Lal Dora/ unauthorised colonies shall be 2000 Sqm. and roads with minimum RoW 7.5m. These conditions are subject to meeting parking requirements within the plot and NOC from the Traffic Police Deptt. and the Delhi Fire Service (DFS) of GNCTD. Such plots shall be incorporated as group housing plots in the Development/Layout Plans of these areas to be prepared, subsequently, if such, plans are not already approved.
- iii. Additional floor area of 400 sq.m. or at the rate 6% of permissible FAR, whichever is less shall be allowed, free from FAR, to cater to community needs such as community / recreational hall, crèche/ day care, library, reading room, senior citizen recreation room / club and society office.
- iv. Ground coverage up to 40% may be allowed to achieve low-rise high-density housing.
- v. The developer shall ensure that minimum 15% of the proposed FAR (over and above 200 permissible FAR and density of 200 DUs/ha), to be constructed for Community-Service Personnel / EWS and lower category. Such flats shall have a carpet area of minimum 32 sq.m. Following are the conditions for these EWS DUs:
 - a. 50% of the EWS Housing Stock shall be retained by Developer Entity (DE) and disposed only to the Apartment owners, at market rates, to house Community Service Personnel (CSP) working for the Residents/Owners of the Group Housing. These will be developed by DE at the respective Group Housing site/premises or contiguous site.
 - b. Remaining 50% of DUs developed by DE for EWS housing purpose will be sold to the eligible beneficiaries identified by DDA/ Local Bodies as per DDA Policy. These can be developed by DE at an alternate nearby site.
 - c. Necessary Parking, Commercial and PSP facilities shall also be provided by the DE for this separate housing pocket.
 - d. The EWS housing component created by the DE shall be subject to quality assurance checks, as prescribed in this regard by Govt./DDA. The final

handing/taking over of this component shall be subject to fulfilling the quality assurance requirements.

- e. The DE shall be allowed to undertake actual transfer/transaction of saleable component under its share/ownership to the prospective buyers only after the prescribed land and EWS housing component sold / transferred to the eligible beneficiaries identified by DDA / local bodies at the rates prescribed by DDA.
- vi. Employer Housing of Central Government, State Government and other Government Agencies are not required to follow the requirement of FAR or Dwelling Units for Community Service Personnel / EWS and lower income category.

Table 22.6 : Plotted Housing

Use Premise	Minimum Plot Area (sq.m.)	Max. Ground Coverage (%)	FAR	Max. No. of DUs	Height (M)	
Plotted Housing	1	Up to 50	90*	350	3	15m (without stilt)
	2	Above 50 to 100	90*	350	4	
	3	Above 100 to 250	75**	300**	4	
	4	Above 250 to 500	75	225	6	17.5m (with stilt)
	5	Above 500 to 750	60	225	6	
	6	Above 750 to 1000	50	200	9	Subject to clearance from Fire Dept. for individual plot
	7	Above 1000 to 1500	50	200	9	
	8	Above 1500 to 2250	50	200	12	
	9	Above 2250 to 3000	50	200	15	
	10	Above 3000 to 3750	50	200	18	
	11	Above 3750	50	200	21	

Other Controls

- i. For the purpose of density calculations, the dwelling unit shall be considered to accommodate 4.5 persons and the servant quarter to accommodate 2.25 persons.
- ii. The local body concerned shall be competent for the following
 - a) to disregard variation of up to 2% in plot size, arising from conversion of area from sq. yard to sq.m.
 - b) *100% ground coverage norms applicable to the preceding category of plot size shall be eligible for regularization of construction, already existing as on 22.09.06 on payment of charges as notified.
 - c) **100% ground coverage and 350 FAR shall be eligible for regularization of construction already existing as on 22.09.06 on payment of charges as per the notification, in respect plot size between 100 to 175 sqm.
- iii. Minimum size of the residential plot shall be 32 sq.m.
- iv. The additional number of dwelling units would be subject to payment of levy for the augmentation of civic infrastructure.
- v. The total ground coverage and FAR permissible in any plot shall not be less than that permissible for the largest plot in the next preceding category.
- vi. Maximum height of the building shall be 15m in plots without stilt parking and 17.5m in plots with stilt parking. Such residential building shall not be considered as high rise building. For purpose of fire and life safety requirements, clearance of Fire Department will be obtained by the individual plot owner.
- vii. Subdivision of plots is not permitted. However, if there are more than one

- building in one residential plot, the sum of the built-up area and ground coverage of all such buildings, shall not exceed the built-up area and ground coverage permissible in that plot.
- viii. Amalgamation of two plots adding up to maximum of 64 sq.m. shall be permitted with following conditions:
 - a) Local Body will simultaneously modify the Layout Plan.
 - b) The maximum ground coverage, setbacks, parking, Dwelling Units etc. shall be for the amalgamated plot size.
 - c) The maximum FAR permissible shall not be less than the permissible in case of two individual plots.
 - ix. The mezzanine floor, if constructed, shall be counted in the FAR.
 - x. Provision of stilt shall be mandatory for plots with area of 100 sq.m upto 750 sq.m. For plots above 750 sq.m., parking shall be provided in the setback/ stilt to achieve parking/ECS as per MPD norms. If the building is constructed with stilt area of non-habitable height (less than 2.4m), used for parking, such stilt area shall not be included in FAR but would be counted towards the height of the building.
 - xi. Number of servant quarters shall be provided as per approved layout plan and shall be constructed within the stipulated height. However, if the garage block space is merged with the main building, no separate servant quarter block or servant quarter, as part of main building shall be allowed. However, provision for a servant's room as part of the dwelling unit within the permissible coverage FAR shall be allowed.
 - xii. Provision for a servant's room (with a floor area not less than 11 sq.m. exclusive of cooking verandah, bathroom and lavatory) as part of the dwelling unit, within the permissible FAR with stipulated height restriction, shall be allowed. The maximum size of servant quarter shall be 25 sq.m. If larger in size, the servant's quarter shall be counted in density as a full dwelling unit.
 - xiii. *Standard Plans:* There are a number of standard building plans designed and approved by the Authority. Such plans shall continue to operate whenever applicable. Such plans shall be modified as per the applicable development controls.
 - xiv. Encroachment on public land shall not be regularized and shall be removed before the local body grants sanction for regularization of additional construction or height except the following:
 - a) Projections / chajjas / covered chajjas built up portion which existed before 7.02.2007 upto 1m above 3m height from the ground level shall be regularized for plot size upto 175 sq.m on roads below 24m ROW in pre-1962 colonies (except for A & B category), in unplanned areas (including special area, village abadi and unauthorized regularized colonies) and resettlement colonies. The owners /occupiers shall have to obtain structural safety certificate and fire clearance within a reasonable period of time as notified by the Government. Such projections / built up portion thereon shall be counted in FAR and in case of excess FAR over and above permissible FAR, such FAR in excess shall be regularized subject to payment of appropriate charges as approved by the Government.
 - b) The local body concerned shall carry out a survey of all such projections eligible to be regularized and put such list in public domain for objections from the occupiers / owners and any person of the public against inclusion / exclusion of

such projection in the list and the list thereafter will be finalized within a period of one month after considering such objections received in writing.

- xv. Every applicant seeking sanction or regularization of additional FAR and/ or height shall submit a certificate of structural safety obtained from a structural engineer. Where such certificate is not submitted or the Building is otherwise found to be structurally unsafe, formal notice shall be given to the owner by the local body concerned, to rectify the structural weakness within a reasonable stipulated period, failing which the building shall be declared unsafe by the local body concerned and shall be demolished by owner or the local body.

- xvi. The minimum setbacks shall be as given in the following table:

Table 22. 7 : Minimum Setback Norms for Residential Area- Plotted Housing

S. No	Plot size (sq.m.)	Minimum Setbacks (in metre)			
		Front	Rear	Side 1	Side 2
1	Below 100	0	0	0	0
2	101 upto 250	3	0	0	0
3	251 upto 500	3	3	3	0
4	501 upto 2000	6	3	3	3
5	2001 and upto 10000	9	6	6	6
6	Above 10000	15	9	9	9

- a. In case the permissible ground coverage is not achieved with the above-mentioned setbacks in a plot, the setbacks of the preceding category may be permitted.
- b. A minimum 2m x 2m open courtyard/service duct shall be provided in residential plots of area of 50 sq.m. to 100 sq.m.

Table 22. 8 : Studio Apartment

Use Premise	Minimum Plot Area	Maximum Ground Coverage	FAR	Minimum ROW (M)	Height (M)
Studio Apartment	2000 sq.m.	33.33%	200	12	NR (Subject to clearance from AAI/ Fire Dept. and other statutory bodies)

Other Controls

- i. The maximum carpet area of flat will be 60 sq.m.
- ii. Additional floor area 400 sq.m or at the rate 6% of permissible FAR, whichever is less shall be allowed free from FAR to cater to community needs such as community / recreational hall, crèche, library, reading room, senior citizen recreation room / club and society office.

Table 22. 9: Dharamshala

Use Premise	Minimum Plot Area	Maximum Ground Coverage	FAR	Minimum RoW (M)	Height (M)
Dharamshala	500 sq.m.	30%	120	-	15

Table 22. 10: State Bhawan/State Guest House

Use Premise	Minimum Plot Area	Maximum Ground Coverage	FAR	Minimum ROW (M)	Height (M)
State Bhawan/State Guest House	--	50%	200	--	NR (Subject to clearance from AAI/ Fire Dept. and other statutory bodies)
Other Controls					
i. In case of Sub-Zone D-13 of Zone-D, the maximum height shall not exceed 26m (Subject to Fire and other statutory/ security clearances that may be required from time to time).					

Table 22. 11 : Affordable Public Rental Housing

Use Premise	Minimum Plot Area	Maximum Ground Coverage	FAR	Minimum ROW (M)	Height (M)
Affordable Public Rental Housing (APRH)	2000 sq.m.	33.33%	200	12	NR (Subject to clearance from AAI/ Fire Dept. and other statutory bodies)
Other Controls					
<p>i. Additional floor area of 400 sq.m. or at the rate 6% of permissible FAR, whichever is less shall be allowed, free from FAR, to cater to community needs such as community / recreational hall, crèche/ day care, storage facilities and society office.</p> <p>ii. APRH could be constructed, operated and maintained by any entity, including Government Bodies or could be handed over to a Concessionaire (Private Entities) for operation and maintenance, as per Model-I (Converting existing Government funded vacant houses into Affordable Rental Housing through Concession Agreement) of the ARHC Scheme of Govt. of India.</p> <p>iii. Affordable Rental Housing (ARH) can be on PPP basis (Model II)</p> <p>a. ARH constructed through this model will consist of a mix of Dwelling Unit (upto 32/60sqm carpet area each for single/double bedroom respectively) and Dormitory of 4/6 beds (upto 10 sqm carpet area per bed) including all common facilities.</p>					

- b. A single project of ARH shall have at least 40 DU (double bedroom/single bedroom) or equivalent dormitory beds (1 single bedroom unit of upto 32 sqm carpet area is considered equivalent to 3 Dormitory beds).
- c. There will be flexibility to Private/Public Entities to have any mix of single/double bedroom and dormitories (4/6 units). However, to ensure that such complexes are used for urban migrant/poor or EWS/LIG category and not misused for any other purposes, a ceiling of maximum tenure of License has been provisioned.
- iv. Commercial component up to 10% of permissible FAR in the premise may be permitted which could be rented or sold by the Entity.
- v. All the residents in the ARH shall occupy the house on the basis of License rights provided by the Owner of the Housing Complex to them.
- vi. The Maximum Tenure of such Licenses shall not be more than three years.
- vii. The License deed should not be renewable beyond the maximum tenure.
- viii. In an ARH Complex it shall be the obligation of the owner of the Housing complex that:
 - (a) He does not charge any premium towards grant of license to any resident.
 - (b) No resident is allowed to continue residing in the house / complex beyond the maximum tenure of license by re-executing a license.
- ix. The Modalities with respect to ARH shall be as per the Operational Guidelines for the Affordable Rental Housing Complexes as issued by Ministry of Housing and Urban Affairs, Govt. of India and as per approvals of DDA.
- x. In case where the provisions in the guidelines are not explicit, separate Development Control Norms shall be prescribed, subject to approval of DDA/Authority.

Table 22. 12 Slum Rehabilitation

Use Premise	Minimum Plot Area	Maximum Ground Coverage	FAR	Minimum ROW (M)	Height (M)
Slum Rehabilitation	2000 sq.m.*	No restriction on ground coverage (except setbacks) for flexibility in design of the rehabilitation project	400	9	NR (Subject to clearance from AAI/ Fire Dept. and other statutory bodies)

Other Controls

1. (*) In case of public housing, the Technical Committee of DDA may relax minimum plot size 10%.
2. The following are guidelines for slum rehabilitation (with site-specific relaxations may be adopted as required).
 - i. The upper limit of density for Slum & JJ clusters (In-situ up-gradation/ Rehabilitation/ Redevelopment of Slum & JJ Clusters, Resettlement Colonies) and EWS Public Housing Schemes be maximum 900 DUs/ ha.
 - ii. The land area for rehabilitation of slum/JJ Cluster shall be taken up on PPP through prescribed land monetisation as per Slum Rehabilitation Regulations/ Policy. The minimum residential component of the land area for slum rehabilitation scheme

- has to be 60% and maximum area for remunerative use 40%.
- iii. The scheme shall be designed in a composite manner with an overall maximum FAR of 400 on the residential component, (beneficiary i.e. 60%) of the land. The maximum FAR of 300 on the remunerative component of the land shall be as applicable irrespective of the land use.
 - iv. Any use/mix of uses shall be permitted in the remunerative component as per MPD provisions. In case the DE proposes a mix of uses, the parking and development control norms shall be applicable on a pro-rata basis, on the FAR utilised for each use.
 - v. 10% of the permissible residential FAR shall be utilised for commercial development as an integrated scheme. No separate plot shall be delineated for use of this FAR.
 - vi. In addition to the above, 10% of the permissible residential FAR may be permitted for development of community work centres for home based economic activities (Household Industries as per MPD norms).
 - vii. Specific situations may require clubbing of scattered squatters within one site to work out an overall comprehensive scheme. Slum & JJ Clusters on plots smaller than 2000 sqm be relocated instead of taking up in-situ rehabilitation as per the above-cited guidelines.
 - viii. Buildings may be recessed on different floors to create incidental spaces shared between DUs in a cluster.
 - ix. Green areas shall be encouraged in schemes where a larger central green/ open space is not feasible, smaller green areas shall be provided.
 - x. Schemes shall be approved by concerned body.
 - xi. Schemes / designs should be compatible for differently-abled persons.
 - xii. Norms for Social and Physical Infrastructure shall be as per DCN

Table 22. 13 : Hostel

Use Premise	Minimum Plot Area (sq.m)	Maximum Ground Coverage	FAR	Minimum ROW (M)	Height (M)
<i>Hostel</i>	500	30	120	--	15
Other Controls					
i. These norms shall not be applicable for hostels under Mixed Use.					
ii. Norms for working men-women hostels shall be as per provisions under "Other Community Facilities".					

Table 22. 14 : Rain Basera (Night Shelter)

Use Premise	Minimum Plot Area (sq.m)	Maximum Ground Coverage	FAR	Minimum ROW (M)	Height (M)
Rain Basera (Night Shelter)	100	60	200	--	26

Table 22. 15 Guest House, Lodging & Boarding House

Use Premise	Minimum Plot Area (sq.m)	Maximum Ground Coverage	FAR	Minimum ROW (M)	Height (M)
Guest House, Lodging & Boarding House	500	30	120	--	15
Other Controls					
i. These norms shall not be applicable for Guest House under Mixed Use.					

Table 22. 16 : Low Density Residential Plot

Use Premise	Minimum Plot Area	Maximum Ground Coverage	FAR	Minimum ROW (M)	Height (M)
Low Density Residential Plot	As per Green Development Area				

Table 22. 17 : Foreign Mission (RF)

Use Premise	Minimum Plot Area	Maximum Ground Coverage	FAR	Minimum ROW (M)	Height (M)
Foreign Mission	--	25%	75	--	15
Other Controls					
i. Basement up to the building envelope line to the maximum extent of 50% of plot area shall be permitted. The basement area, if used for parking and services, shall not be counted in FAR.					
ii. As part of approved layout plan following use premises shall be permitted in Foreign Mission sub-use zone: Foreign Mission, Housing (for the Mission Employees), Guest House, Local Shopping, Bank, Recreational Club, Health Centre - Hospital, Tertiary health care centre, Dispensary, Integrated Residential School, Cultural and Information Centre, Police Post, Fire Station, Post and Telegraph office					

Other controls relevant for Residential Use Zone

1. Community facilities and local facilities shall be provided as per norms. In addition to this, the following shall be considered for provision of these facilities:
 - i. These facilities should preferably be located along internal roads with minimum 12 m ROW, unless specified. The development of the infrastructure should be monitored to assess the achievement in the relevant sectors.
 - ii. Parking requirements shall be as per the parking norms.
 - iii. The minimum size of tot lot at cluster level shall be 125 sq.m.

- iv. The location of schools and Anganwaris should be made in the layout plan in cluster form to facilitate sharing of common parking space and playground.
 - v. The planning of physical infrastructure i.e. Underground Tank, Sewerage-pumping System, Rainwater harvesting, Dual pipe system, Area for segregation of waste, Electric substation, Pole mounted electric transformers, decentralised sewerage treatment should be provided as per norms.
2. Planning of the residential neighbourhood regarding circulation system, including safety requirements shall be governed by the BIS standards or as per the norms of the concerned agencies.
 3. Suitable landscape plans for the neighbourhood shall be prepared for development of the parks and roadside plantation etc.
 4. Schemes / designs should be compatible for differently abled persons.
 5. All plans, Layout and Schemes shall be approved by concerned agencies.
 6. Basement, if constructed, and used only for parking, utilities and services shall not be counted towards FAR.
 7. Stilts: If the building is constructed with stilt area of non-habitable / stipulated height and is proposed to be used for parking, landscaping etc. the stilt floor need not be included in FAR and shall be counted towards height.
 8. Parking shall not be allowed in the mandatory Fire Tender movement road.
 9. Levy on additional FAR shall be at rates notified with the approval of Government from time to time.
 10. Lower norms may be adopted in special cases, as specified in relevant regulations or as per approval of the Authority.

22.9 Commercial

22.9.1 General Business and Commerce

A. Use Premise and Definitions

Table 22. 18 : Use Premise and Definition – Commercial

S. No.	Use premise	Definition
1.	Retail Shop	A premise for sale of commodities directly to consumer with necessary storage.
2.	Repair Shop	A premise equivalent of a of a retail shop for carrying out repair of household goods, electronic gadgets, automobiles, cycles etc.
3.	Personnel Service Shop	A premise equivalent of retail shop providing personnel services like tailor barber etc.
4.	Vending Booth/ Kiosk	A premise in the form of booth for sale of commodities of daily needs either through a mechanical installation or otherwise.
5.	Convenience Shopping Centre	A group of shops in residential area serving a population of about 5,000 persons.
6.	Local Shopping Centre	A group of shops in residential area serving a population of 10,000persons
7.	Office	A premise used for offices etc.
8.	Bank	A premise for offices to perform banking function and operation.
9.	Motor Garage and workshop	A premise for servicing and repair of automobiles.
10.	Cinema / Cineplex / Multiplex	A premise with facilities for projection of movies and stills with a covered space to seat audience.
11.	Restaurant	A premise used for serving food items on commercial basis including cooking facilities. It may have covered or open space or both for sitting arrangement.
12.	Professional Activities	Professional activities shall mean those activities involving services based on professional skills namely Doctor, Lawyer, Architect, and Chartered Accountant, Company secretary, Cost and Works Accountant, Engineer, Town Planner, Media professionals and Documentary Film maker, Management Professionals and Dietician/ Nutritionists.
13.	Weekly Market	An area used once in a week by a group of informal shop establishments in the form of a market. These markets shift from one area to another on different days of the week.
14.	Informal Sector Unit	Retail/ service unit, stationary or mobile, working without roof including small khokhas on roadside. Street vendor- A person who offers goods or services for sale to the public without having a permanent built up structure but with a temporary static structure or mobile stall (or head load).

Note:

Small Shop: Shop of maximum 20 sqm area, trading in or dealing with retail and personnel services, excluding: Retail shops of building materials Repair shops/ workshops of automobiles, tyre resoling and re-treading, and battery charging, Storage, go-down and warehousing, Junk shop (except paper and glass waste), Liquor shop, Printing, dyeing and varnishing.

B. Permissible Activities

Table 22. 19 : Use Premise and Activities Permitted – Commercial

S. No.	Use zone	RD				C1			
		1	2	3	4	5	6	7	8
	Use Premise								
	Activities Permitted	Convenience Shopping Centre (CSC)	Local Shopping Centre (LSC)	Service Market	Informal Bazaar	Community Centre (CC)	NHC	District Centre/ Sub CBD/ Sub City Level Commercial Areas	MC C
1.	Retail Shop	✓	✓	Small Shops	Small Shops	✓	✓	✓	✓
2.	Vending Booth/ Kiosk	✓	✓			✓	✓	✓	✓
3.	Stockists and dealers of medicines and drugs		✓			✓	✓	✓	✓
4.	Fair Price Shop	✓	✓						
5.	Repair / Service	✓	✓	✓	✓	✓	✓	✓	
6.	Personnel Service Shop	✓	✓	✓	✓	✓	✓	✓	✓
7.	Office	✓	✓	✓		✓	✓	✓	✓
8.	Offices of local bodies, PSUs		✓	✓	✓	✓		✓	✓
9.	Conference Facility					✓		✓	✓
10.	Cinema, Cineplex, Multiplex					✓		✓	✓
11.	Hotels					✓		✓	✓
12.	Guest House		✓			✓		✓	✓
13.	Service					✓		✓	✓

	Apptts								
14.	Restaurants	✓	✓			✓	✓	✓	✓
15.	Banquet Halls					✓		✓	✓
16.	Socio-Cultural activities / Recreational Club/					✓	✓	✓	✓
17.	Coaching Centres/ Training Institutes		✓			✓	✓	✓	✓
18.	Police Post, Fire Post.					✓	✓	✓	✓
19.	Petrol Pump / CNG Station					✓		✓	✓
20.	Bus Terminal							✓	✓
21.	Multi-level parking					✓	✓		✓
22.	Service Market, Motor Garage and Workshop			✓	✓	✓	✓	✓	✓
23.	Bank	✓	✓			✓	✓	✓	✓
24.	ATM	✓	✓	✓	✓	✓	✓	✓	✓
25.	Informal Sector unit	✓	✓	✓	✓	✓	✓	✓	✓
26.	Nursing Home/ maternity etc.		✓			✓		✓	✓
27.	Dispensary, Clinical Lab,		✓			✓		✓	✓
28.	Clinic and Polyclinic	✓	✓			✓	✓	✓	✓
29.	Path lab, Diagnostic Facility ¹		✓			✓		✓	✓
30.	Spa, Gym and Salon	✓	✓			✓	✓	✓	✓
31.	Museum/ Art Gallery					✓	✓	✓	✓
32.	Crèche / day care	✓	✓	✓	✓	✓	✓	✓	✓

¹Subject to controls and safety considerations

Notes:

- i. Utilities, Public Conveniences shall be provided as per norms.
- ii. The mandatory requirement of parking as per prescribed standards would be met through multi level parking as far as possible in Metropolitan City Centre, District Centre and Community Centre.

C. Development Control Norms

Table 22. 20 : Commercial

S. No.	Use Premise	Nos	Min. Plot Area (sqm)/ unit	Max Ground Coverage	FAR	Min ROW (m)	Height
A. Local Population upto 10,000							
1	Convenience Shopping Center (CSC)	2	1000	50%	100	12	NR
2	Local Shopping Centre (LSC)	1	3000	50%	100	18	NR
Other controls:							
i. In case of integrated schemes of Commercial Centres, amalgamation and subdivision of the plots is permitted for permitted uses of the respective hierarchy of commercial centres subject to payment of requisite charges as notified by the Competent Authority from time to time.							
ii. Max. 10% additional Ground Coverage shall be allowed for providing atrium only in LSC.							
iii. In case the permissible additional ground coverage for atrium is utilised, 25% of the utilized ground coverage shall be counted towards FAR.							
3	Service Market	1	2000	50%	100	18m	NR
4	Informal sector market	1	1000	50%	40	18m	NR

About 10% of the unutilized sites of LSC / CSC may be converted into Service Markets.

S. No.	Use Zone	Nos	Min. Plot Area (sqm)/ unit	Max Ground Coverage	FAR	ROW (m) (min)	Height
Commercial Centres							
Community Population 1,00,000							
1	Community Centre (CC)	1	20,000	50%	125	24m	NR
i. Maximum 10% additional ground coverage shall be allowed for providing atrium. In case the permissible additional ground coverage for atrium is utilised, 25% of the							

	utilized ground coverage shall be counted towards FAR. ii. Maximum 10% of FAR may be permitted for service market and/or informal market						
Sub-City Population 5,00,000							
1	District Centre (DC) / Sub-Central Business District / Sub- City Level Commercial areas	1	10 ha	50%	150	30m	NR
	i. Maximum 10% additional ground coverage shall be allowed for providing atrium. In case the permissible additional ground coverage for atrium is utilised, 25% of the utilized ground coverage shall be counted towards FAR. ii. Maximum 10% of FAR may be permitted for service market and/or informal market						
City Population 20,00,000							
Metropolitan City Centre /CBD							
1	Commercial Plot: Retail & Commerce Metropolitan City Centre i.e. Connaught Place & its Extension	-	-	25%	150	As existing	NR
	Other Controls i. The size of the plot shall be as in the layout of commercial area, any subdivision of the plot in Connaught Place and its extension should not be permitted. ii. The development controls shall be in accordance with the comprehensive plan of the area to be reframed by the local body. a. In case of Connaught Place, the existing height shall be maintained and FAR could be achieved by increasing proportionate ground coverage. b. No basement shall be permitted in middle circle of Connaught Place. c. Mandatory Architectural Controls shall be applicable iii. For plots developed as part of comprehensive schemes, the permissible FAR shall be as per the valid lease deed.						
2	Commercial Complex at Fire Brigade Lane and Janpath Lane	-	-	25%	150	As existing	NR
	i. Ground coverage and FAR shall be calculated on the area of presently available plots. ii. The area shall be developed on the basis of comprehensive scheme.						
Any other commercial centre							
1	Non-hierarchical Commercial Centre (NHCC)	-	-	50%	125	-	NR
2	Including Commercial component along with Railway / MRTS Stations /		Up to 3 ha.	25%	100	NR	

	ISBT						
	Subject to statutory clearances. The development controls can vary subject to approved scheme.						
3	Asaf Ali Road (the area shown as commercial strip in Delhi Gate – Ajmeri Gate scheme)	-	-	80%	200	18m	20
	Setbacks are not mandatory. In case of rebuilding stilts shall be provided for parking.						
4	Existing Temporary Cinema (minimum 300 seater in one or more cinema hall)		1200 sqm-4000 sqm In case a cinema has more land, the rest of the area would be kept green.	50% subject to min setbacks as per MPD to be adhered	a. 100 subject to max. built-up area of 3000sqm b. In case plot size is more than 4000 sq.m., and is located on 24m ROW and above, max. built-up area not to exceed 4000sqm	18m	15m
	<p>a. New Temporary cinemas shall not be permissible, however already existing Temporary Cinemas shall be allowed to continue on permanent basis as per the stipulated conditions.</p> <p>b. Commercial activity shall be permissible after excluding the space required for capacity of 300 seated cinema hall. The commercial space will be for the activities as permissible for Local Shopping Centre (LSC)</p> <p>c. Cinema would confirm to the Cinematography act and other statutory provisions. Multiplexes shall accordingly be permissible.</p> <p>d. Land use conversion charges, FAR charges, betterment levies and other charges will be levied as approved by the Government from time to time.</p> <p>e. The Temporary Cinema existing on Government Land shall not continue.</p> <p>f. The excess land in such cases if required for larger public purposes shall be acquired and developed as per the norms by the concerned local agencies.</p> <p>g. It should be ensured that adequate parking facilities are provided within the respective plot areas.]</p> <p>h. The local body and Licensing Authorities shall ensure that the above conditions</p>						

	are compiled before renewing the license. i. Individual cases will be processed as per the above provisions
	Other controls for Any other commercial centre i. Subject to statutory clearances. The development controls can vary subject to approved scheme.

Other Controls

- i. Additional FAR Charges, Conversion Charges, Betterment Levy/ External Development Charges etc. shall be payable as decided by the Government from time to time.
- ii. No restriction subject to clearance from Airport Authority of India and Fire Department of GNCTD.
- iii. Ground Coverage up to 50% instead of 40% will be permissible to achieve the enhanced FAR at site(s), in case of any height restriction from Airport Authority of India.
- iv. NR - No Restriction, subject to clearance from AAI, Delhi Fire Service and other statutory bodies.
- v. FAR: The norms of 325 FAR below 30m ROW or 375 FAR on 30m ROW or above and 40% ground coverage shall be applicable in respect of all (I) hotels including hotel plots in Commercial Centres Community Centre, District Centre/ Sub-Central Business District/ Sub City Level Commercial Areas and Metropolitan City Centre/Central Business District except those located in LBZ area, Civil Lines Bungalow Area and hotels existing on heritage structures and (II) Hotel-cum-commercial plots. This shall apply to all categories of hotels mentioned in Clause 4.4. The FAR for Commercial Centres and Metropolitan City Centre/Central Business District as well as Hotel-cum-commercial plots where apportionment of FAR shall be as per original lease conditions and shall stand enhanced automatically to that extent, for this purpose only if not available.
- vi. The utilities such as, underground water storage tank, roof top water harvesting system, separate dry and wet dustbins, post-delivery counter etc. are to be provided within the plot. All hotels, restaurants, auto workshops, hospitals, tertiary health care centres etc. will have to make arrangements for solid waste disposal and primary effluent treatment.
- vii. Individual plot with floor area of 5000 sq.m. or above will provide ESS and generator within the plot. They have to submit energy consumption / audit at the time of sanction of building plans.
- viii. Wherever parking is provided within the plot / basement and is misused, the same is liable to municipalisation / taken over by the authority.
- ix. Wherever redevelopment of existing commercial areas stipulate preparation of a comprehensive scheme, the same can be initiated jointly by the lessees / owners themselves and submitted to land owning agency / planning authority for approval. Wherever any enhancement in FAR is approved, the same will be subject to charging appropriate levies from the beneficiaries. For Metropolitan City Centre, development controls shall be as per approved scheme.
- x. In case of integrated schemes of Commercial Centres, amalgamation and sub-division of the plots is permitted for permitted activities of the respective hierarchy of commercial centres subject to payment of requisite charges as notified by the Competent Authority from time to time.

Any other commercial centre**Shop cum Residence Plot/ Shop Plots**

- i) Shop-cum-residence complexes (Shop-cum-residence plots / shop plots) later designated as CC/LSC/CSC (as already earmarked / shown in the respective Zonal Development Plans / notified by ULBs / GNCTD) shall be allowed to continue with the activities permissible in the Local Shopping Centre with the following conditions:
- FAR of such plot shall be as prescribed for respective size of the residential plotted development or lease deed / conveyance deed / sale deed / allotment conditions, whichever is more. However, in case total FAR in the existing building is exceeding the permissible FAR on the plots of size above 100 sq.m and upto 250 sq.m., such excess FAR (upto max. 350 FAR) shall be permitted subject to payment of penalty charges as prescribed with the approval of Government.
 - Additional FAR shall be permitted on payment of additional FAR charges, as applicable.
 - Payment of use conversion charges from “Residential” to ‘Commercial” shall be applicable as prescribed with the approval of Government.
 - LSCs, CSCs and shop plots which are already under commercial use zone are not be liable to pay any conversion charges.
 - Commercial establishments / shop plots under the above category not having any deviation from already approved layout plans / lease deed / conveyance deed / sale deed are not be liable to pay any additional charges.
- ii) Other existing shop-cum-residence plots shall also be allowed to continue with original permitted use with the FAR of residential plotted development. The upper floors can be converted to commercial use after paying the applicable charges.
- iii) The basement shall be permitted in shop-cum-residence plots / complexes later designated as CC/LSC/CSC subject to relevant provisions under mixed use regulations. If such use of basement leads to exceeding the permissible FAR on the plot, such excess FAR shall be subject to payment of applicable charges prescribed with the approval of Government.
- iv) In all the above cases, owner shall obtain the approval of revised building plans for any addition / alteration / new construction / conversion from the concerned local body subject to all statutory clearances w.r.t. relevant provisions of building bye laws, structural safety, fire safety etc.
- v) Parking provisions shall be as per prevailing norms for residential plotted development and as stipulated in Table 22.46. Onetime parking charges shall be paid either as down payment or in maximum four instalments subject to payment of applicable charges as prescribed with the approval of Government.
- vi) In order to meet the parking requirements, concerned local bodies along with concerned traders / establishments / RWAs shall identify and develop the land for providing shared / common `parking. 5% additional Ground Coverage shall be permissible within the scheme area for the provision of public parking.
- vii) In order to promote parking, the owner of the plot will be allowed to amalgamate

	the plots upto minimum plot size of 1000 sq.m, to provide additional parking on the amalgamated plot. Such plots shall be entitled for a rebate of 50% in conversion charges.
viii)	In case there is no parking facility available in the vicinity, concerned local body may declare such areas as pedestrian shopping streets / areas. Public transport authority shall ensure last mile connectivity to these areas.

D. Informal Sector

Informal Sector Market to be incorporated in the planned development of various use zones are as follows:

Table 22. 21 : Norms for informal sector trade units

S. No.	Use Zones / Use premise	No. of Informal shops / Units
i)	Retail trade: Metropolitan City Centre, District Centre, Community Centre, Convenience Shopping Centre,	3 to 4 units per 10 formal shops (to be provided in informal bazaar / service market components)
ii)	Government and Commercial Offices	
iii)	Wholesale trade and Freight Complexes	3 to 4 units per 10 formal shops
iv)	Hospital/ Tertiary Health Care Centre	3 to 4 units per 100 beds
v)	Bus Terminal	1 unit for two bus bay
vi)		
vii)	Parks District Parks Neighbourhood parks	8 to 10 units at each major entry 2 to 3 units
viii)	Residential	1 unit / 1000 population
ix)	Industrial	5 to 6 units per 1000 employees
x)	Railways Terminus / MRTS Stations	To be based on surveys at the time of preparation of the project.

22.9.2 Wholesale, Warehousing

A. Use Premise and Definitions

Table 22. 22 : Use Premise and Definition - Wholesale, Warehousing

S. No	Use Premise	Definition
1	Wholesale market	a. A premise from where goods and commodities are sold and delivered to

		retailers. The premises include storage and godown, loading and unloading facilities.
2	Warehouse/ Storage/ Godown/ Cold Storage	A premise from where goods and commodities are stored
3	Integrated Freight Complex	A premise to provide facilities for regional and intra-urban freight movement and inter-link with specialized markets in the City. The premise includes storage facilities, servicing, idle parking for goods vehicles and other related functions.

B. Permissible Activities

Table 22. 23 : Use Premise and Activities Permitted – Wholesale, Warehousing

S.No	Use Zone Use Premise	C2		
		1	2	3
	Activities Permitted	Integrated Freight Complex	Wholesale/ sub city markets	Warehouse/ Storage/ Godown
1	Wholesale Shop	✓	✓	✓
2	Warehouse	✓	✓	✓
3	Godown and Storage Shops	✓	✓	Storage of non-polluting/ non-hazardous materials
4	Office	✓	✓	✓
5	Retail Shop (including Personnel Service Shop)		✓	✓
6	Hotel/ Restaurants	✓	✓	✓
7	Repair / Service /Motor Garage & Workshop (max 10% of FAR)	✓	✓	✓
	(4 to 7- Upto 25% of FAR)			
8	Night Shelter	✓	✓	
9	Police outpost upto 150 sq.m, Traffic Police Control Room (Max. 25 sq.m.), Fire Post	✓	✓	
10	Fuel Station	✓	✓	
11	Bus Terminal	✓	✓	
12	Multi-level parking	✓	✓	
13	Bank	✓	✓	
14	ATM	✓	✓	✓

C. Development Control Norms

Table 22. 24 Wholesale, Warehousing

#	Use Zone	Nos	Min. Plot Area (sqm)/ unit	Max Ground Coverage	FAR	ROW (m) (min)	Height (max.)
1	Integrated Freight Complex		As per requirement	40%	100	30	NR
2	Wholesale		8 ha	40%	100	30	NR
3	Warehousing /Godown/ Storage/ Cold Storage		500	70	140	18	15
			501-2000	60	120	18	15
			2001-10000	50	100	18	15
			Above 10,000	40	80	24	15

Other applicable conditions:

In addition to specified norms, the following conditions shall be applicable on all plots/ integrated schemes:

- i. Warehouses on plots of 1 ha and above with direct access from 30m RoW can be developed as big-box retail. Such plots shall be permitted to have retail activity up to 50% of the permissible FAR on payment of charges as fixed by govt. from time to time.
- ii. Utilities, Public conveniences shall be provided as per requirement.
- iii. Height subject to clearance from Airport Authority of India, ASI, Delhi Fire Service (DFS), other concerned authority and statutory bodies.
- iv. The minimum parking as per Transport development control norms shall be earmarked. Wherever parking is provided within the plot / basement and is misused, the same is liable to municipalisation / taken over by the authority. In case of plots less than 300 sq.m. common parking can be provided.
- v. 5% extra ground coverage will be provided for stack parking.
- vi. In case of plots of size 500sq.m. and above, the utilities such as E.S.S., underground water storage tank, roof top water harvesting system, separate dry and wet dustbins, solar heating / lighting system etc. are to be provided within the plot.
- vii. Additional FAR charges, Conversion charges, FAR charges, betterment levies and other charges will be levied as approved by the Government from time to time.
- viii. In case of individual plots not forming part of any comprehensive / integrated development scheme, the development controls shall be as per already approved scheme / layout plan.

22.9.3 Hotels (C3)

A. Use Premise Definition

Table 22. 25 : Use Premise and Definition – Hotels

S. No	Use Premise	Definition
1	Hotel	A premise having minimum 10 lettable rooms for lodging of and boarding of 15 persons or more on short / long term basis. The premise may include Banquet, Conferencing facilities, Swimming pool, Health Club, Discotheque. Hotels having Heritage Classification and those which have classification above 3 star.
2	Budget Hotel	Mid Segment Hotels (i.e. 1-3 stars)
3	Service Apartment	Premise fully furnished, serviced and self-contained with meal preparation and used for short-term or long-term individual, family or corporate accommodation. Premise may also include conference facilities and office space.
4	Motel	A premise providing lodging and free parking facilities, typically a roadside hotel having rooms adjacent to an outside parking area.

B. Permissible Activities

Table 22. 26 : Use Premise and Activities Permitted – Hotels

S. No.	Use Zone Use Premise	C3		
		1 Hotels	2 Budget Hotel	3 Service Apartment
Activities Permitted				
1.	Service Apartment	✓	✓	✓
2.	Guest Room	✓	✓	✓
3.	Guest Suite	✓	✓	✓
4.	Banquet	✓		
5.	Conference Facility			✓
6.	Restaurants	✓	✓	✓
7.	Swimming Pool	✓		✓
8.	Health Club	✓		
9.	Food Court	✓		
10.	Discotheque	✓		
11.	Office	✓	✓	✓
12.	Retail and Service Shop	✓		
13.	Dining and related facilities	✓	✓	
14.	Watch and Ward (upto 20sqm)	✓	✓	✓

C. Development Control Norms

Table 22. 27 : Hotels

S. No	Use Zone	Nos	Min. Plot Area (sqm)/ unit	Max Ground Coverage	FAR	ROW (m) (min)	Height
1	Hotel (including Hotel Plots)		-	40%	a. below 30m ROW - 325 b. 30m and above ROW - 375	12	NR
2	Budget Hotels		1200	50%	100	-	NR
3	Service Apartment		2000	30%	225	18	NR
Other controls for above (1, 2 and 3)							
i) Maximum 20% of the FAR can be used for the Commercial offices, Retail & Service shops.							
4	Motels	-		40%	175	30	NR
i. Maximum 175 FAR shall be permissible on the plot area disclosed in the sanctioned plan as on 07-02-2007 in conformity with Government of India Notification S.O. 550 (E) dated 16-06-1995 and motel guidelines issued by Government of India, MoUD on 04-03-2002. ii. Ground Coverage up to 50% instead of 40% will be permissible to achieve the enhanced FAR at site(s), if there exist any height restriction from Airport Authority of India. iii. Additional FAR Charges, Conversion Charges, Betterment Levy/ External Development Charges etc. shall be payable as decided by the Government from time to time. iv. The motels shall face the road of minimum 30 mts. ROW (if additional land is required for road widening, same to be kept reserved out of the motel area). v. Other norms and permissible activities shall be the same as applicable to hotel use premise. vi. Water, electric supply, sewerage, drainage, traffic circulation, provision of linking road of adequate ROW and other such infrastructure shall have to be provided by the owner at their own cost till the same is made available by the service providing agencies. The Motel owner will have to pay the external development charges including provision of linking road of adequate ROW as demanded by the concerned agencies.							

Other applicable conditions:

In addition to specified norms, the following conditions shall be applicable on all commercial plots/ integrated schemes

- i. Utilities, Public conveniences shall be provided as per requirement.

- ii. Additional FAR charges, Conversion charges, FAR charges, betterment levies and other charges will be levied as approved/prescribed/ notified by the Government from time to time.
- iii. Maximum 10% additional ground coverage shall be allowed for atrium. In case the permissible additional ground coverage for atrium is utilised, 25% of the utilized ground coverage shall be counted towards FAR.
- iv. In case of revision of building plans to avail additional FAR, hotel can avail additional FAR only if adequate parking provision is made within the plot itself.
- v. The norms of 325 FAR below 30m ROW or 375 FAR on 30m ROW or above and 40% ground coverage shall be applicable in respect of all
 - a. Hotels including hotel plots in Commercial Centres Community Centre/ District Centre/ Sub-Central Business District/ Sub City Level Commercial Areas and Metropolitan City Centre/Central Business District except those located in LBZ area, Civil Lines Bungalow Area and hotels existing on heritage structures and
 - b. Hotel-cum-commercial plots.

This shall apply to all categories of hotels. The FAR for Commercial Centres and Metropolitan City Centre/Central Business District as well as Hotel-cum-commercial plots where apportionment of FAR shall be as per original lease conditions and shall stand enhanced automatically to that extent, for this purpose only if not available.
- vi. In respect of hotels where the building plans stand sanctioned prior to 27.1.2006, parking standard of 3 ECS for 100 sqm of floor area shall be applicable only for the additional FAR which will be availed consequent upon amendment to MPD-2021. In respect of hotels where the building plans have been sanctioned on or after 27.1.2006, the parking standard of 3 ECS for 100 sqm of floor area shall be applicable to the entire plot.
- vii. Sustainable Management of waste in hotels & motels will be responsibility of the owner and net pollution discharge should be zero.
- viii. Modern techniques shall have to be adopted in disposal of waste in motels viz. segregation of solid waste into compostable and non-compostable. Compostable waste should be deposited in localized compost pits; non-compostable should be incinerated in incinerators maintained by the motel, subject to pollution control norms.
- ix. Revised building plans will be submitted to the local bodies i.e., concerned municipal body/ DDA as the case may be for sanction under building bye laws.
- x. Height subject to clearance from Airport Authority of India, ASI, Delhi Fire Service (DFS), other concerned authority and statutory bodies.
- xi. The minimum parking as per Clause 22.12.1 shall be earmarked. Wherever parking is provided within the plot / basement and is misused, the same is liable to municipalisation/ taken over by the authority.

22.10 Industries

22.10.1 Planned Industrial Area

A. Use Premise Definition

Table 22. 28 : Use Premise and Definition - Industrial

S. No	Use premise	Definition
1.	Industrial Plot	A premise for industrial activity with non-hazardous, non-polluting activity.
2.	Industrial Flatted	A premise having a group of small industrial units with common services and facilities of non-polluting nature.
3.	Integrated Industrial Area/ Scheme	A premise for industrial activity with non-hazardous, non-polluting activity. It can be mix of plotted or flatted.

B. Permissible Activities

Table 22. 29 : Use Premise and Activities Permitted - Industry

S. No.	Use Zone	M1						
	Use Premise	Manufacturing/ Service Industries /Service and Repair						
		Plotted				Flatted		
		Upto 50 sq. m.	Above 50 - 400 sq.m.	Above 400- 2000 sq.m.	Above 2000 sq.m.	Min. 400- 2000 sq.m.	Above 2000 sq.m. - 20,000	Above 20,000 sq.m.
1	Retail Shop/Repair Shop/ Personnel Service Shop			✓	✓	✓	✓	✓
2	Canteen				✓		✓	✓
3	Warehouse/Storage / Godown related to industrial activity: Upto maximum 10% FAR		✓	✓	✓	✓	✓	✓
4	Offices					✓		
5	Watch and ward residence (20 sq.m.).		✓	✓	✓	✓	✓	✓
6	Treatment Plant, ESS			✓	✓	✓	✓	✓
7	Residential for staff/ worker: upto maximum 10% of FAR				✓		✓	✓

8	R&D Facilities				✓		✓	✓
9	Incubation Centers/ Co-working			✓	✓	✓	✓	✓

C. Development Control Norms

Table 22. 30 : Industry

S. No.	Use Zone Use Premise	M1				
		Plot Area (minimum)	Ground Coverage (maximum)	FAR	ROW (m) (minimum)	Height (m)
1.	Industrial Plotted	Upto 50 sq.m.	100	200	9	8
		Above 50 - 400 sq.m.	60	200	Plots below 100 sq.m.: 9 Plots above 100 sq.m.: 12	15
		Above 400-2000 sq.m.	50	200	12	NR*
		Above 2000 sq.m.	40	200	upto 2 ha: 24 above 2 ha: 30	NR*
2.	Industrial Flatted	400-2000	30	200	12	26
		Above 2000-20,000	30	200	24	NR*
		Above 20,000	30	200	30	NR*

*Subject to clearance from AAI / Fire Department and other statutory bodies.

The additional FAR Charges shall be payable as decided by the Government from time to time.

Other Controls:

- i. All industries should have provision for separating the solid waste before disposal. No untreated effluent shall be allowed to be discharged. Primary treatment of the effluent shall be done at the plot level as per requirement.
- ii. In case of plots upto 60 sq.m., common parking shall be provided whereas for plots above 60 sqm front set back (min. 3 m) shall be provided without boundarywall for parking and loading and unloading.
- iii. 5% extra ground coverage will be provided for stack parking.
- iv. In case of plots of size 500 sq.m. and above, the utilities such as E.S.S., underground water storage tank, roof top water harvesting system, separate dry and wet dustbins, solar heating / lighting system etc. shall be provided within theplot.
- v. Service Centres shall be planned as per plotted industrial area norms.
- vi. Upto maximum 10% FAR can be used for office in Manufacturing and Service/ Repair
- vii. Retail Shop/Repair Shop/ Personnel Service Shop/ Canteen - Upto a maximum 10% FAR or 500 sqm whichever is less.

- viii. In order to facilitate start-ups and innovation clusters in industrial areas, co-working spaces shall be permitted on industrial plots up to 10% of the FAR without any use conversion.
- ix. Warehousing shall be permitted on plots with direct access from min. 30m RoW.

D. Permissible Uses for Use Conversion in Planned Industrial Areas

Table 22. 31 : Permissible Uses for Use Conversion in Planned Industrial Areas

S. No.	Permissible Use premises as part of modification in layout plan of industrial area/ redevelopment scheme*	Subject to Conditions	
		Min. Plot size (sq.m.)	Min ROW (m)
1	Commercial Use		
a.	Commercial (except Hotel/Cineplex) Other Controls i. Activity permitted shall be as per DCN related to the plot size and ROW	-	24
b.	Warehouse/ Storage/ Godown Other Conditions i. Industrial plots are eligible for conversion as per DCN of warehousing ii. Warehouses on plots of 1 ha and above with direct access from 30m RoW shall be permitted to have retail activity up to 50% of the permissible FAR on payment of charges as fixed by govt. from time to time. iii. All loading and unloading facilities are provided within the plot	Min 1000sqm.	30
2	PSP		
a.	Education Facilities: Research & Development Centres, Institutions, Vocational Training Centre, ITI/ Polytechnic/ Skilling centres, Vocational/ Training Institute, Teacher Training Institute, Management Institute, Coaching Centres, Other training institutes (commercial & secretarial training centre), General Colleges, Professional Colleges, College.	Norms related to plot size as prescribed by PSP DCNs FAR as per original land use	24
c.	Health Facilities: Hospital / Tertiary Health Care Centre (up to 100 beds) Other Conditions Eligible for conversion within the existing development control norms subject to conditions that number of beds to be accommodated on a plot shall be worked out {@ 80 sqm} of gross floor area per bed FAR as per original land use shall be applicable	Norms related to plot size as prescribed by PSP DCNs	24
d.	Banquet Hall	800	24

	subject to specification/ regulations including Fire Norms as may be prescribed. DCN of banquet plot shall be applicable		
e.	Restaurant, Recreational Club, Hostel & Old age home, Community and Recreational hall, Nursing Home & Health Centre are permitted as part of modification in layout plan of industrial area. DCN of respective use shall be applicable	Norms as prescribed by DCNs of original land use	
3	Group Housing		
a.	Group Housing	3000	24
	i. Eligible for conversion within development control norms of group housing along with incentive 1.5 times FAR of permissible FAR of Group Housing. ii. Required Commercial preferably and PSP activity for residential population, and working space up to 15% of Permissible FAR shall also be allowed.		

Other Controls:

- i. There shall be no height restriction subject to clearance from AAI, Delhi Fire Services (DFS) and other statutory bodies.
- ii. The industrial use shall be eligible for conversion to other uses within the existing development control norms, subject to payment of conversion charges computed on current market value and cost of parking as decided by the Government from time to time.
- iii. Sub-division of larger Industrial plot or amalgamation of Industrial plots will be allowed in existing areas as well as approved schemes/layouts/building plans on these Industrial Plots.
- iv. Rain water harvesting preferably with rain water storage for re-use ,STP, dual piping system, use of solar PV shall be provided to minimize the additional burden on infrastructure services
- v. These provisions shall not be permitted on non-conforming/ regularized industrial cluster.
- vi. The above provisions shall not affect the concerned Supreme Court orders in any manner.
- vii. For regeneration of industrial areas, a regeneration plan of min. 4 hectares shall be prepared where minimum plot size eligible for regeneration will be 1000sqm. In such redevelopment relaxation in area upto 5% in lower limit of plot size shall be permitted.
- viii. In the redevelopment of industrial plots, 1.5 times of permissible FAR has already been notified in Notification S.O. 683 (E) dated 01.04.2011 regarding Regulations and Guidelines for Existing Planned Industrial Area, therefore, the incentive of 1.5 times of permissible FAR shall be allowed on all permissible uses on industrial plot.

**E. Parameters for Industrial Units in Different Use Zones and Use Premises
Permissibility of Industries in Non-Industrial Use Zones**

For the industrial classification, the limits of parameters shall be fixed according to the nature of industries, area and the nature of industrial development.

Table 22. 32 : Parameters for Industrial Units in Non-industrial use zones

S. No	Use Premises	Groups Permitted (Refer Annexure)	Conditions	
			Max. no. of workers	Max. Industrial Power Load (KW)
1	Residential			
a.	Plotted housing (Household Industries)	Activities listed in Annexure 5 / (Annexure 12)	9	11
b.	Village Abadi	Activities listed in Annexure 5	9	11
2	Commercial			
a.	Convenience Shopping Centre, Local Shopping Centre	M1 (Annexure 12)	5	11
b.	Community Centre		9	11
c.	District Centre		19	11
d.	Service Market, Service Centre	(Annexure 12) and (Annexure 13)	--	--
3	Industrial Use			
a.	Plotted development	All industries except those prohibited and of Non-polluting & non-hazardous nature,	As per need	As per need
b.	Flatted Industries	All industries except those prohibited, and of Non-polluting & non-hazardous nature, excluding industries producing noise / water / vibrations / odour pollution	¹ [As per need]	As per need

Other Controls:

- i. Maximum no. of workers shall be as per notification issued by the Competent Authority from time to time.
- ii. The power requirement for operating pollution control devices and non-manufacturing use shall be over and above the aforesaid permissible load.

22.10.2 New Industrial Areas

- i. New industrial activity in the NCT of Delhi should be restricted to hi-tech and service-based industries (Annexure 12). These activities shall be permissible in existing industrial areas subject to the payment of infrastructure upgradation charges to be decided and recovered by concerned Authority / local body.
- ii. **Industrial Use Zone - Guidelines**
The subdivision of industrial use zone into use premises and subsequent approval of layout plans for industrial estates shall be governed by the following norms:
 - a) DE/ DDA shall prepare layout plan/ regeneration plan based on the following options.

Table 22. 33 : Land distribution in New Industrial Area (Integrated Scheme)

Use Premise	Percentage of land
Industrial (Net Area)	50%
Residential*: workers housing	20%
Recreational: Buffer Zone, Parks, Water Bodies, Green under HT lines, internal paved walkways between zones, open air theatre etc.	7%-10%
Other Use permitted: Commercial Shopping Centre, Retail, exhibition space, Guest House / Budget hotels, Lodging and Boarding, Communication, information centres, training centres, R&D facilities, Restaurant etc.	2%-3%
Social and Physical Facilities 1. Public and Semi-Public: Fire Station / Fire Post, Police Station / Police Post, Hospital / Tertiary Health care Centre /Dispensary, ITI / Polytechnic, Dharamshala, Night Shelter, Day Care Centre, Working Men-Women Hostel, etc. 2. Utilities: Electric Sub-Station, CETPs, Pumping Stations, Underground Reservoirs / Fire Fighting Tanks and other utilities, etc. solid waste collection centres, water recycling plants etc.	6%-8%
Transportation: Circulation, Parking, Walking/cycling paths, Goods Vehicle Parking Fuel Station etc.	15%-18%
Total	100

* Regulations for Group Housing shall apply. The housing would be utilised for the workers/ employees engaged in the industrial area.

Other controls:

- i. For Industrial areas (above 1 ha), additional 15% of permissible residential FAR may be utilised to develop affordable rental housing. Warehousing within the plot in, shall be limited to 10% and shall be provided as incidental storage accruing out of the industrial activity in the respective plot (raw material, finished products, etc., storage)
- ii. Parking norms must be applied as per Clause 22.12.1.

Other conditions for approval of layout plans for Industrial Use Zones:

- i. All new Industrial Estates/ areas shall have approach from a road of at least 30m ROW.
- ii. Grease traps should be provided near automobile washing area.
- iii. New Industrial areas should be located along major arterial roads. Major infrastructure network like CNG, LPG, oil, optical fibre, electricity, etc. to be made available along this corridor through underground pipelines.
- iv. The provision of CETPs, solid waste separation / treatment plants shall be made at the industrial cluster level.
- v. Proper disaster arrangements shall be made by the concerned agency.
- vi. Landscape plans shall be prepared for the area.
- vii. All industries should have provision of separating solid waste before disposal. Provisions for management of e-waste should be made

22.11 Recreational

A. Use Premise and Definitions

Table 22. 34 Use Premises and Definition – Recreational

S. No.	Use Premise	Definition
1	Regional Park	The area comprising of the Northern, central, South Central and Southern Ridge subject to verification by the Forest Department.
2	City Park/ District Park/ Community Park	A park is an area of natural, semi-natural or planted space set aside for human enjoyment and recreation. It may include areas designated for protection/ preservation.
3	Theme Based/Amusement Parks	A large outdoor area usually based on a particular theme/idea featuring various attractions, such as rides, games, as well as other events for entertainment purposes.
4	Multipurpose Ground	An open space for multiple public activities/functions with recreational facilities.
5	Archaeological Parks	Archaeological Park is an area which combines assets of heritage value with ecologically sensitive assets.
6	Historical Monuments	Historical complexes identified as having a degree of historic and/ or socio-cultural significance.
7	Biodiversity Parks	These are special parks with unique landscape that serve as nature reserves for the area and harbor of native flora and fauna.
8	Green Buffer	Buffers are green areas/ corridors developed along water bodies, natural drains, HT Lines, etc.
9	Sports Centre	A premise used for Outdoor and indoor games with pavilion buildings, stadium structure for spectators and related facilities.

B. Permissible Activities

Table 22. 35 Use Premise and Activities Permitted - Regional Park, City Park, District Park, Community Park & Multipurpose Grounds

S. No	Use Zone	P1	P2							RD
	Use	1	2	3	4	5	6	7	8	9

	Premise	Regional Park *	City Park	District Park	Community Park	Theme Based / Amusement Parks	City	District	Community	Local Level Parks
	Activities Permitted									
1	Forests/ Woodlands	✓	✓	✓						
2	Watch and Ward room	✓	✓	✓	✓	✓	✓	✓	✓	
3	Picnic Huts & grounds	✓	✓	✓	✓	✓				
4	Bio-diversity Park	✓	✓	✓						
5	Zoological Garden /Bird Sanctuary	✓								
6	Botanical Garden/ Arboretum	✓	✓	✓						
7	Local Government Offices (Maintenance)	✓	✓	✓	✓	✓	✓	✓		
8	Open Air Theatre/ Amphitheatre	✓	✓	✓		✓				
9	Shooting Range	✓								
10	Police Post/ Fire Post	✓	✓	✓		✓				
11	Orchard	✓	✓	✓		✓				
12	Plant Nursery	✓	✓	✓						
13	National Memorial (approved by Cabinet/ Govt. of India)		✓	✓						

S. No	Use Zone	P1	P2							RD
	Use Premise	1	2	3	4	5	6	7	8	9
		Regional Park *	City Park	District Park	Community Park	Theme Based / Amusement Parks	City	District	Community	Local Level Parks
Activities Permitted	Multipurpose Ground									
14	Aqua park/water sports park/Aquarium		✓	✓		✓				
15	Sports activities		✓	✓						
16	Playground		✓	✓	✓	✓	✓	✓	✓	✓
17	Recreational Club		✓	✓		✓				
18	Open-air food court		✓	✓	✓	✓				
19	Children Park / Children Traffic Park		✓	✓	✓	✓				✓
20	Specialized Park		✓	✓		✓				
21	Archaeological Park		✓	✓						
22	Amusement Park/ Theme Park Rides Mechanical +water rides), games, shows, Theme Exhibits etc.		✓	✓		✓				
23	Amenity structures	✓	✓	✓	✓	✓	✓	✓	✓	
24	Open gyms		✓	✓	✓					
25	restaurant		✓	✓		✓				

S. No	Use Zone	P1	P2							RD
	Use Premise	1	2	3	4	5	6	7	8	9
		Regional Park *	City Park	District Park	Community Park	Theme Based / Amusement Parks	City	District	Community	Local Level Parks
Activities Permitted	Multipurpose Ground									
	/ Café									
26	Vending booth/ Kiosks/		✓	✓	✓	✓	✓	✓	✓	
27	Public meeting ground, Public address podium, Provision for public gathering/ marriage/ Utsav Pandal & other public & social functions etc.						✓	✓	✓	
28	Play area					✓	✓	✓	✓	✓
29	Public fairground/ Mela						✓	✓		

Note:

*Approved Farm Houses sanctioned prior to 01.08.90 [or subsequently if approved by [concerned municipal body], as per the policy applicable for regularization of the existing farm houses subject to necessary clearances from the Central Empowered Committee of Supreme Court and the Ridge Management Board of GNCTD are allowed.]

Table 22. 36 Use Premise and Activities Permitted - Archaeological Park, Biodiversity Park & Green buffer

S. No	Use Zone	P3			P4
	Use Premise	10	11	12	13

	Activities Permitted	Archaeological Parks	Historical Monuments	Biodiversity Park	Green Buffer
1	Public festivals/exhibitions (Temporary Structures)	✓	✓		✓
2	Cycling & walking tracks	✓	✓	✓	✓
3	Interpretation/ Visitor centres	✓	✓	✓	
4	Restaurants / Food courts	✓	✓	✓	
5	Orchards/ Arboretums, greenhouses, gardening clubs, community vegetable gardens & plant nurseries, etc.	✓		✓	✓
6	Specialized Parks (Butterfly Parks, Fernarium etc.)/ Facilities for Flora & Fauna			✓	✓
7	Open Air-Theatre			✓	✓
8	Amenity Structures*	✓	✓	✓	✓
9	Scientific Laboratories			✓	
10	Administrative Office	✓	✓	✓	
11	Camping Site			✓	✓
12	Wetlands & marshes for water-based ecologies			✓	✓
13	Active public use; parks, yoga spaces, active sports (without formal seating) & boating				✓
14	Kiosks	✓	✓	✓	✓

Note:

* Amenity structure includes toilet blocks, pump room, electric room, guard room, store room and equipment room. These shall be permissible in all parks except at local level.

Table 22. 37 Use Premise and Activities Permitted - Sports Facilities

S. No	Use Zone	P5 (Sports Facilities)			RD
	Use Premise Activities Permitted	14	15	16	17
		City Level sports: Divisional Sports Centre	District Sports Centre	Community sports Centre	Local Level Play Area
1	Multiuise Stadium (Seating capacity 15,000)	✓			
2	Stadium	✓	✓		
3	Aquatic centre (covered or otherwise with full size competition pool, a training / lap pool, diving pool which can also be used for Water Polo and Synchronized swimming as well as other aquatic recreational facilities like waterslides, wave pool, hydrotherapy pool, Akhara etc.)	✓			
4	Multipurpose hall (Seating capacity 4,000) [for Exhibitions, Trade Shows, Banquets, Multiple sports & related and socio-cultural events	✓			
5	Sports facilities (outdoor and indoor)	✓	✓	✓	
6	Sports academy/ Sports Training Centre	✓	✓		
7	Sports Medicine Centre	✓	✓	✓	
8	Swimming pool	✓	✓	✓	
9	support infrastructure; storage space /spaces for facilities like changing rooms, multi-gym, etc.	✓	✓	✓	✓

S. No	Use Zone	P5 (Sports Facilities)			RD
	Use Premise	14	15	16	17
		Activities Permitted	City Level sports: Divisional Sports Centre	District Sports Centre	Community sports Centre
10	Shop*	✓	✓	✓	
11	Restaurant/ cafeteria*	✓	✓	✓	
12	Bank extension (counter)*	✓	✓	✓	
13	Office (departmental)*	✓	✓	✓	
14	Hostel / Residential Accommodation for sports persons/ players, Plotted Housing (maintenance & management staff): Min. 5% of total FAR	✓	✓		
15	Police Post, Fire Post, Digital Infrastructure Kiosks	✓	✓	✓	
16	Children's corner	✓	✓	✓	✓
17	Playground	✓	✓	✓	✓
18	Watch & Ward Residence.	✓	✓	✓	

Note:

*S. no 10 to 13 Activities all together are permitted for Max 5% of total FAR.

C. Development Control Norms

Table 22. 38 Recreational

S. No	Use Premise	No.(s)	Min. Plot Area (sqm)/ unit	Max. Ground Coverage (%)	FAR	Min ROW (m)	Height(m)
LOCAL LEVEL							
Population upto 10000							
1	Tot lot	40	125	--	--	--	--
2	Housing area park	2	5000	--	--	--	--
3	Housing	2	5000			--	NR*

	Area Playground		(0.5 ha)				
4	Local level Park	1	10,000 (1 ha)	--	--	--	--
5	Local level Play area	1	5000-10,000 (0.5 to 1 ha)	2 %	4	--	NR*

* Subject to clearance from AAI, Fire Department and other statutory bodies.

S. No.	Use Premise	No.(s)	Min. Plot Area (sqm)/ unit	Max. Ground Coverage (%)	FAR	Min ROW (m)	Height (m)
COMMUNITY LEVEL Population upto 100,000							
1	Community Park	1	35000sq.m (3.5 ha)	--	---	18	Maximum permissible height for all types of habitable built structures is 4.8 m
Other Controls:							
i. All permissible permanent built structures in the park shall not exceed 0.5% of the park area or 100 sq.m. whichever is lesser.							
ii. 20% of the area shall be developed as dense plantation.							
2	Community Multipurpose ground	1	20,000sq.m (2 ha)	NA*	NA**	18	Maximum permissible height for all types of habitable built structures is 4.8 m
Other Controls:							
i. * Minimum 50% of total area shall be under soft parking and remaining 50% shall be utilized for activities.							
ii. **All permanent built structures within the multipurpose grounds, shall not exceed 1% of the plot area or 500 sq.m. Whichever is less.							
3	Community sports Centre	1	1 ha to 3 ha	20%	40	24	NR*
Other Controls:							
Maximum 5% of FAR is permitted for the following:							
i. Shop,							

S. No.	Use Premise	No.(s)	Min. Plot Area (sqm)/ unit	Max. Ground Coverage (%)	FAR	Min ROW (m)	Height (m)
COMMUNITY LEVEL Population upto 100,000							
ii. Restaurant, iii. Bank extension (counter), iv. Office (departmental), v. Police Post, Fire Post, vi. Digital Infrastructure Kiosks.							
* Subject to clearance from AAI, Fire Department and other statutory bodies.							

S. No.	Use Premise	No.(s)	Min. Plot Area (sqm)/ unit	Max. Ground Coverage (%)	FAR	Min. RoW (m)	Height (m)
SUB-CITY LEVEL Population 5,00,000							
1	District Park	1	2,50,000 sq.m (25 ha)	--	NA**	30	Maximum permissible height for all types of habitable built structures is 4.8 m
Other Controls: i. Following norms shall be applicable for built structures within District park that have an area more than 25 ha. <ol style="list-style-type: none"> Area of the restaurant plot shall not be more than 0.8 Ha or 1% of the District Park, whichever is less. Restaurant plot shall have no physical segregation from the rest of the District Park area. The building shall be a single storey structure with max. FAR of 5 and height not more than 4m. without any residential facility and to harmonize with the surroundings. In case there is no parking lot in the vicinity, parking should be provided at a reasonable distance from the restaurants. Parking area should not form part of the restaurant complex / greens. 30% of the area shall be developed as dense plantation. ii.							
2	District Multipurpose Ground	1	40000sq.m (4 ha)	NA*	NA**	24	Maximum permissible height for all types of habitable built structures is 4.8 m
Other Controls: i. **All permanent built structures within the multipurpose grounds, shall not							

S. No.	Use Premise	No.(s)	Min. Plot Area (sqm)/ unit	Max. Ground Coverage (%)	FAR	Min. RoW (m)	Height (m)
SUB-CITY LEVEL Population 5,00,000							
exceed 1% of the plot area or 500 sq.m. whichever is lesser. ii. * Minimum 50% of total area shall be under Soft Parking and remaining 50% shall be utilized for activities.							
3	District Sports Centre	1	3 ha to 10 ha	20%	40	24	NR*
Other Controls: Maximum 20% of FAR a. Max. 5% for- i. Shop, ii. Restaurant, iii. Bank extension (counter), iv. Office (departmental). b. Min. 5% for- i. Hostel/ Residential Accommodation (for sports persons/ players), ii. Plotted Housing (maintenance and management staff), iii. Police Post/Fire Post, iv. Digital Infrastructure Kiosks. <i>* Subject to clearance from AAI, Fire Department and other statutory bodies.</i>							

S. No.	Use Premise	No.(s)	Min. Plot Area / unit	Max. Ground Coverage	FAR	Min. Ro W (m)	Height (m)
CITY LEVEL Population Above 20,00,000							
1	Regional Park	---	NA	NA*	---	NA	Maximum permissible height for all types of habitable built structures is 4.8 m
Other Controls: i. The built structure shall include, provision of security cabins at the entrances to such sites, and 2 (two) toilets per sq.km. in the areas identified as recreational zones/ accessible zones with approval by concerned agencies. ii. Paved surfaces shall be restricted to a maximum of 0.1% of the area of a site. Wherever possible, only pervious material shall be used for paving. Note: **Any development in forest land falling within the Regional Park shall be in accordance to the							

S. No.	Use Premise	No.(s)	Min. Plot Area / unit	Max. Ground Coverage	FAR	Min. Ro W (m)	Height (m)
CITY LEVEL Population Above 20,00,000							
Forest Department.							
2	City Park	1 @10,00,000 population	40 ha	-	NA*	30	Maximum permissible height for all types of habitable built structures is 4.8 m
Other Controls:							
i. Following norms shall be applicable for built structures within City park having an area of more than 80 ha: <ul style="list-style-type: none"> As regards permissible activities, norms for district park shall be applicable Parking area for such activities should not form part of the built complex / greens. ii. 30% of the plot area shall be developed as dense vegetation.							
3	City Multipurpose Ground	1 @10,00,000 population	80,000 sq.m (8 ha)	NA*	NA**	30	Maximum permissible height for all types of habitable built structures is 4.8 m
Other Controls:							
i. ** All permanent built structures within the multipurpose grounds, shall not exceed 1% of the plot area or 500 sq.m. whichever is lesser.							
ii. * Minimum 50% of total area shall be under Soft Parking and remaining 50% shall be utilized for activities.							
4	Theme Based/ Amusement Parks	---	Up to 10 ha	Upto 10%	60	30	12
5	Archaeological Parks	---	NA	0.5%*	---	18	Maximum permissible height is 6m subject to permission from competent authorities.
Other Controls:							
i. *Maximum built area for permanent structures shall not be more than 0.5% of the							

S. No.	Use Premise	No.(s)	Min. Plot Area / unit	Max. Ground Coverage	FAR	Min. Ro W (m)	Height (m)
CITY LEVEL Population Above 20,00,000							
<p>area of the park or 10,000 sq.m., whichever is less.</p> <p>ii. This built area computation shall exclude any heritage assets identified for adaptive reuse.</p> <p>iii. The built area shall be as per applicable statutory provisions including the Acts and Rules governing heritage assets.</p> <p>iv. Design and height of structures shall not obstruct views of the heritage assets and shall be approved by the Competent Authority.</p> <p>v. Public art and installations shall not be considered a part of built area.</p> <p>vi. Cycle tracks, local walkways and desire lines of access through the park shall be maintained and kept open to public during fixed hours.</p>							
6	Biodiversity Parks	---	NA	0.5%*	---	---	2 storeys Max. 12 m for sloping roof structures.
<p>Other Controls:</p> <p>i. *Maximum permissible area of built structures shall be 0.5% of park area or 10000 sq.m., whichever is less.</p> <p>ii. Building within the Bio-diversity parks should meet “green building” criteria (Griha 4 star rating).</p>							
7	Green Buffer	---	NA	0.5%*	---	NA	4.8m**
<p>Controls for built structures:</p> <p>i. *Maximum built area for permanent structures shall not be more than 0.5% of the area of the site.</p> <p>ii. ** Maximum height of the permanent structures shall be 4.8m., except as prescribed by AAI, HCC, DUAC, DTL.</p> <p>iii. Where any projects for buffer development include heritage assets, the built area shall be as per applicable statutory provisions including the Acts and Rules governing heritage assets.</p> <p>iv. Maximum ancillary permissible is 20% of total built up –museums and information centers, restaurants, cafes (applicable on minimum consolidated area of 1 ha).</p> <p>Other Controls:</p> <p>i. Cycle tracks, local walkways and desire lines of access through the site shall be maintained and kept open to public during fixed hours.</p> <p>ii. Wherever possible, new developments along the edge of such sites shall face the sites. Compound walls shall be transparent above a height of 1m. The green buffer should be kept maintained, free from all encumbrances and open to public.</p>							

S. No.	Use Premise	No.(s)	Min. Plot Area / unit	Max. Ground Coverage	FAR	Min. Ro W (m)	Height (m)
CITY LEVEL Population Above 20,00,000							
8	City Level sports: Divisional Sports Centre	1 @10,00,000 population	1,00,000 sq.m (10 ha)	20%	40	30	NR*
<p>Other Controls: Maximum 20% of total FAR</p> <p>a. Max. 5%</p> <p>i. Shop, ii. Restaurant, iii. Bank extension (counter), iv. Office (departmental).</p> <p>a. Min. 5% for</p> <p>i. Hostel / Residential Accommodation (for sports persons/ players), ii. Plotted Housing (maintenance and management staff), iii. Police Post/Fire Post, iv. Digital Infrastructure Kiosks.</p>							
*Subject to clearance from AAI, Fire Dept. and other statutory bodies.							

Other Controls for Recreational Areas:

- i. In all new projects located along drains or water bodies (above 1 ha) shall maintain a minimum mandatory buffer of 10m from the edge of the water bodies/drains wherever feasible.
- ii. All permanent and temporary construction shall be made inclusive for all and accommodate the needs of persons with disabilities.
- iii. All habitable built structures shall not exceed 4.8m unless otherwise specified such as in case of Biodiversity parks etc.
- iv. Recreational activities in Yamuna Flood Plain shall be permitted as identified as Yamuna Comprehensive Plan developed by DDA (ref: ENV:2). The norms for built structures developed in these zones shall be as follows:
 - a. Maximum built area for all such structures shall not be more than 0.5% of the area of the plot or 10,000 sq.m. whichever is less.
- v. **For Parks and Multipurpose grounds:**
 - a. Paved surfaces shall not exceed 1% of the total park area.
 - b. Any park currently operating/serving as District park or City park, shall continue to fall in the same nomenclature.
 - c. Minimum 50% of total area shall be under Soft Parking and remaining 50% shall be utilized for activities.
 - d. Minimum 3% of the remaining area (excluding Soft Parking area) shall be utilized for Electric Sub Station, Toilets, Security and other marriage related activities etc.

- e. Multipurpose Ground can be sub-divided suitably with minimum of 0.5 ha of plot area to accommodate number of functions at one time.
 - f. All park / multipurpose grounds (5 to 10%) shall have provisions for rainwater harvesting.
 - g. Neighbourhood park, housing park, neighbourhood playground, housing playground and tot lots shall be a part of gross residential area.
 - h. Maximum permissible height for all types of habitable built structures is 4.8 m (unless otherwise specified). Pneumatic structures and kinetic facades (as per international standards), temporary structures, iconic structures, sculptures and installations, architectural features, that are non-habitable shall be free of FAR and no height restrictions shall be applicable on these, with approval from Authority. For archaeological parks, necessary permissions shall be taken from approval authorities.
 - i. Amenity structure includes toilet blocks, pump room, electric room, guard room, store room and equipment room. These shall be permissible in all parks except at local level.
 - j. Parks that have been identified as flood sink areas shall not have any permanent construction.
 - k. Multi-gyms shall be permissible in parks having an area of 1 ha and would have built-up area of min. 225 sq.m. and not more than 500 sq.m.
 - l. Informal shops shall be permitted at the entry of these parks as follows:
 - City/ District park: 8-10 at major entries
 - Community parks: 2-5 at major entries
 - Multipurpose grounds: 2-5 at major entries
 - m. Development of parks and green corridors along the Nallahs should incorporate conservation of ground water and water bodies. To recharge the ground water, conservation of water bodies and rainwater shall be essential. The area near Najafgarh Jheel and its surroundings and the Ridge can also be used as potential water conservation area.
- vi. **Sports Facilities:**
- a. New play fields shall be preferably provided / developed in the vicinity of educational institutions and landscape areas.
 - b. To incentivize development of sports facilities and swimming pool (maximum 100 sq.m.) within the group housing areas, schools, clubs, etc. shall not be counted towards ground coverage and FAR.
 - c. All these various sports facilities shall have layout plan, landscape plan, and parking plan, etc.
 - d. The playground and sports facilities should be accessible by a network of pedestrian and cycle tracks wherever feasible.
 - e. The sports facilities shall be developed according to proper layout plan and landscape plan with adequate parking facility.
 - f. The existing sports infrastructure shall be upgraded and efficiently re-planned to provide better facilities.
 - g. Multi-gyms would be permissible in parks having an area of one ha. and would have built up area upto 225 sq.m.

22.12 Transport

A. Development Control Norms

Table 22. 39 - Transport

S. No	Use Premise	Development Controls [^]					
		Plot Area (minimum)	Area under Operation (%) (Maximum)	Area under Building (%) (Maximum)	FAR*	FAR for passenger/ staff accommodation (%) (maximum)	RoW* (m)
1.	Airport	As per norms of Airport Authority of India (AAI)					
2.	Rail Terminal/ Integrated Passenger Terminals	-NA-	70	30	100	15	-NA-
3.	ISBT	10 Ha.	60	40	100	30	45
4.	Bus Depot	0.4 Ha	50	50	100	25	24
5.	Multi-level parking for public buses	2 Ha	100	50	100	25	24
6.	Bus Terminal	0.1 Ha (Community level)	50	50	100	25	18
		0.2 Ha (Sub-City Level)	50	50	100	25	18
7.	Property Development for Metro Stations	Upto 3Ha	As per requirement	25	100	-NA-	-NA-
8.	Metro/ RRTS Yards	-NA-	80%	20%	100	15%	-NA-
9.	Multi-level parking	0.1 Ha	-NA-	66.6%	100	-NA-	18
10.	Fuel stations	30m X 36m (Minimum) 33m X 45m (Maximum)	80	20	40	-NA-	30

[^] To be read along with 'Other Controls' mentioned below.

* FAR is to be calculated and utilised only on the Building Plot. Area under Bus Shelter not to be included in FAR.

** All existing Use premise shall continue to function.

Other Controls:

- i. Airport:**
 - a. Activities Permitted: All facilities related to Airport / Aviation Passengers as decided by AAI.
- ii. Rail Terminal/ Integrated Passenger Terminals/ Metropolitan Passenger Terminal:**
 - a. Activities Permitted: All facilities related to Railway operations, Passengers, Goods handling, watch & ward, Hotel, Night Shelter.
 - b. Only identified Rail Terminal/ Integrated Passenger Terminal/ Multi-Modal Transport Hub to be developed as per TOD norms subject to traffic and transportation studies related to surrounding road network.
- iii. ISBT:**
 - a. Activities Permitted: All facilities related to Bus operations & Passengers, Bus Terminal, parking, watch & ward, Soft Drink & Snack Stall, Offices, Hotel, Night Shelter, Commercial, Social infrastructure, Residential, Service Apartments, hostels.
 - b. FAR shall be available on a maximum area of 10 Ha. or area of the site whichever is less. ISBT including operational structures have maximum FAR of 70 and Hotel/ Passenger accommodation & facilities have maximum FAR of 30.
 - c. Parking: In addition to the requirement of parking for ISBT/ buses, parking for Hotel/ passenger accommodation and facilities shall be at the rate of 2 ECS per 100 sq.m. of floor area.
 - d. The development shall be undertaken in a composite manner.
 - e. ISBT only if identified as TOD node to be developed as per TOD norms subject to traffic and transportation studies related to surrounding road network.
- iv. Bus Depot:**
 - a. Activities Permitted: All facilities related to Bus operations & Passengers, Bus Terminal, parking, watch & ward, Soft Drink & Snack Stall, Offices, Hotel, Commercial, Social infrastructure, Residential, Service Apartments, hostels.
 - b. Area of Bus depots at sub-city level shall be as per the requirement.
 - c. As far as possible, bus depots must function as Bus Terminals.
 - d. Bus depot site identified as TOD node to be developed as per TOD norms subject to traffic and transportation studies related to surrounding road network.
- v. Multi-level parking for public buses:**
 - a. Multilevel bus parking is permitted in all Use Zones except Recreational Open Space and environmentally sensitive areas.
 - b. The site must accommodate at least the required number of bus parking space on site at the rate of minimum 1 bus per 70 sq.m.
 - c. A FAR of 100 is permissible over 50% of plot area. Norms of podium-based building shall be applicable.
 - d. Operational structures and circulation areas may cover 100% of the plot area and shall not be counted towards FAR.
 - e. The maximum height shall be as per local constraints like flight paths, heritage zones etc.
 - f. There will be no restriction on the number of levels of basement subject to structural safety.

- g. In case of integrated schemes, development controls including height shall be as per approved scheme or as per local restrictions if any.

vi. Bus Terminal:

- a. Activities Permitted: All facilities related to Bus operations & Passengers, Soft Drink & Snack Stall.

vii. Property Development for Metro Stations:

- a. Metro Stations along with property development (composite development) up to a maximum area of 3.0 Ha shall be permitted in all Use Zones, except in Recreational and Regional Park/ Ridge Use Zone, Lutyens' Bungalow Zone and Heritage Zones subject to approval from Technical Committee of DDA.
- b. This enabling provision of property development would have the following broad development controls:
 - 1. 25% ground coverage and 100 FAR, including area under Metro Station with no height restrictions and subject to approval of the statutory bodies such as ASI, Airport Authority, DUAC etc.
 - 2. In addition to the requirement of parking for Metro Stations, parking for the commercial component will be @ 2 ECS per 100 sq.m.
 - 3. The development shall be undertaken in a composite manner and DMRC shall obtain approval of all the concerned local bodies/ agencies.
- c. Metro site identified as TOD node to be developed as per TOD norms subject to traffic and transportation studies related to surrounding road network.
- d. The following structures shall be treated as operational structures:
 - 1. All Metro Stations and tracks supporting at grade, elevated and underground including entry structures, ancillary buildings to house DG sets, chilling plants and electric substation, supply exhaust and tunnel ventilation shafts etc.
 - 2. Depots and maintenance workshops.
 - 3. Traction sub-stations.
 - 4. Operational Control Centres.
 - 5. Police Station.
 - 6. Recruitment and Training Centres for operational and maintenance staff.
 - 7. Housing for operational staff and Metro security personnel only.
 - 8. Rehabilitation work to be undertaken for the construction of Metro Project.
 - 9. Shops in Metro Stations to cater to the public amenities.
 - 10. Structures above platform over the foot print of the Metro Stations.

viii. Metro/ RRTS Yards:

- a. Activities Permitted: Idle parking of coaches, washing and cleaning facilities, maintenance related facilities, watch & ward and staff related facilities.

ix. Multi-level parking:

For plots for Multi-Level Car Parking (MLCP) already earmarked / designated by local

bodies, the existing development control norms will continue, as follows:

a. Minimum Plot Size – 1000 sqm.

b.

Plot size	FAR
Upto 3000 sqm	100
Above 3000-10000 sqm	100 FAR up to 3000 sqm + additional 60 FAR on balance land.
Above 10000 sqm	100 FAR up to 3000 sqm + additional 60 FAR up to 10000 sqm + additional 50 FAR on balance land.

Maximum FAR permissible (excluding parking area)

c. Maximum Ground coverage - 66.6%.

d. MLCP plots shall be located on roads with RoW of 12 m and above, subject to feasibility report from a competent agency and NOC from Traffic Police and other statutory bodies.

e. Remunerative uses i.e. activities permitted in Local Shopping Centre, Public and Semi Public uses and Residential use except Banqueting and multiplexes

f. Parking to be provided for remunerative use, shall be @ 3 ECS/100 sqm. and 3 times additional ECS for MLCP component.

g. The height shall not be restricted, subject to clearance from AAI, Delhi Fire Service and other statutory bodies.

h. A single agency shall be responsible for management of the MLCP and the On-street parking up to a distance of minimum 500 m along the road from the MLCP site.

i. Suitable measures have to be taken by the Management Agency to discourage on-street parking around the MLCPs by means of increased parking charges (at least 3 times that of MLCP) and other measures.

j. MLCP plots forming part of comprehensive schemes, shall be governed by the development control norms of the approved scheme.

k. Metro deduction shall not be applicable.

l. For all the MLCP sites beyond 3000 sqm Traffic Impact Assessment (TIA) and Traffic Management Plan (TMA) studies are mandatory.

In case of MLCP plots which do not completely get covered by these norms shall be put up for approval of authority for appropriate decision.

x. Fuel stations:

a. CNG stations may be permitted in all use zones except in 'Regional Park/ Ridge', developed district parks and Zone 'O'. Petrol pumps are permissible in all use zones except in Zone 'O' and recreational use zone.

b. Fuel Stations are permissible on Master Plan / Zonal Plan roads and shall not be permitted in absence of an approved Zonal Plan of the area.

c. The regulations for locating the fuel stations-cum-service stations, the development control and permissibility shall be governed by the policy / decision by competent Authority / Government Notifications issued from time to time.

d. Fuel stations shall be regulated by the following controls:

1. Fuel stations shall be located on roads of minimum 24m ROW.
 2. The plot size for fuel stations shall be minimum of 30m X 36m and maximum of 33m X 45m (75m X 40m for CNG mother station as per requirement).
 3. The minimum distance of plot from the ROW line of road intersections shall be as follows:
 - For minor roads having less than 30m ROW - 50m
 - For roads of ROW 30m or more- 100m
 - Frontage of plots should not be less than 30m.
- e. Maximum Height: 6m
- f. Canopy: equivalent to ground coverage within set back.
- g. Maximum 10 FAR permissible for non-inflammable, non-hazardous commercial activities subject to payment of conversion charges/ levies as may be prescribed by the government from time to time.
- h. In case of existing petrol pumps the provision of maximum 10 FAR for commercial activity would be permissible only to those fuel stations / petrol pumps which conform to the controls given in d) i, ii, and iii above subject to payment of appropriate fees/ levies/ misuse, penalty and other charges.
- i. Dispensing capacity of CNG stations should be substantially increased to cater to the increasing demand from all types of CNG vehicles.
- j. At the time of preparation of layout plans of various use zones namely viz. residential, commercial, industrial, PSP facilities and other areas, the location of Fuel Stations should be provided as per the following norms:

Table 22. 40 Fuel station norms

S. No	Land Use/Use Premises	Norms
1.	Residential Use Zone	Two Fuel Stations (One Petrol Pump + One CNG station) per 150 ha. of gross residential area
2.	Industrial Use Zone	Two Fuel Stations (One Petrol Pump + One CNG station) per 40 ha. of gross industrial area
3.	Freight Complexes	Four Fuel Stations (Two Petrol Pumps + Two CNG stations) in each
4.	District Centres	Four Fuel Stations (Two Petrol Pumps + Two CNG stations) in each district centre
5.	Community Centre	Two Fuel Stations (One Petrol Pump + One CNG station) in each
6.	Public & Semi-Public use zone	Two Fuel Stations (One Petrol Pump + One CNG station) in each PSP area.
7.	Security Forces Campus / Police / Hospitals / Tertiary Health Care Centres / Govt.	For captive use / as per requirement.

- k. Electric charging stations shall be permitted as an integrated installation within fuel stations, wherever feasible.

22.12.1 Parking Standards

- i. Parking standards have been prescribed in each use premise. However, wherever it is not prescribed, it will be followed as given as below:

Table 22. 41 General Parking Standards

S. No.	Use Premises	Permissible Equivalent Car Spaces (ECS) per 100 sq. m. of built up area*
1.	Residential	Refer table 22.45
2.	Commercial	Refer table 22.45
3.	Industrial	Refer table 22.45
4.	Government	Refer table 22.45
5.	Public and semi-public facilities	Refer table 22.45

Note:

- a. Additional parking may be created only as paid, shared parking facilities accessible to public at all times.
- b. In case of integrated schemes with multiple use premise, parking norms may be rationalized proportionately to each use unless otherwise specified (for e.g. in TOD Schemes). This shall be subject to approval of Technical Committee of DDA.
- ii. For the provision of parking spaces, the space standards shall be as given in the Table below.

Table 22. 42 Space Standards for Car Parking

S. No.	Type of Parking	Area per ECS (sq. m.)
1.	Open	23
2.	Ground floor covered	28
3.	Basement	32
4.	Multi-level with ramps	30
5.	Automated multilevel with lifts	16

- iii. In the use premises, parking on the above standards shall be provided within the plot.
- iv. In cases, where the building (except hotel) with sanctioned plan is existing/ under construction and where building plans stand sanctioned as per MPD-2021, the parking is to be provided for additional FAR availed, as per the parking standards prescribed in MPD- 2041.
- v. Parking is one of the activities permitted in all use zones except in regional park / ridge, Recreational Open Space and parks as per the approved Zonal Plan/ layout plan.
- vi. The standards given in Equivalent Car Space (ECS) shall include parking for all types of vehicles i.e. cars, scooters, cycles, light and heavy commercial vehicles, buses etc. Parking adequacy statement / study for large projects like Stadia, Shopping Malls, Multiplexes will be desirable. Mode-wise parking spaces are to be marked on drawings to be submitted for approval.

Table 22. 43 Indicative On-site Parking (ECS) Requirements for projects*

Mode	ECS Standard by mode	Area including circulation (sq. m.)	Distribution by mode - per 1 ECS	Distribution by mode - per 1 ECS (TOD Scheme)
Cars/ Taxis	1.00	23.00	0.60	0.60
2 Wheelers	0.25	5.75	0.25	0.10
Cycles	0.10	2.30	0.05	0.10
Buses/ Shared Vans	3.50	80.50	0.05	0.10
Commercial vehicles	3.50	80.50	0.05	0.10
Total			1.00 ECS	1.00 ECS

**The above figures are indicative and may be customized on case-to-case basis. However, minimum proportion of cycle parking is mandatory.*

- vii. Based on the outcome of the study of Public Transport Accessibility Level (PTAL) value, parking norms shall be reduced by the following deductions:

Table 22. 44 PTAL Deduction in Parking Norms

PTAL Level	Access Index Range	% Deduction in Parking norms			
		Residential	Commercial	Industrial	PSPs*
0	0 - 2	0	0	0	0
1	2 - 3	0	0	0	0
2	3 - 5.5	10	5	5	10
3	5.5 - 7	20	10	10	20
4	7 - 8.5	20	20	20	20
5	8.5 - 12	20	20	20	30
6	12 - 20	20	30	30	30
7	20 - 30	30	30	30	30
8	30 and above	30	30	30	30

- viii. **MLCP deduction:** If any Multi-level Car Parking (MLCP) is located within 500 m radius of any property, the parking requirement within that property shall be reduced by 10 percent. MLCP deduction shall not be applicable on Residential Use/Premise.
- ix. **ECS norms for all use premise shall be as per the table below.** The PTAL and MLCP deduction shall be applicable on these parking norms provisions.

Table 22. 45 Parking Norms

Use Zones	Parking Provisions*	Deductions	
		PTAL	MLCP
Residential Premises			
Group Housing	<ul style="list-style-type: none"> EWS/ Service Personnel Housing DU size: less than 40 sqm- Parking @ 0.5 ECS per DU* DU size: 40sqm to 100 sqm: Parking 	P	NP

Use Zones	Parking Provisions*	Deductions	
		PTAL	MLCP
	<p>@1.0 ECS per DU*</p> <ul style="list-style-type: none"> • DU Size: 100 sqm to 200 sqm: Parking @2.0 ECS per DU* • DU Size: above 200 sqm: Parking @ 2.0 ECS per DU* and additional 1.0 ECS per 100 sqm or part thereof. <p><i>* DU size: Plinth Area</i></p> <p>In case of Government Housing Projects, the parking norms shall be as per the applicable norms adopted in case of GPRA Colonies.</p>		
Studio Apartment	<ul style="list-style-type: none"> • 1.0 ECS/100m² of Built-up area • Basement, if constructed, and used only for parking, utilities and services shall not be counted towards FAR. 	P	NP
Plotted housing	<ul style="list-style-type: none"> • 2 Equivalent Car Space (ECS) in plots of size 250-300 sq.m. 	NP	NP
	<ul style="list-style-type: none"> • 1 ECS for every 100 sq.m. built up area, in plots exceeding 300 sq.m., provided that, if the permissible coverage and FAR is not achieved with the above-mentioned parking norms in a plot, the parking norms of the preceding category shall be allowed. 	NP	NP
Hostel/ Dharamshala or its equivalent / Guest House / Lodging & Boarding House/ Sarai	<ul style="list-style-type: none"> • 0.5 ECS/100m² of Built-up area • These norms shall not be applicable for Guest House under Mixed Use Regulations 	P	NP
Low Density Residential Plot (LDRP)	<ul style="list-style-type: none"> • For plots 0.4 to 2 Ha, minimum 50% of plot area be left for soft parking and landscaping. • For plots more than 2 Ha located on roads of minimum width 18m, minimum 50% of the plot area be left for soft parking, maximum 25% of the plot area for landscaping and max. 25% plot area for functions/ building purposes. 	NP	NP
State Bhawan/ State Guest House	1.0 ECS/100m ² of Built-up area	NP	NP
Affordable Public Rental Housing (APRH)/ Affordable Rental Housing Complex (ARHC)	0.5 ECS/100 sqm built up area	P	NP
Slum Rehabilitation Scheme	<ul style="list-style-type: none"> • Residential component at 0.5 ECS per 100 sq.m. of built-up area which can be relaxed wherever required. • Parking for remunerative purposes shall be as applicable for the relevant land use. 	P	NP

Use Zones	Parking Provisions*	Deductions	
		PTAL	MLCP
Night Shelter	<ul style="list-style-type: none"> No mandatory parking is to be provided 	NP	NP
Foreign Mission	--	NP	NP
Economy - Industry, Trade and Commerce			
Convenience Shopping Centre / Local Shopping Centre / Local Level Commercial areas	2.0 ECS / 100 sq.m. of built-up area	P	P
Service Market	2.0 ECS / 100 sq.m. of built-up area	P	P
Community Centre / Non-hierarchical Commercial Centre	3.0 ECS / 100 sq.m. of built-up area	P	P
District Centre/ Sub-Central Business District / Sub- City Level Commercial areas	3.0 ECS / 100 sq.m. of built-up area	P	P
Commercial Plot: Retail & Commerce Metropolitan City Centre i.e. Connaught Place & its Extension, Fire Brigade Lane and Janpath Lane	3.0 ECS / 100 sq.m. of built-up area	P	P
Any other Commercial Centre, including i. Commercial component within/along with Railway / MRTS Stations / ISBT ii. Asaf Ali Road (the area shown as commercial strip in Delhi Gate - Ajmeri Gate scheme)	2.0 ECS / 100 sq.m. of built-up area	P	P
Integrated Freight Complex/ Wholesale Market	3.0 ECS / 100 sq.m. of built-up area	P	P
Godown Plot	Common parking to be provided in case of plots upto 300 sq.m 3 ECS / 100 sq.m. of floor area for plots above 300 sq.m.	P	P
Hotel	<ul style="list-style-type: none"> 2.0 ECS / 100 sq.m. of built-up area In respect of hotels where the building plans stand sanctioned prior to 27.1.2006, parking standard of 3 ECS for 100 sqm of built-up area shall be applicable only for the additional FAR which will be availed consequent upon amendment to MPD-2021. In respect of hotels where the building plans have been sanctioned on or after 27.1.2006, the parking standard of 3 ECS for 100 sqm of built-up area shall be applicable to the entire plot. 	P	NP
Service Apartment	2.0 ECS / 100 sq.m. of built-up area	P	NP
Motel	<ul style="list-style-type: none"> 3.0 ECS / 100 sq.m. of built-up area All guest parking must be catered to within the motel premises themselves. 	P	P
Manufacturing, Service and Repair Industry	2.0 ECS / 100 sq.m. of built-up area	P	P

Use Zones	Parking Provisions*	Deductions	
		PTAL	MLCP
District Court	2.0 ECS / 100 sq.m. of built-up area	P	P
Integrated Office Complex, Government offices (Central / State Government / Local Bodies)	1.0 ECS / 100 sq.m of built-up area.	P	P
Social Infrastructure			
Play School, Coaching Centre, Computer- Training Institute, Physical Education Centre etc.	1.33 ECS / 100 sq.m of built-up area.	P	P
Nursery School	1.33 ECS / 100 sq m of built-up area.	NP	NP
Primary School	1.33 ECS / 100 sq.m. of built-up area	NP	NP
Senior Secondary Schools, , Integrated School	2.0 ECS / 100 sq.m. of built-up area	NP	NP
Schools for mentally challenged, schools for differently abled persons	1.0 ECS / 100 sq.m. of built-up area (new)	NP	NP
Research & Development Centres	1.0 ECS / 100 sq.m. of built-up area	P	P
Institutions, Forensic Science Laboratory	1.33 ECS / 100 sq.m. of built-up area	P	P
Vocational Training Centre, ITI/Polytechnic/ skill centres, Management Institute, Coaching Centre, training Institutes, etc	1.0 ECS / 100 sq.m. of built-up area	P	P
General Colleges, Professional Colleges, etc	1.0 ECS / 100 sq.m. of built-up area	P	P
University Campus	1.0 ECS / 100 sq.m. of built-up area	P	P
Dispensary, clinics, diagnostic facility, Maternity home, Nursing home, Hospitals, Tertiary health centre, etc.	2.0 ECS/ 100 sqm of built-up area.	P	NP
Paramedic Institute	1.0 ECS/ 100 sqm of built-up area.	P	P
Govt. Hospitals, Medical college	1.0 ECS/ 100 sqm of built-up area	P	P
Dispensary for pet animals and birds Veterinary Hospital for pet animals and birds	1.0 ECS/ 100 sqm of built-up area.	NP	NP
Veterinary Institute	1.0 ECS / 100 sq.m. of Admin. Built-up area	NP	NP
Multi-facility Plot	1.0 ECS / 100 sq.m. of built-up area	P	NP
Old Age Home/ Adult Education Centre/Orphanage/Children's Centre	1.8 ECS / 100 sq.m. of built-up area	P	P
Residential Care Centre for differently abled persons/Mentally challenged	1.8 ECS / 100 sq.m. of built-up area	NP	NP
Large religious centre	2.0 ECS / 100 sq.m. of built-up area	P	P
Banquet Hall	6.0 ECS / 100 sq.m. of built-up area	NP	NP
Fitness centre	3.0 ECS / 100 sq.m. of built-up area	NP	NP
Multipurpose Community Hall, Socio-cultural Institute, Cultural and Information Centre	2.0 ECS / 100 sq.m. of built-up area	P	P
Recreation Club, Convention	2.0 ECS / 100 sq.m. of built-up area	NP	P

Use Zones	Parking Provisions*	Deductions	
		PTAL	MLCP
facilities, Museum, Public/ other Library			
Socio-cultural centre, Science Centre, Planetarium, Exhibition-cum-Fair Ground, International Convention Centre, etc	<ul style="list-style-type: none"> • Subject to statutory clearances • 2.0 ECS / 100 sq.m. of built-up area 	P	P
Police Outpost	1.33 ECS / 100 sq.m. of built-up area	NP	NP
Police Post/station, Fire Post/station, Police Line, District Police office, District Disaster Management, District Jail, Police / Fire Training Institute/college, Police Camp, Security Camps, Disaster Management centre, Security Establishment	2 ECS / 100 sq.m. of built-up area		P
Head Post Office, Telecom facilities, Digital infrastructure facilities	1.33 ECS / 100 sq.m. of built-up area	P	P
Media/ Radio services, satellite & Telecommunication centre, Observatory & Weather Office, Media & news agency, Digital infrastructure facilities	1.33 ECS / 100 sq.m. of built-up area	P	P
Green and Recreational Areas			
For Parks above 3.5 Ha- City Park, District Park and Community Park	Parking may be provided in the lots of 25 to 40 ECS at different locations, as per requirement.	NP	NP
City Multipurpose Ground, District Multipurpose Ground and Community Multipurpose Ground	Minimum 50% of total area shall be under soft parking		
Amusement Parks/ Theme Based	3 ECS / 100 sqm. of built-up area with the stipulation to provide min. parking for 100 cars.	NP	NP
Biodiversity Park	Parking may be provided in the lots of 20 to 25 ECS at different locations, as per requirement.	NP	NP
Sports facilities	2 ECS/100 sq.m. of built up	P	P
Other Use Premises			
Property development in Transit Stations	1.0 ECS / 100 sq.m. of built-up area of commercial component	P	P
Temporary Cinema	3.0 ECS / 100 sq.m. of built-up area	P	P
Hotel/ passenger accommodation within ISBT	2 ECS per 100 sq.m. of built up	P	P

Note-

* In all use premises, parking based on the above standards and applicable deductions shall be provided within the plot.

22.13 Utilities

22.13.1 Water Supply and Sanitation

Table 22. 46 Water Supply and Sanitation

S. No.		Utilities	No.	Area per Unit (Ha)
1	Local Level Population upto 10,000	Sewage Pumping Station	As per requirement	
		Underground water tank with booster station and OHT		
		Local level waste water treatment facility		
2	Sub-City Level Population 5,00,000	Sewage Pumping Station	As per requirement	
		Waste water treatment facility		
3	City Level Population 20,00,000	Sewage Pumping Station	As per requirement	
		Sewerage Treatment Plant (180 mld)		

Table 22. 47 Area requirement for Water Supply and Sanitation

S. No.	Utility	Capacity	Land Requirement (sqm)
1	Sewage Treatment Plant (STP)	STP (with SPS & EPS) - upto 5 MGD (22.7 MLD) capacity	650 sq.m./MLD
2		STP (with SPS & EPS) - capacity above 5 MGD (22.7 MLD)	1,100 sq.m./MLD
3		Sewage Pumping Station (SPS)	50 sq.m.
4		Effluent Pumping Station (EPS)	50 sq.m.
5	Water Treatment Plant (WTP)	WTP - 80 MGD (363 MLD)	300 sq.m./MLD
6		WTP - 40 MGD (182 MLD)	400 sq.m./MLD
7	Underground Reservoir with Booster Pumping Stations	5 ML Capacity	700 SQ/ML
8		50 ML Capacity	600 SQ/ML

22.13.2 Solid Waste Management

Table 22. 48 Area requirement for Solid Waste Management

S. No.		Utilities (Capacity)	No.	Area per Unit (sqm)
1	Local Level Population upto 10,000	Area for segregation of waste and parking of utility vehicles (previously: Dhalao)	1	200

2	Sub-City Level Population 5,00,000	Material recovery facility (semi-automatic): 200 TPD	1	6,000 - 8,000
3	City Level Population 20,00,000	Material recovery facility (automated) : > 10,000 TPD	1@ > 20,00,000	10,000 - 20,000
Remark: MRF (Material recovery facility) as per SBM guidelines				

22.13.3 Power

Table 22. 49 Area requirement for Power

S. No.	LEVEL	Utility	No.	Area per Unit (sqm)
1	Local Level Population upto 10,000	Electric Sub Station 11 KV	1	40
2	Community Level Population 1,00,000	Electric Sub station 66 KV	2	2,500-4,000
3	Sub-City Level Population 5,00,000	Electric Sub station 220 KV	1	7,000-10,000
4	City Level Population 20,00,000	Electrical Sub station 400 KV	1	40,000

22.13.4 High Tension (HT) Line Buffer

Table 22. 50 Buffer from High Tension (HT) Line

S. No.	Utility	Voltage	Minimum Ground Clearance	RoW Requirement
1	HT Line buffer	765kV	12.1m	67m
2		400kV	8.8m	52m
3		220kV	7m	35m

22.14 Government

A. Use Premise and Definitions

Table 22. 51 Use Premise and Definition - Government

S.No.	Use Premise/ Category	Definition
1	President Estate and Parliament House	President Estate and Parliament House
2	Government Offices	Premises used for the office of Central/ State/ Local Government departments/ agencies.
3	Integrated Office Complex	Premises/ Office complex for offices of Central, State, Local Government departments/ agencies and PSUs. These premises may include offices of single/ multiple departments/ agencies.
4	District Court, Family Court, etc.	Premises/ Court Complexes used for the offices of Judiciary and related activities like lawyers chambers.
5	Government Land (use undetermined)	The norms of Govt. land (use undermined) shall be as per approved layout / scheme, for which development controls shall be as per respective use premises.

B. Permissible Activities

Table 22. 52 Use Premise and Activities permitted

S.No.	Use Zone	G2 (Government)	
	Use Premise	1	2
	Activities permitted	District Court, Family Court, etc.	Government Offices / PSU's, Integrated Office Complex
1	Court	✓	
2	Government Offices		✓
3	Residential max. 5% of FAR	✓	✓
4	Post Office	✓	✓
5	Canteen/ Cafeteria	✓	✓
6	Police Post	✓	✓
7	Fire Post	✓	
8	Restaurant	✓	✓
9	Retail Shop	✓	✓
10	Library	✓	✓

11	Dispensary	✓	✓
12	Administrative offices	✓	
13	Banks and ATM	✓	✓
14	Lawyer's Chamber	✓	
15	offices	✓	✓
16	Digital Infrastructure facility	✓	✓
17	Gym/ Yoga/ Meditation Centre (non-Commercial)	✓	✓
18	Creche / Child Care Centre	✓	✓

C. Development Control Norms

Table 22. 53 Government Offices

S.No.	Use Premise	Plot Area (Min)	Maximum Ground Coverage	FAR	Minimum ROW (m)	Height (m)
1	District Court, Family Court, etc.	1 Ha	50%	300	18	No height restriction subject to clearance from AAI, DFS and other statutory bodies
2	Government Offices					
3	Integrated Office Complex					
<p>Note</p> <ul style="list-style-type: none"> For all new allotments only. Land already allotted not covered under this provision. The maximum FAR for Use premises located in Zone O, and Bungalow Area of Zone C and Zone D, will be 200, along with other provisions given in Zonal Development Plans. <p>Other Controls</p> <ol style="list-style-type: none"> Residential Use- Maximum up to 5% of total permissible FAR can be utilized for residential activities. Public Sector Undertaking/Commercial offices to be restricted to 10% of the total permissible FAR. In case of Redevelopment: Utilization of 10% of total permissible FAR for Commercial Uses shall be permissible to make the redevelopment process financially feasible. This shall be subject to approval of land-owning agency and concerned local body. The norms of Govt. land (use undermined) shall be as per approved layout/ scheme, for which development controls shall be as per respective use premises. 						

22.15 Public and Semi-Public – Social Infrastructure

22.15.1 Health Facilities

A. Use Premise and Definitions

Table 22. 54 Use Premises and Definition – Health Facilities

S. No.	Use Premise	Definition
1	Non-bedded Health facility	A premise with facilities for medical advice, provision of medicine, and/or for carrying out various tests for confirmation of symptoms of a disease. Such facilities may have a few observation beds. (eg. Dispensary/ Clinics/ Clinical laboratory, etc.)
2	Non bedded Health facility (Veterinary)	A premise having facilities for medical advice and provision of medicines. (eg. Dispensary for animals and birds, Pet clinics, etc.)
3	Bedded Health facility (Small)	A premise having medical facilities for treatment/ care for both indoor and outdoor patients having upto 50 beds. Such premises may also include health-care facilities for persons with special needs, elderly, etc. and facilities for pathological/ radiological evaluation of a person's health condition for confirmation of any ailment/ disease. (eg. Nursing Home/ Maternity Home/ Polyclinic/ PHC / Family Welfare Centre/ Paediatric Centre/ Geriatric Centre/ Transition-homes/ Respite care centres, Voluntary health services, Diagnostic centres, Deaddiction/ Rehabilitation facility, etc.)
4	Hospital	A premise providing medical facilities of general or specialised/ advanced nature for treatment of indoor and outdoor patients. Such premises may also include R&D facilities related to health-care. (eg. Hospital/ Tertiary Health Care Centre)
5	De-addiction/ Rehabilitation Centre	A premise with facilities for providing substance use disorder treatment (like drug, alcohol, etc.) and rehabilitation ranging from Acute Detoxification Centres to Long Term Treatment Centres. (eg. Standalone De-addiction Centre/ Rehabilitation Centre)
6	Veterinary Hospital	A premise having medical facilities for indoor and outdoor treatment of animals and birds. (eg. Veterinary hospital)
7	Veterinary Institute	A premise providing medical education and training for granting degrees, diplomas, licenses in veterinary science and animal husbandry
8	Medical College	A premise having facilities in which a person may undergo a course of study or training including any post graduate course of study or training which will qualify him for the award of a recognized medical qualification.

Note: Health facilities can be managed by public/ private/ voluntary organizations.

B. Permissible Activities

Table 22. 55 Use Premises and Activities Permitted - Health Facilities

Sr no.	Use Zone	RD	PS1						
	Use Premise	Non-bedded Health facility	Non-bedded Health facility (Veterinary)	Bedded Health facility (Small)	Hospital	De-addiction & Rehabilitation facility	Veterinary Hospital	Medical College	Veterinary Institute
	Activities Permitted	1	2	3	4	5	6	7	8
1	Administrative office	✓	✓	✓	✓	✓	✓	✓	✓
2	Facilities for indoor treatment of patients			✓	✓	✓		✓	
3	Facilities for outdoor treatment of patients	✓		✓	✓	✓		✓	
4	Facilities for indoor treatment animals and birds						✓		✓
5	Facilities for outdoor treatment of animals and birds		✓				✓		✓
6	De-addiction/ Rehabilitation/ Counselling Centre			✓	✓	✓		✓	
7	R&D facilities				✓		✓	✓	✓
8	Laboratories	✓		✓	✓		✓	✓	✓
9	Diagnostic facilities			✓	✓	✓	✓	✓	✓
10	College / Institute				✓			✓	✓
11	Library/Reading room				✓			✓	✓
12	Watch & Ward Residence (Upto 20 sqm)	✓	✓	✓	✓	✓	✓	✓	✓
13	Retail shop (chemist shop upto 20 sq.m. only)	✓	✓	✓	✓	✓	✓	✓	✓
14	Retail shop (other than chemist)				✓			✓	
15	Canteen/ Cafeteria	✓	✓	✓	✓	✓	✓	✓	✓
16	ATM	✓	✓	✓	✓		✓	✓	✓
17	Vending booth/ kiosk	✓	✓	✓	✓		✓	✓	✓
18	Accommodation for Staff				✓	✓	✓	✓	✓
19	Patient attendant accommodation				✓	✓	✓	✓	
20	Hostel				✓			✓	✓
21	Indoor games hall							✓	✓
22	Bank extension counter				✓		✓	✓	✓
23	Prayer room			✓	✓		✓	✓	✓
24	Creche/day-care facilities				✓		✓	✓	✓

25	Traffic Police Control Room / Police Outpost				✓			✓	
26	Fire Post							✓	✓
27	Post office counter							✓	✓

Sr no.	Use Zone	RD	PS1						
	Use Premise	Non-bedded Health facility	Non-bedded Health facility (Veterinary)	Bedded Health facility (Small)	Hospital	De-addiction & Rehabilitation facility	Veterinary Hospital	Medical College	Veterinary Institute
	Activities Permitted	1	2	3	4	5	6	7	8
28	Auditorium							✓	✓

C. Development Control Norms

Table 22. 56 Health facilities

S. No	Use Premise	No. (s)	Min. Plot Area (sqm)/ unit	Max. Ground Coverage (%)	FAR	Min RO W (m)	Height (m)
LOCAL LEVEL Population upto 10000							
1	Non-bedded Health facility	1	800	30%	150	12	
COMMUNITY LEVEL Population upto 100000							
1	Non-bedded Health facility (Veterinary)	1	300	35%	100	18	
2	Health facility (Small)	6	1000*	30%	150	18	
3	Hospital	3	2000-15000	40%and 5% (MLCP) BRT	250 for RoW less than 24m. 300 for RoW above 24m. 375 for RoW above 30m.	18	
SUB-CITY LEVEL Population upto 500000							
1	Hospital**	3	Above 1.5 ha	40% and 5% (MLCP)	250 for RoW 18m to 24m. 300 for RoW above 24m. 375 for RoW above	18	

S. No	Use Premise	No. (s)	Min. Plot Area (sqm)/ unit	Max. Ground Coverage (%)	FAR	Min ROW (m)	Height (m)
					30m.		
2	De-addiction/ Rehabilitation Centres	1	2000	35%	150	18	
3	Veterinary hospitals	1	2000	30%	150	18	
CITY LEVEL Population upto 20,00,000							
1	Medical college	As per requirement	As per MCI Norms	35%	Gross FAR: 160 College and hospital = min. 75% Residential = min. 20% Others = upto 5%	24	
2	Veterinary Institute		Veterinary Council of India / Ministry norms				
Notes: * In developed areas the plot size may vary depending on the availability of land. **Size of hospital plot will be restricted up to 1.5 ha in residential area, with preference to plot having three side open and having minimum 18m ROW on one side. Total floor area of the hospital shall be governed as per the total number of beds allowed in it.							

Other Controls for the above Use Premises:

- i. No height restriction subject to clearance from AAI, DFS, DMA, NMA and other statutory bodies.
- ii. For Maternity Home, Nursing Home/ Polyclinic, Primary Health Centre, Family Welfare Centre, Paediatric Centre/ Geriatric Centre, Diagnostic Centre, minimum gross area shall be **60 sq.m per bed** and for use premises such as Hospitals, Tertiary Health Care Centre, De-addiction/ Rehabilitation Centres, R&D facilities, Veterinary hospitals for pet and animals, Medical colleges, Veterinary Institutes, minimum gross floor area shall be **80 sq.m per bed**.
- iii. For Hospitals, Tertiary Health Care Centre, Veterinary hospitals, De-addiction/ Rehabilitation Centres and R&D facilities, maximum 10% ground coverage shall be allowed for providing atrium. In case, the permissible additional ground coverage for atrium is utilized 25% of the utilized ground coverage shall be counted toward FAR.
- iv. For Hospitals, Tertiary Health Care Centre, Veterinary hospitals, De-addiction/ Rehabilitation Centres and R&D facilities multilevel podium parking shall be

- v. permissible to the extent of building envelope lines, free from FAR and ground coverage to facilitate ample parking in spaces, subject to structural safety.
- vi. For Hospitals, Tertiary Health Care Centre, Veterinary hospitals, De-addiction/ Rehabilitation Centres and R&D facilities, maximum 10% of the achieved FAR shall be free if utilized for waiting and reception area. However, this area shall be taken into account for the provision of hospital parking as per norms.
- vii. For Hospitals, Tertiary Health Care Centre, Veterinary hospitals, de-addiction/ Rehabilitation Centres and R&D facilities, service floor of height 1.8m shall not be counted in FAR.
- viii. Environmental clearances are mandatory as per the prevailing regulations of Ministry of Environment, Forest and Climate Change.
- ix. Zero discharge for sewerage shall be enforced at the cost of the promoters and post treatment water can be used by premises for its needs of horticulture, flushing, coolant tower, washing or disposal to other construction sites. These issues concerned the local bodies and can be dealt accordingly as per existing regulations at the time of sanctioning the plan.
- x. Natural sky light condition is exempted for Atrium and construction over the Atrium may be allowed.
- xi. In case of existing premises / sites, the enhanced FAR shall be permitted, subject to payment of charges as may be prescribed by the Authority / land owning agency and other clearances.
- xii. Basement after utilization for Parking; Services Requirements such as air conditioning plant and equipment, water storage, boiler, electric substation, HT & LT panel rooms, transformer compartment, control room, pump house, generator room; staff locker room, staff changing room, staff dining facilities without kitchen facility, Central sterile supply deptt., back end office; Other Mechanical Services; Installation of Electrical and firefighting equipments; and Other Services like kitchen, laundry and radiology lab and other essential services required for the maintenance/ functioning of the building, may be used for healthcare facilities with prior approval of the concerned agencies.
- xiii. **Conditions for Ancillary Use:**
 - a. In case of Hospital (Upto 1.5 ha):
 - i. **Maximum 25% of FAR** shall be allowed for residential component/ use such as accommodation of essential staff and attendants of the patients.
 - ii. For support facilities other than residential component, a built-up area of max. 1% FAR upto 300 sq.m. shall be permitted.
 - b. In case of Hospital (Above 1.5 ha) and Rehabilitation facility:
 - i. **Maximum 25% of FAR** shall be allowed for residential component/ use such as accommodation of essential staff and attendants of the patients.
 - ii. For support facilities other than residential component, a built-up area of max. 1% FAR upto 500 sq.m. shall be permitted.
 - c. In case of Veterinary Hospital:
 - i. **Maximum 10% of FAR** shall be allowed for residential component/ use such as accommodation of essential staff and attendants.
 - ii. For support facilities other than residential component, a built-up area of max. 1% FAR upto 300 sq.m. shall be permitted.

- d. In case of Medical colleges & Veterinary Institutes) **maximum 30% of FAR** shall be allowed for permitted support activities:
- i. Minimum 20% of FAR to be allowed for residential component/ use such as accommodation of essential staff and attendants of the patients, hostel for students.
 - ii. Maximum 5% of FAR shall be allowed for other support/ ancillary facilities other than residential

22.15.2 Educational Facilities

A. Use Premise and Definitions

Table 22. 57 Use Premise and Definition - Educational Facilities

S. No	Use Premise	Definition
1	Learning Centres/ Creches	Premises used for providing support/ parallel education facilities. (eg. Playschool, Creche, Early learning centres, Coaching/ tuition facilities, Anganwadi)
2	School (Type-I)	A premise having educational and playing facilities for students' upto V/ VIII standard. (eg. Primary School, Middle School)
3	School (Type-II)	A premise having educational and playing facilities for students' upto XII standard. (eg. Senior Secondary School, Secondary School, Integrated School)
4	Special Schools	A premise having educational (formal and vocational) and playing facilities for mentally challenged & differently abled persons (eg. School for Mentally challenged, Schools for differently abled persons)
5	Research and Development Centre	A premise providing facilities for research and development for any specific field. (eg. Research and Development Centre)
6	Institute	Premises with facilities for vocational training and education (technical/ vocational/ management/ preparatory for employment) (eg. Vocational Training Centre/ ITI/ Polytechnic/ Vocational/ Training Institute/ Management Institute/ Teacher Training Institute, Commercial/ Secretarial Training Centre, Hotel Management, Nursing and Paramedic Institute, etc.)
7	College	A premise having educational and playing facilities for students of undergraduate & post-graduate courses under a university. It includes all professional disciplines. (eg. General College, Professional College)
8	University	A premise having an educational institution designed for instruction, examination, or both, of students in many branches of advanced learning, conferring degrees in various faculties, and often embodying colleges and similar institutions.

B. Permissible Activities

Table 22. 58 Use Premise and Activities permitted - Educational facilities

	Use Zone	RD			PS1				
	Use Premise	Learning centers/ Creches	School Type-I	School Type-II	Special School	Research and Development Centre	Institute	College	University
	Activities Permitted	1	2	3	4	5	6	7	8
1	Creche and Day Care Centre	✓							
2	Nursery School		✓	✓					
3	Kiosks		✓	✓	✓				
4	Canteen/ Cafeteria			✓	✓		✓	✓	✓
5	Watch & Ward Residence upto 20sq.m		✓	✓	✓	✓	✓	✓	✓
6	Retail Shops upto 20sq.m		✓	✓	✓		✓	✓	✓
7	Bank extension counter			✓	✓	✓	✓	✓	✓
8	ATM			✓		✓	✓	✓	✓
9	Auditorium			✓	✓	✓	✓	✓	✓
10	Indoor games hall			✓	✓	✓	✓	✓	✓
11	Swimming Pool			✓				✓	✓
12	Post Office Counter Facility			✓	✓			✓	✓
13	Hostel facility			✓	✓	✓	✓	✓	✓
14	Residential use of essential staff and student			✓	✓	✓	✓	✓	✓
15	Rehabilitation Centre				✓				
16	Workshop				✓				
17	College							✓	✓
18	Playground							✓	✓
19	Library					✓	✓	✓	✓

C. Development Control Norms

Table 22. 59 : Education Facilities

S. No.	Use Premise	No	Minimum Plot Area (sq.m.)	Maximum Ground Coverage	FAR	Minimum ROW (m)	Height (m)
LOCAL LEVEL Population upto 10000							
1	Learning Centre/ Creche	1	500	35%	120	12	
1	School (Type-I)	1	2000-4000	30%	120	18	18
2	School (Type-II)	1	4000-8000	35%	150	18	18
Other Controls: <ol style="list-style-type: none"> In case of new schools, the front boundary wall shall be recessed by 6m to accommodate visitors parking within setback area. Upto 10% variation in plot size is permitted. Differential norms will be applicable to Special Area, Regularized Unauthorized Colonies, Urban Villages and Resettlement Colonies. Playground shall be developed on pool basis in different areas at local level. Note: Pre-Primary Schools / Nursery Schools / Montessary Schools / Creche, Play Schools, are permissible in residential use							

	Use Premise	No	Minimum Plot Area (sq.m.)	Maximum Ground Coverage	FAR	Minimum ROW (m)	Height (m)						
SUB-CITY LEVEL Population upto 5,00,000													
1	Special Schools	4	2000	50%	120	18	18						
2	Research & Development Centres	1	4000	35%	225	24	37						
3	Institute	1	4000	35%	225	24	37						
4	College*	2	As per UGC / AICTE Norms	35%	225	24	37						
Other Controls: <ol style="list-style-type: none"> Variation in plot size upto 10% is permissible. In case of Special Schools, max. 20% of permissible FAR can be utilised for residential use of the essential staff and student accommodation. In case of R&D Centres, Institutes and Colleges, max. 30% of permissible FAR can be used for hostel accommodation for the students and staff. In case of old Colleges (above 4 ha area) plot shall be divided as follows: <table border="1" data-bbox="384 1944 1404 2016"> <tr> <td>a. College Building area</td> <td>1.8 ha</td> <td>45%</td> </tr> <tr> <td>b. Play field area</td> <td>1.8 ha</td> <td>45%</td> </tr> </table> 								a. College Building area	1.8 ha	45%	b. Play field area	1.8 ha	45%
a. College Building area	1.8 ha	45%											
b. Play field area	1.8 ha	45%											

	Use Premise	No	Minimum Plot Area (sq.m.)	Maximum Ground Coverage	FAR	Minimum ROW (m)	Height (m)
SUB-CITY LEVEL Population upto 5,00,000							
	c. Residential including hostel area				0.4 ha	10%	
Development control norms for academic college building & residential will be same as that of University.							

	Use Premise	No	Minimum Plot Area (sq.m.)	Maximum Ground Coverage	FAR	Minimum ROW (m)	Height (m)
CITY LEVEL Population upto 20,00,000							
1	University Campus including International Education Centre (IEC) – Large campus (10 ha and above) will be divided into following four parts:	As per requirements	As per UGC/AICTE Norms			24	37
	a) Academic including Administration (45% of total land area)			30%	225		37
	b) Residential (25% of total land area)			1. Regulations for group housing shall apply 2. The land shall be reserved for facilities as per residential norms			
	c) Sports and Cultural activities (15%)			10%	15		26
	d) Parks and Landscape (15%)			NA			

22.15.3 Post and Telecommunication Facilities

A. Use Premise and Definitions

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Table 22. 60 Use Premise and Definition - Post & telecommunication facilities

S. No.	Use Premise	Definition
1	P&T facility (Type-I)	Premise with facilities/ counters for postal, courier services, digital infrastructure and telecom facilities (eg. Post office counter, Courier service office, Digital infra facility/ kiosks, etc.)
2	P&T facility (Type-II) General Post Office	A premise with facility for postal and telecommunication services, to and from a number of post offices attached to it. (eg. General post office, Head post office, Sub-city level digital infra facility, etc.)
3	P&T facility (Type-III)* Radio & Television Station	Premise with facilities for recording, broadcast and transmission of news and other programmes, research & development of satellite & telecommunication technology, research and development of data relating to weather and forecasting thereof, facilities for digital resources and data management, etc.. (eg. Satellite and Tele- Communication Centre, Observatory & Weather Office, Media & News Agency including Media Training Centre, Digital infrastructure facility, etc.)
4	Transmission Tower and wireless station	A premise used for installation of a tower for communication purposes.

* Transmission Site/ Centre shall be considered as part of P&T facility (Type-III), however the development of such sites shall be as per requirement.

B. Permissible Activities

Table 22. 61 Use Premise and Activities Permitted - Post & Telecommunication facilities

Sl.no.	Use Zone	PS1	
	Use Premise	P & T Facility (Type II)	P & T Facility (Type III)
	Activities Permitted	1	2
1.	Retail shop	✓	✓
2.	Canteen/cafeteria/ Vending booth/kiosk	✓	✓
3.	Auditorium		✓
4.	Accommodation/ Residential for staff	✓	✓
5.	Watch & Ward Residence (upto 20sqm.)	✓	✓
6.	Library/ Reading room	✓	✓
7.	Fitness centre (non commercial use		✓

Use Zone	PS1
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Sl.no.	Use Premise	P & T Facility (Type II)	P & T Facility (Type III)
	Activities Permitted	1	2
8.	Hostel accommodation for students/ trainees		✓
9.	Press club		✓
10.	Dining area		✓
11.	Facilities for Media (print, television & internet)		✓
12.	Research laboratory		✓
13	Data Center	✓	✓

C. Development Control Norms

Table 22. 62 Post and Tele-communication facilities

	Use Premise	No.	Minimum Plot Area	Maximum Ground Coverage	FAR	Minimum ROW (m)	Height (m)
LOCAL LEVEL Population upto 10000							
1	P&T facility (Type-I)		No specific site reservation to be kept in the layout plan since it is permitted in all use zones / under mixed use as per requirement, except in Recreational use zone				NA
CITY LEVEL Population upto 2000000							
2	P&T facility (Type-II)	2	2500 sq.m.	30%	120	18	26
3	P&T facility (Type-III)	As per requirement	As per requirement	35%	150	18	26
<p>Note: Upto 10% variation in plot size is permitted.</p> <p>Other Controls:</p> <ul style="list-style-type: none"> i. For P&T facility (Type-II), upto 15% of FAR is allowed for residential component and other support facilities. ii. For P&T facility (Type-III), upto 30% of FAR is allowed for hostel accommodation for students and residential use of essential staff. 							

22.15.4 Security-Police Facilities

A. Use Premise and Definitions

Table 22. 63 Use Premises and Definition – Security-Police Facilities

S.No.	Use Premise	Definition
1	Traffic Control Room	A premise of temporary structures having facilities for the managing of traffic and related issues.
2	Police Outpost	A Premise with temporary structures for people and equipment to manage law and order.
3	Police Post	A premise having facility for a local police post of a temporary nature or on smaller scale as compared to a police station.
4	Police Station	A premise having facilities for offices of local police post.
5	District Police office and Battalion	A premise having facilities for the offices and paramilitary forces.
6	Police Line	An area having facilities for work and residential accommodation of paramilitary forces.
7	Jail	A premise with facilities for detention, confinement and reform of criminals under the law
8	Police Training Institute/ College	A premise having facilities for training of paramilitary forces.
9	Police Firing Range	A premise having facilities for firing practice of the paramilitary forces.
10	Civil defense and home guards etc.	A premise having facilities for offices and other functions of civil organization for internal defense.
11	Forensic science laboratory	A premise having facility for application of medical knowledge.
12	National Security Establishments	A premise having establishments undertaking issues of National Security or as defined/ notified by Government of India from time to time.

B. Permissible Activities

Table 22. 64 Use Premises and Activities Permitted - Security-Police Facilities

# S. No	Use Zone	RD		PS1			
		1	2	3	4	5	6
	Use Premise	Traffic Control Room	Police Outpost	Police Post	Police Station	District Police Office and Battalion	Police Line
	Activities Permitted						
1.	Accommodatio			✓	✓	✓	✓

# S. No	Use Zone	RD		PS1			
		1	2	3	4	5	6
	Use Premise	Traffic Control Room	Police Outpost	Police Post	Police Station	District Police Office and Battalion	Police Line
	Activities Permitted						
	n for staff						
2.	Canteen		✓	✓	✓	✓	✓
3.	Bank Extension Counter				✓	✓	✓
4.	Hostel					✓	
5.	Playground					✓	
6.	Indoor games facility					✓	✓
7.	Officers Room with facilities for recording NCR (Non-Cognizable Report) and storing emergency equipments		✓				
8.	Dormitory with toilet & bath facilities and kitchen		✓			✓	✓
9.	Communication Centre				✓	✓	✓
10.	Service Workshop					✓	✓
11.	Religious facility					✓	✓
12.	Vending booth/ Kiosk					✓	✓
13.	Reading room/ library					✓	✓
14.	Fitness Centre for non-commercial use					✓	✓

# S. No.	Use Zone	PS 1					
		7	8	9	10	11	12
	Use Premise	District Jail	Police Training Institute/ College	Police Firing Range	Civil defense & home guards etc.	Forensic Science Laboratory	National Security Establishments
	Activities Permitted						
1.	Canteen	✓	✓		✓	✓	✓
2.	Bank Extension Counter		✓		✓		✓
3.	Hostel		✓	✓	✓		✓
4.	Playground/ games facility	✓	✓	✓	✓		✓
5.	Accommodation for staff	✓	✓	✓	✓	✓	✓
6.	Retail shop of area 20 sq. m. each	✓	✓	✓	✓		✓
7.	Auditorium		✓				✓
8.	Swimming Pool		✓	✓			
9.	Post office counter facility		✓				
10.	First aid facility						✓
11.	Emergency Backup/ Disaster Preparedness						✓
12.	Watch and ward residence (upto 20 sq. m.)	✓	✓	✓	✓	✓	✓
13.	Communication Centre		✓	✓			✓ (Temporary)
14.	Reading room/ library		✓	✓			✓
15.	Fitness Centre for non-commercial		✓	✓			✓

# S. No.	Use Zone	PS 1					
	Use Premise	7	8	9	10	11	12
	Activities Permitted	District Jail	Police Training Institute/ College	Police Firing Range	Civil defense & home guards etc.	Forensic Science Laboratory	National Security Establishments
	use						
16.	Kiosks		✓	✓	✓		✓
17.	Voluntary Health Services		✓	✓			✓

# S. No	Use Zone	PS 1		
	Use Premise	13	14	15
	Activities Permitted	Central Police Organisation	Security Forces camp	Police Camp
1.	Bank Extension Counter	✓	✓	✓
2.	Hostel	✓	✓	✓
3.	Retail shop of area 20 sq. m.	✓	✓	✓
4.	Swimming Pool	✓	✓	✓
5.	Communication Centre	✓	✓	✓
6.	Facilities for meditation/ spiritual training	✓	✓	✓
7.	Fitness Centre for non-commercial use	✓	✓	✓
8.	Accommodation for staff	✓	✓	✓
9.	Hostel	✓	✓	✓
10.	Hospital/ nursing/ paramedic facility	✓	✓	✓
11.	Veterinary hospitals for pet and animals	✓	✓	✓
12.	De-addiction/ Rehabilitation Center	✓	✓	✓
13.	Canteen	✓	✓	✓

C. Development Control Norms

Table 22. 65 Security-Police Facilities

S. No.	Use Premise	No.(s)	Min. Plot Area (sqm)/ unit	Max. Ground Coverage (%)	FAR	Min ROW (m)	Height(m)
LOCAL LEVEL Population upto 10000							
1	Traffic and Police control room	As per requirement, Permissible in all use premises/ zone, and to be provided in schemes as per requirement.	1. As per requirement on major road junctions/ stretches etc. as part of road right of way based on site feasibility. 2. Maximum area = 25 sq m.			---	
2	Police Outpost		Upto 150	75%	300	18 m	
COMMUNITY LEVEL Population upto 100,000							
1	Police Post	1	Upto 2500	50%	300	18 m	
SUB-CITY LEVEL Population upto 500,000							
1	Police Station	2	Upto 1 Ha.	50	300	18 m	
CITY LEVEL Population upto 20,00,000							
1	District Jail	1 per 50.0 lakh	Upto 2 Ha.	50	300	18 m	
2	Police Lines	As per requirement	Upto 1 Ha.	50	300	18 m	
3	District Police Office and Battalion						
4	Police Training Institute/ College						
5	Police Firing Range	As per requirement	Upto 5 Ha.	50	300	18 m	

S. No.	Use Premise	No.(s)	Min. Plot Area (sqm)/ unit	Max. Ground Coverage (%)	FAR	Min ROW (m)	Height(m)
6	Police camp						

Other controls

- i. Max. FAR for Use Premises located in Zone O, and Bungalow Area of Zone C & Zone D, will be 120, along with other provisions given in Zonal Development Plans.
- ii. In case of Security-Police facilities, for all the use premises, maximum of 30% of permissible FAR can be allowed for residential and permitted activities as mentioned in table above. The residential component shall be as per Residential Plot-Group Housing.
- iii. Use premises such as National Security Establishments shall be permitted within the categories mentioned in above Table.
- iv. For the above plots, no height restriction shall be applicable, subject to clearance from AAI, Delhi Fire Service, and other Statutory bodies.

22.15.5 Safety-Fire Facilities

A. Use Premise and Definitions

Table 22. 66 Use Premises and Definition – Safety-Fire Facilities

S. No.	Use Premise	Definition
1	Fire post	Premises with lesser degree of facilities for fire fighting. The post may be attached to specific premises with fire prone activities.
2	Fire station	A premise having facility for fire fighting for a catchment area assigned to it. It includes residence of essential staff.
3	Fire Training Institute	A premise having facilities of training for emergency times in case of fire, building collapse etc.
4	Disaster Management Centre	A premise having facility of disaster emergency backup, hospital facility, training centre for disaster preparedness, wireless communication etc.
5	Disaster Management Units	A premise having establishments undertaking issues of Disaster Management or as defined/ notified by GOI from time to time.

B. Permissible Activities

Table 22. 67 Use Premises and Activities Permitted - Safety-Fire Facilities

S.	Use Zone	PS1				
No	Use Premise Activities Permitted	1	2	3	4	5
		Fire post	Fire Station	Fire Training Institute	Disaster Management Centre	Disaster Management Units
1.	Accommodation for staff	✓	✓	✓	✓	✓
2.	Service Workshop		✓		✓	✓
3.	Hostel			✓	✓	✓
4.	Fire station			✓	✓	
5.	Watch and ward residence (upto 20 sq. m.)		✓	✓	✓	✓
6.	Healthcare facility			✓	✓	
7.	Open practice grounds for practice and relief camps/ Disaster Preparedness			✓	✓	✓
8.	Communication Centre			✓	✓	✓ Temporary
9.	First aid facility				✓	✓
10.	Emergency Backup				✓	✓
11.	Canteen	✓	✓	✓	✓	✓
12.	Bank extension Counter		✓	✓	✓	✓
13.	Night shelter					✓
14.						
15.	Vending booth/ Kiosk		✓			✓
16.	Reading room/ library			✓	✓	✓
17.	Indoor games facility			✓	✓	
18.	Fitness Centers for non-commercial use		✓	✓	✓	✓

C. Development Control Norms

Table 22. 68 Safety-Fire Facilities

S. No	Use Premise	No.(s)	Min. Plot Area (sqm)/ unit	Max. Ground Coverag e (%)	FAR	Min ROW (m)	Height(m)
COMMUNITY LEVEL Population upto 100,000							
1	Fire Post	1	Upto2500 sq. m.	50%	300	18 m	
SUB-CITY LEVEL Population upto 500,000							
1	Fire Station	2	Upto 1 Ha.	50	300	18 m	
2	Disaster Management Unit	1	5000-10000	50	300	18 m	
CITY LEVEL Population upto 20,00,000							
1	Fire Training Institute	As per Requirement	Upto 5Ha.	50	300	18 m	
2	Disaster Management Centre	As per Requirement	Upto 5Ha	50	300	18 m	

Other controls

- i. Delhi Fire Services (DFS) shall identify fire hazard zones and the location of the fire services (fire stations/ fire posts) shall be identified such that it is tactically advantageous in providing fire protection services to the community.
- ii. Max. FAR for Use Premises located in Zone O, and Bungalow Area of Zone C & Zone D, will be 120, along with other provisions given in Zonal Development Plans.

- iii. In case of Safety-Fire facilities, for all the use premises, maximum of 30% of permissible FAR can be allowed for residential and permitted activities as mentioned in table above. The residential component shall be as per Residential Plot-Group Housing.
- iv. For the above plots, no height restriction shall be applicable, subject to clearance from AAI, Delhi Fire Service, and other Statutory bodies.

22.15.6 Distributive Facilities

A. Use Premise and Definitions

Table 22. 69 Use Premise and Definition - Distributive Facilities

S. No.	Use Premise	Definition
1	Milk Booth/Milk, Fruit & Vegetable Booth/Delhi Milk Supply Booth/ Fair Price Shop	A premise with basic facility for the supply of daily groceries to the local population.
2	LPG godown including booking office	A premise for the booking, storing and supply of LPG to local population.
3	Gas godown	A premise having the facility of wholesale storage of LPG, godown, etc.

B. Permissible Activities

Table 22. 70 Use Premise and Activities Permitted - Distributive Facilities

S. No.	Use Zone Use Premise Activities Permitted	PS 1		RD
		1	2	3
		Gas Godown	LPG Godown including booking office	Milk Booth/Milk, Fruit & Vegetable Booth/Delhi Milk Supply Booth
1.	Booth/ built structure for display and sale of dairy products/ fruits and vegetables etc.			✓
2.	Watch and ward residence (up to 20 sq.m.)	✓	✓	
3.	Booking office		✓	
4.	Store / Godown	✓	✓	
5.	Care taker office	✓		

Note:

1. Booking Office cum Godown: Permitted in all Use Zones except residential and recreational Use Zones.
2. LPG Booking Office can be permitted in all Use Zones.

C. Development Control Norms

Table 22. 71 Distributive Facilities

S. No.	Use Premise	No	Minimum Plot Area (sq.m.)	Maximum Ground Coverage	FAR	Minimum ROW (M)	Height (M)
1	Milk Booth/ Milk, Fruit & Vegetable Booth/Delhi Milk Supply Booth/ Fair Price Shop	One per 5000 population.					
			i. As per standard design of the concerned department ii. Permitted in all zones as per approved layout plan.				
2	LPG godown including booking office	As per requirements					
			i. Plot size – upto 600 sqm including booking office and security hut. ii. Permitted in all use zones except in residential and recreational use zones subject to statutory clearances.				
	Other Controls: <ol style="list-style-type: none"> 1. Milk, Fruit, vegetable and LPG are the basic requirements of the day-to-day life, and should have proper distribution set-up. 2. Fair Price Shops may be provided in close proximity to EWS / LIG housing / resettlement colonies. 3. For LPG godowns the norms and standards shall be as per PESO (Petroleum and Explosives Safety Organization) 						

22.15.7 Socio-Cultural Facilities

A. Use Premise and Definitions

Table 22. 72 Use Premises and Definition – Socio-Cultural Facilities

S. No.	Use Premise	Definition
1	Socio-Cultural facility (Type-I)	Premises with facilities for local level socio-cultural activities; learning (music, art, etc.), playing, interaction, meeting and gathering spaces. (eg. Banquet Hall, etc.)
2	Socio-Cultural facility (Type-II)	Premises with facilities for various socio-cultural activities/ training facilities that can have community level public gatherings/ functions and public events.Can also include facilities for cultural and information services. [eg. Multipurpose community hall, Socio-cultural Institute (with facilities for learning and performance of music, dance, other performing arts, exhibitionspace, art gallery, library, creative workshops, auditorium, small theatres), Cultural and Information Centre, etc.]

3	Socio-Cultural facility (Type-III)	Premises with facilities that promote culture & other creative as well as recreational activities. (eg. Recreational Club, Public Library, etc.)
4	Socio-Cultural facility (Type-IV)	Premises with facilities for holding large gatherings and events like exhibitions, international/ national conferences, meetings, symposiums etc. These may also include large entertainment/ socio-cultural facilities. (eg. Socio cultural centre, Science Centre, Planetarium, Museum, International Convention Centre, Exhibition-cum-fair ground)

B. Permissible Activities

Table 22. 73 Use Premises and Activities Permitted - Socio-Cultural Facilities

Sr. no	Use Zone	RD	PS 1		
	Use Premise	Socio-Cultural Facility (Type-I)	Socio-Cultural Facility (Type-II)	Socio-Cultural Facility (Type-III)	Socio-Cultural Facility (Type-IV)
	Activities Permitted	1	2	3	4
1	Canteen	✓		✓	
2	Bank Extension Counter		✓	✓	✓
3	Vending Booth/ Kiosks	✓	✓	✓	✓
4	Restaurant		✓	✓	✓
5	Watch & Ward Residence (upto 20sqm.)		✓	✓	✓
6	Exhibition centre and art gallery			✓	✓
7	Community Hall		✓		.
8	Hostel		✓	.	
9	Music, dance and drama training centre			.	✓
10	Library/ Reading room		✓	✓	✓
11	Auditorium			.	✓
12	Hall for public gatherings, marriages, cooking facilities and other facilities	✓			
13	Museum			.	✓
14	ATM	✓	✓	✓	✓
15	Health care facility				✓
16	Commercial office			.	✓

Sr. no	Use Zone	RD	PS 1		
	Use Premise	Socio-Cultural Facility (Type-I)	Socio-Cultural Facility (Type-II)	Socio-Cultural Facility (Type-III)	Socio-Cultural Facility (Type-IV)
	Activities Permitted	1	2	3	4
17	Hotel				✓
18	Police Post				✓
19	Fire post				✓
20	Accommodation for Maintenance Staff			✓	✓
21	Open Air theatre/ amphitheatre		✓	✓	✓
22	Fair ground				✓
23	Convention and meeting space/ convention centre				✓
24	Film centre				✓
25	Multipurpose training and meeting rooms				✓
26	Retail Shop			✓	✓
28	Guest House/ Guest Rooms			✓	✓
29	Indoor/ Outdoor Sports			✓	
30	Swimming Pool			✓	✓

C. Development Control Norms

Table 22. 74 Socio-Cultural facilities

Use Premise	No.(s)	Min. Plot Area (sqm)/ unit	Max. Ground Coverage (%)	FAR	Min ROW (m)	Height(m)
Socio-Cultural facility (Type-I)	1	800-2000	30%	150	12	-
Socio-Cultural facility (Type-II)	2	1000	40%	120	24	-

Use Premise	No.(s)	Min. Plot Area (sqm)/ unit	Max. Ground Coverage (%)	FAR	Min ROW (m)	Height(m)
Socio-Cultural facility (Type-III)	1	5000	40%	120	24	
Socio-Cultural facility (Type-IV)*	As Per requirement	As per requirement	35% + 5% (MLCP)	120	30	
Notes:						
* For activities like exhibition-cum-fair grounds, max. ground coverage shall be 20% and 5% ground coverage for MLCP and max. FAR shall be 20.						

Other Controls:

- i. Recreational Clubs located in LBZ Area, Civil Lines Bungalow Area, Recreational Use Zones and existing on Heritage Structures will be dealt on case-to-case basis and Technical Committee of DDA will approve the Development Controls norms based on the existing status.
- ii. In the open area apart from outdoor games / sport facilities, swimming pool would be permissible upto an area of 300 sqm. free from ground coverage.
- iii. In case of Banquet Hall
 - Basements within the ground envelope shall be allowed for parking. Stilt floor for parking is permissible
 - 30% of basement area for services / storage shall not be counted in FAR.
- iv. In case of International Convention Centre, maximum 10% ground coverage shall be allowed for providing atrium. In case, the permissible additional ground coverage for atrium is utilized, 25% of the utilized ground coverage shall be counted towards FAR
- v. For the above plots, no height restriction shall be applicable, subject to clearance from AAI, Delhi Fire Service, and other Statutory bodies.
- vi. **Conditions for Ancillary Use:**
 - a. In case of Socio-Cultural facility (Type-II & III): Support/ ancillary facilities shall be allowed upto a maximum of 20% of permissible FAR.
 - b. In case of Socio-Cultural facility (Type-IV) except International convention centre and Socio-cultural centre: Support/ ancillary facilities shall be allowed upto a maximum of 50% of permissible FAR.
 - c. In case of International Convention Centre: Exhibition space, Convention and meeting space shall be minimum 40% of permissible FAR. Support/ Ancillary facilities (Retail shop, office space/ commercial office, Hotels and related activities) shall be permitted upto maximum 60% of permissible FAR.
 - d. In case of Socio-Cultural Centre: Socio Cultural activities shall be minimum 40% of permissible FAR. Support/ Ancillary facilities (Retail shops, office space/ commercial office, Hotels and related activities) shall be upto maximum 60% of permissible FAR.

22.15.8 Other-Community Facilities

A. Use Premise and Definitions

Table 22. 75 Use Premise and Definition - Other-Community Facilities

S. No.	Use Premise	Definition
1	Night Shelter	Premise having the facility for providing the night accommodation to individuals without any charges or with token charges. It may run by local government or voluntary agencies.
2	Other Community Facility (Type-I)	Premises that can accommodate multiple small-scale community/ religious facilities (eg. Small religious facility, etc.)
3	Other Community Facility (Type-II)	Premise having facility of caring and training, boarding & lodging of elderly/ differently abled persons/ mentally challenged, women and children. It may also include residential facilities for working women / men and education/ training facilities for adults. (eg. Old Age Home, Care Centre for differently abled persons / mentally challenged, Working women-men hostel, Adult education centre, etc.)
4	Other Community Facility (Type-III)	Premises with facilities for correction, counselling and accommodation of child in conflict with law or who have committed an offence. Related judicial facilities and services for behavioural reforms may also be located here. (eg. Reformatory/ Observation homes/ Special Homes/ Juvenile homes)
5	Other Community Facility (Type-IV)	Premises for large religious facilities with high footfall. (eg. Large religious facility)

B. Permissible Activities

Table 22. 76 Use Premise and Activities Permitted - Other-Community Facilities

Sr. no	Use Zone	RD	PS 1			
			Night Shelter	Other Community Facilities (Type-I)	Other Community Facilities (Type-II)	Other Community Facilities (Type-III)
	Use Premise	1	2	3	4	5
	Activities Permitted	1	2	3	4	5
1	Accommodation for staff		✓	✓	✓	
2	Hostel			✓	✓	
3	Retail shop (upto 20 sqm.)		✓	✓	✓	
4	Bank extension Counter					✓

5	Accommodation for preachers/ devotees/ management staff (Max.15% of total FAR)					✓
6	Langar Hall/ Kitchen					✓
7	Prayer halls		✓			✓
8	Auditorium					✓
9	Museum					✓
1 0	Museum/Art Gallery/ ExhibitionCentre					✓
1 1	Training Centre for Yoga					✓
1 2	Care home with residential facility			✓		
1 3	Health facilities/gym			✓		
1 4	Dining facility			✓	✓	
1 5	Welfare Centre			✓		
1 6	Night Shelter and related facilities.	✓				
1 7	Temple, Mosque, Church, Gurdwara,Synagogue, Ashram					✓
1 8	Bathing Ghat					✓
1 9	Gaushala					✓
2 0	Dargah					✓
2 1	Charitable Health Facility					✓
2 8	Canteen			✓	✓	✓
2 9	Restaurant					
3 0	Watch and ward residence (upto 20sq m).			✓		
3 2	ATM			✓	✓	
3 3	Space for administration office			✓	✓	
3 4	Facilities for meditation/ spiritualtraining			✓	✓	
3 5	Facilities/ studios for training inmusic and other forms of art			✓		

C. Development Control Norms

Table 22. 77 Other-Community facilities

S. No.	Use Premise	No.(s)	Min. Plot Area (sqm)/ unit	Max. Ground Coverage (%)	FAR	Min ROW (m)	Height (m)
LOCAL LEVEL Population upto 10000							
1	Other Community Facility (Type-I)	2	400	40	100	12	No height restriction subject to clearance from AAI, DFS, DMA, NMA and other statutory bodies.
COMMUNITY LEVEL Population upto 100000							
1	Night Shelter*	1	100	60	200	-	26m
SUB-CITY LEVEL Population upto 500000							
1	Other Community Facility (Type-II)**	5	1000	40%	120	18	No height restriction subject to clearance from AAI, DFS, DMA, NMA and other statutory bodies.
CITY LEVEL Population upto 2000000							
1	Other Community Facility (Type-III)	As per requirement	2000	40%	150	18	No height restriction subject to clearance from AAI, DFS, DMA, NMA and other statutory bodies.
2	Other Community Facility (Type-IV)	As per requirement	As per requirement	30%	100	24	

Other Controls:

- i. Sites for Dhobi ghats / laundry shall be provided in Residential use zone / PSP facility areas as per the norms of local body. In such sites following facilities shall be permitted: Overhead tank, Underground Tank, Oxidation Pond, Septic Tank

Sewerage Pumping station, Public Toilet & Urinal, Electric Sub-station, Dhalla and Dustbin, Dhobi Ghat, Machine Laundry.

- ii. *Location of night shelter is to be decided by the Local Authorities / GNCTD based on practical demand / assessment. For geographical distribution of night shelters a minimum of at least one night shelter per administrative unit such as the Revenue Sub-Division or jurisdiction of Police Station may also be taken as criteria for planning purposes. Night shelter shall be permitted in new proposed constructions by adopting innovative concepts such as integrated complex with commercial space on the ground floor and night shelter on the first floor; and in existing buildings with suitable modifications. Night shelter can be developed within the Railway Terminals, Bus Terminals, Wholesale/Retail markets, Freight Complexes, Police Stations etc. by the concerned agencies such as Railways, Health, Industry, DTC, Police, etc., wherever feasible.
- iii. **Location of Working Men-Women Hostels shall be decided on the basis of proximity with work/ employment centres and on the basis of demand assessment.
- iv. **Conditions for Ancillary Use:**
 - a. In case of Other-Community Facilities (Type-I): Support/ ancillary facilities shall be allowed maximum upto 50 sq.m.
 - b. In case of Other-Community Facilities (Type-II and III): Support/ ancillary facilities shall be allowed maximum of 20% of permissible FAR.
 - c. In case of Other-Community Facilities (Type-IV): Support/ ancillary facilities shall be allowed maximum of 5% of permissible FAR.

22.15.9 Cremation Ground, Burial Ground & Cemetery

A. Use Premise and Definitions

Table 22. 78 Use Premise and Definition - Cremation Ground, Burial Ground & Cemetery

S. No.	Use Premise	Definition
1	Burial Ground	A premise with facilities for burying of dead bodies.
2	Cremation Ground	A premise with facilities of performing last rites of dead bodies by burning.
3	Cemetery	A premise with facilities for burying of dead bodies.
4	Electric Crematorium	A premise with facilities for last rites of the deceased.
5	Burial Ground for Animals	A premise with facilities for burial of animals

B. Permissible Activities

Table 22. 79 Use Premise and Activities Permitted - Cremation Ground, Burial Ground & Cemetery

S. No.	Use Zone	PS1				
	Use Premise	1	2	3	4	5
		Activities	Burial Ground	Cremation Ground	Cemetery	Electric Crematorium

	Permitted					Animals
1.	Sheds for performing rituals		✓	✓	✓	
2.	Facilities for registration of deaths	✓	✓	✓	✓	
3.	Retail shops of woods, flowers and other related material	✓	✓	✓	✓	✓
4.	Drinking water	✓	✓	✓	✓	✓
5.	Parking	✓	✓	✓	✓	✓
6.	Watch and ward residence (20 sq.m.)	✓	✓	✓	✓	✓

C. Development Control Norms

Table 22. 80 Cremation Ground, Burial Ground & Cemetery

S. No	Use Premise	No	Minimum Plot Area (sq.m.)	Maximum Ground Coverage	FAR	Minimum ROW (m)	Height (m)
1	Burial Ground	1 for 10 lakh population	10000	NA	NA	18	NA
2	Cremation Ground	1 for 5 lakh population	5000	50%	100	18	No height restriction subject to clearance from AAI, DFS, DMA, NMA and other statutory bodies
3	Cemetery	1 for 10 lakh population	10000	NA	NA	18	NA
4	Electric Crematorium	1 for 5 lakh population	5000	50%	100	18	NA
5	Burial Ground for Animals	1 for 10 lakh population	2000	NA	NA	18	NA
Other controls: i) In case of Cremation Ground, provisions for crematoriums (basic/ green/ gasifier based/ electric) shall be made. In the existing cremation grounds, provision of crematorium is to be made							

22.15.10 Multi-Facility Plot

Table 22. 81 Development Control Norms of Multi facility Plot

Use premise	Plot Area (sq.m.)	Ground Coverage (maximum)	FAR	ROW (m) (minimum)	Height (m)	Activities Permitted
Multi Facility Plot	500	50%	200	18	No height restriction subject to clearance from AAI, DFS, DMA, NMA and other statutory bodies.	Mix of PSP facilities at the local level (Health, Education, Socio-cultural, Other-Community facilities, Communication facilities)
Note: Single function shall be permitted upto max of 2/3 of BUA, to facilitate multiple facility on the plot.						

22.15.11 Public & Semi-Public Facilities / Premises

The following norms shall be applicable in case of PSP facilities / premises, for which specific development controls have not been specified.

1. Max. Ground Coverage 30%
2. Max. Floor Area Ratio 120
3. Max. Height 26 m.

Note:

- i. In case of plots allotted to political parties by the government land housing agencies, up to 15% of maximum FAR may be utilized for residential hostel accommodation.
- ii. Amalgamation of the smaller PSP plots or sub division of the larger PSP plots for a single or its multiple use, is allowed with the permissible PSP facilities as per the provisions of MPD-2021.

22.16 Permission of Use Premises in Use Zones

As part of approval of layout plan or as a case of special permission from the Authority, Permission of selected Use Premises in Use Zones RD, C1, C2, M, PS are as per the following:

Table 22. 82 Permission of Use Premises in Use Zones

S. No.	Use Premises	Use Zones				
		RD	C ₁	C ₂	M	PS
RD	RESIDENTIAL					
i.	Residential plot - Plotted Housing	P	P**	NP	NP	NP
ii.	Residential plot - Group Housing	P	P	NP	P	P
iii.	Studio Apartment	P	NP	NP	NP	NP
iv.	Residence - cum - Work Plot	P	P	NP	NP	NP
v.	Foreign mission	P	P	NP	NP	NP
vi.	Hostel / Old age home	P	P	NP	P	P
vii.	Short term Accommodation - Hostel / Guest house / Lodging & Boarding House / Sarai / Working Women-Men Hostel, Dharamshala and its equivalent / Service Apartment	P	P	P	P	P
viii.	Multipurpose Community Hall / Barat Ghar	P	P	NP	P	P
ix.	Night Shelter	P	P	P	P	P
x.	Community / Recreational Hall, Library, Reading Room, Society Office, Crèche and Day Care Centre.	P	P	P	P	P
xi.	State Bhawan/ State Guest Houses	P	P	P	P	P
C	COMMERCIAL					
i.	Local Level (Convenience / Local shopping centre)	P	P	P	P	P
ii.	Cinema / Multiplexes	NP	P	P	P*	NP
iii.	Service markets / Informal Bazaars	P	P	P	P	NP
iv.	Wholesale Trade	NP	P	P	NP	NP
v.	Storage, godown and warehousing, cold storage & Ice factory, gas godown.	NP	NP	P	P	NP
vi.	Guest House/ Lodging & Boarding House	P	P	P	P	P
vii.	Service Apartment	NP	P	P	P	P
viii.	Hotel	NP	P	P	P	NP
P	RECREATIONAL					
i.	Recreational (Park, Play grounds, Swimming Pool) / Sports Complex/ Stadium/ Amusement parks/ Recreational Clubs etc.	P	P	P	P	P
M	INDUSTRY					
i.	Industrial plot, flatted group industry	NP	NP	NP	P	NP
ii.	Service centre & Service industry	NP	P	P	P	NP

T	TRANSPORTATION					
i.	Circulation (Road network with street furniture, Bus terminal, MRTS stations, Parking etc.	P	P	P	P	P
ii.	Bus depot & Workshop	NP	NP	NP	P	NP
iii.	Multi-level parking for private modes	NP	P	P	P	P
G	GOVERNMENT					
i.	Local / Government maintenance Offices	P	P	P	P	P
ii.	Offices of utility services providing agencies	P	P	P	P	P
iii.	Government Offices (Central / State Government / Local Bodies), Integrated Office Complex	NP	P	P	P	P
iv.	District Court/ Family Courts	NP	P	P	P	P
PS1	PUBLIC AND SEMI PUBLIC FACILITIES					
Health						
i.	Hospital (0.2 ha. to 1.5 ha.)	P	P	NP	P	P
ii.	Tertiary Health Care Centre	P	P	NP	P	P
iii.	Primary Health Centre / Family Welfare Centre / Maternity Home / Dispensary etc., Pediatric Centre/ Geriatric Centre, Voluntary Health Services, Extended health-care facilities (like transition-homes, respite care centres, Pathology laboratory, Small collection centres), De-addiction Centres	P	P	NP	P	P
iv.	Nursing Home / poly clinic / clinic / clinical laboratory etc.	P	P	NP	P*	P
v.	Dispensary for pet and animals	P	P	P	P	P
Education						
i.	Primary school / Middle school, Pre-primary/ Nursery/ Montessori schools,	P	NP	NP	NP	P
ii.	Creche & Day care centres, Anganwadi, Play schools	P	P	P	P	P
iii.	Sr. Secondary School	P	NP	NP	NP	P
iv.	School for Mentally Challenged / differently abled persons	P	NP	NP	NP	P
v.	Technical Training centre (ITI / Polytechnic/ Vocational/ Training Institute/ Management institute/ Teacher Training Institute, etc.), Skilling centres	P	P	NP	P	P
vi.	Research & Development Centres	NP	P	NP	P	P
Facilities						
i.	Bus terminal, taxi stand, milk / vegetable booths, religious premises, vending booth, petrol / CNG filling pump, recreational club, police outpost,	P	P	P	P	P

	police post, police station, fire post, fire station, post office, & telegraph office and telephone exchange.					
ii.	Care centres for differently-abled and mentally challenged, Orphanage/ Children's Centre, Senior citizens' club	P	NP	NP	P	P

P: Permitted

P*: Permitted only in Commercial Centres

NP: Not Permitted

P**: Special permission as per Mixed use/ Special Area Regulations

Note:

1. Park, Open Parking, Circulation and Public Utilities/convenience are permitted in all Use Zones.
2. The permission of Use Premise in the following Use Zones shall be governed by the specific function of the Use Zone.
 - a. C3- Hotel,
 - b. P3- Historical Monuments,
 - c. T1- Airport,
 - d. T2- Terminal / Depot - Rail / MRTS / Bus / Truck,
 - e. T3- Circulation - Rail / MRTS / Road,
 - f. U1-Water, U2-Sewerage, U3-Electricity, U4-Solid Waste, U5- Drain,
 - g. G1-President Estate & Parliament House,
 - h. G3-Government Land (Use Undetermined),
 - i. PS -Cremation and Burial Ground, Religious,
 - j. Green Development Area
 - k. W2-River & River Flood Plain

22.17 Other Development Codes

For each Use Premise, the following DCNs shall be applicable. Wherever DCNs are not mentioned in the Plan or this section, National Building Code shall be referred.

22.17.1 High Rise Buildings

- i. Buildings taller than 15 m (without stilt) and 17.5 m (including stilt) in all use zones will be considered as a High Rise Building.
- ii. In case of provision of stack-parking in stilt floor, minimum height of 2.4 m. for stilt floor may be relaxed. However, in case of stack parking the height shall be as per design and structural safety requirement.
- iii. Intermittent service floor may be permitted for installation of equipments and services required for the maintenance of the building with prior approval of the agencies concerned and is not to be counted in FAR. The height of the service floor is to be decided based on the depth of structural members, the height requirement for providing water-reservoirs, other equipments, etc. Height belowbottom of any beam shall not be more than 1.8 m. from the finished floor level excluding false floor if any.
- iv. Basement will be permitted within the setback lines subject to clearance from local bodies / deptts. Concerned municipal corporation and Fire Deptt. Where there are no setbacks, basements should be permitted upto 2 meters and where there is setback, it should be 6 meters from the plot boundary.
- v. Podium(s) will be permitted within the setback lines subject to clearance from the fire department. The movement of vehicles and parking shall be restricted within the podium. Rooftop to be allowed for uses such as swimming pool, landscaping, and related structures.

- vi. Other conditions for basement will be as per Clause 22.16.3.

22.17.2 Setbacks:

Minimum setbacks shall be provided as per the Table 22.81 for all developments other than residential plotted and areas specifically mentioned in the Plan.

Table 22. 83 Minimum Setbacks (Other than Residential Plotted Development)

Plot size (in sq.m)	Minimum Setbacks			
	Front (m)	Rear (m)	Side (m) (1)	Side (m) (2)
Upto 60	0	0	0	0
Above 60 & upto 150	3	1.5 (avg.)	-	-
Above 150 & upto 300	4	2 (avg.)	-	-
Above 300 upto 500	4	3	3	-
Above 500 upto 2,000	6	3	3	3
Above 2,000 upto 10,000	9	6	6	6
Above 10,000	15	12	12	12

Note:

- In case the permissible coverage is not achieved with the above given setbacks, the setbacks of the preceding category may be allowed.
- The setbacks are subject to requirements of height and ventilation as per building byelaws.
- In case a layout is sanctioned with more than the minimum prescribed setbacks, the same shall be followed in the sanction of the building plans.
- Technical Committee of DDA may relax setbacks, ground coverage and height in special circumstances.
- ESS wherever required to be provided within the plot, is allowed by shifting of side / rear setbacks.

22.17.3 Basements:

- Basement(s) up to the setback line, maximum equivalent to parking and services requirement, such as air conditioning plant and equipment, water storage, boiler, electric sub-station HT and LT Panel rooms, transformer compartment, control room, pump house, generator room and other mechanical services and installation of electrical and firefighting equipment, and other services required for the maintenance of the building with prior approval of the concerned agencies, could be permitted and not to be counted in FAR.
- In case of residential use, basement shall not be counted towards FAR if used for household storage and parking. Basement if used for permissible mixed-use activities shall be counted towards FAR. If such use of basement leads to exceeding the permissible FAR on the plot, appropriate charges prescribed with the approval of government, shall be levied on the additional FAR.
- In case of Hotels, use of basement for laundry, cold room for storing food articles, linen store, garbage room, housekeeping store and cold storage may be allowed.
- In case of Healthcare facilities, basement after utilization for Parking; Services Requirements such as air conditioning plant and equipment, water storage, boiler, electric sub-station, HT & LT panel rooms, transformer compartment, control room, pump house, generator room; staff locker room, staff changing room, staff dining facilities without kitchen facility, Central sterile supply deptt., back end office; Other Mechanical Services; Installation of Electrical and fire fighting equipment; and Other Services like kitchen, laundry and radiology lab and other essential services required for the maintenance/functioning of the building may be used for healthcare facilities with prior approval of the concerned agencies.

- v. In case of high rise buildings, basement shall be permitted 6m from the plot boundary, within the setback lines, subject to clearance from concerned authorities.
- vi. The basement(s) beyond building line shall be kept flushed with the ground and shall be ventilated with mechanical means of ventilation.
- vii. Basement(s) shall be designed to take full load of the fire tender, wherever required and subject to adequate safety measures.
- viii. In case the basement is used for activity in conformity with the use premises, wherever permitted, the same shall be counted in FAR subject to clearance from the Fire Authorities and other statutory bodies.
- ix. The ESS, fire fighting installations and underground water tank shall neither be counted in ground coverage nor in FAR.

22.17.4 Service Plans

The Developing Agency should provide for the following in layout plans of plots of size 3000 sq.m and above:

- i. Recycling of treated waste water with separate lines for potable water and recycled water. Dual piping system to be introduced.
- ii. Ground water recharge through rain water harvesting, conserving water bodies and regulating groundwater abstraction.
- iii. Treated sewage effluent should be recycled for non-potable uses like gardening, washing of vehicles, cooling towers, etc.
- iv. Utilities such as, underground water storage tank, roof-top water harvesting system, separate dry and wet dustbins etc. are to be provided within the plot.
- v. All hospitals, commercial, industrial, hotels, restaurants, auto workshops, etc. will have to make arrangements for primary effluent treatment within the plot.
- vi. Provide ESS and generator and to submit energy consumption/audit will be submitted at the time of sanction of building plans.
- vii. Provision of cavity walls, atriums, shading devices in buildings will be encouraged to make them energy efficient.
- viii. Solar heating system will be provided on all plots with roof area of 300 sqm and above.
- ix. In order to encourage the above, 1% to 4% extra ground coverage and FAR, on each, may be given as an incentive by the local bodies, depending upon the provisions made. In exceptional cases 5% incentive may be permitted.
- x. These incentives shall be based on the rating criteria prescribed by 'Green Rating for Integrated Habitat Assessment' (GRIHA) for green buildings.
- xi. In case of non-compliance of above, after obtaining occupancy certificate, penalty at market rate shall be levied for incentive FAR by land owning agency.

The regulations for enforcement of above shall be prepared by the Director, Local Self Government, GNCTD in consultation with Environment Department, GNCTD within a period of six months (after notification of modifications) and notified with the approval of the Authority/Central Government

22.17.5 Regulations for Building Controls within Use premises

The objective of these regulations is to provide controls for building(s) within use premises excluding the internal arrangement, which are covered in Building Bye-laws.

General Notes:

- i. Where development controls are not stipulated for any use premise, the same can be formulated by the Authority.

- ii. The mezzanine floor and service floor wherever provided shall be considered as a part of the total FAR. In case of the buildings with 26 m. and more height in all use-zones, Technical Committee of DDA may permit the following in special circumstances:
 - a) In case of provision of stack-parking in stilt floor or basement, minimum height should be 2.4 m.
 - b) Intermittent service floor may be permitted for installation of equipments and services required for the maintenance of the building with prior approval of the agencies concerned and are not to be counted in FAR. The height of the service floor is to be decided based on the depth of structural members, the height requirement for providing water-reservoirs, other equipments, etc. The height of Service floor in the building shall be limited to 1.8 m.
- iii. If the building is constructed with stilt area of non-habitable height (2.4 mts) and is proposed to be used for parking, landscaping, etc. the stilt floor need not be included in FAR.
- iv. Wherever the building regulations are given for different categories of plots, the area covered and the floor area shall in no case be less than the permissible covered area and floor area respectively for the largest size of plot in the preceding category.
- v. In case of all the plots of size 1000 sq.m. and above, except 'Residential Plot – Plotted Housing', atrium will be permitted with stipulations – Maximum 10% additional ground coverage shall be allowed for providing atrium. In case, the permissible additional ground coverage for atrium is utilized, 25% of the utilized ground coverage shall be counted towards FAR.

22.17.6 Norms for non-residential use within residential use premises

- i. Three types of non-residential activities shall be permitted within residential use premises:
 - a. Professional activities
 - b. Other activities – Commercial and PSP uses
- ii. Non-residential use within residential use premises, (including small shops) shall not be permitted in the Lutyens' Bungalow Zone, Civil Lines bungalow zone, government housing, institutional / staff housing of public and private agencies and buildings / precincts listed by the Heritage Conservation Committee.
- iii. **Identification of Mixed-Use areas/ Streets:**
 Following streets/ areas shall be considered as Mixed Use areas/ streets and Commercial Streets for the purpose of this Clause:
 - a. All streets/ stretches already notified as Mixed Use street or Commercial street by the Competent Authority;
 - b. Residential areas and streets/ stretch earlier declared as commercial areas / streets or where commercial use was allowed in MPD-1962 shall continue to the extent as was permissible as per MPD-1962;
 - c. Commercial activity existing from prior to 1962 in residential areas, subject to documentary proof thereof;

- d. Plotted development in pre-1962 colonies shall be treated as rehabilitation colonies in their respective categories (A to G) for the purpose of this chapter.
- e. Any street /stretch under the process of notification by the Competent Authority or where the matter is presently sub-judice, upon completion of the notification process.
- f. No new streets other than already identified shall be notified as Mixed Use/ Commercial Use streets.
- g. All existing plots and uses as approved for mixed use under MPD-21 shall continue to be permitted as per approved conditions.

iv. **Professional Activities:**

Professional activities shall mean those activities involving services based on professional skills namely Doctor, Lawyer, Architect, and Chartered Accountant, Company secretary, Cost and Works Accountant, Engineer, Town Planner, Media professionals and Documentary Film maker, Management* Professionals and Dietician/ Nutritionists. These shall be permitted in all residential use premises (plotted development and group housing)

Professional activity is permissible in:

- a. In group housing, and plotted development with multiple dwelling units, professional activity shall be permitted on any floor subject to maximum of 50% of the permissible or sanctioned FAR, whichever is less, of each dwelling unit.
- b. In the case of plotted development with single dwelling unit, professional activity shall be permissible on any one floor only, but restricted to less than 50% of the permissible or sanctioned FAR whichever is less on that plot.
- c. Professional activity in basements is permissible in plotted development, subject to relevant provisions of Building Bye-Laws, structural safety norms and fire safety clearance. In case, the use of basement for professional activity leads to exceeding the permissible FAR on the plot, such FAR in excess shall be used subject to payment of appropriate charges prescribed with the approval of Government.
- d. No combining of DUs shall be permitted. All required licenses, permissions and clearances for conducting such activities shall be obtained from concerned agencies.

v. **Provisions for identified Mixed-Use areas/ Streets:**

Following streets/ areas shall be considered as Mixed Use areas/ streets and Commercial Streets for the purpose of this Clause:

- a. All streets/ stretches already notified as Mixed Use street or Commercial street by the Competent Authority;
- b. Residential areas and streets/ stretch earlier declared as commercial areas / streets or where commercial use was allowed in MPD-1962 shall continue to the extent as was permissible as per MPD-1962;
- c. Commercial activity existing from prior to 1962 in residential areas, subject to documentary proof thereof;
- d. Plotted development in pre-1962 colonies shall be treated as rehabilitation colonies in their respective categories (A to G) for the purpose of this chapter.
- e. Any street /stretch under the process of notification by the Competent Authority or where the matter is presently sub-judice, upon completion of the notification process.
- f. No new streets other than already identified shall be notified as Mixed Use/ Commercial Use streets.

- g. All existing plots and uses as approved for mixed use under MPD-21 shall continue to be permitted as per approved conditions.

vi. Household Industries:

Industrial activities (listed in Annexure 4) shall be permitted as Household Industries in all residential use premises, as per following conditions:

- a. Maximum number of workers: 9
- b. Maximum power load: 11 kw
- c. No inflammable or hazardous substance is stored within premise.
- d. Household industrial units shall be allowed on any floor to the extent of 50% of permissible floor area of the dwelling unit. Such activities shall not be permitted in basements.
- e. Separate industrial electric connection (single phase) and Municipal License shall be obtained from the concerned authorities.
- f. None of the industries in residential areas shall be allowed to carry out processes such as anodizing, bleaching, burning of coal, canning facility, dyeing, electroplating, moulding works, use of CFC gases, varnishing, washing and other water intensive processes.

vii. Permissibility of Commercial and Other activities in mixed use

a. Commercial activities

Table 22. 84 Types of activities permitted in identified mixed use areas/ streets and commercial streets

Activities	Type of uses permitted	In case of notified Mixed Use Street	In case of notified Commercial Street
Commercial	<ul style="list-style-type: none"> - Retail Shop, Repair Shop, Personnel Service Shop - Office - Restaurant 	Entire ground floor up to permitted ground coverage	<ul style="list-style-type: none"> a. Permitted up to 100% of FAR b. All uses as permitted in LSCs shall be allowed c. Banquet Hall shall also be permitted

Notes:

- i. **The following activities shall not be allowed under Mixed Use:**
 - a) Retail shops of building materials [timber, timber products (excluding furniture), marble¹, iron and steel, (gravel, cement and sand²), firewood, coal and any fire hazardous and other bulky materials.
 - b) Repair shops / workshops of automobiles, tyre resoling and re-treading, and battery charging.
 - c) Storage, go-down and warehousing.
 - d) Junk shop (except paper and glass waste)
 - e) Liquor shop
 - f) Printing, dyeing and varnishing
 - g) Any other activity that may be notified from time to time by Government.
- ii. **On mixed-use or commercial notified streets with 24m and above ROW,**

- Shops of finished building material (including gravel, sand and cement) will be permitted only if no cutting and polishing activity is undertaken. These shall be permitted on plots of minimum 100 sqm with maximum 50% ground coverage.
 - Automobile repair shops and workshops shall be permitted on 30m or above ROW.
- iii. **In case of DDA flats, the entire ground floor of the flats on notified streets shall be permitted as follows:**
- Only one Small Shop- maximum 20 sqm area unit shall be permitted.
 - No amalgamation of flats shall be permitted
- iv. If use of basement for non-residential activities leads to exceeding the permissible FAR on the plot, such excess FAR shall be used, subject to payment of appropriate charges prescribed by the competent authority.

b. Other activities

"Other activity" are broadly in the nature of 'Public and Semi-Public' facilities as per conditions specified and plots abutting roads of minimum ROW prescribed.

For other activities permissible in residential plots following conditions shall be applicable, whether or not the road is notified as mixed use street:

- i. In A, B, C & D colonies, all activities shall be permitted on minimum 200 sq.m plots and in E, F, G colonies on minimum 75 sq.m plots. Min. RoW shall be as follows:

Table 22. 85 Min. RoW conditions for other activities

Colony type	Condition
A & B colonies	Only on 24m and above ROW
C & D colonies	Only on 24m ROW and above in regular residential plotted development, 9 m ROW in rehabilitation colonies and in regularized-unauthorized colonies, resettlement colonies, AOWC and urban villages
E, F & G colonies	Only on 13.5m and above ROW in regular residential plotted development, 9 m ROW in rehabilitation colonies and in regularized-unauthorized colonies, resettlement colonies, AOWC and urban villages
Note: Any existing uses approved in all types of colonies (prior to notification of the prevailing master plan) as per the provisions of MPD-21 shall continue to be permitted.	

- ii. **Other activities shall include the following:**

Table 22. 86 Other activities permitted in identified mixed use areas/ streets and commercial streets

Other Activities	Type of uses permitted	Other Condition
PSP	<ul style="list-style-type: none"> • Bank • Dispensary, Clinics, Clinical laboratory, Pathology laboratory, Small collection centres, • Maternity Home, Nursing Home/ Polyclinic/ Primary Health Centre, Nursing home, Family Welfare Centre Pediatric Centre/ Geriatric Centre Diagnostic Centre, etc. • Wellness Centres including day spas/ weight-loss centres/ ayurvedic centres offering ayurvedic treatment/ salons offering fitness and aesthetic medical services • Pre-primary/ Nursery/ Montessori schools; Play schools, Creche & Day care centres • Coaching Centre, Computer training institute • Vocational Training Centre, Skilling centres, Coaching Centres, • Senior citizens' meeting room, Banquet Hall, Indoor games facilities, Fitness centres and Gym, Guest house (including lodging houses) irrespective of number of rooms. 	<ol style="list-style-type: none"> a. Other activities shall be permissible upto 2/3rd of total FAR. In case of Banks it shall be limited to 600 sq.m. b. On plots abutting 24 m RoW/ notified mixed use/ commercial street, other activities shall be permissible upto 100% of permissible FAR c. Banks lockers if part of existing bank shall be allowed in the respective basements of same premises. d. In A & B colonies following shall be permitted: <ul style="list-style-type: none"> • Guest House (incl. Lodging houses) • Diagnostic Centre, • Maternity Home, Nursing Home/ Polyclinic, Primary Health Centre, Family Welfare Centre, Pediatric Centre/ Geriatric Centre, Extended health-care facilities (like transition-homes, respite care centres, Special facilities for differently-abled and mentally challenged persons) • Pre-primary School/ Nursery/ Montessori/ Day Care shall be permissible • Banks, NGOs, Fitness centres and wellness centres shall be permissible as per provisions of MPD-2021. e. Pre-Primary/Nursery, Montessori/ Creche/ Day Care uses shall not be permitted in basement. f. Skilling centres, Coaching Centres, Computer Training institute uses shall only be permitted on plots with minimum area of 1000 sq.m on roads with 24m ROW. g. Banquet Hall shall only be permitted on 24m and above ROW. These shall be restricted to basement and ground floor. h. In case of Health facilities, radiation-based activities shall not be permitted in Residential areas. i. Only the Non-profit organizations/ NGOs existing as on 07.02.2007 and registered under applicable Acts, may continue to operate. j. Restaurants on ground floor only with

		valid appropriate licenses and with all statutory clearances, as existing on or before the date of notification shall only be permissible on notified mixed use streets
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viii. Permissibility of Commercial and Other Activities in Mixed Use in Walled City and Cultural Precincts

Table 22. 87 Norms applicable for Walled City and for plots identified as part of Cultural Precincts

Type of uses permitted	ROW requirement	Minimum plot size
Small Shops	No minimum requirement	No minimum requirement. Max. 1 unit per plot.
Retail Shop, Repair Shop, Personnel Service Shop, Office and Restaurant)	Minimum 6m ROW	75 sq.m
<ul style="list-style-type: none"> - Dispensary, Clinics, Clinical laboratory, Pathology laboratory, Small collection centres, - Maternity Home Nursing Home/ Polyclinic <ul style="list-style-type: none"> - Primary Health Centre - Family Welfare Centre - Pediatric Centre/ Geriatric Centre - Diagnostic Centre - Pre-primary/ Nursery/ Montessori schools; Play schools - Creche & Day care centres - Coaching Centre, Computer training institute - Vocational Training Centre, Skilling centres, Coaching Centres - Reading room/ library, Youth Centre, Senior citizens' meeting room, Facilities for meditation/ spiritual training, Banquet Hall, Indoor games facilities, Fitness centres and Gym, Small Religious facility, Post Office Counter 	Minimum 9m ROW	75 sq.m

ix. Non-residential activities in Group Housing

In case of Group Housing Plots Small shop and Retail Shop, Repair Shop, Personnel Service Shop specially provided for in the layout plan shall be permitted up to a maximum of 1.5% of the permissible FAR or 1000 sqm, whichever is less. At least 50% of such FAR shall be mandatorily utilised for provision of small shops units catering to local needs. A minimum of 4 shops of 20 sqm each shall be provided. Such uses may be provided in the form of vertical mixing or separate block within the plot.

- x. **Additional Norms applicable on all non-residential activities within residential development:**
- a. DCN as applicable for the particular residential use will continue to be applicable, even if the plot / dwelling unit is put to mixed use.
 - b. In Plotted Housing plots, boundary wall shall be optional along the main access road. In plots with stilt parking, active frontage may be maintained by providing shop fronts and other permitted mixed-use activities. ??Such shops shall be counted towards FAR.
 - c. Wherever a service road is available or proposed, then the mix-use premises should be approached from such service road and not directly from the main carriageway.
 - d. No encroachment shall be permitted on the streets or public land.
 - e. Any trade or activity involving any kind of obnoxious, hazardous, inflammable, non-compatible and polluting substance or process shall not be permitted.
 - f. Applicable charges shall be as under:
 - All premises with non-residential activities shall be required to declare such Mixed Use to the concerned local body and pay necessary charges as per the process notified by the competent authority.
 - All premises with non-residential activities shall be liable for payment of applicable Mixed Use charges to the concerned local body as per the rates notified by the competent authority, for the period during which the property is used for non-residential activities.
 - The allottee / owner shall obtain pay all necessary fees or charges before using the premise for any non-residential activity.
 - The local body concerned shall be responsible for the conduct of test check of properties under mix use, whether registered with it or not.
 - In addition to other penal action available under the relevant act, properties found to be under mix use, without registration or in violation of the terms of this notification shall be liable to pay, to the local body, a penalty as prescribed by the competent authority from time to time.

22.18 Green Blue Factor (GBF)

Computation of GBF shall be done at the plot level and the same shall be integrated as a condition for all building and layout sanction. The factors and methodology to be used for GBF computation are as follows:

GBF is the ratio of the sum of area under different types of blue/green elements (as identified above) against their respective factor to the total plot area:

Table 22. 88 GBF Calculator

S. No.	Type of Blue/green element (X)	Factor
1	Impervious surface (including paved areas, black top driveways and internal streets, roof surface without green roof)	0
2	Chlorinated water feature (e.g. swimming pool)	0.2
3	Green Wall (supported vertical systems for plants on external wall surfaces)	0.2
4	Pervious surface with water absorbent tiles	0.3
5	Pervious surface with manicured lawn and/or Greenhouse	0.5
6	Green Roof (minimum 70% area covered with plantation and shrubs)	0.6
7	Pervious surface with natural grass/ground and vegetation (including urban agriculture)	0.8
8	Area under tree cover (canopy density 10-40%)	0.9
9	Area under dense tree cover (canopy density 40% or more)	1

S. No.	Type of Blue/green element (X)	Factor
10	Open water body with non-lined bottom (non-chlorinated)	1
<p style="text-align: center;">GBF for a plot shall be calculated using the following formula: GBF = {(Area under element X corresponding factor) +... (Area under element nX corresponding factor)}/ Total plot area</p>		

22.19 Transfer of Development Right (TDR)

Transferable Development Right (TDR) means the FAR provided in exchange of unutilized development rights on specific sites as permitted by the master plan. TDR can be utilized only in TDR receiving areas identified by the Plan.

TDR shall only be awarded where land/development right is forfeited for a public purpose such as provision of essential infrastructure, regeneration of historical areas, housing for urban poor, etc.

TDR shall be awarded in the form of a TDR Certificate. TDR Certificate shall be issued by Delhi Development Authority as per regulations for the same. Regulations detailing out the process of implementation of TDR shall be prepared by DDA within 6 months of the notification of this Plan.

TDR Certificate shall provide development rights only within the NCT of Delhi.

TDR Certificate will be valid in perpetuity and the owner can use it at any time or transfer it to any other person or entity as per the regulations.

Multiple transactions are permitted on the TDR Certificate till the total value of TDR issued has been utilised. Once the TDR is completely expended, the TDR Certificate becomes null and void. A dedicated online portal for all matters pertaining to demarcating TDR generating and receiving areas, TDR issuance, tracking TDR utilization shall be set up.

Computation of TDR for utilisation: The value of TDR for utilisation shall vary according to the variation in land values across the city. The following formula shall apply to rationalise the variation and compute the value of TDR to be utilised at the receiving site:

Table 22. 89 TDR

TDR value on the receiving site = (Rg/Rr) x Y
<p><i>Where,</i> Rg = Land rate in rupees per sq.m. as per the circle rate of generating site in the year when TDR Certificate is issued. Rr = Land Rate in rupees per sq.m. as per the circle rate of the receiving site of the same year for which Rg has been considered Y = Unutilized FAR (can be whole or part of the TDR value in the Certificate)</p>

Other conditions for TDR utilisation:

- i. TDR shall be utilised only within TDR Receiving Areas, demarcated and notified by DDA
- ii. TDR shall be utilised to build over and above the permissible FAR on a receiving site/plot.
- iii. A plot shall be eligible to utilise TDR only if at least 50% of the area is within the notified TDR Receiving Area.

Following are the identified TDR Receiving Areas and associated conditions for TDR utilisation.

TDR Receiving Area in land pooling zones: 500m corridor on either side of the urban extension roads (UERs) only applicable in area notified under land pooling. (ref: DEV1)

- i. Only plots of minimum 3000 sq.m., with direct access from minimum 18m RoW are eligible to receive TDR. Plotted housing shall not be eligible to receive TDR.
- ii. TDR may be utilised up to a maximum of 10% of the permissible FAR for the same land use permissible on the plot.
- iii. On VM plots, TDR can be utilised as FAR for any land use after rationalisation. It shall not be linked to the land use of the receiving plot and can be utilised as residential, commercial, PSP or industrial FAR, provided the maximum FAR limit is not exceeded, and compatible uses are ensured on the plot.
- iv. Only 10% increase shall be permitted on the extent of FAR calculated for each land use at sector level, for utilisation of TDR.
- v. TDR Receiving Area in notified TOD Nodes and Business Promotion Districts:
- vi. Only plots having direct access from minimum 30m RoW, coming up as TOD Schemes or Regeneration Schemes of minimum 1 ha area shall be eligible to receive TDR.
- vii. Maximum TDR shall be 10% of the permissible FAR. Total FAR including TDR on a plot shall not exceed 500.
- viii. TDR on such Schemes can be utilised for Commercial, PSP and Industrial uses.

22.20 Norms for Vertical Mixing

- i. Compatible uses shall be permitted to be developed as part of the same building/structure on a plot.
- ii. Separate entry/exits and service cores shall be provided for each use.
- iii. Public uses such as facilities, commerce, schools, etc. Shall be located on the lower floors with direct access from the ground level.
- iv. Vertical Mixing of hospitals, health care facility, university campuses, utilities, fuel stations, parks and correction/ penal facilities of any kind shall not be permitted. Local medical facilities shall be permitted as part of vertical mixing.
- v. Mixing shall only be permitted for compatible uses as follows:
 - a. Only non-manufacturing industries like service industry (IT/ITES, BPO/KPO,etc.), packaging and logistics, and non-polluting MSME units can be combined with PSP.
 - b. Schools can only be combined with residential use premises. Other educational institutions can be combined with clean industries such as those mentioned above.

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List of Abbreviations

A

AI - Artificial Intelligence
AAI- Airport Authority of India
APRH - Affordable Public Rental Housing
ASI - Archaeological Survey of India
ATA - Active Travel Area
AQI - Air Quality Index

B

B&B – Bed and Breakfast
BBMB - Bhakra Beas Management Board
BEE- Bureau of Energy Efficiency
BFSI - Banking, Financial Services and Insurance
BID - Business Improvement District
BIS - Bureau of Indian Standards
BPD - Business Promotion District
BRT - Bus Rapid Transit
BUA - Built-up Area

C

CBD - Central Business District
CHBS - Cooperative Housing Building Societies
CBO - Community-Based Organization
CBWTFs - Common Bio-Medical Waste Treatment Facilities
CC - Community Centre
CCTV - Closed-Circuit Television
C&D wastes - Construction and Demolition Wastes
CETP - Common Effluent Treatment Plant
CGWB - Central Ground Water Board
CMP - Comprehensive Mobility Plan
CNG - Compressed Natural Gas
CNCR - Central National Capital Region
CP - Connaught Place
CPCB - Central Pollution Control Board
CPHEEO- Central Public Health and Environmental Engineering Organization
CPWD – Central Public Works Department
CRMP - Cultural Resource Management Plan
CSC - Convenience Shopping Centre
CSP- Community Service Personnel
CSO – Civil Society Organization
CSR - Corporate Social Responsibility
CVs - Commercial Vehicles

D

DC - District Centres
DE- Developer Entity
DCN- Development Control Norms
DCR - Development Control Regulations
DDA - Delhi Development Authority
DDMA- Delhi Disaster Management Authority
DE - Developer Entity
DFC - Dedicated Freight Corridor
DFS- Delhi Fire Service
DDMA- Delhi Disaster Management Authority
DMRC- Delhi Metro Rail Corporation
DIMTS - Delhi Integrated Multi-Modal Transit System
DISCOM - Distribution Company
DJB - Delhi Jal Board
DMA - District Metered Area
DMC - Delhi Municipal Corporation
DMIC - Delhi Mumbai Industrial Corridor
DMRC - Delhi Metro Rail Corporation
DOMC - Delhi One-Mobility Commission
DPCC - Delhi Pollution Control Committee
DPGS - Delhi Parks & Gardens Society
DRU - Disaster Response Unit
DSA - Data Sharing Agreement
DSIIDC - Delhi State Industrial and Infrastructure Development Corporation
DTC - Delhi Transport Corporation
DTIDC - Delhi Transport Infrastructure Development Corporation
DU - Dwelling Unit
DUAC - Delhi Urban Art Commission
DUHF - Delhi Urban Heritage Foundation
DUSIB – Delhi Urban Shelter Improvement Board
DVC - Damodar Valley Corporation

E

ECS - Equivalent Car Space
ECBC- Energy Conservation Building Code
ECS - Equivalent Car Space
EDC - External Development Charges
EDMC - East Delhi Municipal Corporation
EIA - Environmental Impact Assessment
EoDB – Ease of Doing Business
ESZ - Eco-Sensitive Zones
ESS- Electric Sub Station
EWS- Economically Weaker Section
EV - Electric Vehicle
EWS - Economically Weaker Section

F

FAR - Floor Area Ratio
FDI - Foreign Direct Investment
FOBs - Foot Over Bridges
FTTH - Fibre-to-the-Home

G

GBF - Green-Blue Factor
GDA - Green Development Area
GDP - Gross Domestic Product
GER - Gross Enrolment Rate
GHG - Greenhouse Gas
GIS - Geographic Information System
GNCTD - Government of National Capital Territory of Delhi
GPCD - Gallons Per Capita per Day
GPRA - General Pool Residential Accommodation
GRIHA - Green Rating for Integrated Habitat Assessment
GSM - Global System for Mobile Communication
GVA - Gross Value Added

H

HCC - Heritage Conservation Committee
HCV - Heavy Commercial Vehicle
HDI - Human Development Index
HH - Household
HT - High Tension

I

ICD - Inland Container Depot
ICT - Information and Communication Technology
ICV - Intermediate Commercial Vehicle
IEC- Information Education and Communication
I&FC - Irrigation and Flood Control Department
IFC - Integrated Freight Complex
IGP - Integrated GDA Plan
IGBC- Indian Green Building Council
IIA - Industrial Improvement Area
INTACH - Indian National Trust for Art and Cultural Heritage
IPT - Intermediate Public Transport
IRC - Indian Road Congress
ISBT - Inter State Bus Terminal
IT - Information Technology
ISBT- Inter State Bus Terminal

ITES - Information Technology Enabled Services

ITI - Industrial Training Institute
ITMS - Intelligent Transport Management System

J

JJ clusters - Jhuggi Jhopri clusters

K

KBI – Knowledge Based Industries
KPI - Key Performance Indicator

L

LBZ - Lutyens Bungalow Zone
LCA - Life Cycle Analysis
LCV - Light Commercial Vehicle
LDC - Liveable Delhi Committee
L&DO - Land and Development Office
LDRA - Low-Density Residential Area
LDRP - Low-Density Residential Plot
LEED- Leadership in Energy and Environment Design
LIG - Low Income Group
LoS - Level of Service
LPCD - Litre Per Capita per Day
LPG - Liquefied Petroleum Gas
LPR - Labour Participation Rate
LRT - Light Rail Transit
LSC - Local Shopping Centre

M

MCC - Metropolitan City Centre
MCD - Municipal Corporation of Delhi
MCV - Medium Commercial Vehicle
MDR - Mobility Data Repository
M&E - Monitoring & Evaluation
MOEF& CC- Ministry of Environment and Forest & Climate Change
MES - Military Engineer Services
MFA - Material Flow Analysis
MGD - Millions of Gallons per Day
MICE - Meetings, Incentives, Conferences & Exhibitions
MIG – Medium Income Group
MLCP - Multi-Level Car Parking
MMI - Multi-Modal Integration
MMSCMD - Million Metric Standard Cubic Meter Per Day
MMTH - Multi-modal Transport Hub
MoHUA - Ministry of Housing and Urban Affairs
MPD - Master Plan Delhi

MRF - Material Recovery Facilities
MRTS - Mass Rapid Transit System
MSME - Micro Small Medium Enterprise
MSW - Municipal Solid Waste
MTA - Market Traders Association
MTNL - Mahanagar Telephone Nigam Limited
MU - Mega Unit
MUZ - Multi-Utility Zone
MW - Megawatt
M&WC - Medicine & Walk-in Clinic

N

NBC- National Building Code
NCR - National Capital Region
NCRPB - National Capital Region Planning Board
NCTD - National Capital Territory of Delhi
NCZ – Natural Conservation Zones
NDMC - New Delhi Municipal Corporation
NFHS - National Family Health Survey
NGO - Non-Governmental Organization
NHAI - National Highways Authority of India
NHC - Non-Hierarchical Commercial Centres
NHCC - Non-Hierarchical Commercial Centre
NMA- National Monument Authority
NMT - Non-Motorized Transport
NMV - Non-Motorized Vehicle
NOC - No Objection Certificate
NR- No Restriction
NREP - National Resource Efficiency Policy
NRW - Non-Revenue Water
NTE - Night Time Economy

O

O-D - Origin Destination
O&M - Operations & Maintenance

P

PBS - Public Bicycle Share
PDS - Public Distribution System
PHPDT - Peak Hour Peak Direction Traffic
PIS - Passenger Information System
PLFS - Periodic Labour Force Survey
PM - Particulate Matter
PMD - Parking Management District
PMDMU - Plan Monitoring and Database Management Unit
PMDP - Parking Management District Plan

PMKVY - Pradhan Mantri Kaushal Vikas Yojana
PM-UDAY - Pradhan Mantri Unauthorised Colonies in Delhi Awas Adhikar Yojana
PMV - Personal Motor Vehicle
POPS - Privately-Owned Public Spaces
PPP - Public Private Partnership
PSP - Public & Semi-Public
PT - Public Transport
PTAL - Public Transport Accessibility Levels
PUHC - Primary Urban Health Centre
PVs- Passenger Vehicles
PwD - Persons with Disabilities
CPWD - Central Public Works Department

R

R&D - Research and development
RFID - Radio Frequency Identification
RoW - Right of Way
ROB - Road Over Bridge
RUB - Railway Under Bridge
RRTS - Regional Rail Transportation System
RRTS - Regional Rapid Transit System
RTVs - Rapid Transit Vehicles
RWA - Resident Welfare Association

S

SCADA - Supervisory Control and Data Acquisition
SDC - Sustainable Delhi Committee
SDG - Sustainable Development Goals
SDMC - South Delhi Municipal Corporation
SEZ - Special Economic Zone
SMEs - Small and Medium-sized Enterprises
SPAs - Service Providing Agencies
SPV - Special Purpose Vehicle
SRDC - Shahjahanabad Redevelopment Corporation
SRS - Sample Registration System
STP - Sewerage Treatment Plant
SUS - Sustainable Urban Services
SWM - Solid Waste Management
SWOT - Strengths Weaknesses Opportunities and Threats

T

TDR - Transferable Development Rights
TERI - The Energy and Resource Institute

TOD - Transit-Oriented Development
ToR - Terms of Reference

TPD - Tonnes Per Day

U

UBBL - Unified Building Bye Laws

UCs - Unauthorized Colonies

UEs - Urban Extension Roads

UGR - Under Ground Reservoir

ULB - Urban Local Body

UMTA - Unified Metropolitan Transportation Authority

URDPFI - Urban and Regional Development Plans Formulation and Implementation

UT - Union Territory

UTF - Urban Transport Fund

UTTIPEC - Unified Traffic and Transportation Infrastructure (Planning & Engineering) Centre

V

VDC - Vibrant Delhi Committee

VGF - Viability Gap Funding

W

2Ws - Two wheelers

3Ws - Three wheelers

4Ws - Four wheelers / PV(cars)

WHO - World Health Organization

WSUD - Water Sensitive Urban Design

WTP - Water Treatment Plant

Z

ZDP - Zonal Development Plan

Z-farming - Zero Acreage farming

ZWLs - Zero Waste Localities

Definitions

A

Active frontage

A street stretches where there is an active engagement through visual / physical permeability between the street and the building. In active frontage the front façade of buildings open towards the streets and accommodates public activity such as retail or recreational activities. It enhances pedestrian activities and passive surveillance on the public street.

Active travel

A mode of transport which involves physical activity such as walking and cycling to get from one destination to another.

Active Travel Area (ATA)

A precinct/area identified, to promote Active Travel by improving the density of NMT streets and/or retrofitting the existing network in that area.

Adaptive reuse

It is the process of reusing a listed existing building, to accommodate permissible and compatible uses. With adaptive reuse in historic buildings, continuation of the aesthetic and historic values along with prolonged useful life can be achieved. The re-use and permissible alterations of building shall be as per the grade provisions given in UBBL 2016.

Affordable rental dwelling units

Tenure-based residential units comprising of affordable rental dwelling units and dormitories with initial rents as prescribed by the Government.

All-abilities Park

Park designed with recreational facilities/activities making them inclusive for users of all abilities and age groups.

Amenities FAR

Amenities FAR is an incentive FAR (over and above permissible FAR) for provisioning additional social amenities in unplanned areas as part of the regeneration process.

Archaeological Park

A spatially contiguous area that combines assets of heritage value with ecological assets. Such parks have the potential to become an interpretative and educational resource for the public in addition to the value as a tourist attraction.

Assisted purchase units

Tenure-based residential dwelling units comprising of rent-to-own model units where tenants will mandatorily set aside annual lump sum amounts with the option of purchasing the unit at the end of a pre-specified period.

B

Bio-drainage

Bio-drainage or biological drainage is the removal of excess soil water by plants through evapotranspiration, which depends upon the plant species, plantation density, depth to water table and climate.

Bio-swale

A green infrastructure facility designed as a vegetated, shallow, landscaped depression to capture, treat, and infiltrate stormwater runoff as it moves downstream.

Blue assets

Ecological features like river Yamuna and wetlands, ponds, lakes, natural drains and man-made features like canals, *baolis*, wells, etc.

Brownfield area

The existing built-up area of the city.

Business Promotion Districts (BPDs)

BPDs include specific existing Industrial Areas, District Centres and Institutional Areas etc. as identified in the Plan

C

Canopy density

The proportion of an area that is covered by the crown of trees and is expressed in percentage of the total area.

Carriageway

A space reserved for movement of motorized and non- motorized vehicles.

Circular economy

An economic model in which resources are kept in use for as long as possible in order to maximize value and reduce waste. It is an alternative to the traditional linear economic model of 'make, use, dispose' and includes recycling and repair economies, wastewater reuse, recycled C&D waste products and construction materials (like fly ash bricks, reclaimed asphalt pavement etc.), recycling of faecal sludge, etc.

City level circuits

Public space networks for fostering a safe and vibrant civic society/societal behavior ~~public realm~~ supported with improved ~~public~~ amenities/facilities for facilitating cultural and/or creative economies, at times coupled with ~~for introduction~~ of themed events, etc

Clean economies /industry

Non-polluting and environment-friendly economies/industries such as knowledge and cyber economies, cultural and creative economies, green economies, circular economy etc. which has low impact on the quality of air and water, manages waste and reduces its generation, as well as minimizes chemical risks.

Commercial Centers

These are the major business trade & commerce & shopping centres that serve as the multi modal activities. It includes Metropolitan City Centre, District Centre, Community Centre, Local Shopping Centre, Convenience Shopping Centre and Non-Hierarchical Commercial Centre, Wholesale and Warehousing.

Comprehensive Mobility Plan (CMP)

A Plan presents a long-term vision of desirable mobility patterns (people and goods) for a city and provides strategy and policy measures to achieve this vision.

Congestion pricing

The charge applied to vehicles entering a defined area of the city so as to reduce the number of vehicles and level of congestion in those areas.

Consortium

A duly registered association having rights, duties & obligations in accordance with the law, consisting of multiple landowners/Developer Entities who have come together to pool land for development as per prescribed norms and guidelines.

Conversion charges

These are the charges prescribed by the Government from time to time & payable wherever use of the land / activity is changed, other than the license fee permitted as per law.

Complete Streets

Streets designed and operated such that they prioritize pedestrian and cyclists over other users, and enable safe mobility for all users, including people of all ages and abilities.

Cultural and Creative Economies

Economy based on industries such as tourism, design and fashion, publishing, F&B, media, visual/performing arts, etc.

Cultural hotspots

Places of intense public activity, attracting locals as well as tourists due to the identity of the place, or historic, cultural or any other significance.

Cultural Precincts

A concentration of fragmented and non-contiguous heritage sites and/or buildings of socio-cultural importance within an area, connected to each other by streets or street networks to form a cohesive cultural hotspot.

Cultural Resource Management Plan (CRMP)

It is a plan to be prepared for each cultural precinct, incorporating urban design and built form controls.

Cycling Highways

Dedicated cycling corridors identified and developed with all necessary infrastructure to facilitate long distance active travel.

D

Developer Entity (DE)

An individual land/property owner or a group of land/property owners who have pooled one or more parcels of land for taking up development/ regeneration.

E

Eco-cultural assets

Features where both ecological and cultural aspects of a landscape are combined together, such as protected monuments and heritage buildings with open greens, gardens, constructed water systems like tanks, stepwells (*baolis*) etc.

Economy Routes

Dedicated high frequency low-fare mass transit routes in the city.

Encumbrance

Any legal or physical impediment that can adversely impact the transferability of the property and restrict its free use until the encumbrance is removed.

Evacuation spaces

Open to sky areas where people can gather at the time of an event such as fire, earthquake etc. These can be parks, multi-purpose grounds, other open spaces etc. that are easily accessible by residents.

Economically Weaker Section (EWS)

EWS households are defined as households having an annual income for qualifying into the Category, as may be prescribed by the Government from time to time.

Express Routes

Route connecting high footfall mass transit stations/destinations such that the number of stops /halt stations during the journey are minimized and the travel time is optimized. *Refer MOB2, clause 4.4*

External Development Charges (EDC)

The charges to be paid by DE/Consortium towards the cost of constructing, laying and installing the trunk public infrastructure and services, including inter-alia roads, water supply, sewerage and drainage systems, electricity supply, greens etc.

F

First mile connectivity

First mile connectivity refers to getting people from origin of a trip to any public transportation hub like a railway station, bus stand/depot or metro station etc.

Flood Detention Sinks/retention sinks

Storm water management practice used to retain/store flood water. Detention sinks can be used to attenuate and treat surface water runoff from roads or other impermeable surfaces. They are designed

for areas in which storm runoff needs to be contained for a period of time to allow solids to settle and for downstream peak flow to be reduced.

G

Green assets

Ecological features like forests, orchards, riverside development, planned parks, trees and landscaped areas, recreational greens, green belts, gardens and green roofs in built fabric, etc.

Green-Blue Factor (GBF)

It is a factor used for calculating a combination various green - blue features at the plot level i.e. roof gardens, terrace gardens on intermediate floors, green walls, landscaped and/ or pervious ground areas etc.). .

Green-Blue Infrastructure

The interconnected network of multi-scalar and multi-functional Green and Blue Assets that may be natural or form a part of designed landscapes/urban design. The concept refers to urban planning where water bodies and land are interdependent, and grow with the help of each other while offering environmental and social benefits

Green building

A building that, in its design, construction and operation, reduces or eliminates negative impacts, and create positive impacts, on the climate and natural environment and preserves natural resources.

Green campus

A campus designed with low carbon footprint and net zero energy. Such sites have very high proportion of greens and open spaces while employing sustainable and eco-friendly practices at all stages of the building's lifecycle.

Green cess

Tariff levied by the development authority and local bodies, creating as a separate Green Fund used for promoting various environment-related works and interventions in the city.

Green corridors

Continuous green and open space existing / proposed along natural drains, water bodies that may include scrub lands, buffers, floodplains, to create a city-wide network of green-blue assets

Green cover

The total area under vegetation across the city that includes publicly accessible and publicly managed green space, non-accessible green spaces, privately owned vegetated land (including farmland, private gardens) and the area of vegetated cover on buildings (green roofs, terrace gardens, etc.)

Green Development Area (GDA)

Area earmarked for development characterized by low density and low building foot print with large wooded and landscaped areas as per the Green Development Area Policy.

Green economies

Economies that allow reduced carbon emissions and pollution, enhanced energy and resource efficiency, and prevention of the loss of biodiversity and ecosystem services. Examples include urban farming, horticulture, solar farms, theme parks, etc.

Greenfield area

The new areas available for development of urban uses within a city, typically on large vacant lands for new development.

Green fuel

Green fuel or bio fuel is a hydrocarbon that is made by or from a living organism that can be used to generate energy.

Green fund

A fund dedicated for activities/initiative pertaining to protection and enhancement of green-blue assets.

Greenways

Greenways are multifunctional linear landscapes that provide a range of socio-ecological benefits. When created along natural drains and rivers, these offer great potential to be developed as city level dedicated corridors for pedestrians and cyclists. Such greenways can serve the twin functions as safe spaces for leisurely walking, family picnics, cycling etc. as well as provide connection to a Strategic Active Corridors in the vicinity.

Gross Residential Use

A Residential neighborhood consisting of parks, Local shopping centre, schools, dispensary, religious building, utilities and other facilities required for the population at the local level.

H**Heritage assets**

Heritage Assets includes both tangible (movable and immovable heritage properties such as paintings, sculptures, manuscripts etc and monuments, heritage buildings, sites, places, streets, areas, gardens, landscapes etc.) and intangible elements (practices, knowledge, skills, living expressions and traditions such as festivals, art forms & folk culture, cuisine, dance & drama etc.) of heritage value.

Heritage building

Any iconic / historically important building identified, listed and notified by concerned agency and urban local bodies. Currently, there are 1459 notified heritage buildings within Delhi.

Heritage TDR

Compensation awarded in the form of FAR to the land / property owner for reduction/loss of development rights against his land due to protection of a heritage building / site.

Heritage precincts It is an area identified by concerned agency that requires conservation and/or preservation for historical and/ or architectural and/or aesthetic and/or cultural and/or environmental and/or ecological purpose.

Heritage Zone

A large contiguous area of historic importance with characteristics such as unique built fabric, concentration of tangible and intangible heritage assets, associated with a particular dynasty / era or architectural style etc.

Household industries (HHI)

A non polluting, non-obnoxious industrial unit allowed in all residential areas (except the 'No Industrial Activity Zones') with certain conditions.

I

Influence Zone Plan (IZP)

An integrated plan prepared for the delineated TOD Planning Area of a TOD Node, that includes various area improvement works such as road widening, upgrading public streets multi-utility zones, and facilities for IPT, pedestrian and NMT, multi-modal integration, provision of public parking, urban furniture, signage, public conveniences, street vending zones etc.

Integrated GDA Plan (IGP)

A broad structure plan for the identified area in Green Development Area (GDA).

Interactive zone

Specific areas and trails identified within natural and heritage assets, where full or regulated public access may be permitted with provision of adequate amenities (toilets, drinking water fountains, resting places, visitor information centres etc.) for the purpose of recreation.

Intermediate Public Transport (IPT)

Intermediate Public Transports (IPTs) comprise of on-demand modes of transport (taxis, auto-rickshaws etc.) with no fixed route.

K

Knowledge Based Industry/ cyber economies

Industry that is based on intensive use of technology and measures of research and development and knowledge inputs. For example, firms involved in pharmaceuticals, health biotech, telecommunications, information technology, software, avionics, cyber economies, high-tech robotics and electronics, knowledge and innovation, research and development, etc.

L

Land Pooling

The legal consolidation of land parcels for utilization as per Land Policy and the Regulations for Operationalization of Land Pooling Policy.

Last mile connectivity

It refers to the trip from origin to transit system or transit system to destination such as people going from a transportation hub like a railway station, bus depot or metro station to their final destination or vice - versa.

Low-carbon technology

It is a method to reduce greenhouse gas emissions and to prevent global warming.

Low-carbon technology generalizes all the means and methods for low-carbon or carbon-free. It suits the need of adapting to a low-carbon economy,

M

Mandatory Wooded Area

The natural tree covered area (including natural unlined water bodies) to be maintained as part of Green Development Schemes. The trees shall have a canopy density of 70% or more and shall be of species that require less water and/or are effective for pollution control as recommended by the Competent Authority

Master Regeneration Plan

It is a plan to be prepared by the various agencies for the large existing developed areas in order to enhance the present circulation network and create smaller pockets/blocks for undertaking regeneration.

Micro-mobility

Green-mobility options that promote active travel such as battery-operated cycles, e-bikes etc.

Minimum Waste Locality (MWL)

Locality (residential area, housing society, colony, apartment, market etc.) where all the wet municipal solid waste is managed within its boundaries through eco-friendly solutions such as composting and bio-methanation etc.

Miyawaki forest

A dense, multilayered urban forest created by an afforestation technique that involves planting numerous native species in the given area. It can play a major role in ecosystem restoration, controlling pollution, mitigating urban heat island effects and supporting local wildlife.

Multi-facility plots

A plot where various local facilities are proposed to be developed in a composite manor in one or more building within the same plot.

Multi-Modal Integration (MMI)

Integration of rail and road-based systems which may include metro, rail/ rapid rail, bus/ BRTS and intermediate public transport (IPT) including feeder services, taxis, auto-rickshaws and private modes including non-motorised transport (NMT) such as cycle-rickshaws, bicycle, pedestrian, etc.

Multi-Modal Transport Hub (MMTH)

A transit node having multiple modes located at one place such as railway stations, ISBTs, RRTS stations and metro stations etc.

Multi-Utility Zone (MUZ)

An element on urban streets as a dedicated space between footpath/cycle track and motor vehicle lane, having space provisions for any or all of the following functions within them: tree plantation, auto/cycle-rickshaw stands, hawker zones, parking, street furniture, bus stops, public toilets, information kiosks,

traffic police booths and underground and overhead utility services like electricity, water, fire hydrants, telephone, gas etc.

N

Natural assets

Natural ecological features like forests, ridge, river, streams, drains, lakes, ponds and wetlands, etc. wetlands, etc.

Nightlife circuits

Public space networks promoting an active night life by improving safety, reducing congestion by staggering activities, utilising spaces for different activities optimally, and improving productivity for formal as well as informal economic activities and creating night economies.

Night shelter

A premise having the facility for providing night accommodation to individuals without any charges or with token charges. It may be run by local government or voluntary agencies.

Night Time Economy (NTE)

Various economic activities providing alternative time and space for continuing work and production in the city and the areas that remain open for cultural activity and entertainment to attract tourists and locals at night time.

NMV / Cycle Track

A reserved space for movement of non-motorized vehicles like cycle, cycle rickshaws and hand pull carts.

Non-motorized transport (NMT)

Active transport that includes walking, cycling and other forms of mobility that are powered by humans (cycle-rickshaws, handcarts etc.).

O

On-street parking

Authorized parking that takes place within public Rights of Way (RoW).

Off-street parking

Authorized parking that takes place in a built structure (underground, at ground level or above ground level) or may be out in the open as surface parking. It is entered via a driveway (making barrier-based payment systems feasible).

P

Parking Management Area (PMA)

An area delineated to parking related interventions such as managing demand, increasing supply, regulating available parking and reducing parking related externalities.

Parking Management Area Plan (PMAP)

Plans prepared for designated Parking Management Area (PMAs) including specifics of parking management, use of existing parking spaces, parking charges, congestion pricing, ITS application, and enforcement of the plan.

Play streets

Low-volume, local streets temporarily closed to traffic for a specific duration for the purpose of play and recreation.

Privately-owned public spaces (POPS)

Spaces that are private property and are maintained by the owner/developer, but provide open public access during regulated hours at ground or elevated levels within buildings.

Private parking

Parking which is reserved for specific groups of users, such as residents or tenants.

Public art

Site specific artwork created to enhance and animate publicly accessible spaces through artistic interpretations that range from individual sculpture to integrated architectural and landscape features and treatments.

Public Plazas:

Plazas ranging from neighbourhood chowks and nukkads to institutional forecourts, city squares and piazzas, and forming important pause points along movement networks.

Public realm

An essential urban common, comprised of shared public areas in a city that belong to everyone and are accessible to all such as streets, public and private plazas, parks and open spaces, etc.

Public space

An area or place that is open and accessible to all people, regardless of gender, ethnicity, age or socio-economic level. These include public gathering spaces (plazas, squares, parks) as well as connecting spaces (streets, subways). The a number of public spaces of cultural, social and economic significance are added in the form of activity nodes and networks adding to a vibrant public life .

Public waterfronts

Public spaces designed alongside water bodies in areas that were previously neglected, such as the Yamuna floodplains, buffers of drains and water bodies etc.

Public Transport Accessibility Level (PTAL)

A detailed and accurate measure of the accessibility of an area to the public transport network (including all public transport modes, IPTs, etc.), taking into account walk access time and service availability.

Public parking

Parking which is open to the general public for casual short term parking use.

R

Regeneration

A flexible framework that allows the option of using a mix of instruments for development of an area, namely, retrofitting, reconstruction or full/partial redevelopment, provided requirements of , sustainable services, structural safety and improved walkability are met.

Refuge spots

Any spaces within neighbourhood identified by RWAs/ local bodies to provide alternate locations for healthy/unwell residents at the time of contagious disease outbreaks. Such spots may be in the community centre, multi-facility centre or any other publicly accessible facility.

Rental housing

Residential properties having number of DU's and/ or dormitory, exclusively available for rent to the prospective tenant through a formal mechanism like agreement or any such undertaking

Retrofitting

The addition of new technology or features to an existing structure to reduce or eliminate the possibility of damage to that structure from flooding, erosion, high winds, earthquakes, or other hazards.

Right of Way (RoW)

A reserved space for movement of all modes of traffic which includes pedestrian, cycles, cycle rickshaws, buses, cars, scooter, taxis, autorickshaws, etc. Space for services, underground/ overground utilities, public conveniences and amenities, vendors drinking water kiosks, etc, is planned and reserved within the ROW, without encroaching on walking space or motor vehicle movement space.

S

Sector

An area delineated in the Zonal Development Plan (ZDP) bounded by existing or proposed roads or physical features such as high tensions lines, railway lines, drains etc. having an area of..... hec .

Service markets

An area or market having shops for fruits and vegetables, service and repair, junk and scrap materials (kabari), hardware and building materials, automobile repair workshops, etc. *Refer ECO1, clause 3.6*

Service Providing Agency

An agency responsible for providing services such as water supply, sewerage disposal, electricity supply, construction of roads, communication and other distributive services etc .

Single Window System

An ease of doing business measure developed as a single online platform for receiving applications, verifications, approvals, grievances etc., to manage the implementation of a particular policy/ scheme in a time bound manner

Shared mobility

Shared mobility refers to all modes of transport that are not privately-owned. Most of these modes have fixed-route and fixed-price and fixed-schedule (such as buses, metros, etc.). It also includes all demand-based modes that provide first- and last-mile connectivity (shared autos, rickshaws, cabs, etc.)

Small format housing

Housing units with size ranging from 40 - 60 sq.m.

Solar Farms

Solar farms or solar fields are large scale solar installations where photovoltaic panels (solar panels) are used to harvest the sun's energy. .

Special abilities parks

Parks designed for play and recreational activities of users (especially elderly, toddlers and infants with caregivers) with disabilities and special needs.

Special Area

An area with special characteristics designated as such in the Plan for development / redevelopment.

Strategic Active Travel Corridors

Certain identified routes with existing or anticipated high share of cyclists and pedestrians and connecting different activity centers.

T

Tactical urbanism

Tactical Urbanism or pop-up urbanism is a measure for temporarily retrofitting a street section to priorities pedestrian and NMT movement by reserving lanes, pedestrianizing street stretches, etc. 1

Transit-Oriented Development (TOD)

A compact development around a high-capacity transit node with high density, mixed use and design oriented towards walkable and cycleable neighborhood, by maximizing land potential.

TOD Nodes

A mass transit station selected & notified for intense development notified by DDA. The provisions of TOD (Transit Oriented Development) Policy shall only be applicable in the Influence Zones of such identified TOD Nodes.

TOD Planning Area

An area of 500 to 800 m radius around transit stations .

TOD Scheme

A development proposal for an area falling within TOD node and fulfilling all eligibility criteria as specified in the TOD Policy.

Transit hotspots

Transit nodes developed as hubs of mix use and public activity.

Tree directory

A database of the tree species in a particular area, with identified unique trees/ tree clusters like tree corridors or precincts, heritage trees, precincts with high carbon storage and sequestration rates, etc.,

U**Unauthorized colonies (UCs)**

Colonies/ comprising of contiguous area, developed without considering planning principles and approval of layout plans , building plan from concerned agencies .

Urban farming

The practice of growing, processing, and distributing food and other products through plant cultivation or animal husbandry, aquaculture and urban beekeeping in and around cities for local population needs.

Urban Woodlands

Areas within protected forests that are developed to provide people access to a variety of flora, fauna and natural environment.

Use Premises

A Specific plot or one of the many sub divisions of a Use Zone, designated in an approved layout plan, for a specific Use. Land use of a premise has to be determined on the basis of the Master Plan .

Use Zone

An area for any one of the Specified Use Category of the urban functions as provided in the Master Plan.

V**Vertical mixing of uses**

Provisioning of mixing of identified use premises in restricted conditions vertically in a plot.

W**Walkability**

Walkability is a measure of the extent to which an area is walkable according to various features of the built environment (barrier free, safe, well-lit, comfortable etc.) and Ped-Shed of the area under consideration.

Walk Plan

A plan prepared for stretches of at least 400-500m (5-10 minutes walking distance) around any specific destination node with provision of pedestrian and cycling infrastructure. Actual delineation of area under a Walk Plan shall be based on ped-sheds and/or desire lines.

Water Sensitive Urban Design (WSUD)

An approach which integrates urban planning with the management, protection and conservation of the urban water cycle (including water supply, wastewater, stormwater and groundwater management) such that the urban water management is sensitive to natural hydrological and ecological processes.

Worker housing

Worker housing means property used temporarily or seasonally for the residential use of a person who is employed to do any highly skilled, skilled, semi-skilled or unskilled, manual, technical or clerical work, but does not include any such person who is employed mainly in a managerial or supervisory or

administrative capacity. This housing may either be on- or off-site, and may consist of either dwelling unit or dormitory typology. Worker housing sites shall consist of adequate water supply and sanitation facilities and other amenities like emergency medical aid, creche, etc.

Z

Z-farming

Z-farming or zero-acreage farming is a form of agriculture where separate land is not required for such activity. It utilizes otherwise unused, non-conventional spaces like rooftops, indoors, vertical spaces within buildings, etc.

Zonal Development Plan

A plan for one of the zones (divisions) of the National Capital Territory of Delhi containing detailed information regarding provision of social infrastructure, parks and open spaces, circulation system, etc.

Annexures

Annexure 1: Prohibited / Negative List of Industries

Industries manufacturing the following shall be prohibited within National Capital Territory of Delhi.

2[However, Environment Department, GNCTD in consultation with Industries department, GNCTD shall take the final decisions to ascertain a particular activity/Industry/ factory to fall under the said list as per the parameters/ norms set by the CPCB and adopted by the DPCC.]

1. Arc / Induction Furnace
2. Acids
3. Alkalis
4. Animal & fish oils
5. Aldehydes
6. Acid slurry
7. Acetylides, phridines, iodoform, chloroform, E-nepthol, etc.
8. Ammonium sulphoajanide, arsenic and its compounds, barium carbonate, barium cyanide, barium ethylesulphate, barium acetate cinnabar, copper sulphocyanide, ferrocyanide, hydro cyanide, hydro cyanic acid, potassium biocalate, potassium, cyanide, prussiate of potash, phynigallc acid, silver cyanide
9. Aircraft building.
10. Abattoirs, animal blood processing (except existing, relocation 1{and modern abattoir with latest technology shall be permitted subject to all clearances from the concerned agencies and compliance with the National Green Tribunal's Orders in this regard). These will be dependent strictly on the need of the NCT of Delhi to be determined by the concerned local body/ authority.}
11. Bitumen blowing (hot)
12. Brick kiln (using fresh earth as raw material, coal as fuel)
13. B-nepthol
14. Bakelite powder (starting from formaldehyde)
15. Barely malt and extract
16. Bone-grist, bone-meal, salting of bones, storages of bones in open, bone drying
17. Bone charcoal manufacturing
18. Blast furnaces - coal fired
19. Bicycles (integrated plant)
20. Brewery and potable spirits 2{(However, microbreweries upto 500 L/day capacity may be allowed to be set up at any Restaurant / Hotel /Club subject to installation of on-site waste water treatment facility and compliance to all other regulatory requirements)}
21. Chlorinated paraffin wax purification
22. Carbon black
23. Cement industry
24. Calcium carbide, phosphorous, aluminum dust paste and powder, copper, zinc, etc. (electrothermal industries)
25. Cranes, hoists and lifts (excluding assembly)
26. General industrial machinery (such as hydraulic equipments, drilling equipments, boilers, etc.)

27. DOP (Diocetyl Phthalate), DBP & Plasticizer
28. Dry cell battery
29. Dye & dye intermediates
30. Distillation of wood, chemical seasoning of wood (excluding natural seasoning)
31. Explosives, i.e., Fireworks, Gunpowder, Guncotton, etc.
32. Earth moving machinery / equipment (manufacturing of assembly)
33. Electric wires and cables (more than 100 workers, 2000 sqm plot)
34. Fatty acids
35. Fungicides & pesticides
36. Flexographic ink
37. Fuel oils, illuminating oils and other oils such as sthetic oil, shoal oil, lubricants
38. 1[Foundries (Cupola Furnace)*]
39. Gas compressors
40. Graphite production
41. Glass furnace (more than 1 ton / day capacity)
42. Gases-carbon-disulphide, ultramarine blue, chlorine, hydrogen, sulphur dioxide, acetylene, etc.
(other than LPG / CNG / Oxygen / medical gases)
43. Glandular / glandes extraction
44. Glue and gelatine from bones and flesh
45. Hot mix plant (except those approved by DPCC / CPCB)
46. Hazardous waste processing viz. hospital/ 2[tertiary health care centre/] medical/industrial waste.
3[(However, modern hazardous waste processing plant with latest technology shall be permitted subject to all clearances, including environmental clearances, from concerned agencies and compliance with the National Green Tribunal's orders in this regard. These will be dependent strictly on the need of the NCT of Delhi to be determined by local body/ authority).]
47. Polyurethane foam
48. Industrial gelatine, nitro glycerine and fulminate
49. Iron / steel metal forging (using pneumatic hammer).
50. Industrial gelatine, nitro glycerine and fulminate
51. Industrial trucks, trailers, etc.
52. Linear alkyd benzene
53. Lead manufacturing including secondary lead industry (recovery of lead from waste scrap)
54. Lime kiln.
55. Leather tanning and dyeing (raw hides/skins to semi finish)
56. Locomotives and wagons
57. Methanol
58. Methylated spirit
59. Mechanical stone crushers & washing of coarse sand
60. Manufacturing of pulp & paper
61. Melamine resin
62. Mineral salts (which involve use of acids: CuSO₄, FESO₄, alum, etc.)
63. Manufacturing of diesel engines, generators except assembly
64. Motor cycles, scooters, cars, tempos, trucks, etc.
65. News print manufacturing, pulping, fresh paper making

66. Nitrogeneors and phosphatic fertilizers, except mixing of fertilizers for compounding (large scale)
67. Organic solvent, chlorinated minerals, methanol, aldehydes, methylated spirits
68. Petroleum coke processing, not as fuel
69. Potteries / refractories (using coal or furnace oil)
70. Polyethylene polymers including resins
71. Paint industry (nitro Cellulose & Alkyd resin based)
72. Plasticisers manufacturing
73. Pyridines
74. Phenol formaldehyde resin and powder
75. Porcelain product potteries (using coal of production capacity more than 2 tonne per day)
76. Rubber solution and thinner (using naptha and rubber scrap)
77. Roasting of Ore Sulphide Oxides of mixtures
78. Rayon fibre manufacturing
79. Refractories
80. Reclamation of rubber.
81. Production of tyres and tubes (devulcanisation)
82. Saccharine
83. Secondary Zine industry
84. Synthetic rubber
85. Smelting
86. Sewing machines (integrated units) except assembly
87. Sluice gates and gears
88. Stainless Steel Pickling
89. Steam engines
90. Steel pipes and tubes (continuous welded/seamless)
91. Sugar, khand sari
92. Sodium silicatc industry (more than 1 tonne/day)
93. Stone quarrying
94. Textile (more than 100 workers in all shifts, I acre of land, 100 LKD of water)
95. Thorium, radium and similar isotopes and recovery of rare earth
96. Turbines
97. Urea & Phenyl Formaldehyde resin
98. Vegetable oil hydrogenerated
99. Waste (crude / burnt) oil processing (refinery)

Notes:

- i. A public utility service involving any of the activities referred to above shall be permitted subject to environmental laws.
- ii. Further additions / alterations to the list of Prohibited Industries could be made if considered appropriate and in public interest by the Central Government to do so.
- iii. However, continuity of any type of furnace shall be within set parameters of CPCB & DPCC.

Annexure 2: Typological classification of green and blue assets

Natural and Existing Green Blue Assets

Land-based

- Aravalli (Ridge), Regional Parks, Reserved Forest
- Protected Forests
- City Forests
- Biodiversity Parks
- Buffers of natural drains and water bodies
- Archaeological Parks and Greens of historical monuments
- Areas for natural protection/conservation identified by government agencies

Water-based

- River Yamuna and its flood plain
- All natural drains in accordance with the Drainage Master Plan 2018
- Marshes and wetlands
- Water Bodies (1Ha and above) including lakes
- Baolis (stepwells) and Tanks (part of Delhi's historic water system)

Planned green blue assets and other recreational areas

- Planned parks and open spaces of all hierarchies – regional, city, district, community, neighbourhood, housing area, tot lots, multipurpose grounds, golf courses, and playgrounds. (some large parks are part of protected forests in Delhi)
- Sports centres/complexes, golf courses
- Orchards, plant nurseries
- Zoological park and botanical gardens

Other green blue assets within the built fabric

- Private gardens, courtyards, rooftop gardens, pools, internal streets etc.
- Large green areas identified in Institutional /Government campuses/
- Public green spaces contributed through regeneration/TOD schemes
- Surface/open parking areas, public plazas
- Mandatory green areas in closed industrial estates
- Mandatory green areas in LBZ
- Mandatory buffers of HT lines/oil pipelines/other services
- Residual space under flyovers, along water mains, along railway lines, etc.
- Herbs, spice gardens, greenhouses.
- Plantation on central verge of roads, tree cover along roads and streets

New and potential City level Green Blue assets

- Abandoned mines and quarries, power plants and land fill sites/reclaimed land
- Newly developed Buffers of natural drains
- Green Development Area

**The list can be extended by adding any other assets identified by DDA from time to time*

Annexure 3: List of Planned Industrial Areas in Delhi *(Extracted from MPD 2021)*

Industrial activity shall be conducted at the following locations in the Industrial Use Zone, as indicated in the Land Use Plan:

ZONES A to H

1. Naraina Indl. Area,
 2. Jhandewallan Flatted Factory,
 3. Motia Khan Scheme,
 4. DCM Flatted Factory Complex,
 5. Shahzada Bagh Indl. Area,
 6. Gulabi Bagh Indl. Area,
 7. Rajasthan Udyog Nagar G.T. Road near Jahangirpuri,
 8. SMA Co-op. Indl. Estate G.T. Road near Jahangirpuri,
 9. SISI Indl. Area G.T. road near Jahangirpuri,
 10. G.T. Karnal Road Indl. Area near Rana Pratap Bagh,
 11. Hindustan Prefab Ltd., Indl. Area near Shivaji Rly Stn. (Minto Road),
 12. Okhla Indl. Area Ph. I, II & III,
 13. Mohan Co-op Indl. Area,
 14. SISI Complex Okhla near Modi Flour Mills,
 15. Najafgarh Road Indl. Area near Zakhira,
 16. Kirti Nagar Indl. Area, Mayapuri Ph. I & II,
 17. Udyog Nagar Rohtak Road,
 18. Keshav Pur Leather Tannery Scheme (part of Service Centre) near Vikaspuri,
 19. Wazirpur Industrial Area,
 20. Lawrence Road Indl. Area,
 21. Mangolpuri Indl. Area Ph. I & II,
 22. Jhilmil Indl. Area,
 23. Patparganj Indl. Area,
 24. Friends Colony Indl. Area,
 25. Narela Indl. Estate,
 26. Bawana Indl. Estate,
 27. Khanjehala Indl. Estate,
 28. PVC Bazar Tikri Kalan,
 29. Badli
 30. Bhorgarh
- a. Additional Industrial Areas will be indicated while preparing plans for Urban Extension Areas.
 - b. The approved Work-cum-Industries Centres, Service Centres etc., where development has been undertaken in accordance with the land use / earlier Master Plans, shall continue to be industrial subject to conformity with provisions stipulated.

Annexure 4: Household Industries

1. Agarbatti and similar products
2. Aluminum hanger (excluding wire drawing and anodizing).
3. Ayurvedic / Homoeopathic / Unani medicines.
4. Assembly and repair of electronic goods.
5. Assembly and repair of sewing machines.
6. Assembly of hand tools.
7. Assembly of Badminton shuttlecocks.
8. Assembly and repair of electrical gadgets, cooler/heater etc.
9. Assembly and repair of typewriter (excluding Font Casting).
10. Assembly of Bakelite Switches.
11. Assembly and repair of measuring instruments (excluding handling of Mercury and hazardous materials).
12. Atta Chakkies.
13. Batik works.
14. Block making and photo enlarging.
15. Biscuit, pappey, cakes and cookies making.
16. Button making, fixing of button and hooks.
17. Bookbinding.
18. Brushes and brooms (by hand). s
19. Calico and Textile products.
20. Cane and bamboo products.
21. Cassettes recording.
22. Clay and modeling with / without Plaster of Paris.
23. Coir and jute products.
24. Cardboard boxes.
25. Candles.
26. Copper and brass art wares.
27. Cordage, rope and twine making.
28. Carpentry.
29. Contact Lens.
30. Canvas bags and hold-alls making.
31. Candies, sweets, rasmalai etc. (when not canned).
32. Cotton / silk printing (by hand).
33. Computer repairing and cyber information Centre.
34. Computer Software.
35. Dari and carpet weaving.
36. Detergent (without bhatti).
37. Data processing.
38. Dairy products e.g. Cream, ghee, paneer, etc.
39. Dry Cleaning (excluding big workshops).
40. Desk Top Publishing.

41. Embroidery.
42. Enameling Vitreous (without use of coal).
43. Framing of pictures and mirrors.
44. Fountain pens, ball pens and felt pens.
45. Gold and Silver thread, kalabattu.
46. Hosiery products (without dyeing and bleaching).
47. Hats, caps, turbans including embroideries.
48. Information Technology enabled services
49. Ink making for fountain pens.
50. Interlocking and buttoning.
51. Jewellery items.
52. Khadi and handloom.
53. Khustattis.
54. Knitting works.
55. Lace products.
56. Leather footwear.
57. Leather belts and assembly of buckles (by hand)
58. Leather and rexine made ups.
59. Milk Cream Separation.
60. Manufacture of Jute products.
61. Manufacture of Bindi.
62. Name plate making.
63. Production of following items.
 - i. Blanco cakes
 - ii. Brushes
 - iii. Kulfi and confectionery.
 - iv. Crayons.
 - v. Jam, jellies and fruit preserves.
 - vi. Musical instruments (including repairs).
 - vii. Lace work and like.
 - viii. Ornamental leather goods like purses, handbags.
 - ix. Small electronic components.
64. Paper stationery items and book binding.
65. Pith hat, garlands of flowers and pitch.
66. P.V.C. products (maximum one moulding machine).
67. Paper machine.
68. Perfumery and cosmetics
69. Photosetting.
70. Photostat and cyclostyling.
71. Photo copying of drawings including enlargement of drawings.
72. Packaging of Shampoos.
73. Packaging of Hair Oil.
74. Preparation of Vadi, Papad etc.
75. Processing of condiments, spices, groundnuts and dal etc.

76. Pan masala.
77. Production of Sweets and Namkeens (less than one ton/day)
78. Paper Mache
79. Paper cup. Plates, files cover and letter pads (without printing).
80. Photography (developing and printing).
81. Repair of watches and clocks.
82. Rakhee making
83. Repair of domestic electrical appliances.
84. Readymade garments (without washing).
85. Repair of bicycles.
86. Repair and assembly of computer hardware.
87. Repair of bags, brief cases, suitcases, except use of leather and PVC material.
88. Repairing of Water meters, stabilizer, UPS, etc.
89. Rubber Stamps.
90. Stone engraving.
91. Sports goods/Sports Nets.
92. Surgical bandage rolling and cutting.
93. Stove pipe, safety pins and aluminium buttons (by hand press).
94. Silver foil making.
95. Saree fall making.
96. Shoe laces.
97. Stamp pads.
98. Screen Printing.
99. Tailoring.
100. Thread balls and cotton fillings.
101. Toys and dolls.
102. Ties.
103. Tomato Ketchup.
104. Umbrella assembly.
105. Utensil washing powder (only mixing and packaging).
106. Velvet embroidered shoes / shawls.
107. Vermicelli and macaroni.
108. Wood carving and decorative wood wares.
109. Wool balling and lachee making.
110. Wooden / cardboard jewellery boxes (subject to no objection certificate from the department).
111. Wool knitting (with machine).
112. Zari Zardozi.

Annexure 5: Household Industries permissible in Villages (Abadi)

1. Black smithy.
2. Cane and bamboo products.
3. Clay and modelling with / without Plaster of Paris.
4. Dari / Carpet / Sari weaving (except dying & bleaching).
5. Ice cream and water-cooling by Refrigeration. (without cold storage)
6. Stone engraving.
7. Village pottery Industry (without bhatti).
8. Village oil ghani.
9. Wood carving and decorative wood wares.

Notes:

- i. Storing of chemicals listed under schedule I and/ or II of the Manufacture, Storage and import of hazardous Chemical Rules, 1989 and Public Liability Insurance Act, 1990 shall be prohibited.
- ii. No effluent / emissions shall be allowed to be generated by the units and these shall adhere to the noise standards as stipulated by Ministry of Environment and Forests, Government of India.

Annexure 6: Indicative list of city-level circuits

- Coronation Park-Shahjahanabad
- Red Fort-Humayuns Tomb
- PuranaQila-RashtrapathiBhavan
- Humayuns Tomb-Safdarjungs Tomb
- Safdarjung Tomb-Mehrauli
- Tughlaqabad-Jahanpanah-Mehrauli
- Mehrauli-Sultan Garhi

Annexure 7: Street Design Regulations

Based on the overall Mobility, Safety and Environmental Goals for the City, the following Regulations must be followed for design, execution, management and maintenance of all Roads:

1. To Promote Preferable Public Transport Use:

- 1A. Streets should be Retrofit for equal or higher priority for Public Transit and Pedestrians.
- 1B. Prohibit street parking or enforce high parking charges for private vehicles on public streets and spaces, in order to encourage use of other modes.
- 1C. Provide dedicated lanes for high occupancy vehicles (HOVs) and carpool during peak hours.
- 1D. Provide transit-oriented mixed landuse patterns and redensify city within walking distance of MRTS stops, wherever permissible.

2. For Safety of All Road Uses by Design:

2A. Limit speed by design on urban arterial roads and sub-arterial streets to 50 kmph and on collector and local streets to 30 kmph. Street design should be used as a means of limiting speed where possible aided by enforcement in the case of higher speed limit.

2B. Traffic calming of all streets with ROW of 12 m or less, through narrowing of driveway and meandering path with use of trees, islands and street furniture.

Speed should be limited to 20 km/hr by design.

2C. Maximum kerb height shall not exceed 150 mm, as higher kerbs are difficult to climb for pedestrians causing them to walk on carriageways. Higher kerbs are also dangerous for speeding vehicles during off-peak hours as they may cause overturning of vehicles, accidents, etc.

- Final road level should be fixed for all streets in the city. When repaving roads, previous layers must be scraped such that final road level remains the same.
- Footpath level should never be more than 150 mm above adjoining carriageway level.

2D. Intermittent buffers, bollards and other physical elements should be used to protect footpaths from encroachment by motor vehicle parking. However, such elements should not form a barrier, such as continuous railings, that constrain access to pedestrians. Active enforcement is required to protect encroachment of footpaths.

2E. Corner radius of Kerb should not exceed 12 m, in order to control speeding of vehicles at blind turns and intersections, causing accidents. No slip roads or free left turns should be provided on Collector or Local Streets. In case slip roads or turning pockets are provided on Arterial roads, safe at-grade pedestrian crossings with traffic calming and signal should be provided.

2F. Multi-Utility Zone (MUZ) of minimum 1.8 m width should be provided on all Collector and Arterial Roads, to accommodate bus stops, street utilities, trees, street furniture, planting for storm water management; IPT/NMT stands, paid idle parking, etc. so that these don't encroach upon the carriageway or safe pedestrian movement spaces.

2G. Secure parking facilities and services for cyclists/ NMT should be provided on all Collector and Arterial Roads.

2H. Provide Accessible Public Toilets at every 500-800 M distance – preferably located close to bus stops for easy access by pedestrians and public transport users.

3. For Pedestrian Safety, Comfort and Convenience on All Streets:

3A. Pedestrians should remain at ground level with comfortable and safe access and minimum detours from the most direct path, unless there is no other alternative.

3B. A continuous unobstructed footpath on each side of all streets with ROW wider than 12m. Minimum width of footpath should be 1.8 m (with clear height 2.4 m.) in addition to space for trees/greenery/vending spaces and surface utilities. Width of footpath shall be determined based on pedestrian volume and have to be wider than 1.8 m wherever required.

3C. Frontage Zone or Dead Width: For sidewalks in shopping areas, an extra 1 m should be added to the footpath width. In residential areas, a dead width of 0.5 m may be added.

3D. On streets with ROW of 18 m or less, if pedestrian traffic is greater than 8000 per hour in both directions together, the entire ROW should be notified for pedestrianization. Streets may be considered for pedestrianization even if pedestrian traffic is lower than 8000 per hour depending on the potential to improve economic activity and/or safety and convenience.

3E. Elevation of footpaths over the carriageway at all times should be <150 mm and adequate cross slope for storm water runoff. The elevation should be low enough for pedestrians to step onto and off of the footpath easily.

3F. All facilities and amenities should be barrier free for universal access by all persons with reduced mobility including those with hearing and visual impairments.

3G. At least 5 safe Street-Level Crossing Opportunities per kilometer of street with 250 m being maximum spacing between two crossings. Depending on context, these crossings may be signaled and/or traffic calmed (through raising crosswalk over street level by 150 mm) to reduce vehicular speed.

- Pedestrian refuge with a minimum width of 1 m at each street crossing location after crossing 7 m of one way motor vehicle carriageway or 10 m of two way motor vehicle carriageway at non signaled midblock crossings.
- Pedestrian refuge width may be expanded to 1.75 m where possible to accommodate a bicycle.
- Grade separated structures (foot-overbridges and pedestrian-subways) should be avoided to prevent unnecessary detours to reach destinations.
- If grade-separated pedestrian crossings are unavoidable due to presence of highways in peripheral zones of urban areas, then such crossings structures should be frequent. There must be at least 4 crossing opportunities per kilometer in areas with development at edges. Every crossing should be universally accessible.

3H. Natural Surveillance or “eyes on the street” should be enabled on all roads by removing setbacks and boundary walls and building to the edge of the street ROW, wherever permitted as per norms. This would allow people from inside to look out on to the pavement, thus discouraging harassment of women on footpaths, bus-stops and public spaces.

- The main building facade should face the street, located on the property line without setback or with active use within set back and transparent edge that contribute to street safety. Commercial frontages should have facades with minimum 50% transparency (untinted) to facilitate visual surveillance of streets.

- In case enclosure of sites is required, transparent fencing should be used above 300 mm height from ground level.
- Vending spaces should be marked in addition and adjacent to the walking path, especially along high pedestrian volume areas to activate the street and make it safe. Space to be planned for utilities including drinking water kiosks and toilets so that the walking space is enhanced but not compromised.

3I. Provide adequate low-mast Street Lighting for pedestrians and bicycles, in addition to any high-mast lighting provided for the carriageway. Approx. 20 lux level is suitable for non-shopping areas and footpaths and 25-30 lux-level is required for shopping areas, bus-stops, Metro station exits and any areas where pedestrians are expected to gather or wait.

3J. Provide Dustbins, post-boxes, signage and other public amenities at street corners for high usability.

4. For climatic comfort for all Road Users:

4A. Trees are an essential component for all streets – to provide shade to pedestrians/ cyclists and reduce solar gain.

- At least 125 trees per km for streets with ROW smaller than 12 m. At least 125 trees per km per footpath on streets with ROW greater than 12 m.

Spacing of trees at no place should be greater than 12 m except at intersections.

4B. High albedo (diffuse reflectivity) materials should be used for paving to reduce urban heat island effect.

4C. Built to Pavement Edge Buildings with overhangs and arcades provide good protection to pedestrians.

5. To ensure universal accessibility and amenities for all street users:

5A. All facilities and amenities should be barrier free for universal access by all persons with reduced mobility including those with hearing and visual impairments, as per Codes.

5B. Continuous barrier free pavement should be provided for ease of movement for elderly/ persons with disabilities. Pavement height of the footpath should be maintained at a constant level of 150 mm all along the ROW, for proper provision of table-tops / ramps, etc. at various locations such as entry to properties, crossings, etc.

5C. Provide at-grade crosswalks (and foot-over-bridges on highways or BRT corridors) at intervals of approx. 70-250 M, aligning with location of transit stops, type of street / land use activities and neighbouring building entries and destinations.

5D. Provide Accessible Public Toilets should be provided every 500-800 M distance, preferably located close to bus stops for easy access by pedestrians and public transport users.

6. To reduce Urban Heat Island Effect and Aid Natural Storm Water Management:

6A. Decrease impervious surfaces through permeable paving, tree planting zones, etc. to increase ground water infiltration & prevent seasonal flooding.

6B. Integrate Natural Storm Water filtration and absorption into street design through bio-filtration beds, swales and detention ponds.

6C. Decrease Heat Island Effect (HIE) by increasing greenery, planting trees, using reflective paving, etc.

7. Intermediate Public Transport:

Intermediate Public Transport (IPT) are hired / shared modes of transport that may serve as feeders to trunk public transport systems or as another alternative to private transport use. IPT includes cycle-rickshaws, auto-rickshaws, e-rickshaws, taxis and any other vehicle type serving as a shared mode / feeder service that is also prescribed under the Motor Vehicle Act. Taxis play an important role in providing an integrated transport service which should also be available on road like all other metro cities for people who choose not to use a car and combine taxi with public transport for certain trips. Auto-rickshaws also play an essential role as a shared or hired mode of public transport which provide door-to-door connectivity for a variety of trips and provide an affordable alternative to private modes.

Adequate space for IPT, Bus, private bus, truck and commercial parking must be provided on all Layout Plans.

8. Definition of Mass Rapid Transit System (MRTS):

Mass Rapid Transit System (MRTS) may be defined as any public transit system having the capacity to carry more than 10,000 peak hour peak direction trips (PHPDT).

Annexure 8: Indicative list of Cultural Precincts

- NizamuddinDargah- Humayun's Tomb Complex-Sundar Nursery
- Shamsi Fort-Jahaz Mahal-Zafar Mahal-Baoli-Adam Khan Tomb- QutubMinar complex
- Vijay Mandal - Begumpur - Sarai Shahji -Lal Gumbad
- Safdurjung Tomb- Lodhi garden- Lodhi Institutional Area- Lodhi Art District
- Trikona Park- Shahpurjat fashion street - TohfeWalaGumbad- Asiad village society
- Firoz Shah tomb- HauzKhas village - HauzKhas Lake
- Khirki mosque-Satpulanullah- monuments in Chirag Dilli- Jahanpanah forest
- Heritage Precincts within Walled City (Heritage Zone): Historical markets (like Khari Baoli, ParatheWaliGali / Katras / Chandni Chowk vista/ area around Matia Mahal/ area around Jama Masjid
- Heritage Precinct within LBZ: Central Vista

Annexure 9: Industrial concentration in non-conforming areas for redevelopment

Non-Conforming industries	Area (Ha)
Anand Parbat	49.5
Shahdara	19.7
Samai Pur Badli	20.1
Jawahar Nagar	17.9
SultanpurMazra	15.5
Hastal Pocket – A	5.5
Naresh Park Extension	12.7
Libaspur	32.4
Peeragarhi Village	17.2
Khyala	47
Hastal Pocket – D	6
Shalamar Village	5.1
New Mandoli	24.7
Nawada	5.3
Rithala	41.2
Swarn Park Mundka	6.9
Haiderpur	22.2
Karawal Nagar	25.5
Dabri	2.6
BasaiDarapur	-
Prahladpur Banger	23.4
Mundka and MundkaUdyog Nagar	80.8
Ranhola (<i>*Notified on dt. 26th August 2019 by Industries Department, GNCTD</i>)	

Annexure 10: Key Performance Indicators for MPD-2041

Sl. No.	Name of the KPI	Means of measurement	Remarks
1	Reduction in Indigenous Air Pollution	$\frac{\text{Number of indigenous PM2.5 observations within at least "good" category}}{\text{Total number of observations}} \times 100$ <p>Where,</p> <ul style="list-style-type: none"> • Indigenous PM2.5 = Indigenous factor X PM2.5 value • Observations = Number of monitoring stations x 365 (for daily measurements) • Good category = corresponds to the directions provided by CPCB. 	Much of the pollution in Delhi is from external sources over which the city has no control. Indigenous factor is the pollution that originates in the city that can be ascertained through a source apportionment study. Such a study shall be carried out every 5 years.
2	Water Pollution Control	$\frac{\text{Measured Dissolved Oxygen in the natural body}}{\text{Minimum Desired Dissolved Oxygen in the natural body}} \times 100$ <p>Where,</p> <ul style="list-style-type: none"> • Natural bodies includes the river, water bodies, and natural drains • Minimum Desired Dissolved Oxygen (for 1st phase of monitoring) = 4 mg/L (to be revised subsequently as per CPCB directions) 	Individual scores for river, water bodies, and drains to be calculated in the range 1-5 as per the criteria in 2.4. An average of the three scores will give the overall KPI score.
3	Green Cover Enhancement	Annual increase in green cover of the city (%) with reference to a baseline (e.g. 2021 data)	Green cover is defined and calculated as per Forest Survey of India directions.
4	Rejuvenation of Water Bodies	$\frac{\text{Number of rejuvenated water bodies of size 1 Ha and above}}{\text{Total water bodies of size 1 Ha and above}} \times 100$	Criteria for defining a rejuvenated water body <ul style="list-style-type: none"> • No presence of solid waste in or around the water body

			<ul style="list-style-type: none"> • No discharge of untreated wastewater in the water body • Presence of a boundary protection around a water body • No visible eutrophication in the water body • Minimum DO of 4 mg/l • Access to general public (desirable but not mandatory). • Regular maintenance mechanism in place • No reduction in volume of water from previous year
5	Flood Risk Reduction	Reduction in the number of flooding hotspots with reference to a baseline (e.g. 2021 data)	Flooding hotspots defined and identified by PWD and Delhi Traffic Police
6	Wastewater Reuse	$\frac{\text{Treated wastewater used}}{\text{Total wastewater generated}} \times 100$	
7	Groundwater Augmentation	Number of observation wells in which the groundwater depth is in "safe" category	"Safe" category, as defined by CGWB
8	Reducing Landfill Stress	$\frac{\text{Total waste reaching landfills}}{\text{Total waste generated}} \times 100$	
9	Converting Waste to	Increase in revenue generated from recycled C&D products with reference to a baseline (e.g. 2021 data)	

	Wealth		
10	Share of Renewable Energy in Total Usage	$\frac{\text{Energy usage from renewable sources}}{\text{Total energy usage}} \times 100$	Renewable energy sources include solar, wind, hydro, and geothermal.
11	Seismic Compliance	$\frac{\text{Number of registered buildings that are siesmically compliant}}{\text{Number of registered buildings requiring siesmic compliancy}} \times 100$	Buildings requiring seismic compliancy as per DDMA directions.
12	Safety Against Fire Outbreaks	Reduction in number of fire incidents with reference to a baseline (e.g. 2021 data)	
13	Share of Small Format Housing in New Housing Stock	$\frac{\text{Number of small format authorized DUs constructed}}{\text{Number of new authorized DUs constructed}} \times 100$	Refer SSI1: Clause 3.2.2.
14	Slum Rehabilitation	$\frac{\text{Number of listed slums that are rehabilitated}}{\text{Total number of listed slums}} \times 100$	Listed slums as per DUSIB.
15	Shift towards Public Transport	Ratio of total trips by public and shared modes of transport to total trips by private modes (excluding walk trips)	Data to be ascertained through a city-wide transport modal split survey every five years.
16	Adoption of Electric Vehicle	$\frac{\text{New electric vehicles registered}}{\text{Total new vehicles registered}} \times 100$	
17	Human Development Index	Self-explanatory	The methodology propagated by UNDP may be used to ascertain the HDI for Delhi.
18	Heritage Conservation	$\frac{\text{Number of conserved heritage sites}}{\text{Total number of heritage sites}} \times 100$	Conservation criteria as prescribed by Archeological Survey of India.
19	Vibrancy of Public Streets	$\frac{\text{Length of roads of 18m and above designed as per street design Regulation}}{\text{Total length of roads of 18m and above}} \times 100$	Refer Annexure 6 : Street Design Regulation

20	Female Participation in Workforce	$\frac{\text{Total female workers between the age of 15-64}}{\text{Total females between the age of 15-64}} \times 100$	

Annexure 11: List of Industries (M1)

- This category will comprise businesses engaged in high technology, research and development (R&D), high value-added and knowledge intensive activities.
- A range or variety of activities or uses which are technology and research-oriented industries and non-manufacturing in nature are allowed in this industrial use zone;

1. Software Industry

- a. Computer hardware and software industry and industries doing system integration using computer hardware and software.
- b. Industries integrating and manipulating the interfaces of the computers and telecom facilities.
- c. Software products and Mobile Applications IT and IT enabled functions

2. IT Service Industry

- a. Internet & Email Services Provider
- b. World wide Web Services Provider Ecommerce & content development.
- c. Electronic Data Interchange (EDI) Services
- d. Video conferencing, V SAT, ISDN services
- e. Electronic/IT Data Centre activities

3. ITES Industry

- a. Customer interaction services, e.g, call/ contact centres and email help desks
- b. Back office processing
- c. Finance and accounting (provided remotely)
- d. Insurance claims processing (provided remotely)
- e. HR services & Other Consulting (provided remotely)
- f. Web site development and maintenance services g. Remote education
- g. Business Process Outsourcing, Knowledge Process Outsourcing
- h. Software Extension development
- i. Electronic Design & Product Development
- j. Engineering Design & Product Development
- k. Industries catering to the information needs of uses by providing databases or access to databases spread throughout the globe.
- l. Industries providing the facilities for sophisticated testing of different or all components of the information technology.
- m. Telecommunications and enabling services.

4. Media

- a. TV and video programme production.
- b. Photo composing and desktop publication.
- c. Publishing
- d. Audiovisual services

5. Biotechnology/ Medical

- a. R&D and manufacture of products or processes, which use or are derived by using specific living systems (plants, animals and microbes or parts thereof) and or enzymes/ biocatalysts derived there from

- b. Genetic Engineering & Contract Research & Clinical Trials
- c. Medical Transcription Services

6. Research & Development and Design

- a. Electronics R&D-Design & Product Development
- b. Engineering R&D- Design & Product Development
- c. Biotechnology R&D
- d. Design Garments Industry, Gems & Jewellery, Web Design etc
- e. Textile designing and fabric testing, etc.
- f. Inter-Disciplinary R&D Services

7. Others

- a. Packaging
- b. Electronic goods, Power (Electrical) Distribution services
- c. Service and repair of TV and other electronic items.
- d. Transport services
- e. Food and beverage services
- f. Culture and creative industries
- g. Start ups, incubators and Accelerators

Note:

1. * The minimum ROW of a street or stretch of road on which the activities mentioned in Sl. No. 7 are permissible is as follows:

- i. Plots upto 1000 sqm- 12 m ROW
- ii. Plots above 1000 sqm- 18 m ROW

2. Any recommendation for additions/ alterations to the above list forwarded by DSIIDC in consultation with Industries department of GNCTD shall be incorporated, if considered appropriate and in public interest by the Central Government.

Annexure 12: List of Service & Repair Industries (M1)

1. Air Conditioner Parts.
2. Aluminium doors / windows / fittings / furniture.
3. Assembly and repair of Cycles.
4. Auto Parts.
5. Bulbs (battery).
6. Cycle Chain / Locks.
7. Diamond Cutting and Polishing work.
8. Electric fittings (switch, plug pin etc.)
9. Engineering works
10. Foundry (small job works as per prescribed limits of Industries Department / DPCC).
11. Ice-cream and water cooling by Refrigeration (without cold storage)
12. Ice boxes and cooler bodies.
13. Iron grills and door making.
14. Jute products.
15. Knife making.
16. Marble stone items.
17. Metal lathe cutting.
18. Motor winding works.
19. Steel lockers
20. Steel Springs.
21. Tin box making.
22. Transformer covers.
23. TV, Radio recorders etc.
24. TV / Radio / Transistor cabinets.
25. Typewriter parts manufacturing and assembly.
26. Water meter repairing.
27. Welding works.
28. Wire Knitting.
29. Wooden furniture works.
30. Information Technology enabled Services and computer parts

Note: All these industries shall be non- hazardous and non-polluting in nature and the standards prescribed by the pollution control authorities would have to be met by all industrial units in this category.

Annexure 13: List of pre-1962 built up residential and rehabilitation colonies

1. Aliganj
2. Andha Mughal
3. Balbir Nagar
4. Bharat Nagar
5. B. K. Dutt Colony
6. Dishad Garden
7. Gandhi Nagar
8. Geeta Colony
9. GulabiBagh
10. Inderpuri
11. Jangpura - A
12. Jangpura - B
13. JangpuraExtn.
14. Jawahar Nagar
15. Kalkaji
16. Kamla Nagar
17. Karol Bagh
18. Kingsway Camp
19. Kirti Nagar
20. KishanGanj
21. Kishan Nagar
22. Lajpat Nagar - I to IV
23. MalkaGanj
24. Malviya Nagar
25. Mansarovar Garden
26. Model Basti
27. Model Town
28. Moti Nagar
29. Multan Nagar
30. Nanakpura
31. Nicholson Marg
32. New Rajinder Nagar
33. Old Rajinder Nagar
34. Outram Lines
35. Patel Nagar (E)
36. Patel Nagar (W)
37. Patel Nagar (S)
38. Pratap Nagar
39. Prem Nagar
40. Punjabi Bagh
41. Rajouri Garden
42. Rana PratapBagh
43. Ramesh Nagar
44. Ram Nagar
45. Rohtasnagar
46. Roop Nagar
47. Sarai Rohilla
48. Shahdara
49. Shakti Nagar
50. Sheikh Sarai
51. Shivaji Park
52. Subhash Nagar
53. Tilak Nagar
54. Timar Pur
55. Tihar - I & II
56. VinobaPuri
57. Vijay Nagar

Annexure 14: Service Plans

List of Annexures

ANNEXURE I:	SERVICE PLAN - DELHI JAL BOARD (DJB)
ANNEXURE II:	SERVICE PLAN - IRRIGATION AND FLOOD CONTROL DEPARTMENT (I&FCD)
ANNEXURE III:	SERVICE PLAN - DELHI CANTONMENT BOARD (DCB)
ANNEXURE IV:	SERVICE PLAN - EAST DELHI MUNICIPAL CORPORATION (EDMC)
ANNEXURE V:	SERVICE PLAN - SOUTH DELHI MUNICIPAL CORPORATION (SDMC)
ANNEXURE VI:	SERVICE PLAN - NORTH DELHI MUNICIPAL CORPORATION (NORTH DMC)
ANNEXURE VII:	SERVICE PLAN - NEW DELHI MUNICIPAL COUNCIL (NDMC)
ANNEXURE VIII:	SERVICE PLAN - DEPARTMENT OF ENVIRONMENT, GNCTD AND DELHI POLLUTION CONTROL COMMITTEE (DPCC)
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ANNEXURE XII:	SERVICE PLAN - DEPARTMENT OF INFORMATION AND TECHNOLOGY, GNCTD

ANNEXURE I: SERVICE PLAN – DELHI JAL BOARD (DJB)

अधीन सूचित (निवेदन) की
 छापी सं. 59
 दिनांक 22/01/21

छापी संख्या 35
 दिनांक 22/01/21
 उप-निदेशक (योजना) एम.सी.ए.आर. जे.ए.ए.

शत्रुघ्न (योजना) कार्यालय
 कार्या सं. I-82
 दिनांक 21.01.2021

DELHI JAL BOARD : GOVT OF NCT OF DELHI
 OFFICE OF THE CHIEF EXECUTIVE OFFICER
 VARUNALAYA PHASE-II, KAROL BAGH, NEW DELHI

No. DJB/CEO/2021/ D-882

Date : 18.01.2021

To
The Vice Chairman
Delhi Development Authority
Vikas Sadan
New Delhi – 110023

VCA Office
 Dy. No. 120-SD
 Date: 20/1/21

R&D SYSTEMS
 DDA, VIKAS SADAN
 Dy. No. 274
 Date 19/1/21
 V.C.

Sub: Perspective Plan for Infrastructural Services for Delhi 2041- Water Supply & Sewerage
Ref: DO No. F 18(7)/2018-MPD/D-154 dated 16.07.2020 from Vice Chairman, DDA

Sir,

Inviting reference to your above letter on the captioned subject, I am to state that the Perspective Plans for Infrastructural Services for Delhi 2041-Water & Sewerage have been prepared, copies of which are enclosed as Annexure – ‘A’ & ‘B’.

In this regard, it is submitted that Delhi has limited availability of raw water resources and therefore, infrastructure planning must necessarily incorporate enhanced water conservation measures including optimum utilization of treated effluent for non-potable purposes. Further, Rain Water Harvesting is also an integral part of the water conservation paradigm along with revival of water bodies for sustainability of ground water resources. These measures are required to be given focused attention in future Urban Planned Developments in the National Capital.

Com (AS)
 Shalini 20/1

Also ask for soft copy.
 Acc (AS) 20/1/21
 Pl. send mail to DDA for providing soft copy.
 J.R. 28/1/21

AD (AS) - II / MPM (AS) 02.01.21 / mpm

Needless to emphasize, Delhi Development Authority, being the premier development agency in Delhi, has a pivotal role to facilitate additional availability of raw water to the National Capital for its planned and orderly development through liaison with the Central Ministries and agencies concerned.

Further, it had been earlier informed that a Consultant has been engaged for preparation of DPR for Integrated Infrastructural Master Plan (IIMP) for Land Pooling Zones. It is assured that DJB will provide all necessary available inputs on network design, identification of sites for WTPs/STP etc and extend fullest co-operation to the Consultant appointed by the DDA and facilitate the process of infrastructure planning for developments under Land Pooling Zones/MPD-2041.


(Nikhil Kumar)
Chief Executive Officer

- Encl: A. Perspective Plan for Infrastructural Services for Delhi 2041- Water Supply
B. Perspective Plan for Infrastructural Services for Delhi 2041- Sewerage

9650817009
Santosh K
SE DJB

Soft copy received vide email dt 19/01/2021. Kindly forward with original letter to NIUA.
19/01/2021

Ms Nisha PA

PERSPECTIVE PLAN FOR INFRASTRUCTURE SERVICE FOR DELHI - 2041

AGENCY: DELHI JAL BOARD (DJB)

(A) WATER SUPPLY

1. Present water demand

Delhi Jal Board (DJB) had earlier considered per capita potable water requirement @ 60 GPCD. As per the projected population of 23 million for 2021, the water demand is estimated to be 1380 MGD.

2. Water demand projections for 2041

DJB anticipated that by the year 2041 about 1500 MGD potable water @ 50 GPCD (225 LPCD) for a population of 30 million (3 crore) shall be required. For future planned developments, availability of potable water will be restricted to maximum of 40 GPCD (180 LPCD).

3. Basis for adopting per capita water requirement:

Due to limited water resources, demand for potable water has been rationalized by use of non-potable recycled water of desired quality standards for different non-potable uses. For future planned developments, availability of potable water will be restricted to a maximum of 40 GPCD as given in the Table - 1.

Table 1 Potable Water Demand as per use for future developments

Potable Water Demand	Quantity
Residential	135 LPCD
Non-Residential (Commercial/Institutional etc. including 5 LPCD for floating population)	20 LPCD
Fire Demand	2 LPCD
Transmission Losses @ 15%	23 LPCD
Total	180 LPCD (Say 40 GPCD)

Water requirement for toilet flushing purposes in residential developments and non-residential developments (about 75LPCD) shall have to be met by use of non-potable recycled water of desired quality standard with dual piping system. Water demand for industrial process water & horticulture/gardening/agriculture purposes shall also need to be necessarily met out from recycling of wastewater of desired quality standards. Necessary infrastructure for enabling use of recycled water such as dual piping and plumbing, etc. is to be ensured by DDA / Land Developing Agencies. For new buildings (land pooling / redevelopment), dual piping maybe enforced by the building plan sanctioning authorities.

The plumbing infrastructure for dual piping is very difficult and cost intensive to implement in existing developments. Therefore, Delhi Jal Board has assessed that with potable water demand of 40 GPCD in future planned developments, total requirement of potable water at

the city level can be progressively brought down from 60 GPCD to 50 GPCD.

4. Action Plan for Water Augmentation for 2041

It is well known that the fresh water resources for the National Capital Territory of Delhi are limited and the situation is increasingly becoming challenging. Therefore, a twin-pronged strategy for water supply in the future focuses on the augmentation of both, ground water and surface water resources, while also emphasizing the need for increased wastewater treatment and reuse, rainwater harvesting initiatives, restoration of water bodies, etc.

Water Augmentation Plan for NCT of Delhi envisaged by Delhi Jal Board is given here under Table - 2:

Table 2 Water Augmentation Action Plan

Water Sources	Source of water	Proposed amount of water augmentation (in MGD)			
		2021 - 2026	2026 - 2031	2031 - 2036	2036 - 2041
Short to Medium term Plan (248 MGD)					
1. Ground Water Extraction (113 MGD)	a. Installation of additional Tube-Wells in Palla Area (200 Tube-Wells)	25			
	b. Aquifer Recharge and Ground Water Extraction from Water Bodies / Lakes (including reuse of treated effluent)	23			
	c. Ground Water Extraction from Localized Area having High Ground Water Levels				
	d. Additional Ground Water Recharge Projects in Palla Areas	65			
	e. Setting up Advanced WTPs at Okhla with Ground Water Sources from Ranny Wells				
2. Surface Water (70 MGD)	Discharge of high quality treated effluent in the River Yamuna at Palla and its reclamation at Wazirabad as raw water source (Reuse of treated effluent)	70			
3. HP share of unutilized water in Yamuna	Additional Yamuna water to Delhi as per the MOU with Himachal Pradesh for utilization of their un-utilized Yamuna river water allocations.	65			

share (Surface Water - 65 MGD)				
Medium to Long term Plans (336 MGD)				
4. Substitution of 51 cusec of Yamuna Water for irrigation purposes (16 MGD)	Utilization of 51 cusec of allocated irrigation water to Delhi at Hathnikund / Tajewala for its drinking water needs	16		
5. Raw water from Uttar Pradesh (140 MGD)	MOU with Uttar Pradesh for additional river water to Delhi in lieu of adequately treated effluent by Delhi for their irrigation needs	140		
6. Upstream Storages (180 MGD)	Upstream Storages – Renukaji, Lakhwar & Kishau dam projects <i>(*This is a highly tentative calculation. However, exact allocations will be decided by UYRB where Delhi hopes that drinking water requirements will be given primacy in allocations & return flow by Delhi will be considered in allocation of Yamuna water in Delhi for its consumptive needs.)</i>	180*		
Present Availability of Water		935 MGD		
Additional Water Augmented by 2041		584 MGD		
Total Water Availability by 2041		1519 MGD		

DDA has to earmark land required for water supply infrastructure and has to provide land to Delhi Jal Board for setting up Water Treatment Plants and Primary UGRs/Master Balancing Reservoirs with Booster Pumping Stations. JICA Study Report on Improvement of Water Supply in Delhi has suggested Master Plan Development Zones wise Primary UGRs/MBRs with pumping capacities totalling to 1560 MGD and four new Water Treatment Plants. Status of land for the proposed four new Water Treatment Plants is given in Table – 3.

Table 3 Land Requirement for new WTPs

Sr. No.	Name of WTP	Capacity (MGD)	Status of Land	Master Plan Development Zone
---------	-------------	----------------	----------------	------------------------------

1	Iradat	80	Available with DJB	P-1
2	Dwarka Phase II	50	-do-	L
3	Najafgarh	75	DDA has to provide	L
4	Chattarpur	80	-do-	J

The land requirement includes additional provision of 15% & 25% for WTPs and UGR with BPS respectively for future expansions and ancillary infrastructure.

In addition, Water Treatment Plants for another 300 MGD would require to be setup for catering to the projected population of 30 million by 2041. Land for these WTPs will need to be earmarked as per norms mentioned below, depending on the source of raw water and the planned development to be carried out.

➤ **For Water Treatment Plants:**

- 80 MGD (363 MLD) capacity – 300 m²/MLD
- 40 MGD (182 MLD) capacity – 400 m²/MLD

➤ **For underground Reservoirs with Booster Pumping Stations:**

- 5 ML Capacity – 700 m²/ML
- 50 ML Capacity – 600 m²/ML

Assessment of land requirement should not be limited by the projected population for MPD-2041, but need to consider design period i.e. population projections for 2051 and further future urban expansions.

5. Water Conservation Initiatives by DJB

5.1. Groundwater Recharge through Rain Water Harvesting:

Central Ground Water Board has assessed that potential annual rainwater run-off of 24.39 MCM (5,372MG) out of the total of 175 MCM (38,546 MG) available for recharge areas in Delhi. This is proposed to be realized through construction of check dams and artificial recharge structures in rainwater drains. Annual potential of rooftop rainwater harvesting is assessed to be about 14.69 MCM (3,236MG).

RWH Structures are integral to the rainwater conveyance system. DJB has also published guidelines for encouraging adoption of Rooftop Rain Water Harvesting. DJB has identified 89 buildings maintained by PWD/DMCs/GoI/DDA, etc.in 2019, where RWH system is feasible to be installed.

Eleven rain centers in the field and one at the Headquarter have been setup to facilitate the applicants to install rainwater-harvesting system. Nodal officers' in-charge of these rain centers has also been

appointed. Intensive awareness program for publicity of Rain Water Harvesting is also carried out from time to time.

5.2. Revival and Rejuvenation of Existing Water Bodies and Creation of Artificial Water Bodies:

Traditional water bodies help sustain the city's eco system and act as a catalyst to its growth and development, and additionally their rejuvenation contributes to the aesthetics of the city. Majority of Delhi's traditional water bodies suffer from encroachment, illegal construction, over-extraction and water pollution. In order to address these issues, DJB has taken up the work of revival of 240 water bodies with an aim to recharge ground water. The scheme amounting to Rs. 37,678.92 lakh to revive 155 water bodies was approved by DJB in December 2018, out of which, work for 50 water bodies have already been awarded. Raw sewage is proposed to be treated and utilized to recharge ground water.

DJB is also creating artificial Lakes at PappanKalan Waste Water Treatment Plant (WWTP), Dwarka WTP, Timarpur Oxidation Pond, Rohini WWTP and Nilothi WWTP. About 46.5 MGD of treated effluent will be utilized after due treatment to fill the lakes for recharge of ground water. It is estimated that about 50% i.e. 23.25 MGD of water would be available as raw water source from extraction of ground water by installation of tube-wells in the surrounding areas of these artificial lakes.

Status on revival of existing water bodies and creation of new lakes is given in Table-4 &5 Revival/rejuvenation of water bodies will involve following activities:

- Sewage flow into the identified water bodies will be trapped or stopped.
- Treated effluent from a nearby decentralized Waste Water Treatment plants will be used for rejuvenation of dry water bodies or DJB will install bioremediation Waste Water Treatment Plants to clean waste water coming into the water bodies.
- The surrounding of water bodies will be developed and people residing nearby will be given access to the water bodies.

Table 4 Status of Works on Existing Water Bodies

S. No.	Status of Water Bodies/Artificial Lake	No. of Water Bodies / Artificial Lakes	Awarded / Estimated Cost(Lakh)	Timelines
1	In progress	46	7942.05	Works will be progressively completed in phased manner in
2	Proposal under Preparation for call of tenders	39	10639.22	
3	To be executed by M/S CSIR-NEERI as PMC	4	1348.25	

4	Proposed to be carried out through in-house technology on DBO basis	66	17749.40	next 3 to 4 years.
5	Water Bodies received from IFCD, Proposed to be carried out through in-house technology on DBO basis	85	22859.08	
Total		240	60538.00	

Table 5 Status of New Artificial Lakes to be created

S. No.	Status of Artificial Lakes	Quantity of Treated Effluent to be Utilized (MGD)	Estimated Quantity available for use as Raw Water Source from Extraction of Ground Water (MGD)	Status	Timelines
1	At DWARKA WTP	15	7.5	In Progress	Works will be progressively completed in phased manner in next 3 to 4 years.
2	At Sector -25 Rohini WWTP	5.5	2.75	In Progress	
3	At Timarpur Oxidation Ponds	6	3	In Progress	
4	At Nilothi WWTP	15	7.5	Proposal revised	
5	At Pappankalan WWTP	5	2.5	In Progress	

5.3. Utilization of Treated Wastewater:

Present utilization of treated effluent in NCT of Delhi is about 90MGD, apart from the discharge of 267 MGD of treated effluent as return flow in the river Yamuna downstream of Wazirabad Barrage as per the present interim distribution of Yamuna water by UYRB. Further, proposed utilization of Treated Effluent to the extent of about 436-466 MGD is given in Table-6 as under, which will be undertaken in a phased manner.

Table 6 Proposed Utilization of Treated Effluent

Sr. No.	Proposed Utilization	Quantity (MGD)	Timelines	Remarks
1	Coronation Pillar STP	70-100	Dec-2023	To be used as source of Raw Water after tertiary treatment. This proposal has been agreed <i>in principle</i> by UYRB. The tenders for consultant have been received on 07.01.2021 and likely to be awarded by Feb, 2021.
2	Auchandi & Jaunti Regulator	20	Jun-2023	Exchange with Haryana in lieu of irrigation component. This

	for irrigation use in NCT of Delhi			proposal is being considered by UYRB and joint inspection with UYRB was done on 08.01.2021.
3	Exchange in lieu of raw water with U.P	140	(3-4 years after MOU with UP) 2024-25	Exchange of raw water in lieu of Treated Effluent from Okhla STP. Matter is being pursued with U.P Govt. The feasibility report submitted by UP irrigation, under examination.
3	Committed use by PPCL	18	At present about 7 MGD is being taken by PPCL at their Bawana plant however, keeping in view their future expansion plans a provision of additional 18 MGD is kept for their committed use.	Committed use by PPCL at Rithala.
4	All water bodies, forests etc.	188	Dec-2024	
	Total	436 -466		

WAPCOS (India) Limited, a Government of India Undertaking, has submitted its report with identified proposed Recharge Schemes/Projects in NCT of Delhi such as Check dams/Nala bunds in Ridge area, Roof-top rainwater harvesting schemes in institutional and commercial buildings, percolation ponds, lake basins, aquifer storage and recovery wells, parks and gardens recharge regions, flyovers and city roads, Yamuna flood basin areas, etc. to be carried out by respective agencies.

6. Efforts for Service Level Improvements by DJB

Delhi Jal Board has taken numbers of steps to improve sanction of water and sewer connections in a time bound manner and to increase billing and revenue collection efficiency such as implementing Revenue Management System (RMS), mobile application for self-billing and online payments, doorstep delivery of public services, time bound grievance redressal, simplification of procedure of sanctioning of new water/sewer connection, strict actions against wastage of water, etc.

DJB endeavour is to provide equitable distribution of water to the citizens of Delhi and to meet their 24x7 demand of potable water continuously at adequate pressure. For this, Delhi Jal Board is revamping water supply distribution infrastructure including formation of District Metered Areas for reducing non-revenue water and minimizing physical loss of precious potable water through leakages. Installation of bulk flow meters for water auditing, replacement of old/damaged

water pipelines, District Metered Areas (DMAs), reforms on revamping water distribution infrastructure under existing Chandrawal and Wazirabad WTPs, installation of SCADA systems at WTPs, UGRs and in water distribution systems, etc. are few of the DJB initiatives in this direction.

Several steps are being taken to overcome frequent Ammonia pollution in river Yamuna by DJB. Delhi Jal Board also has setup Quality Control Cell to check quality of raw water and treated water.

(B) WASTEWATER / SEWERAGE

1. Wastewater Projections for 2041

Estimated wastewater generation for a population of 30 million (water supplied @50 GPCD) at 80% of supplied water comes out to be 1200 MGD.

2. Perspective Sewage Disposal Plan for 2041

Perspective Sewerage Disposal Plan for 2041 comprises of a multi-dimensional approach with various crucial verticals like laying of sewerage system in unsewered areas of Delhi, rehabilitation of existing STPs, construction of new STPs or at mouth of the Drains, construction of Decentralized STPs in various parts of Delhi, upgradation of existing STPs to higher parameters of BOD: TSS <10:10 and Zero Liquid Waste Discharge (ZLWD) policy in Land Pooling Area etc. The sewerage development plan for 2041 draws heavily from the SMP- 2031 and is a continuation of the sewerage management action plan being undertaken by DJB. Therefore, with suitable need based modifications depending on the actual growth patterns and spatial distribution, the Sewerage Master Plan -2031 prepared by DJB, will be able to fulfil the requirement of MPD-2041.

Based on various physical factors and zoning criteria, the whole NCT of Delhi has now been delineated into 12 (twelve) sewage-drainage zones, instead of six zones earlier, excluding the Cantonment and Airport areas. The zones have been primarily delineated based on the wastewater generation from each zone/sub zone, the capacity of existing WWTPs/WWPSs and land availability for any additional WWTP/WWPS, if required. Sewerage Schemes for each Zone are prepared considering the existing sewerage infrastructure, proposed sewerage infrastructure under various projects, development plans for a particular area, population projections, amount of waste water generation, land availability for proposed sewerage infrastructure and site feasibility.

The following table enlists the proposed delineated zones and sub zones:

S. No.	Drainage Zone	Sub Drainage Zone
Zone 1	Shahdara (SHD)	Yamuna Vihar (YV)
		Sonia Vihar (SV)
		Kondli (KN)
Zone 2	Okhla (OKH)	Okhla (OK)
		Tajpur (TP)
Zone 3	Keshopur (KSP)	Keshopur (KP)
Zone 4	Rohini-Rithala (RR)	Rithala (RT)
		Rohini (RH)
Zone 5	CORONATION PILLAR (COR)	Coronation Pillar (CP-1)
		Coronation Pillar (CP-2)

Zone 6	DWARKA (DWK)	Dwarka (DK-1)
		Dwarka (DK-2)
Zone 7	NAJAFGARH (NJF)	Najafgarh (NJ)
		Jhuljhuli (JH)
		Dhichaon Kalan (DK)
		Somesh Vihar (SV)
Zone 8	NILOTHI (NLT)	Nilothi (NT-1)
		Nilothi (NT-2)
Zone 9	NARELA (NRL)	Narela (NR)
		Palla (PL)
		Zindpur (ZP)
Zone 10	SOUTH DELHI (SD)	Mahrauli (MH)
		Vasantkunj (VK)
		Ghitorni (GH)
		Mahipalpur (MP)
		Kapashera (KH)
Zone 11	OUTER SOUTH DELHI (OSD)	Fatehpurberi and Chandanhola (FC)
		Rajpur Khurd (RK)
Zone 12	KANJHAWALA-BAWANA (KB)	Kanjhawala (KJ)
		Bawana (BW)

3. Sewage Treatment Augmentation Action Plan for 2041:

Detailed Perspective Plan for augmentation of sewage treatment capacity to cater to the projected requirements of year 2041 is as under:

S. No.	Particulars	Total (MGD)
1.	Present sewage treatment capacity	597
2.	STPs under up gradation / reconstruction through funding from NMCG, YAP-III and AMRUT (Okhla -30 MGD, Kondli-20 MGD, Coronation-40, Rithala-20 MGD)	110
3.	Construction of 56 DSTPs in various parts of Delhi	92
4.	Construction of STPs at Mouth of the Drain (10 MGD Mori gate, 10 MGD Delhi Gate, 20 MGD Barapulla)	40
5.	Construction of 7 MGD STP at Sonia Vihar and 25 MGD STP at Rohini	32
6.	Augmentation of treatment capacity through PAC (Poly Aluminum Chloride) extended aeration and construction of DSTP based on growth the population in the developing area.	89
7.	Land Pool area proposed to be designed on Zero Liquid Discharge basis. Therefore, DSTPs are to be constructed by Land Pooling agencies for 75 lacs population having water supply @ 40 GPCD @ of 80% Water supply.	240
	Grand Total	1200 MGD

3.1. Augmentation of Sewage Treatment Capacity to 707 MGD by December - 2022 as per following:

S. No.	Name of STP	Present capacity (in MGD)	Total Sewage Treatment capacity After augmentation (in MGD)	Net Increase (in MGD)	Augmentation Plan
1	Coronation Pillar	30	70	40	Construction of new STP of 70 MGD
2	Rithala phase-I	20	40	20	Rehabilitation of Rithala STP phase-I under YAP-III
3	Kondli	70	90	20	Rehabilitation of Kondli STP under YAP-III
4	Okhla	140	170	30	Construction of new STP of 170 MGD under YAP-III
	Total	260	370	110	
Enhancement of Treatment by December 2022			110 MGD		

3.2. Upgradation of Existing STPs to BOD: TSS<10:10: 6 STPs (Pappankalan, Nilothi, Kapashera, CWG Village, Delhi Gate & Chilla) with total 70 MGD presently at 10:10. Upgradation Work in progress in 10 STPS with 289 MGD capacity- targeted completion by Dec-2022 in phased manner.

S.No	Location	Capacity	Targeted completion
1	Kondli STP Phase I	10 MGD	December 2021
2.	Kondli STP Phase II	25 MGD	December 2022
3.	Kondli STP Phase III	10 MGD	December 2021
4.	Yamuna Vihar STP Phase II	10 MGD	December 2022
5.	Okhla STP Phase I	30 MGD	In place of these four STPs, a New STP of 124 MGD capacity is under construction which is targeted to be completed by December 2022
6.	Okhla STP Phase II	12 MGD	
7.	Okhla STP Phase III	37 MGD	
8.	Okhla STP Phase IV	45 MGD	
9.	Rithala Phase-I	40 MGD	December 2022 subject to grant of tree cutting permission from Forest department.
10.	Coronation Pillar	70 MGD	In place of existing Coronation Pillar Phase-I,II& III (30 MGD) , new 70 MGD STP at Coronation is under construction which is likely to be commissioned; 50% by March, 2021 100% by June 2021.
Total		289 MGD	

3.3. Up-gradation of balance Existing STPs with Parameters of BOD/TSS as 10/10 mg/l (including Bio-nutrient & pathogen removal & sludge management):

S. No.	Name of STP	Phase- Wise Breakup	Design Capacity (in MGD)	Designed outlet	Expected timelines
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				Parameters BOD/TSS	of completion
1	Rithala	Phase - II	40	15/20	The completion period for up-gradation of STPs is 3 to 4 years from the date of availability of funds.
2	Okhla	Phase-V	16	30/50	
		Phase-VI	30	20/30	
3	Kondli	Phase - IV	45	20/30	
4	Keshopur	Phase-I	12	20/30	
		Phase-II	20	30/50	
		Phase-III	40	30/50	
5	Yamuna Vihar	Phase - I	10	30/50	
		Phase-III	25	20/30	
6	Vasant Kunj	Phase - I	2	30/50	
		Phase - II	3	30/50	
7	Mehrauli	Mehrauli	5	20/30	
8	Narela	Narela	10	30/50	
9	Nilothi	Phase - I	40	30/50	
10	Najafgarh	Najafgarh	5	30/50	
11	Pappankalan	Phase - I	20	30/50	
12	Dr. Sen Nursing Home Nalla	Dr. Sen Nursing Home Nalla	2.2	10/15	
13	Delhi Gate	Phase - I	2.2	10/15	
14	Rohini	Rohini	15	30/50	
15	Ghitorni	Ghitorni	5	30/50	
16	Molar-Bandh	Molar- Bandh	0.66	30/50	
		Total	348.06 MGD		

3.4. Construction of new STPs: Following new STPs are proposed to be constructed at new locations and at the mouth of the drains. Details are as under:

S. No	Name of STP	Capacity MGD	Timeline	Remarks
1	Sonia Vihar	7	December-2024	Process of appointment of consultant is in process.
2	Rohini	25	December-2024	Estimate under preparation
3	Delhi Gate	10	December-2024	Land is required from DDA/ Revenue Department
4	Mori Gate	10	December-2024	Allotment of land is awaited from DDA.
5	Barapulla	20	December-2024	Allotment of land is awaited from DDA.
Total		72 MGD		

3.5. Construction of new Decentralized Sewage Treatment Plants (DSTPs) (92 MGD): As per Sewerage Master Plan- SMP 2031, 32 Nos. STPs are to be constructed, out of which, 14 STPs are to be constructed in Najafgarh Drainage Zone and 18 STPs in Narela, Okhla, Outer South Delhi, Kanjhawala, Bawana, Shahdara Zone. Due to land constraint, it has been decided to construct

Decentralized STPs at 42 locations in place of 18 STPs. For setting up 56 plants (42 d-STPs + 14 STPs) and 02 STPs at the mouth of drain, land at 73 locations is required, which includes 15 locations for Sewage Pumping Stations (SPS). Out of total 73 locations, land at 10 locations is already available with DJB and for the balance 63 location, land will have to be made available by different agencies as follows:

S.No.	Name of the Department / Agency	Land Locations
1	Land and Building Department, GNCTD after acquisition from private person	13 locations
2	Gaon Sabha lands	11 locations
3	DDA	39 locations
	Grand Total	63 locations

3.6. Status of Decentralized Sewage Treatment Plants:

S. No.	Name of STPs	Capacity (MGD)	Timeline	Remark
1.	14 (7+7) STPs in Najafgarh Drainage Zone	32	18 to 30 months after approval of funding of balance STPs by NMCG and allotment of land	Out of 14 locations, land is available only at 08 locations and land at balance 06 locations is yet to be allotted.
2.	42 Decentralized STPs at various locations. (+7 SPS)	60	24 to 36 months after allotment of land	Land for construction of 42 DSTPs and 07 SPS have been identified at various locations and it is still in the process of allotment by Revenue department of GNCT Delhi. Necessary action will be taken by DJB after allotment of land.
	Total	92 MGD		

3.7. **Extension of network to un-sewered areas:** The un-sewered area in Delhi mainly consists of unauthorized colonies. As per the list circulated by UD Dept., GNCTD, there are 1799 unauthorized colonies in Delhi. The present status and action plan for providing sewer network in these colonies is tabulated below:

S. No.	Status	Commutative Status as on November 2020 (Numbers)	Timeline	Remark
1.	Sewer line laid and notified	561	Completed	
2.	Work of sewer network is in progress	595	Up to Dec, 2024 in phased manner	

3.	Colonies where NOC is awaited/ O-Zone	131	About 03 years after receipt of NOC / Clearance from concerned department	The work shall be taken up after NOC from Forest Department/Ozone
4.	Colonies where sewerage network is to be laid along with Decentralized STP	512	For laying sewerage network in these colonies 3 years-time will be required after availability of land for DSTPs.	The work shall be taken up after allotment and possession of land by DDA & Revenue Dept. As sewer network cannot be laid in isolation without first identifying and taking possession of land for construction of SPS and decentralized STPs.
	Total	1799		

3.8. Sewage Generation anticipated in Land Pooling Area: As per Zero Liquid Discharge (ZLWD) policy for sewers, Decentralized STPs are to be constructed within premises of the Building / Complex in DDA Development/ Land Pooling Areas. Since Sewage is proposed to be treated within the Land Pooling Area, no centralized sewerage treatment system is required for Land Pooling Areas. Treated effluent from DSTPs within sector / Housing Complex will be reused for flushing, gardening and other secondary purposes to the maximum extent and unutilized treated effluent, if any may be utilized for recharging nearby Water Bodies etc. For Land Pooling Areas, Decentralized Sewage Treatment Plants (DSTPs) will be required to be constructed and provision for land for DSTPs will required to be made in DDA Master Plan – 2041 as per Sector Layout Planning. Land requirement norms for construction of STP/SPS/EPS will be as under:

- a) Land requirement for STP including Sewage Pumping Station & Effluent Pumping Station for capacity up to 22.7 MLD (up to 5 MGD) - **650 m²/MLD**.
- b) Land requirement for STP including Sewage Pumping Station & Effluent Pumping Station for capacity above 22.7 MLD (above 5 MGD) - **1100 m²/MLD**.
- c) Land requirement of **50 m²/MLD** for construction of Sewage Pumping Station and **50 m²/MLD** required for Effluent Pumping Station.

4. Initiatives taken by Delhi Jal Board for efficient sewerage management and mitigation of pollution in drains/river:

4.1. Interceptor Sewer Project (ISP)

The Interceptor Sewer Project (ISP) has been conceptualized for abatement of pollution in the River Yamuna. Under Interceptor Sewer Project, 108 Nos of the drains are trapped and provision of trapping of about 242 MGD flow is being made. Out of proposed 242 MGD, provision for trapping of 238 MGD (98.35%) has already been made. Out of this, 158.70 MGD wastewater is being trapped and treated at the various STPs in the command.

However, the physical works under ISP is almost completed and facility of trapping 242 MGD will be in place, but the actual treatment of this entire quantity of sewage will be done in phased manner only after the completion of the Coronation Pillar, Rithala and Kondli STPs by December 2022.

4.2. Setting up of Decentralized STPs by Institutions/ Schools/ Agencies

DJB has framed a policy for Setting up of DSTPs by individual Schools/Institutions/ Complexes/ Parks/ Hospitals etc. to use the treated effluent for horticulture purpose in their parks.

4.3. Enhanced Use of Treated Effluent

In pursuit of promoting the use of treated effluent for non-potable purposes, DJB has installed filling points for treated effluent at almost all WWTPs. The Biochemical Oxygen Demand (BOD) stands at ≤ 20 ppm and the Total Suspended Solids (TSS) stands at ≤ 30 as well, making it usable for non-potable purposes. DJB has also written to and conducted workshops with a number of Government agencies such as DMRC, PWD, NDMC, SDMC EDMC, NTPC, Indian Railways (for their wagon and carriage washing) and others, encouraging them to use treated effluent. Also, through different incentives in its new policy, DJB is aiming to increase utilization of the treated effluent.

4.4. Rehabilitation of peripheral sewers in Delhi

Most of the peripheral sewers are too old and suffering from severe structural deterioration and have outlived their economical life span thereby, exhibiting operational deficiencies. To overcome these problems, it has been proposed to rehabilitate the peripheral system, so that entire sewage generated in city could be transferred to STPs for optimal utilization of installed capacity of plants and reduction of pollution in river Yamuna. Therefore, DJB intends to take up the rehabilitation of peripheral sewers, which are dysfunctional or partially functional due to multitude of problems such as settlement of sewers, sewage gas related structural failures, leaking joints, disjointed sewer pipes, heavy siltation, blockage due to indiscriminate throwing of rubbish and debris into manholes, illegal discharge of trade waste and collapsed sewers.

The Rehabilitation of peripheral sewers under Phase -I comprises of diameter ranging from 450mm to 1400mm having length of about 162 km. The Project has been divided into 6 packages and, work is in progress and likely to be completed by 2022.

4.5. Providing House Service Sewer Connection

Delhi Jal Board has started a scheme to encourage all such consumers who live in sewerred areas but have not taken sewer connections to apply and obtain sewer connections. Under this scheme, all those who applied for a new sewer connection before 31-03-2020 were not charged any amount and DJB provided them sewer connections at its

own cost. All installation charges and road repair charges are to be reimbursed by Delhi Government to DJB as grant-in-aid under **“Mukhyamantri Muft Sewer Connection Yojna.”** Under this scheme, about 4.84 lac sewer connections have been sanctioned/ regularized.

4.6. Deployment of Mini Sewer Cleaning Machines

DJB has deployed 200 Nos. specially fabricated tailor made Sewer Cleaning machines in order to avoid hazardous operation of sewer cleaning by manual labour. The sewers in narrow lanes can be cleaned mechanically without man entry now.

4.7. Septage Management Rules 2018

DJB has made efforts to implement the septage management rules in Delhi ‘Delhi Water Board Septic Tank Waste Management Regulations Act - 2018’ under Delhi Water Board Act-1998 for collection, transportation and disposal of waste of septic tank and matter connected therewith. As per the Septage Regulation 2018, DJB has issued 208 Nos. Licenses to the private tanker operators and they are engaged in the collection and disposal of Septage from the individual households from unauthorized colonies/ unsewered areas. The average collection of Septage is approximate to 6-7 Lac litres per day.


4.8. Management of wastewater in storm-water drains in Delhi:

As per directions of Hon’ble NGT, Integrated Drain Management Cell (IDMC) has been constituted on 17.03.2020 under the Chairmanship of Chief Secretary of Delhi for remediation and management of all drains of Delhi with representatives of all Drain owning Agencies (DoA).

The mandate of IDMC is to prepare a comprehensive action plan for “Alternate Technologies for Management of Waste Water in Drains” in Delhi as per the techno-economic evaluation of the multiple methodologies and techniques suggested in the reports of CPCB.

DJB is also making concerted efforts to trap the sewage flowing in the 18 major drains directly out falling into River Yamuna in the Delhi stretch between Wazirabad to Okhla by diverting sewage to nearest STPs. out of 18 major drains 13 drains have already been trapped.

ANNEXURE II: SERVICE PLAN - IRRIGATION AND FLOOD CONTROL DEPARTMENT (I&FCD)



No Task

Without Mask

OFFICE OF THE CHIEF ENGINEER
 GOVT. OF NCT OF DELHI,
 IRRIGATION AND FLOOD CONTROL DEPARTMENT,
 L.M. BUND OFFICE COMPLEX, KRISHAN KUNJ,
 DELHI-110031.
 Email-ceifcd@gmail.com

डायरी संख्या... 576
 दिनांक... 08/02/21
 उपनिदेशक (योजना) एम.पी.एम.आर., डी.डी.

No: CEF/P&D/MPD/2041/2021-22/ 4918-41

Dated: 4/2/21

अति० आयुक्त (सो०)-II
 डायरी सं०... 102
 दिनांक... 09-02-21

✓ The Vice Chairman
 Delhi Development Authority
 Vikas Sadan, I.N.A,
 New Delhi-110023.

VC Office
 Dy. No. 36-DA
 Dated 5/2/21

Sub:- **Service Plans for MPD 2041.**

आयुक्त (योजना) कार्यालय
 डायरी सं० T-160
 दिनांक 08-02-2021

Sir,

Kindly refer to your D.O. letter No. PS/VC/DDA//2021/03 dated 11.01.2021 addressed to Secretary (I&FC) and subsequent email received from Additional Chief Architect DDA dated 12.01.2021 vide which service plan for MPD 2041 was sought on top priority.

am. (PLG)
Chakraborty

Accordingly, please find enclosed herewith service plan for drainage management MPD- 2041 in respect of I&FC Department, Govt. of NCT of Delhi, containing page from 1 to 127 alongwith Annexure B to E for further necessary action.

Yours faithfully,

Encl:- As above

[Signature] 04.02.2021
 (Sanjay Saxena)
 Chief Engineer (Zone-I)

No: CEF/P&D/MPD/2041/2021-22/

Dated:

Copy forwarded for information to:-

- Secretary (I&FC), Govt. of NCT of Delhi, Varunalaya Building, Karol Bagh, Delhi.

Chief Engineer (Zone-II)

4 from 04/02/2021
AC(PLG) II MPMR
AD(PLG) II MPMR
 PREVENT COVID-19
 Ms. Nisha, PA-III

J.P.S.
En. Anand 10/02/2021
D.D. C.E.G. MPMR
 Pls. share with NIVA.

Dr. Arund
 10/02/2021

PREVENT COVID-19. WASH YOUR HANDS - WEAR MASK - MAINTAIN DISTANCE - FOLLOW SOCIAL DISTANCING

SERVICE PLAN for DRAINAGE MANAGEMENT

IRRIGATION AND FLOOD CONTROL DEPARTMENT (I&FC)

1. MANAGEMENT STRATEGY

Special recommendation

There should be a single institution that bears an overall responsibility of the management of the total storm water drainage system, within NCT of Delhi, for effective administrative management.

Dredging and cleaning of drains by I&FC department

I&FC Department has large banks along major drains for deployment and movement of machinery and desilted earth is also kept on these banks till its final disposal, either by filling in low lying areas/depressions along drains or shifting into earmarked sanitary land fill sites.

Strengthening of embankments of drains of I&FC department

Before onset of monsoon, all the embankments of I&FC Department drains are checked in respect of their stability and necessary restoration/repair work, as needed is carried out by respective divisions of I&FC Department. A certificate in this regard is also forwarded by concerned engineers to Head Quarter. I&FC Department also has departmental machinery for such restoration/ strengthening work in the form of hydraulic excavators and dozers.

Remodelling of various drains

The embankment strengthening/remodelling proposals as of now and their current status in respect of I&FC Department Drains is attached as Annexure-II (a). The above-cited table shows that embankment of most of the drains are in good and stable condition and there is no need for their strengthening. Similar situation is found in respect of need of remodelling of drains. The work of remodelling is in progress at Najafgarh Pond Drain and Bund Drain. For some drains, like Escape Drain No. 1 & Relief Drain, work of remodelling is required but there are land constraints. Remodelling of KSN drain is required as most of the catchment area of this drain is urbanized and many unauthorized colonies were also developed and are being developed. Due to this, there is no scope for percolation of storm water, which has to be carried by this drain. Besides this, due to lack of sewerage network in unauthorized colonies the discharge of sewage, household waste and other wastewater are also flowing into KSN drain through various drains of other Agencies.

There is no land available for remodelling since the adjacent area on both sides is developed and urbanized. Hence, there is a need, to acquire land for remodelling of KSN drain. For other drains, the work of remodelling and strengthening shall be taken up as per their requirement in future.

Canals and their management

To keep up the uninterrupted flow of irrigation water to the irrigated land in Delhi, all repair and maintenance works, cleaning/ dredging /desilting, strengthening of embankments are being taken up as per requirement and necessity.

Delineation, conservation and management of buffers for all major I&FC drains

There are 57 major drains owned and maintained by I&FC Department. The buffer land/ additional land width available along the drains for future development is tabulated and

attached as Annexure-II (b).

Troublesome drains

There are eight troublesome drains, which are detailed out in the service plan report shared by I&FC Department:

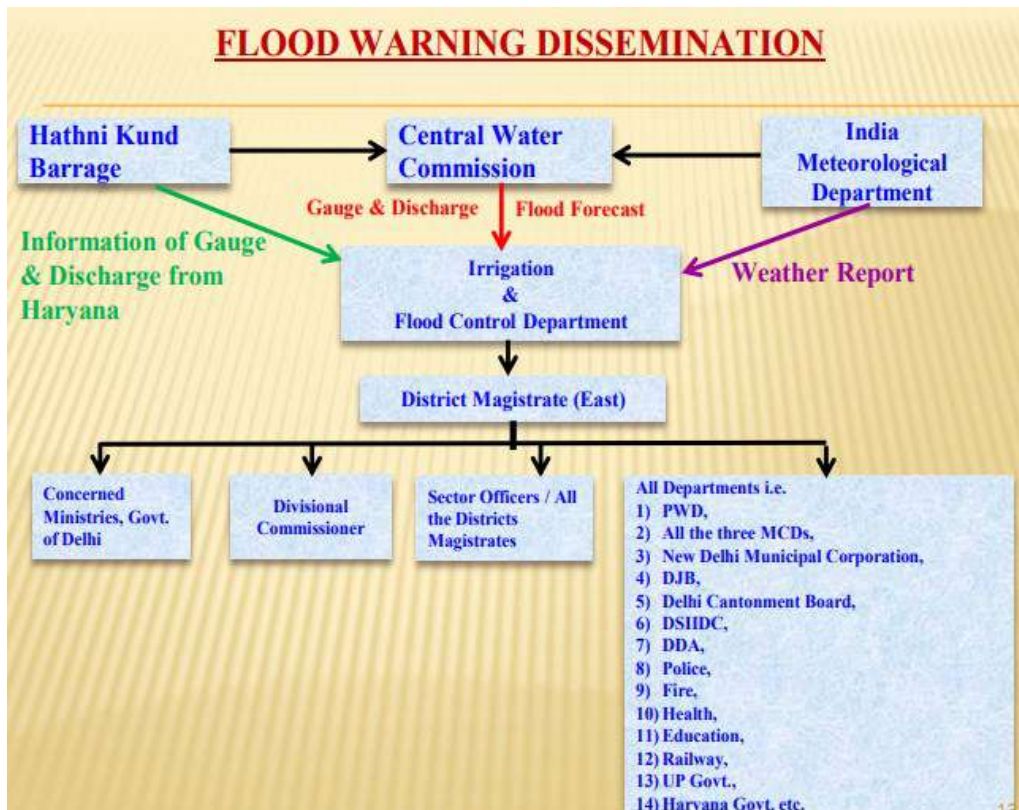
Sr. No.	Drain Name	Problems / Constraints	Remedial Measures
1.	Escape Drain No. 1	Drain flow being obstructed by two water mains lying in the drain itself, No space for De-silting for a stretch, Heavy silt from WTP, Bed level of the drain flat.	The twin water mains may be shifted.
2.	Biharipur Drain	Bounded on both sides with closely packed houses, No space for movement of de-silting machine, Heavy dumping of MSW and cow dung.	A parallel carriageway may be provided, demolition of unplanned/ unauthorized construction on either side.
3.	Bund Drain	Bounded on both sides with closely packed houses, No space for movement of de-silting machine, Heavy dumping of MSW and cow dung.	Bar screen has been placed, Bypass drain constructed, Removing obstructions, A parallel carriage way may be provided, demolition of unplanned/unauthorized construction on either side.
4.	Relief Drain	No space for movement of de-silting machine, Heavy dumping of MSW in the drain by the local resident, Daily dumping of waste by the hawkers.	A parallel carriage way may be provided all along the length in the stretch from CRPF Camp to Khajuri Chowk by considering demolition of unplanned / un authorized construction on drain side. NHAI may be asked to remodel the drain in the entire length with proper outfall.
5.	Kirari Suleman Nagar Drain	106 unauthorized, un-sewered colonies contributing to all categories of house hold waste, sewage and also dumping of MSW, During flood season the residual treated water comes with more silt due to which the siltation occurs.	DDA shall have to divert their wastewater out falling into KSN drain at two points of main DDA road drain to adjacent DDA drains. Three culverts of KSN drain shall be demolished and adequate hume pipes will be laid for increasing the water way and smooth discharge of wastewater.
6.	Pankha road drain	Heavy daily disposal of MSW and other household & market wastes, Non availability of banks and access for deployment of machines, Presence of high tension overhead electric line, Encroachment in the drain, Heavy floating materials, silt, debris etc. from inlets/ out falling drains, Local resistance for not stacking the material in front of their houses and shops	A scheme for construction of RCC retaining wall on both sides, The M.S Jalis have been erected over the bridges to discourage the localities from throwing of garbage, Joint survey with DJB and BSES is occasionally conducted time to time to cope with the ground realities, The MS boards being erected at vulnerable points to discourage people from dumping and throwing of household waste and garbage. Inviting specialized agencies to plan rejuvenation of drain. Deployment of Jal

			Rakshak.
7.	Nasirpur Drain	Heavy daily disposal of MSW and other household & market wastes, Non availability of banks and access for deployment of machine, Presence of water pipeline, electric & Telephone cables in the water way, Presence of high tension overhead electric line, Encroachment in the drain, Heavy floating materials, silt, debris etc. from inlets/ out falling drains, Non availability of space for stacking desilted materials, Local resistance for not stacking the materials in front of their houses and shops.	M.S Jallies have been erected over the bridges; MS boards are being erected at vulnerable points, Inviting specialized agencies to plan rejuvenation of drain, R&D for specialized machinery for effective cleaning of drain, stopping of sewerage water into the drain, Deployment of Jal Rakshak, Installation of MS Jallies on the mouth of out falling drains.
8.	Asola Drain	Inefficiency of civic agency i.e. MCD for collection of MSW from houses & markets, construction of Dhalaos, Lack of civic sense and awareness among local people. Lack of specialized machines fit for cleaning of the drain in existing circumstance; Lack of power to challan the defaulters.	DJB may construct STP and lay sewer lines in the area. The MCD shall develop effective mechanism for collection of MSW of the household wastes and C&D wastes. R&D for specialized machinery for effective cleaning of drain. Immediate filling of vacant posts of technical and work charge staff. Stopping of sewerage water into the drain. Spreading of general awareness about health and hygiene among the people residing all along the drain.

2. FLOOD MANAGEMENT

Apex Committee

An Apex Committee has been constituted under the Chairpersonship of Hon'ble Chief Minister, Delhi to recommend, supervise and co-ordinate flood control measures in the National Capital Territory of Delhi. The Central Flood Control Room at LM Bund Office Complex, Shastri Nagar Delhi, remains in constant touch with the Control Rooms of different departments i.e. MCD's, NDMC, PWD and DDA to receive complaints and take appropriate remedial action in case of drainage congestion on account of heavy rains. Disaster management control room at office of D.M. (East) remains functional for relief & rescue operations. In case of any need, the Divisional Commissioner may seek assistance from Army in controlling floods, evacuation of the marooned people, distribution of food supplies and other related matters.



Sector Committee

Sector Committee is also constituted for each district, under the supervision of a Sector Officer of D.M. rank. The Sector Officer also acts as a link between the various departments, at District level, organized evacuation of the people, if necessary and to re-habilitate them in relief camps and distribution of relief supplies.

Function of the Sector Committee: Immediately after its constitution, the Sector Committees will meet within the areas of their jurisdiction and plan the steps needed for dealing with the problems arising out of floods or drainage congestion.

Flood Warnings

The first warning is issued by Central Flood Control Room as soon as the discharge from Hathnikund Barrage exceeds one-lakh cusecs or Discharge at Manasi exceeds 3500 cusecs for Sahibi / N.G. Drain- where upon the relevant Sector Control Rooms starts functioning and keeps a vigil in their respective areas. Second Warning been issued when the discharge from HathniKund Barrage exceeds 3 lakh cusecs or Discharge at Manasi exceeds 70000 cusecs for Sahibi / N.G. Drain- People residing within the river embankments near to active course shall be warned and arrangement made to shift them to safer places. The Police and the staff of the Flood Control Dept. would undertake patrolling along Right & Left marginal embankments and keep vigil on the vulnerable points. The third warning been issued when the discharge from HathniKund Barrage exceeds 5 lakhs cusecs while for Sahibi or Discharge at Manasi exceeds 1 lakh cusecs for Sahibi / N.G. Drain- This warning shall be issued when the discharge at Masani Barrage exceeds one Lakh cusecs. People residing in dangerously exposed areas will be advised to remain alert and move to places of higher altitude, in case of need.

Vulnerable Points

Levels at Old Railway	S. No.	CRITICAL POINTS	ACTION REQUIRED
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Bridge			
205.33 (Provisional Danger Level)	1.	Rescue Boat Club R/B River Yamuna	Additional Filled Earth Bags were placed to stop entry of water from Riverside.
	2.	Monastery Market R/B River Yamuna	Additional Filled Earth Bags were placed to stop entry of water from Riverside.
	3.	Geeta Ghat- Entry Point R/B River Yamuna	Additional Filled Earth Bags were placed to stop entry of water from Riverside.
	4.	Qudsia Ghat R/B River Yamuna	Hydra was deployed for operation of gates/inlets
	5.	Nigam Bodh Ghat R/B River Yamuna	Gaps were plugged by placement of filled earth bags
	6.	Tonga Stand Regulator R/B River Yamuna	-DO-
	7.	Vijay Ghat Regulator R/B River Yamuna	Additional Filled Earth Bags were placed to stop entry of water from Riverside.
	8.	Nalla No. 12 & 12A R/B River Yamuna	Pumps were deployed for pumping continuously and additional Filled Earth Bags were placed to stop entry of water from Riverside.
	9.	Regulator at RD-180 m of R.M.E.	-DO-
	10.	Chilla Regulator	Gates closed as per requirement
	11.	Burari Regulator at RD-1135 m of Jahangirpuri Drain.	- DO-
206.00	12.	Neem Karoli-Gau Shaala R/B River Yamuna	Additional Filled Earth Bags were placed to stop entry of water from Riverside.
	13.	Civil Military Drain Regulator R/B River Yamuna	Were closed as per requirement
	14.	L. F. Bund in Trans Yamuna Area Shank RD. 1400m Shank RD. 800m	The hard stone and earth bags dumped to prevent erosion of Shanks & Embankment.
	15.	Nalla No. 14 Regulator R/B River Yamuna	Pumps were deployed for pumping continuously and additional Filled Earth Bags were placed to stop entry of water from Riverside.
	16.	Outfall of Toe Drain along RME near RD 2700m of Supplementary Drain	Additional Filled Earth Bags were placed to stop entry of water from Riverside.
207.00	17.	D.J.B site along Ring Road R/B River Yamuna	Additional Filled Earth Bags were placed to stop entry of water from Riverside.

3. Actions Taken by I&FC Department

- **Monitoring of flood**

In order to monitor the flood situation, control rooms and wireless network are setup throughout the monsoon season and a complete record of the discharges and their water levels is maintained in respect of river Yamuna as well as river Shahibi with the active assistance of CWC, IMD & the neighbouring States. Daily weather report having data of rainfall till date, rainfall during last 24 hours and forecast of the rain as well as floods is generated and shared with all stakeholders to take necessary measures.

- **Protection and Maintenance of embankments**

The department has constructed above embankments over different periods to fortify the city against the flood fury and to protect & maintain these embankments, different types of flood protection and maintenance works like protection of embankments, protection/construction/restoration of spurs, launching aprons, stone pitching etc. are being undertaken by the department on regular basis as per the need. The staff of the Flood Control Dept. would undertake 24x7 patrolling along right & left marginal embankments and keep vigil on the vulnerable points.

- **Regulators**

The regulators constructed and maintained by I&FC department at 15 Nos. outfalls of different drains directly out falling into river Yamuna in the city reach will have to be operated from time to time to suitably pump out the city drainage in case the river is in high flood and heavy local rainfall. The regulators/ gate being closed at the time of heavy discharge in the river to check the reverse flow of river into the city side. A close liaison is to be maintained with U.P. Irrigation Department for timely opening of gates of Chilla regulator, if heavy discharge enters Delhi through Shahdara drainage system, either due to heavy local rainfall or rainfall in upstream Loni-Saharanpur U.P. areas. Boats and emergency portable pump sets will have to be kept ready to meet any exigency arising out of the flood situation.

- **Resources**

Boats and emergency portable pump sets will have to be kept ready to meet any exigency arising out of the flood situation. Resources are available with the I&FC department to meet out the requirement during monsoon season.

- **River training works**

They may be constructed on both sides of the river or only on one side, for some suitable river length, where the river is passing through towns or cities. (ii) Spurs or Groynes: These are constructed, in order to protect the bank from which they are extended, by deflecting the current away from the bank. (iii) Pitching of banks and provision of launching aprons: Banks of a river are directly protected by stone pitching, or by concrete blocks, or by brick lining or by growing vegetable cover, etc. Concrete blocks are very costly, and stone pitching is mostly adopted, if available without much difficulty. The banks of the river are made stable by giving them a stable slope varying from 1:1 to 2:1 depending upon the material of the bank. They are then pitched, so as to make them strong enough to resist erosion.

- **Flood Plain Zone**

In compliance to the directions of Hon'ble National Green Tribunal in the matter of Manoj Mishra Vs. Union of India (O.A. No. 06/2012) vide order dated 13.01.2015 vide which it has been directed that flood plain should be identified for flood, once in 25 years in the interest of ecology, biodiversity and the river flow. IIT Delhi has conveyed flood of 2011 as once in 25 years during which maximum discharge release from Tajewala and maximum gauge recorded at Old Railway Bridge was 205.72 in respect of discharge of 6,41,462 cusecs. The 20 sheets of flood plain maps have been prepared by GSDL based on the maximum water levels observed in year 2011 at various locations with the level of 205.72 round of to 206.00 and forwarded the same to Delhi Development Authority for physical demarcation of flood plain for river Yamuna.

4. KEY INFRASTRUCTURE OR SPECIAL PROJECTS IDENTIFIED DURING THE PLAN PERIOD, ALONG WITH DETAILS OF PROJECTS AND THEIR TIMELINES

Table 3. List of Special Projects			
S. No.	Project Name	Target	Timeline
1.	Creation of Water Bodies/ Reservoirs in Flood Plains of River Yamuna by retaining excess water in the River during Monsoon Season from Palla to Wazirabad.	The implementation of this project on a larger scale of about 1180 Acre, as proposed in the conceptual plan, shall result in recharge of flood plain of River Yamuna from Palla to Hiranki and the ground water can be tapped through the existing network of tube wells of DJB and this network can be further augmented by DJB for improving the fresh water supply to Delhi.	
2.	Details of Pilot Project at Ghoga Drain	Activity aimed at improving the quality of wastewater as well as to rejuvenate drains. A pilot project to treat at least ten lakh litres per day of wastewater by using ecologically sensitive & sustainable technology like constructed wet land system was created to treat wastewater flowing in Ghoga Drain. The Pilot Project comprises construction of SWAB based wetland system. The project has been envisaged to treat 1 MLD of wastewater flowing in Ghoga Drain and the Construction of 6 Nos. check dam of 0.50 M high with stone boulders within an interval of 1 Km each.	
3.	Pilot Project: Rejuvenation of Rajokari Water Body	In order to rejuvenate the water body a pilot project for rejuvenation of Rajokari water body was undertaken by the department with objective of: (i) Treatment of sewerage water by ecological sustainable technology to reduce pollutant as such BOD COD dissolved and suspended solid etc. and bring it to permissible level for water body. (ii) Landscaping of open area along with Horticulture work and provision for lighting of the area. Further installation of CCTV camera for security purpose, plantation of creeper plants over the boundary wall in order to increase aesthetic view and greenery, open gym equipment, children play equipment for the purpose of use of this area for complete recreation was also desired and the same is in process that will be completed by 30.04.2021.	Awarded award of Excellence awarded on 28.08.2020, under National Water Innovation Summit & Awards 2020.
4.	Widening & strengthening of Embankments along river Yamuna from Palla to Wazirabad.	Schemes were prepared for raising of embankment and strengthening by widening of embankment from existing single lane to two-lane carriageway They were placed and approved by the Technical Advisory Committee (TAC) in its 36 th & 41 st meetings. The Approximate expenditure on widening and	

		strengthening of Embankment from Palla to Wazirabad shall be Rs. 3800 Lacs.	
5.	Water front development along Najafgarh drain	A scheme of Rs. 6.22 crores for the Comprehensive Consultancy services for Water Front Development on Najafgarh Drain from Chhawla Bridge to Basaidarapur Bridge with designing of two lane road on left & right bank of Najafgarh drain & various bridges have been approved by GNCT of Delhi.	Floating of tender is in process
6.	National Hydrology Project (NHP)	<p>The National Hydrology Project, (NHP) is a World Bank supported Govt. of India scheme with 100% grant in aid to Central & State implementing agencies (IA). I&FC Department & DJB have signed the NHP as an Implementing Agency (IA) for the State of Delhi.</p> <p>NHP aims at taking up the following main activities:</p> <p>a. Establishing and upgrading Hydro-met network in all the river basins. b. Bringing the entire hydro-metrological data on a standardized central database for easy storage, validation, analysis and dissemination. c. Development of Decision Support Systems for Flood Forecasting, reservoir operations, water resources planning & management, conjunctive use etc. following a river basin approach. d. Capacity building of the States and enhancing collaboration between Centre & States and amongst the State themselves through trainings, establishment of data centres, Centres of Excellence etc.</p> <p>Total allocation of Rs. 3679.76 Crores is made for this work, to be implemented by various Central and State Govt. Agencies. For this purpose, Rs. 25.00 Crores has been allocated for the State of Delhi.</p> <p>Following activity has been approved for implementation by I&FC Department and Delhi Jal Board under National Hydrology Project: -</p> <p>1. Real Time information system on drainage network in Delhi. 2. Real Time information system for rainfall in Delhi. 3. Groundwater Measurement Equipment. 4. Upgradation of Water Testing Laboratories.</p>	The work proposed will be partly taken up in the current Financial Year and the remaining work will be taken up in forthcoming years. On completion of this project, various data being generated on real time will be available on the server of NHP for real time monitoring & can be assessed by the authorized representative of all other State Govt.
7.	Strengthening and raising of right bank of Najafgarh drain		Already undertaken.
8.	Rejuvenation of 10 water bodies entrusted to I&FC Dept.	The water bodies in Delhi are in extremely bad shape and are in varying degrees of environmental degradation. Hence, the Govt. of Delhi taken up development and	After issue of Administrative Approval and Expenditure

		<p>rejuvenation of water bodies as a flagship programme. Though I&FC Dept. is not land-owning agency but has taken up above 10 water bodies for rejuvenation as per present Govt. policy. The rejuvenation of above water bodies is being taken up in holistic manner by constructing the wet lands that are ecologically sensitive and sustainable which are most suitable in situ treatments for discharges of wastewater less than 1 MLD. As a part of rejuvenation, necessary landscaping works, walking tracks, cycling tracks, benches, solar lighting, public amenities like toilets, Amphitheatre where ever feasible will be taken up to facilitate effective utilization for recreation purpose of local public.</p> <p>The estimated cost for rejuvenation of above 10 water bodies including STP and landscaping is Rs. 21.54 Cr.</p>	<p>Sanction, the period of completion for rejuvenation of above 10 water bodies will be 18 months including all codal formalities.</p>
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5. ESTIMATED LAND REQUIREMENTS FOR PROJECTS

The department is facing a problem of disposal of desilted earth, as MCDs are reluctant to take the same; hence, it is necessary that DDA may give land parcels at different locations along the drains having size of around 1 ha. each at every 10 Km interval (totalling around 1000ha.).

It is recommended that the service lines in form of sewer, water, electric, communication etc. should be shifted outside the land boundary of I&FC drains.

Large chunks of I&FC land are being utilized for the construction of dhalaos by civic agencies, it is suggested that separate land should earmarked outside drain boundary for collection, processing, shifting and disposal of MSW as well as C&D waste along entire align of existing drains.

6. PROJECTED LAND REQUIREMENT IN VIEW OF MPD 2041

The drain wise projected land requirement considering expected remodeling, their operation and maintenance, creation of green belt, for processing of the desilted earth, for service road, for service lines, for C&D waste and additional stores etc. is attached as Annexure-II (b).

The additional land available for future use along drains varies with drains as well as their stretch/locations. In upper reaches of Najafgarh its width is more than 135 m. while in lower portion (which is highly urbanized) it comes down to 25 m. Similar situations exist in other drains also. This additional land is being utilised for service lines like sewer lines, water pipeline, H.T. lines, communications cables etc. in addition to construction of Dhalaos, Chhat Pooja Ghats, Mohalla clinics, Parks etc.

To create green zones along drains plantation work has also been done on the available drain land at different locations.

7. KEY TARGETS THAT WILL BE INCLUDED IN MPD 41 ACTION PLAN

Component	Current status	Target for 2041	Phasing Plan
Length (in km) of buffers created and maintained along major drains	The drain wise status of length of drain, width, depth of drain, catchment area, design discharge, present status of embankments & status of buffer land along the drains is annexed as (Annexure-II (b))		

8. SUGGESTIONS AND RECOMMENDATIONS

For construction of new drains in the sub cities to be planned under Master Plan 2041, following recommendations are made with regard to planning / construction of drainage system:

- a) The existing drainage network of Irrigation and Flood Control Department may be remodeled within the limits of the feasibility, to integrate the drainage network of sub-cities to be planned under Land Pooling Policy / MPD-2041, whenever, the relevant details are shared with I&FC Department in consultation with all stakeholders.
- b) Provision should be made for continuous green lines along the entire course of the drains on both sides.
- c) A separate provision for the services lines like sewer, water, electric, communication etc. should be made outside the drain boundary areas.
- d) A separate provision for land for collection, processing, transportation, shifting and disposal should be made for MSW as well as C&D waste.
- e) New development should be made in such a way that overall runoff from the area does not increase with the proposed urbanization. For that necessary measures in form of ponds, parks, porous pavements, green belts, artificial lakes / or other rainwater harvesting and storage structures etc. may be adopted.
- f) The officers involved in drainage and flood management should be given exposure to International best practices, so as to adopt the same to the National Capital City of Delhi.

Referred annexures for I&FC Service Plan:

Annexure II (a): Embankment Strengthening /Remodelling Status of Drains

Annexure II (b): Details of Buffers along Drains of I&FC Department

Annexure II (c): Detail of Effluent Irrigation System

ANNEXURE – II (a) : Embankment Strengthening /Remodelling Status of Drains

Name of Drain	Length of Drain (in KMs)	Present status of Embankment	Whether any strengthening proposed or required	Whether remodelling of drain is proposed/ required
CD-I				
Najafgarh Drain, CD-I-45316m	45.31	Stable	No	NA
Palam Drain	4.20	Stable	No	NA
Palam Link Drain	1.47	Stable	No	NA
Najaf Garh Pond Drain	1.95	Stable	No	Yes Work in progress.
Nasirpur Link Drain	2.90	Stable	No	NA
Bijwasan Drain	4.20	Stable	No	NA
Pankha Road Drain	3.60	Stable	No	NA
Shahbad Mohammadpur Drain	0.23	Stable	No	NA
Mudhela Drain CD-I-6920m,	6.95	Stable	No	NA
CD-II				
Supplementary Drain D 16436 m to RD 22471 m	6.04	Inspection path i) L/B 17700 to 19362- CC Road ii) R/B 16436 to 16700- CC Road iii) R/B 21350 to 22137-CC Road Mohalla Clinic(RD 17700m R/B) 1500 plants proposed b/w RD 16436m to 22471m at scattered locations 350 Sapling already planted and their maintenance is in progress	-N/A- Section already lined	-N/A- Section already lined

Name of Drain	Length of Drain (in KMs)	Present status of Embankment	Whether any strengthening proposed or required	Whether remodelling of drain is proposed/ required
Najafgarh Drain, RD 45316 m to RD 57140m	11.82	Inspection Road i) L/B RD 47390m to RD 48300m CC/Bituminous Road ii) L/B RD 54346m to Nose Point CC/Bituminous Road iii) L/B RD 56306m to RD 57106m CC/Bituminous Road iv) R/B RD 46870m to RD 48315m CC Road v) R/B RD 54346m to RD 56704m Bituminous Road	No proposal of strengthening as of now - strengthening work shall be done if so necessitated in future	No proposal of remodelling as of now - Remodelling work shall be done if so required in future.
CD-III				
Trunk Drain No.I , CD-III-5260m,	5.26	Good	NO	NO
RD 0m to RD 3200m				
RD 3200m to 5260m				
Trunk Drain No. II	4.55	Good	NO	NO
RD-4550m to RD-3900m				
RD-3900m to RD-3230m				
RD-3230m to RD-1980m				
RD-1980m to RD-0m				
Shahdara Outfall Drain	5.90	Good	NO	NO
RD-5900m to RD-0m				
Ghazipur Drain	6.15	Good	NO	NO

Name of Drain	Length of Drain (in KMs)	Present status of Embankment	Whether any strengthening proposed or required	Whether remodelling of drain is proposed/ required
RD-0m to RD-2135m				
RD-2135m to RD-3505m				
RD-3505m to RD-5090m				
RD-5090m to RD-6157m				
Shahdara Link Drain	4.56	Good	No	NO
RD 4545m to RD-3500m= 45.15m				
RD 3500m to RD-3065m= 53.50m				
RD 3065m to RD-2565m= 44.50m				
RD 2565m to RD-2150m= 36.45m				
RD 2150m to RD 1330m = 43.45m				
RD 1330m to RD-930m = 43.45m				

Name of Drain	Length of Drain (in KMs)	Present status of Embankment	Whether any strengthening proposed or required	Whether remodelling of drain is proposed/ required
RD 930m to RD-330m = (covered portion) 43.00m				
RD 330m to RD 130m= 43.45m				
CD-IV				
Trunk Drain No.I , CD-IV-5260m, to 13387m	8.13	Good	No	No
RD 5260m to 6690m	1.43			
RD 6690m to 10330m	3.64			
RD 10330m to 13387m	3.06			
Karawal Nagar Drain	2.48	Good	No	No
Biharipur Drain	1.00	No sufficient land is available for Embankment.	No	No
RD 0m to RD 650m	0.65			
RD 650m to RD 1000m	0.35			
Bund Drain	3.45	No sufficient land is available for Embankment.	Yes	Remodelling of drain is in progress on existing section as the no sufficient land is available along the drain.

Name of Drain	Length of Drain (in KMs)	Present status of Embankment	Whether any strengthening proposed or required	Whether remodelling of drain is proposed/ required
Escape Drain No. I	2.98	Good from RD 0m to RD 2650m. No sufficient land is available for Embankment from RD 2650m to RD 2980m.	NA	Drain is passing through thickly populated area. Due to land constraint, no any remodeling is proposed between RD 1650m to RD 2560m. However remodeling is required in near future.
RD 0m to 980m	0.98			
RD 980m to 1650m	0.67			
RD 1650m to 2650m	1.00			
RD 2650m to 2980m	0.33			
Escape Drain No. II	0.45	Good	No	No
Relief Drain	2.18	No sufficient land is available for Embankment.	NA	Drain is passing through thickly populated area. Due to land constraint, no any remodeling is proposed. However remodeling is required in near future.
RD 0m to 695m	0.70			
RD 695m to 965m	0.27			
RD 965m to 1860m	0.90			
RD 1860m to 2180m	0.32			
CD-V				
Ali Drain	2.78	1 side Road 1 side NTPC.	No	No
Asola Drain	3.39	on Right side from 400 to 600 RD.	There is kuchcha zigzag drain passes through private land and water spreads in the open field and there is no outfall of drain.	
Molar Bund Extension Drain	1.38	No	No	No
Sarita Vihar Drain	1.30	Earthen	No	No

Name of Drain	Length of Drain (in KMs)	Present status of Embankment	Whether any strengthening proposed or required	Whether remodelling of drain is proposed/ required
CD-VI				
Drain No. 6	14.73	Good condition	Not required	Not required
Burari Creek	8.86	Good condition	Not required	Not required
Burari Drain	6.04	Good condition	Not required	Not required
New Drain	5.40	Good condition	Not required	Not required
Jagatpur Link Drain (Link Drain No. II)	2.46	Good condition	Not required	Not required
Toe Drain	4.00	Good condition	Not required	Not required
CD-VII				
BAWANA ESCAPE DRAIN	19.79	Strengthen	No	No
Bankner Link Drain	5.43	Good	Yes	No
Khera Khurd Drain	5.20	Good	Yes	Yes
Ghoga Link Drain	5.12	Good	No	No
Naya Bas Link Drain	3.00	Good	No	Yes
Sanoth Link Drain	3.35	Good	No	Yes
Alipur Link Drain	0.88	Good	No	No

Name of Drain	Length of Drain (in KMs)	Present status of Embankment	Whether any strengthening proposed or required	Whether remodelling of drain is proposed/ required
Tikri Khurd Link Drain	1.94	Good	Yes	Yes
Khera Kalan Drain (Link)	0.86	Good	No	No
Bawana Drain RD 9561M to RD 11391M	1.830	Good	No	No
Nangloi Drain CD-VII-2100m	2.10	Good	No	No
CD-VIII				
MungeshPur Drain RD 15850 m to RD 37550 m	21.65	Earthern	-	-
Bazitpur Drain RD 0 m to RD 8049 m	8.05	Earthern	-	-
Bawana Drain RD 0 m to RD 9561 m	10.83	Earthern	-	-
Ladpur Link Drain RD 0 to RD 2300 m	2.30	Earthern	-	-
Katewara Link Drain RD 0 m to RD 1330 m	1.33	B/Work	-	-
Jatkhori Link Drain RD 0 m to RD 3760 m	3.76	Earthern	-	-
Nangal Thakran Link Drain RD 0 m to RD 900 m	0.90	Earthern	-	-

Name of Drain	Length of Drain (in KMs)	Present status of Embankment	Whether any strengthening proposed or required	Whether remodelling of drain is proposed/ required
Madanpur Drain RD 4100 m to RD 8229 m	4.13	Earthern	-	Channelization of drain near Ghewra village on up stream of Railway line crossing is required
Kirari Suleman RD 4150 to RD 7850 m	3.70	Dry brick	-	Remodelling of KSN drain is required as the most of the catchment area of this drain is urbanized and many unauthorized colonies were also developed and being developed. Due to this, there is no scope for percolation of storm water and which has to be carried by this drain. Besides this, due to lack of sewerage network in unauthorized colonies the discharge of sewage, household waste and other wastewater are also flowing into KSN drain through various drains of other Govt. Agencies. There is no land available for remodeling since the adjacent area in both sides is developed and urbanized. Hence, there is a need, to acquire land for remodeling of KSN drain.

Name of Drain	Length of Drain (in KMs)	Present status of Embankment	Whether any strengthening proposed or required	Whether remodelling of drain is proposed/ required
Sultanpur Drain RD 0 m to RD 9200 m	9.20	Earthern	Strengthening of bank is required on upstream side of Karala-Kanjhawala road at Rupali Enclave	-
Rasulpur Link Drain RD 0 m to RD 750 m	0.75	Earthern	-	-
CD-IX				
Supplementary drain from RD 0 to RD 16436m	16.44	Inspection road, dhalao, twin pipeline of DJB, PWD Road, Plantation and Mohalla Clinic etc. exist on Bank of Supplementary Drain.	Strengthening Required	Remodelling Required
CD-X				
Jahangir Puri Outfall drain	5.47	RD 0m to RD 4800m both side bank PCC tile lined & RD 4800m to RD 5470m both side bank stone pitching	Strengthening and upgradation of regulator at RD 1135m. (Work being taken by Mechanical Division-II, in year 2020-21.)	No
RD 0m to RD 1700m				
RD 1700m to RD 3000m				
RD 3000m to RD 4000m				
RD 4000m to RD 4800m				
RD 4800m to RD 5470m				
CD-XI				
Supplementary Drain, CD-XI				

Name of Drain	Length of Drain (in KMs)	Present status of Embankment	Whether any strengthening proposed or required	Whether remodelling of drain is proposed/ required
RD 22471m to RD 25075m	2.604	Land/Road exist on left bank of Supplementary Drain where park, Mohalla Clinic, Chhat Ghat, Inspection Road and Dhalao have been constructed. Around 10000 nos. plants has been planted on left bank of Supplementary Drain. On the right bank Kaccha inspection Road exists which is common bank of N G Drain and Supplementary Drain.	Strengthening required	Remodelling required
RD 25075m to RD 26060m	0.985			
RD 26060m to RD 28080m	2.020			
RD 28080m to RD 31300m	3.220			
RD 31300m to RD 34500m	3.200			
CD-XII				
Madanpur Drain (RD 0m to RD 4100m)	4.10	-	Not Required	Not Required
Kirari Suleman Nagar Drain (RD 0m to RD 4100m)	4.10	-	Not Required	Not Required
(RD 0m to RD 1722m)	1.72	-		
(RD 1722m to RD 3700m)	1.98	-		
(RD 3700m to RD 4100m)	0.40	-		

Name of Drain	Length of Drain (in KMs)	Present status of Embankment	Whether any strengthening proposed or required	Whether remodelling of drain is proposed/ required
Mundka Peripheral Drain (RD 0m to RD 2345m)	2.35	-	Not Required	Not Required
Ranhola Pond Drain (RD 0m to RD 1160m)	1.16	-	Not Required	Not Required
CD-XIII				
MungeshPur Drain CD-XIII-10362m	10.362 0m to 1575m = 1575m to RD. 6600m RD.6600m to 10362M	Stable	No	No
Bhupania Chudania Drain (including Haryana portion)	8.55 RD. 0m to 2736m RD. 6280m to 8550M RD.2736m to 6280M (Haryana State)	Stable	No	No
Mudhela Drain CD-XIII- From 6950 to 12560m	5.60	Stable	No	No
Nangli Sakrawati Link Drain, CD-XIII- RD-0m to 385m = 385m, CD-XIII- RD-1712m to 2262m =	0.93 RD. 0m to 385 RD. 1712m to RD.2262m	Stable	No	No

Name of Drain	Length of Drain (in KMs)	Present status of Embankment	Whether any strengthening proposed or required	Whether remodelling of drain is proposed/ required
550m				

ANNEXURE – II (b): Details of Buffers along Drains of I&FC Department

DETAILS OF BUFFERS ALONG DRAINS OF I&FC DEPARTMENT																
Name of Drain	Length of Drain (in KMs)	Reach wise total land width (in mtr.) / Right of way	Reach wise top drain width (in mtr.) including water way	Depth of drain (in mtr.)	Balance land width (in mtr.) (Buffers)	Additional land required										Remarks
						Remodelling / augmentation	Operation & maintenance	Creation of green belt	For processing of desilted earth	For Service road	For services like; electric line, communication cable, pipe lines water/sewer & dhalao	For C&D waste	For additional stores of I&FC Dept.	Others, if any	Total (in hectare)	
FC-I																
Jahangir Puri Outfall drain	5.47															
RD 0m to RD 1700m		75.00	54.00	1.80m	21.00	3.50 mtr each side Total = 7.00 mtr	---	2.00 mtr each side Total = 4.00 mtr	---	---	2 mtr each side Total = 4.00 mtr	---	---	---	8.20	
RD 1700m to RD 3000m		66.00	48.00		18.00											
RD 3000m to RD 4000m		31.00	27.00		4.00											
RD 4000m to RD 4800m		35.00	33.00		3.00											
RD 4800m to RD 5470m		54.00	43.00		12.00											
Trunk Drain No.1 , CD-III-5260m	5.26				2.67											
RD 0m to RD 3200m		54.86	38.00	16.86		10.00	7.50	14.00	7.50	5.00	5.00	15.68				

DETAILS OF BUFFERS ALONG DRAINS OF I&FC DEPARTMENT																
						Additional land required										
Name of Drain	Length of Drain (in KMs)	Reach wise total land width (in mtr.) / Right of way	Reach wise top drain width (in mtr.) including water way	Depth of drain (in mtr.)	Balance land width (in mtr.) (Buffers)	Remodelling / augmentation	Operation & maintenance	Creation of green belt	For processing of desilted earth	For Service road	For services like; electric line, communication cable, pipe lines water/sewer & dhalao	For C&D waste	For additional stores of I&FC Dept.	Others, if any	Total (in hectare)	Remarks
RD 3200m to 5260m		22.86	20.00		2.86		24.00	7.50	14.00	7.50	5.00	5.00			12.98	of the proposed additional land is only possible if the redevelopment of the nearby area of the drain proposed by DDA
RD 5260m to 6690m	1.43	45.00	33.00	4.00	12.00		8.00	10.00			5.00	5.00			4.00	
RD 6690m to 10330m	3.64	45.00	25.00	4.50	20.00			10.00			5.00	5.00			7.28	
RD 10330m to 13387m	3.06	37.00	15.00	4.50	22.00			10.00			5.00	5.00			6.11	
Trunk Drain No. II																
RD-4550m to RD-3900m		15.24	15.24		0.00		32.00	7.50	14.00	7.50	5.00	5.00			4.62	
RD-3900m to RD-3230m	4.55	32.74	20.05	2.60	12.69		20.00	7.50	14.00	7.50	5.00	5.00			3.95	
RD-3230m to RD-1980m		45.24	20.55		24.69		8.00	7.50	14.00	7.50	5.00	5.00			5.88	
RD-1980m to RD-0m		54.86	22.80		32.06			7.50	14.00	7.50	5.00	5.00			7.72	

DETAILS OF BUFFERS ALONG DRAINS OF I&FC DEPARTMENT																	
						Additional land required											
Name of Drain	Length of Drain (in KMs)	Reach wise total land width (in mtr.) / Right of way	Reach wise top drain width (in mtr.) including water way	Depth of drain (in mtr.)	Balance land width (in mtr.) (Buffers)	Remodelling / augmentation	Operation & maintenance	Creation of green belt	For processing of desilted earth	For Service road	For services like; electric line, communication cable, pipe lines water/sewer & dhalao	For C&D waste	For additional stores of I&FC Dept.	Others, if any	Total (in hectare)	Remarks	
Shahdara Outfall Drain	5.90			3.26													
RD-5900m to RD-0m		135.00	58.764		76.236			10.00	14.00			5.00	5.00			20.06	
Ghazipur Drain	6.15			3.11													
RD-0m to RD-2135m		104.00	54.44		49.56		5.00	7.50	14.00			5.00	5.00			7.79	
RD-2135m to RD-3505m		104.00	53.83		50.17				7.50			5.00	5.00			2.40	
RD-3505m to RD-5090m		104.00	52.59		51.41				7.50			5.00	5.00			2.77	
RD-5090m to RD-6157m		85.00	47.73		37.27			5.00	7.50	7.00	3.50	5.00	5.00			3.52	
Shahdara Link Drain	4.56			2.135													
RD 4545m to RD-3500m		45.15	22.25		22.90		10.00	7.50	10.00			5.00	5.00			3.92	

DETAILS OF BUFFERS ALONG DRAINS OF I&FC DEPARTMENT																
						Additional land required										
Name of Drain	Length of Drain (in KMs)	Reach wise total land width (in mtr.) / Right of way	Reach wise top drain width (in mtr.) including water way	Depth of drain (in mtr.)	Balance land width (in mtr.) (Buffers)	Remodelling / augmentation	Operation & maintenance	Creation of green belt	For processing of desilted earth	For Service road	For services like; electric line, communication cable, pipe lines water/sewer & dhalao	For C&D waste	For additional stores of I&FC Dept.	Others, if any	Total (in hectare)	Remarks
RD 0m to RD 650m	0.65	4.50	2.00	1.50	2.50	5.00	6.00	5.00	6.00	6.00	3.00	3.00			2.14	
RD 650m to RD 1000m	0.35	8.00	2.00	1.50	6.00	5.00	4.00	5.00	5.00	4.00	3.00	3.00			1.02	
Bund Drain	3.45	7.50	3.70	2.00	3.80	5.00	4.00	5.00	3.00	6.00	3.00	3.00			10.00	
Escape Drain No. I	2.98															
RD 0m to 980m	0.98	25.90	8.00	4.00							3.00	3.00			0.60	
RD 980m to 1650m	0.67	23.00	6.00	3.00	17.90		4.00	5.00	5.00	6.00	3.00	3.00			1.74	
RD 1650m to 2650m	1.00	18.23	6.00	2.50	17.00	5.00	4.00	5.00	5.00	6.00	3.00	3.00			3.10	
RD 2650m to 2980m	0.33	17.00	2.80	2.00	12.23	5.00	4.00	5.00	5.00	6.00	3.00	3.00			1.02	
Escape Drain No. II	0.45	30.00	10.00	3.00	20.00			5.00			3.00	3.00			0.50	
Relief Drain	2.18															
RD 0m to 695m	0.70	27.00	13.00	2.00	14.00		3.00		3.00	6.00	3.00	3.00			1.26	

DETAILS OF BUFFERS ALONG DRAINS OF I&FC DEPARTMENT																
						Additional land required										
Name of Drain	Length of Drain (in KMs)	Reach wise total land width (in mtr.) / Right of way	Reach wise top drain width (in mtr.) including water way	Depth of drain (in mtr.)	Balance land width (in mtr.) (Buffers)	Remodelling / augmentation	Operation & maintenance	Creation of green belt	For processing of desilted earth	For Service road	For services like; electric line, communication cable, pipe lines water/sewer & dhalao	For C&D waste	For additional stores of I&FC Dept.	Others, if any	Total (in hectare)	Remarks
RD 695m to 965m	0.27	Not visible marsh land				5.00	3.00	5.00	3.00	6.00	3.00	3.00			0.76	
RD 965m to 1860m	0.90	8.00	2.60	1.20	5.40	5.00	3.00	5.00	3.00	6.00	3.00	3.00			2.52	
RD 1860m to 2180m	0.32	15.00	5.00	1.50	10.00		3.00	5.00	3.00	6.00	3.00	3.00			0.74	
														FC-I	154.24	

FC-II

Drain No.6	14.73	1. RD 0m to 2650m = 45.00 Mtr	1. RD 0 m to 1725m = 26.95 Mtr.	Varies from 3.40 Mtr 4.10 Mtr	1. RD 0 m to 1725m = 18.05 Mtr.	(26.95x0.5)x 1725 = 23244 Sqm.	----	RD 0 to 13025m = 13025 m x 5m X 2= 130250 Sqm.	RD 10000 m to RD 11000 m 40000 Sqm	----	For Services 13025x2 = 26050 Sqm	----	RD 2600m = 20m x 15m = 300 Sqm.	----	37.275
		2. RD 2650m to 6600m = 44.00 Mtr	2. RD 1725m to 2250m = 26.60 Mtr.		2. RD 1725m to 2250m = 18.40 Mtr.	(26.6x0.5)x(2 250-1725) = 6983 Sqm	----	----	----	----	For Dhalao RD 2600m RD 2315 RD 2975 RD 12000 RD 11700 5 x 15m x 15m = 1025 Sqm.	RD 7700m = 20m x 15m = 300 Sqm.			
		3. RD 6600m to 12500m = 40.00 Mtr	3. RD 2250m to 2650m = 22.05 Mtr.		3. RD 2250m to 2650m = 27.95 Mtr.	(22.05x0.5)x(2650-2250) = 4410 Sqm	----	----	----	----	----	----			
		4. RD 12500m to 14725m = 28.00 Mtr.	4. RD 2650m to 2825m = 26.60 Mtr.		4. RD 2650m to 2825m = 17.40 Mtr.	(26.6x0.5)x(2 825-2650) = 2328 Sqm	----	----	----	----	----	----			
			5. RD 2825m to 6600m = 28.70 Mtr.		5. RD 2825m to 6600m = 15.30 Mtr.	(28.7x0.5)x(6 600-2825) = 54171 Sqm	----	----	----	----	----	----			

			6. RD 6600m to 7730m = 26.45 Mtr.		6. RD 6600m to 7730m = 13.55 Mtr.	(26.45x0.5)x(7730-6600) = 14944 Sqm	----	----	----	----	----	----	----		
			7. RD 7730m to 9700m = 26.10 Mtr.		7. RD 7730m to 9700m = 13.90 Mtr.	(26.1x0.5)x(9 700-7730)= 25709 Sqm	----	----	----	----	----	----	----		
			7. RD 9700m to 10700m = 23.50 Mtr.		7. RD 9700m to 10700m = 16.50 Mtr.	(23.5x0.5)x(1 0700-9700) = 11750 Sqm	----	----	----	----	----	----	----		
			8. RD 10700m to 12500m = 19.20 Mtr.		8. RD 10700m to 12500m = 20.80 Mtr.	(19.2x0.5)x(1 2500-10700) = 17280 Sqm	----	----	----	----	----	----	----		
			9. RD 12500m to 14725m = 12.50 Mtr.		9. RD 12500m to 14725m = 15.50 Mtr.	(12.5x0.5)x(1 4725-12500) = 13906	----	----	----	----	----	----	----		
Burari Creek	8.86	20.00	10 to 12	2.10	10 to 8	(12x0.5)x(88 67) = 53202 Sqm	----	From RD 0 m to RD 8867 m x 5.0 m x 2 = 88670 Sqm	----	From RD 0 m to RD 8867 m x 3.0 m = 26601 Sqm	For Services From RD 0 m to RD 8867 m x 2.0 m = 17734 Sqm For Dhalao Near RD 450 M Near RD 1050M Near RD 1450 M Near RD 1950 M Near RD 4150 M Near RD 5250 M Near RD 5850 M Near RD 6500 M Near RD 7850 M Near RD 450 M New Course 10x15x15 =2250 Sqm	----	500 Sqm (Near RD 2300 M Near RD 6000 M)	----	18.90

Burari Drain	6.04	3.50 to 6.00 M	3.50 to 6.00 M	0.60	Nil	$(5 \times 0.5) \times (6040) = 15100 \text{ Sqm}$	From RD 0 m to RD 5488 m $5488 \times 5.00 = 27440 \text{ Sqm}$	From RD 0 m to RD 5488 m $5488 \times 5.00 \times 2 = 54880 \text{ Sqm}$	----	----	For services $5488 \times 2 = 10976 \text{ Sqm}$ For Dhalao Near RD 3500 M Near RD 5100 M $2 \times 15.00 \times 15.00 = 450.00 \text{ Sqm}$	----	----	----	10.8846			
New Drain	5.40	61.00	48.00	5.20	13.00	$(48 \times 0.5) \times (5400) = 129600 \text{ Sqm}$	From RD 0 to 5400 m $5400 \times 5 \times 2 = 54000 \text{ Sqm}$	----		For services from RD 0 to 5400 m $5400 \times 2 = 10800 \text{ Sqm}$		19.44			
Jagatpur Link Drain (Link Drain No. II)	2.46	4.00	2.50	2.50	1.50	$(2.5 \times 0.5) \times (2460) = 3075 \text{ Sqm}$	From RD 0 m to RD 500 m $500 \times 5.00 = 2500 \text{ Sqm}$	From RD 0 to 2460 m $2460 \times 5 \times 2 = 24600 \text{ Sqm}$	----	----	For services $2460 \times 2 = 4920 \text{ Sqm}$ For Dhalao Near RD 300 M $1 \times 15.00 \times 15.00 = 225.00 \text{ Sqm}$	----	----	----	3.532			
Toe Drain	4.00	1.50	1.50	1.20	Nil	$(1.5 \times 0.5) \times (4000) = 3000 \text{ Sqm}$	From RD 0 m to RD 4000 m $4000 \times 5.00 = 20000 \text{ Sqm}$	From RD 0 m to RD 4000 m $4000 \times 5 \times 2 = 40000 \text{ Sqm}$	----	----	For services $4000 \times 2 = 8000 \text{ Sqm}$ For Dhalao Near RD 3240 M Near RD 2500 M Near RD 1900 M Near RD 850 M $4 \times 15.00 \times 15.00 = 900.00 \text{ Sqm}$	----	----	----	7.19			
																	Total Area CD-VI	97.22

BAWANA ESCAPE DRAIN	19.79	40.50 M (Avg)	19.425 M (Avg.)	1.50 to 4.80	21.0475	Remodelling augmentation for future requirement Length along drain RD 0 M to RD 19790 M = 19790M Width extended 10 M area 19790 x 10 = 1, 97,900 Sqm or 19.79 Ha.	-	Length RD 0 M to RD 19790 M = 19790M Width 5 M both side of drain area 2 x 19790 x 5 = 1, 97,900 Sqm or 19.79 Ha.	At RD 11000 M area 5 Acre or 2 Ha.	For service lane Length RD 0 M to RD 19790 M = 19790M Width 4.25 M both side of drain area 2 x 19790 x 4.25 = 1, 68,215 Sqm or 16.82 Ha.	i) RC 19100 M & 19200 M (Budhpur) ii) RD 4165 M to RD 4795 M (Near R/B) J.J. Amar Colony Bawana – Narela Road. (iii) RD 13400 M (R/B) Metro Vihar Holambi Kalan. area 3x 15M x 15 M = 675 Sqm 0.0675 Ha	-	for store at RD 9900 M area 15M x 15 M = 225 Sqm 0.02 Ha	-	78.28
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Bankner Link Drain	5.43	14.10 Avg.	11.25	1.00	2.85	Remodelling augmentation for future requirement Length along drain RD 0 M to RD 5430 M = 5430M Width extended 8 M area 5430 x 8 = 43,440 Sqm or 4.34 Ha.	-	Length RD 0 M to RD 5430 M = 5430M Width 5 M both side of drain area 2 x 5430 x 5 = 54300 Sqm or 5.43 Ha.	-	For service lane Length RD 0 M to RD 5430 M = 5430M Width 4.25 M both side of drain area 2 x 5430 x 4.25 = 46,155 Sqm or 4.62 Ha.	RD 2950 M (Near Saboli Road X-ing culvert).RD 3906 M (Pio Manihari Road X-ing).area 2x 15M x 15 M = 450 Sqm 0.045 Ha	-	-	-	14.435	
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Khera Khurd Drain	5.20	6.75	3.40	0.80	3.35	Remodelling augmentation for future requirement Length along drain RD 0 M to RD 5200 M = 5200M Width extended 5 M area 5200 x 5 = 26,000 Sqm or 2.60 Ha.	-	Length RD 0 M to RD 5200 M = 5430M Width 5 M both side of drain area 2 x 5200 x 5 = 52000 Sqm or 5.20 Ha.	-	For service lane Length RD 0 M to RD 5200 M = 5200M Width 4.25 M both side of drain area 2 x 5200 x 4.25 = 44,200 Sqm or 4.42 Ha.	RD 740 M (Near Bhatte wala Road) area 15M x 15 M = 225 Sqm 0.0225 Ha	-	-	-	12.243	
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Ghoga Link Drain	5.12	5.00	5.00	0.80	0.00	Remodelling augmentation for future requirement Length along drain RD 0 M to RD 5120 M = 5120M Width extended 5 M area 5120 x 5 = 25600 Sqm or 2.56 Ha.	-	Length RD 0 M to RD 5120 M = 5120M Width 5 M both side of drain area 2 x 5120 x 5 = 51200 Sqm or 5.12 Ha.	-	For service lane Length RD 0 M to RD 5120 M = 5120M Width 4.25 M both side of drain area 2 x 5120 x 4.25 = 43520 Sqm or 4.35 Ha.	-	-	-	-	12.03	
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Naya Bas Link Drain	3.00	8.50 Avg	7.00	0.45 to 0.50	1.50	Remodelling augmentation for future requirement Length along drain RD 0 M to RD 3000 M = 3000M Width extended 5 M area 3000 x 5 = 15000 Sqm or 1.50 Ha.	-	Length RD 0 M to RD 3000 M = 3000M Width 5 M both side of drain area 2 x 3000 x 5 = 30000 Sqm or 3.00 Ha.	-	For service lane Length RD 0 M to RD 3000 M = 3000M Width 4.25 M both side of drain area 2 x 3000 x 4.25 = 25500 Sqm or 2.55 Ha.	RD 490 M CULVERT (Nar Opposite Metro vihar Holambi Khurd) area 15M x 15 M = 225 Sqm 0.0225 Ha	-	-	-	7.073	
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Sanoth Link Drain	3.35	10.80	9.00	1.40	1.80	Remodelling augmentation for future requirement Length along drain RD 0 M to RD 3350 M = 3350M Width extended 5 M area 3350 x 5 = 16750 Sqm or 1.68 Ha.	-	Length RD 0 M to RD 3350 M = 3350M Width 5 M both side of drain area 2 x 3350 x 5 = 33500 Sqm or 3.35 Ha.	-	For service lane Length RD 0 M to RD 3350 M = 3350M Width 4.25 M both side of drain area 2 x 3350 x 4.25 = 28475 Sqm or 2.85 Ha.	-	-	-	-	7.88	
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Alipur Link Drain	0.88	30.00	3.50	2.50	26.50	Remodelling augmentation for future requirement Length along drain RD 0 M to RD 880 M = 880M Width extended 5 M area 880 x 5 = 4400 Sqm or 0.44 Ha.	-	Length RD 0 M to RD 880 M = 880M Width 5 M both side of drain area 2 x 880 x 5 = 8800 Sqm or 0.88 Ha.	-	For service lane Length RD 0 M to RD 880 M = 880M Width 4.25 M both side of drain area 2 x 880 x 4.25 = 7480 Sqm or 0.75 Ha.	RD 0 M, (Near Kiran Garden) ii) RD 435 M (Near Alipur City Forest Road) area 2x 15M x 15 M = 450 Sqm 0.045 Ha	-	2.115	
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Tikri Khurd Link Drain	1.94	The drain existing in the NH-1 Land	3.50	0.80	-	Remodelling augmentation for future requirement Length along drain RD 0 M to RD 1940 M = 1940M Width extended 5 M area 1940 x 5 = 9700 Sqm or 0.97 Ha.	-	Length RD 0 M to RD 1940 M = 1940M Width 5 M both side of drain area 2 x 1940 x 5 = 19400 Sqm or 1.94 Ha.	-	For service lane Length RD 0 M to RD 1940 M = 1940M Width 4.25 M both side of drain area 2 x 1940 x 4.25 = 16490 Sqm or 1.65 Ha.	-	-	-	-	4.56	
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Nangloi Drain CD-VII- 2100m	2.10	17.50	9.16	2.00	8.34	Remodelling augmentation for future requirement Length along drain RD 0 M to RD2100 M = 2100M Width extended 5 M area 2100 x 5 = 10500 Sqm or 1.05 Ha.	-	Length RD 0 M to RD 2100 M = 2100M Width 5 M both side of drain area 2 x 2100x 5 = 21000Sqm or 2.10 Ha.	-	For service lane Length RD 0 M to RD 2100 M = 2100M Width 4.25 M both side of drain area 2 x 2100 x 4.25 = 17850 Sqm or 1.79 Ha.	-	-	-	-	4.94		
																Total Area CD-VII	145.58
Mungesh Pur Drain RD 15850 m to RD 37550 m	21.65	32.69 m to 10.00 m	8.54 m to 18.76 m	1 m to 1.50 m	24.15 m to 1.46 m	(12.70 x 0.50 x 21650/10000)=13.74 Ha	-	(2 x 5 x 21650/100 00)=21.65 Ha	RD 21785 m to RD 21285 m(500 x 100/10000)=5 Ha	-	For dhalaos(5 x 15 x 15 /10000) =0.11 Ha.	-	-	-	40.50		
Bazitpur Drain RD 0 m to RD 8049 m	8.05	8.60 m to 12.00	4.47 m	1.00 m	5.83 m	(4.09 x 0.50 x 8050/10000) =1.64 Ha	-	(2 x 5 x 8050/1000 0) =8.05 Ha	-	-	For dhalaos (3 x 15 x 15 /10000) =0.06 Ha.	-	-	-	9.75		

Bawana Drain RD 0 m to RD 9561 m	10.83	5.30 m to 12.00 m	4.75 m	0.75 m	0.55 m to 7.25 m	(4.47 x 0.50 x 10830/10000) =2.42 Ha	(1.50 x 10830/10000) =1.62 Ha	(2 x 5 x 10830/10000) =10.83 Ha	-	-	For dhalaos (4 x 15 x 15 /10000) =0.09 Ha.	-	-	-	14.96	
Ladpur Link Drain RD 0 to RD 2300 m	2.30	11.00 m	2.92 m	0.30 m	8.08 m	(1.67 x 0.50 x 2300/10000) =0.19 Ha	-	(2 x 5 x 2300/10000) =2.30 Ha	-	-	-	-	-	-	2.49	
Katewara Link Drain RD 0 m to RD 1330 m	1.33	2.50 m	0.60 m	0.80 m	1.90 m	(0.60 x 0.50 x 1330/10000) =0.04 Ha	-	(2 x 5 x 1330/10000) =1.33 Ha	-	-	-	-	-	-	1.37	
Jatkhori Link Drain RD 0 m to RD 3760 m	3.76	2.75 m to 3.50 m	1.834 m to 2.587 m	0.30 m	0.163 m to 1.66 m	(1.45 x 0.50 x 3760/10000) =0.27 Ha	(1.50 x 3760/10000) =0.56 Ha	(2 x 5 x 3760/10000) =3.76 Ha	-	-	-	-	-	-	4.59	
Nangal Thakran Link Drain RD 0 m to RD 900 m	0.90	3.64 m	2.14 m	Dry	1.50 m	(1.67 x 0.50 x 900/10000) =0.07 Ha	(1.50 x 900/10000) =0.135 Ha	(2 x 5 x 900/10000) =0.90 Ha	-	-	-	-	-	-	1.11	
Madanpur Drain RD 4100 m to RD 8229 m	4.13	12.50 m	9.02 m	1.00 m	3.48 m	(4.85 x 0.50 x 4130/10000) =1.00 Ha	-	(2 x 5 x 4130/10000) =4.13 Ha	-	-	For dhalaos (3 x 15 x 15 /10000) =0.06 Ha.	-	-	-	5.19	

Kirari Suleman RD 4150 to RD 7850 m	3.70	7.50 m to 15 m	6.98 m	2.02 m	0.52 m to 8.02 m	$(3.66 \times 1.0 \times 3700/10000) = 1.35 \text{ Ha}$	-	$(2 \times 5 \times 3700/10000) = 3.70 \text{ Ha}$	-	-	For dhalaos $(5 \times 15 \times 15 / 10000) = 0.11 \text{ Ha}$. For all services $(1.50 \times 3700/10000) = 0.55 \text{ Ha}$. Total = 0.66 Ha	-	-	-	5.71	
Sultanpur Drain RD 0 m to RD 9200 m	9.20	4.20 m to 12.60 m	4.57 m	0.75 m	8.03 m	$(2.945 \times 0.50 \times 9200/10000) = 1.35 \text{ Ha}$	$(1.50 \times 9200/10000) = 1.38 \text{ Ha}$	$(2 \times 5 \times 9200/10000) = 9.20 \text{ Ha}$	-	-	For dhalaos $(3 \times 15 \times 15 / 10000) = 0.06 \text{ Ha}$.	-	-	-	11.99	
Rasulpur Link Drain RD 0 m to RD 750 m	0.75	6.80 m	3.214 m	0.30 m	3.61 m	$(0.91 \times 0.50 \times 750/10000) = 0.03 \text{ Ha}$	-	$(2 \times 5 \times 750/10000) = 0.75 \text{ Ha}$	-	-	-	-	-	-	0.78	
												Total Area CD-VIII			98.44	
Madanpur Drain(RD 0m to RD 4100m)	4.10	14.50 (Av.)	11.50	1.00	3.00	$(4100 \times 3.00)/10000 = 1.23 \text{ Ha}$	$(2300 \times 5.00)/10000 = 1.15 \text{ Ha}$	$(4100 \times 2.00 \times 5.00)/10000 = 4.10 \text{ Ha}$	RD 900m)(500 x 100/10000)=5 Ha	$(4100 + 2300) \times 4.25/10000 = 2.72 \text{ Ha}$	For dhalaos $(3 \times 15 \times 15 / 10000) = 0.06 \text{ Ha}$.	-	$(2 \times 15 \times 15)/10000 = 0.045 \text{ Ha}$ (RD 3700 and RD `900)	-	14.31	

Kirari Suleman Nagar Drain (RD 0m to RD 4100m)	4.10	15.00m to 24.00m	(A) 9.00m to 11.00m (B) 5.30m Rcc Trough Section	1.40	(A) 6.00m to 13.00m (B) 9.70m to 19.70m	(2400 x 5.00) /10000 = 1.20 Ha	(1150 x 5.00) /10000 =0.60 Ha	(4100 + 2400) x 5.00 /10000 =3.25 Ha	RD 2900m) (500 x 100/10000) =5 Ha	(4100+ 2700) x 4.25 /10000 =2.89 Ha	For dhalaos (3 x 15 x 15 /10000) =0.06 Ha.	-	(2 x 15 x 15) /10000 = 0.045 Ha (RD 1400 and RD 1722)	-	13.05				
(RD 0m to RD 1722m)	1.72																		
(RD 1722m to RD 3700m)	1.98																		
(RD 3700m to RD 4100m)	0.40																		
Mundka Peripheral Drain (RD 0m to RD 2345m)	2.35	2.50	2.00	1.50	0.50	-	(2350 x 5.00) /10000 =1.175 Ha	(2350 x 2.00 x 5.00) /10000 =2.35 Ha	-	(2350+ x 4.25 x 2.00) /10000 =2.00 Ha	-	-	(1 x 15 x 15) /10000 = 0.023 Ha (RD 850)	-	5.55				
Ranhola Pond Drain (RD 0m to RD 1160m)	1.16	1.20	1.20	1.20	-	-	-	-	-	-	-	-	-	-	-				
																	Total Area CD-XII	32.90	
																		Total Area FC-II	374.13

FC-III

Supplementary Drain RD 16436 m to RD 22471 m	6.04	55.00	50.00	3.66	5	--	9.00	12.00	3	6.00	6	-	-	-	36.00
Najafgarh Drain, RD 45316 m to RD 57140m	11.82	70.00	45.00	5.50	25.00	--	18	24	3	12	12	-	-	-	69.00
Supplementary drain from RD 0 to RD 16436m	16.44	RD 0m to RD8800m =152.40	61.40	3.66	RD 0m to RD 8800m = 91.00m	-	-	-	-	-	9 Ha.	-	-	-	9
		RD 8800m to RD 9400m = 113.00m			RD 8800m to RD 9400m = 51.60m	-	-	-	-	-					
		RD 9400m to RD 16436m = 123.10m			RD 9400m to RD 16436m = 61.70m	-	-	-	-	-					
Supplementary Drain, CD-XI															
RD 22471m to RD 25075m	2.604	68.30	46.27	3.66	22.03	-	4	5	-	3	3	-	-	-	15
RD 25075m to RD 26060m	0.985	103.00	48.72		54.28	-	-	-	-	-	1				1

		175m RD. 34350m to 37180m - 150m to 200m RD. 37180m to 38960m - 200m to 225m RD. 38960m to 40680m - 180m to 200m RD. 40680m to 42930m - 180m to 220m RD. 42930m to 44800m - 250m to 300m RD. 44800m to 45316m - 200m to 250m														
Palam Drain	4.20	37.00	18 to 10.34	2.50	22.83	-	4200x12x2 = 100800 Sqm	4200x25x2 = 210000 Sqm Both side	5000 Sqm	4200x15x2= 126000 Sqm	4200x5x2= 42000 Sqm	1050/735 Sqm	2000 Sqm	-	48.75	
Palam Link Drain	1.47	10.00 (Approx.)	4.50 to 2.25	1.30	6.62	1470x10 x2 = 29400 Sqm	1470x12x2 = 35288 Sqm Both side	1470x5x2 = 14700 Sqm	2000 Sqm	1470x7.50x2 =22050 Sqm	1470x5x2= 14700 Sqm	368/257	2000 Sqm	-	12.08	
Najaf Garh Pond Drain	1.95	17.00 (Approx.)	4.50	0.95	12.50	1950x10 x2 = 39000 Sqm	1950x12x2 = 46800 Sqm	1950x5x2 = 19500 Sqm	2000 Sqm	1950x7.50x2 =29250 Sqm	1950x5x2=19500 Sqm	488/340	-	-	15.69	

Nasirpur Link Drain	2.90	12.00 (Approx.)	6.50	2.10	5.50	2900x10 x2= 58000 Sqm	2900x12x2=69 600 Sqm Both side	2900x5x2= 29000 Sqm	3000 Sqm	2900x7.50x2 = 43500 Sqm	2900x5x2=29000 Sqm	725/508	2000 Sqm	-	23.53	
Bijwasan Drain	4.20	20.00 to 30.00	4.00	0.91	21.00	4200x10 x2 = 84000 Sqm	4200x12x2=10 0800 Sqm Both side	4200x5x2= 42000 Sqm	5000 Sqm	4200x7.50x2 =63000 Sqm	4200x5x2=42000 Sqm	1050/735	2000 Sqm	-	34.06	
Pankha Road Drain	3.60	19.60 to 24.00	8.00	2.30	13.80	3600x10 x2 = 72000 Sqm	3600x12x2= 86400 Sqm Both side	3600x25x2 = 180000 Sqm	4000 Sqm	3600x7.5x2= 54000 Sqm	3600x5x2= 36000 Sqm	900/630	2000 Sqm	-	43.59	
Shahbad Mohammad pur Drain	0.23	14.50	2.35	1.22	12.15	-	225x12x2=540 0 Sqm Both side	225x5x2=2 250 Sqm	1000 Sqm	225x7.50x2= 3375 Sqm	225x5x2=2250 Sqm	57/40	2000 Sqm	-	1.64	
Mudhela Drain CD-I-6920m,	6.95	16.50	5.00	1.52	11.50	6950x10 x2= 139000 Sqm	-	6950x5x2 = 69500 Sqm	2000 Sqm	6950x7.50x2 = 104250 Sqm	6950x5x2 = 69500 Sqm	1740/120 0	-	-	38.72	
TOTAL CD-I															1056.13	
Ali Drain	2.78	40.45	35.00	4.00	5.00	--	2780X12X2 = 66720 Sqm. (6.67 Hectare)	2780X10X2 = 55600 Sqm. (5.56 Hectare)	2000 Sqm. (0.2 Hectare)	--	2780X5X2=2780 Sqm. (2.78 Hectare)	500 sqm & 300 Sqm. (0.085 Hectare)	500 Sqm. (0.05 Hectare)	--	15.345	
Asola Drain	3.39	5.00 Mt. (Avg.)	2 to 5	Av. Depth 3.00	2 to 5	5470X4= 21880 Sqm. (2.19 Hectare)	5470X12X2= 131280 Sqm. (13.13Hectare).	5470X10X2 = 109400 Sqm. (27.35 Hectare)	2000 Sqm. (0.2 Hectare)	5470X7= 38290 Sqm. (3.8. Hectare.)	5470X5X2=54700 Sqm.(5.47) Hectare	500 sqm & 300 Sqm. (0.085 Hectare)	2000 Sqm. (0.2 Hectare)		52.425	

Molar Bund Extension Drain	1.38	0 to 615-2.25	615 to 1335-2.25	1.50 to 2.25 Mtr.	Nil	--	1380X12X2=3120 Sqm. (3.31 Hectare)	1380X10X2=27600 Sqm. (2.76 Hectare)	2000 Sqm. (0.2 Hectare)	1380X7=9660 Sqm. (0.97 Hectare)	1380X5X2 = 1380 Sqm. (1.38 Hectare)	500 sqm & 300 Sqm. (0.085 Hectare)	2000 Sqm. (0.2 Hectare)	--	8.905	
Sarita Vihar Drain	1.30	20.00	15.00	2.50	5.00	--	1300X12X2=31200 Sqm.(3.12 Hectare)	1300X10X2=2600 Sqm. (2.6 Hectare)	2000 Sqm. (0.2 Hectare)	1300X7=9100 Sqm. (0.91 Ha)	1300X5X2=13000 Sqm. (1.30 Hectare)	500 sqm & 300 Sqm. (0.085 Hectare)	2000 Sqm. (0.2 Hectare)	--	8.415	
TOTAL CD-V															85.09	
Mungesh Pur Drain CD-XIII-10362m	10.362 0m to 1575m = 1575m to RD. 6600m to 10362M	137 54 66	29.02 29.02 29.02	3.32	107.98 24.98 36.98		10362x30x2 = 621720.00 Sqm or 62.17 Hectare	10362x50x2 =1036200 Sqm or 103.62 Hectare	10362x25x2=518100.00 Sqm or 51.81 Hectare	2 Hectare	10362x20x2 = 414480.00 Sqm or 41.45 Hectare	-	2 Hectare	0.80 Hectare	= 263.85-82.21 (Available land) = 181.64	
Bhupania Chudania Drain (including Haryana portion)	8.55 RD. 0m to 2736m RD. 6280m to 8550M RD.2736m to 6280M (Haryana State)	90 65 22	22 22 Un-demarcation Portion	3.05	68 43 -		8550x30x2 = 513000 Sqm or 51.30Hectare	8550x50x2 =855000 Sqm or 85.50 Hectare	8550x25x2 = 427500 Sqm or 42.75 Hectare	2 Hectare	8550x20x2 = 342000 Sqm or 34.20 Hectare	-	2 Hectare	0.80 Hectare	= 218.55-47.18 Available land = 171.37	
Mudhela Drain CD-XIII- From 6950 to 12550m	5.60	17.6	6.57	0.91	11.3		5600x15x2 = 168000 Sqm or 16.80Hectare	5600x20x2 = 224000Sqm or 22.40Hectare	5600x25x2 = 280000Sq m or 28.00 Hectare	2 Hectare	5600x20x2 = 242000Sqm or 22.40 Hectare	-	0.40 Hectare	0.40 Hectare	92.40-9.86 Available land = 82.54	

Nangli Sakrawati Link Drain, CD-XIII- RD-0m to 385m = 385m, CD-XIII-RD-1712m to 2262m = 550m	0.93RD. 0m to 385 RD. 1712m to RD.2262 m	1.801.20	1.801.20	1.50	00	930x5x1 = 4650 Sqm or 0.47 Hectare	930x5x1 = 4650 Sqm or 0.47 Hectare	-	-	930x20x1 = 18600Sqm or 1.86 Hectare	-	0.40 Hectare	0.40 Hectare		= 3.6 - 0.14 Available land = 3.46	
TOTAL CD-XIII														439.01		
Total Projected Land Area FC-IV														1580.23		
TOTAL AREA (FC-I + FC-II + FC-III + FC-IV)														2252.10		

ANNEXURE – II (c) : Detail of Effluent Irrigation System

I. Keshopur Effluent Irrigation System (KEIS)

The Irrigation Network under Civil Division No. XII also known as Keshopur effluent irrigation system (KEIS) consists of irrigation Channels and Minors and feeder channels spanning across a total length of 30.40 Km to take the effluent treated water from Keshopur Sewerage treatment Plant of Delhi Jal Board, thereafter being supplied by pumping through Keshopur Pump House and Tilangpur Kotla Pump House throughout the year for agricultural land for Irrigation in the Villages Nilothi, Ranhola, Mundka, Tilangpur Kotla, Baprola, Bakkarwala, Dichaonkalan, Hirankudna and Neelwal in Dist. West of Delhi. The total area irrigated is approximately 1630 Acres. A road network comprising of inspection path with cumulative length of approximately 20.00 Km also exist along the irrigation channels and minors to facilitates watch and ward, day to day repair maintenance etc. in r/o the irrigation network which are also being used by local residents for daily commuting. The discharge of 180 cusecs is conveyed and distributed through above Irrigation Network System for irrigating the said agriculture land.

II. Coronation Effluent Irrigation System at Burari (CTP)

The Irrigation Network under Civil Division No.VII also known as Effluent Irrigation System for Burari Area consists of irrigation Channels and Minors and feeder channels spanning across a total length of 17.37 Km to take the effluent treated water from Coronation Pillar Sewage Treatment Phase-I&II (20 MGD), Phase-III (10 MGD) of DJB, Near Coronation Park of Delhi Jal Board, thereafter being supplied by pumping through Pump House at Burari throughout the year for agricultural land for Irrigation in the Villages Burari, Jharoda, Bhalaswa, Mukundpur, Kadipur, Ibrahimpur in Dist. West of Delhi. The total area irrigated is approximately 325 Acres. A road network comprising of inspection path with cumulative length of approximately 17.37 Km also exist along the irrigation channels and minors to facilitates watch and ward, day to day repair maintenance etc. in r/o the irrigation network which are also being used by local residents for daily commuting. The discharge of 20 cusecs is conveyed and distributed through above Irrigation Network System for irrigating the said agriculture land.

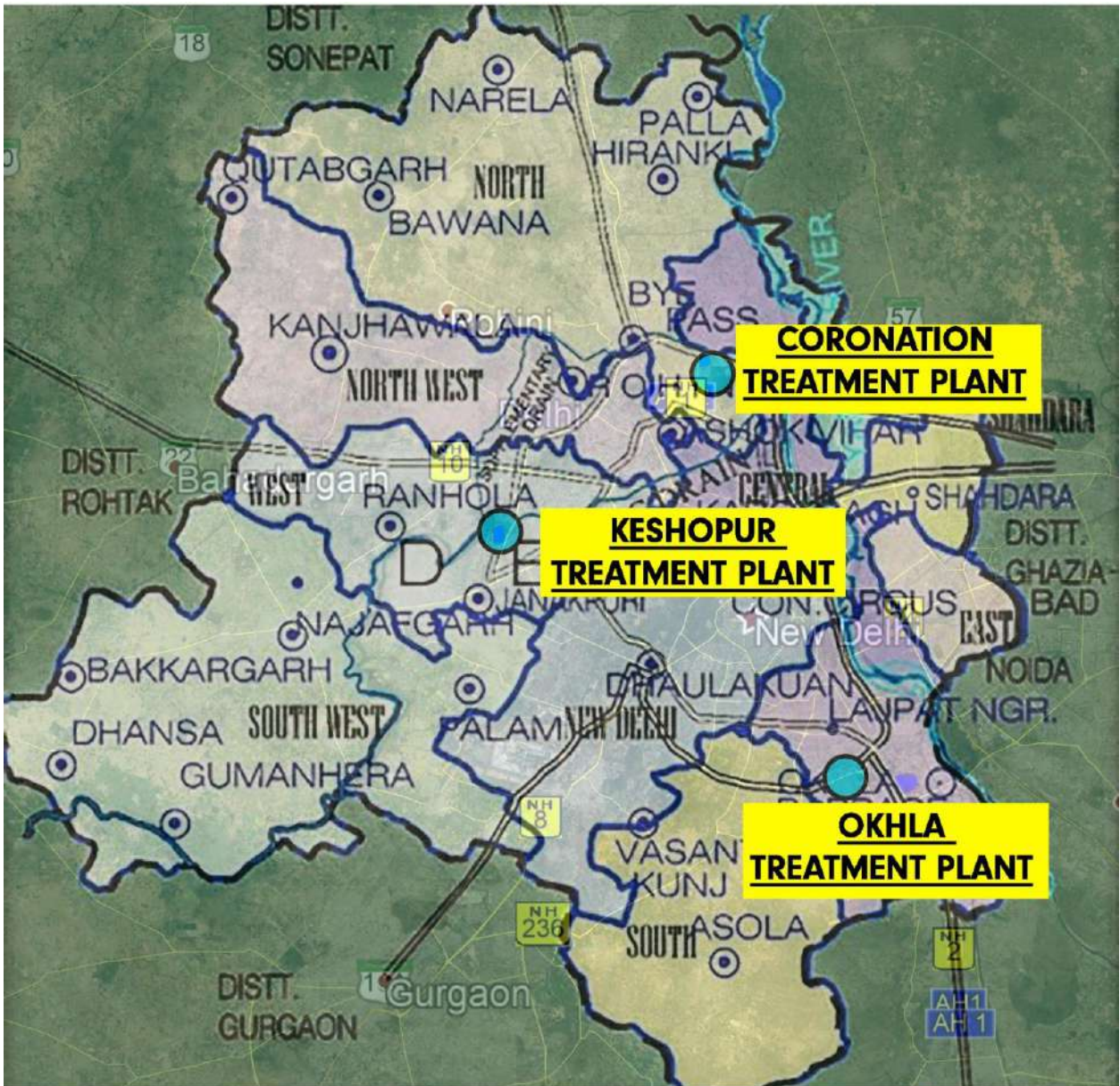
III. Okhla Effluent Irrigation System

The Irrigation Network under Civil Division No. V also known as Okhla effluent irrigation system consists of irrigation Channel spanning across a total length of 05.00 Km to take the effluent treated water from Okhla Sewerage Treatment Plant of Delhi Jal Board, thereafter being supplied for Irrigation in the Villages Ali, Mandapur Khadar & Jaitpur in District (South-East) of Delhi. The total area irrigated is approximately 500Acres day-to-day repair maintenance etc. in r/o the irrigation network which are also being used by local residents for daily commuting. The discharge of 20 cusecs is conveyed and distributed through above Irrigation Network System for irrigating the said agriculture land.

Conclusion:

Due to rapid urbanization in Delhi Territory, thereby the agriculture land area in Delhi is diminishing, therefore, the necessity of remodelling / expansion of above Effluent Irrigation Systems is not envisaged.

Key Plan of Effluent Irrigations Systems:



[I&FC Deptt. Govt. of NCT of Delhi](#)



ANNEXURE III: SERVICE PLAN - DELHI CANTONMENT BOARD (DCB)



दिल्ली छावनी परिषद
DELHI CANTONMENT BOARD
सदर बाजार, दिल्ली छावनी- 110010
Sadar Bazar, Delhi Cantt - 110010

हर काम देश के नाम



Tel. No.: 011-25693837, 25695450 ✉: ceodelhicantt@gmail.com 🌐: www.delhi.cantt.gov.in

No.DCB/IT/SWM-AP/2020

Dated: 21.01.2021

To

The Vice President
Delhi Development Authority
Vikas Sadan, I.N.A.
New Delhi - 110023

Subject: Service Plan for Municipal Solid Waste Management

Sir

Reference your DO letter No. PS/VC/DDA/2021/10 dated 12.01.2021.

2. Vide above referred DO letter, this office was directed to submit Service Plan for Municipal Solid Waste Management. The Service Plan for Delhi Cantonment Board Municipal Solid Waste Management is annexed herewith as **Annexure-A**.
3. This is for information please.

Yours faithfully,

Chief Executive Officer
Delhi Cantonment
(SVR Chandra Sekhar)

PERSPECTIVE PLAN FOR INFRASTRUCTURE SERVICE FOR DELHI - 2041

AGENCY: DELHI CANTONMENT BOARD

1. BACKGROUND - DELHI CANTONMENT BOARD

The administration of Delhi cantonment is carried out through a Board, which has 16 members, out of which 08 are nominated/ Ex-officio members and 08 members are elected by the public residing in civil as well as military area. The civil and military populations reside in different pockets in the cantonment. The needs and challenges of both pockets differ from each other in respect of solid waste management.

Basic information about Delhi Cantonment Board is mentioned below:

S. No.	Item	Details
1	Year of establishment	1914
2	Total Area	10452 Acres
3	Total Population (Census 2011)	1,10,351
4	No. of wards	08
5	Commercial areas	02
6	Urban Villages	06
7	Schools	16
8	Slums	02
9	Length of Roads	50.60 km
10	Hospital/ Dispensaries	04
11	Parks	17

2. SOLID WASTE GENERATION IN DELHI CANTONMENT BOARD

1	SOILD WASTE GENERATION - Current status			
	S. NO	Item	Details	
	1	Total solid waste generated per day	68 MT	
	2	Waste generated from civil area per day	23 MT	12 MT Dry waste
				11 MT Wet waste
	3	Waste generated from Army area per day	45 MT	24 MT Dry waste
	4	Total Dry waste processed per day in waste to energy Plant at Okhla	30 MT	
	5	Wet waste processed per day in waste to energy plant at Okhla	07 MT	
	6	Waste dumped in Landfill site at Okhla per day	31 MT	
CIVIL AREA - Current status				
1. The Household waste is segregated into wet & dry streams at source. Approx. 95% segregation at source has been achieved so far. 2. All the waste collected from civil area is transferred to different Waste Transfer Centers (WTCs). 3. All the WTCs have been designed for the temporary storage of dry & wet waste, as separate fractions. 4. Rag pickers have been integrated into the system to pick up recyclable items, from the waste collected at the WTC's.				
2	ACTION PLAN FOR SEGREGATION AT SOURCE - MUNICIPAL SOLID WASTE			
	CIVIL AREA	ARMY AREA		

	<p>It is estimated that Municipal Solid Waste likely to be generated from civil area by 2041 will be 37 MT per day. The challenge before the Board is to maintain the level of source segregation in civil area. For this, the following exercise is being undertaken on regular basis:</p> <ol style="list-style-type: none"> Two sanitary guides accompany the door-to-door collection vehicle, they make announcement and make sure that only segregated waste is collected. A register is maintained to keep a check on those residents who are not handing over segregated waste. The repeated offenders to be penalized according to the provisions of Delhi Cantonment Board solid waste Management Bye-Laws. Regular interaction with residents and awareness campaigns in the form of street play, mohalla meeting etc. is organized to keep the residents aware and motivated on source segregation. Formal training is being imparted to Rag pickers/ Safaiwalas to improve the level segregation on monthly basis. The rag pickers were issued separate I-cards and have been successfully integrated into the system. 	<p>The population of army area is mostly comprised of army troops. Therefore, it is estimated that there will be no difference in the quantity of Municipal solid waste generated today and which is likely to be generated in 2041.</p> <ol style="list-style-type: none"> A system is being worked out for on-site composting of food waste generated by transit camps, officer's messes, community kitchens of army units and institutes. Further, it is proposed that army authorities will be asked to install decentralized composting machines. This step shall considerably reduce the problem of segregation at source, which in turn would lessen the amount of non-recyclable waste being transported to the landfill site at Okhla. It has been decided that station headquarters and Delhi Cantonment Board will sensitize RWAs, existing in the army area, to segregate and process the wet waste in their own compound.
3	MUNICIPAL SOLID WASTE COLLECTION	
	CIVIL AREA	ARMY AREA
	<p>For civil area, 14 door-to-door vehicles are deployed for collecting both dry and wet waste, which is segregated at household level. These vehicles have been suitably modified to carry the solid waste in segregated form. A few salient aspects of door to door collection are as under:</p> <ol style="list-style-type: none"> All vehicles have been fitted with tracking system (GPS) Announcement system with specific message for segregation has been incorporated. The staff has been deployed ward wise for the collection of segregated waste at source. The mobile numbers of the staff have been made public to ensure transparency and commitment of Delhi Cantonment Board. 	<p>For Army area, 27 vehicles have been deployed to collect the solid waste. Separate bins have been provided for dry and wet waste. The waste collected from the army area is directly taken to the processing plant and landfill site at Okhla.</p>

3. MANAGEMENT STRATEGY

3.1. DETAILS OF SORTING AND MATERIAL RECOVERY FACILITY

There are eleven secondary storage points, with the facility of separate storage of dry and wet

waste, within the territorial jurisdiction of Delhi Cantonment Board. Out of this, one secondary storage point at Tigris Road has been converted into sorting and material recovery facility with capacity to handle 30 MT waste daily. Further, rag pickers have been integrated into the system to pick up recyclable items, from the waste stored at Tigris Road. Accordingly, two more material recovery facilities will be developed to meet the need, which will arise in 2041.

3.2. DETAILS OF PROCESSING OF SOLID WASTE

All the waste after collection is moved to waste transfer centers, where the recyclable waste is retrieved. Therefore, the solid waste is carried by respective vehicles to Okhla. On average, approximately 30 MT of dry waste and 7 MT of wet waste are disposed in the Waste to Energy and Waste to Compost plants respectively. The processing of waste at Okhla is done under the management of South Delhi Municipal Corporation. Only 31 MT of solid waste is being dumped at the landfill site at Okhla. 100% of solid waste, which is generated in Delhi Cantonment, is either processed or dumped at the landfill site, on a daily basis.

A pilot project exclusively for the processing of food waste generated from market area, with a total capacity of 175 Kg, is fully functional for the last 2 years in the WTC at Tigris Road.

It is also proposed that 4 to 5 sorting- cum- compositing machine, with a capacity of 10 MT each will be installed at different locations, within 4 years, to handle the wet waste generated within the territorial jurisdiction of Delhi Cantonment Board.

3.3. DETAILS OF MANAGEMENT OF PLASTIC WASTE

There is a complete ban on the use polythene bags of less than 50-micron thickness. The Assistant Sanitary Inspectors keep a regular check in market area and also impose fine if someone is found in violation.

A committee has also constituted to identify and replace specific items of non- biodegradable plastic like plastic straw, plastic spoon disposable plastic glass, plastic plates etc. with biodegradable items. These processes of replacement of non- biodegradable plastic items have been successfully achieved in Gopinath Bazar & the committee keeps visiting the commercial areas for ensuring that people and shop keeper get habituated for such practice.

A baling machine has been installed in the waste transfer centre at Tigris Road, for making bales of plastic and polythene waste material, for ease of handling/ disposal through the rag pickers.

3.4. DETAILS OF MANAGEMENT OF HORTICULTURE WASTE

A total of 17 parks of various sizes are being maintained in the Cantonment area. All the parks have been provided with pits for collection of horticulture waste.

The horticulture waste is further carried to the nearest shredding machine, four of which have been installed in different areas of the cantonment. The shredded horticulture waste is converted into compost in the natural process, duly augmented with the spray of appropriate quantity of EVM. The compost generated is being utilized within its geographical limits.

3.5. DETAILS OF MANAGEMENT OF CONSTRUCTION AND DEMOLITION (C&D) WASTE

- a) On an average up to 1.0 metric tons of C&D, waste is generated in Delhi Cantonment area, on daily basis.
- b) A central storage facility for C&D waste has been created in Jharera village for temporary holding of the same before further disposal.

- c) The C&D waste is transported from the central storage facility to the processing facility setup at Shastri Park by IL&FS, under the management of EDMC.
- d) Explicit directions have been issued to all contractors working under Delhi cantonment Board, as well as Military Engineering services (MES), to follow the above procedure for the disposal of C & D waste.
- e) Vulnerable areas have been put under CCTV surveillance to prevent dumping at unauthorized sites.
- f) Punitive action is promptly taken against the defaulters.

ANNEXURE IV: SERVICE PLAN - EAST DELHI MUNICIPAL CORPORATION (EDMC)



EAST DELHI MUNICIPAL CORPORATION
Office of Chief Engineer SHN/(EMS)/HQ
419, Udyog Sadan Patpar Ganj Indl. Area,
Delhi-110092 Phone No. 011-66667504



No.: CE-HQ/EMS/SHN/EDMC/2020-21/D- 697

Dated: 20/11/2021

To,
Commissioner (Planning)
Delhi Development Authority
5th Floor, Vikas Minar,
New Delhi-110002

Subject:- Service Plan for Municipal Solid Waste Management

Please refer the D.O. Letter No. PS / VC / DDA / 2021 / 07 dated 11.01.2021 from V.C. DDA to Commissioner EDMC vide which it was requested to share service plan for Municipal Solid Waste Management.

In this connection it is submitted that The Hon'ble Supreme Court vide its orders dated 17.08.2018, in the matter of SWM (C) No. (S) 1/2015 in re: Outrage as Parents End Life After Child's Dengue Death, had directed the Lt. Governor of Delhi to constitute a Committee to go in depth into all aspects of solid waste management in Delhi including cleaning up the dumpsites in Gazipur, Bhalswaand Okhla and frame a workable and implementable policy.

Accordingly, the said committee had already submitted its report to Hon'ble Supreme Court. On the suggestions and direction of the Committee, EDMC has outsourced Door to Door Collection and Transportation of Municipal Solid Waste to processing facility / landfill for entire EDMC under Public Private Partnership (the "PPP") mode on Design, Build, Finance, Operate and Transfer (the "DBFOT") basis"

EDMC already has one 1300 TPD Waste to Energy Plant, one 1000 TPD C&D Waste processing plant, 10 nos one TPD accelerated composters, 02 nos five TPD bio-methnation plant and 10 TPD one number XAPPER Machine for decentralized processing the waste.

EDMC is also developing one 2000 TPD integrated facility waste management facility which will have one 600 TPD WIE plant for combustible waste, 1200 TPD Bio-methnation plant for wet waste and 200 TPD C&D waste processing plant for inert waste at Ghonda Gujran in association with NTPC and likely to be operational by September, 2022 through joint venture company NEWS. In addition 3 nos. 1 TPD accelerated compost plants are under installation.

East Delhi Municipal Corporation is maintaining is one sanitary landfill at Ghazipur spread over in area of about 70 acres having over 140 lac tonne legacy waste. Approximate 2000-2200 MT fresh / residue MSW is received daily. Recently, EDMC has started processing of legacy waste through excavating, windrowing, drying, segregating through different size of trommels. The outputs are C&D waste, combustible waste like RDF, filling inert material of size 6 to 30mm and soil like inert material of less than 6mm size. Till date over 3.7 lacs tonne of legacy waste has already being processed through 15 trommels with approximate 3000 TPD capacity. The same will be increased as per the Action Plan attached in the template. The land so reclaimed will be use for waste management facilities as Technology park show casing different technologies of wet waste and recyclable waste.

Further, EDMC has planned processing of wet waste through decentralized processing by installing 20 nos. bio-methnation plant at different location depending upon availability of land and funds. The detailed IEC plan has been prepared for Door-to-Door segregated collection of waste with the help of local through ward wise Safai Nigrani Samities headed by DC of the Zone with local Councilor.

The information in the template as desired is attached.

Encl: as above

Pu
20/11/2021
Chief Engineer (HQ)
East Delhi Municipal Corporation

Copy for kind information to:-

1. VC, DDA
2. OSD to Commissioner for information to Commissioner
3. E-in-C
4. Office Copy

Pu
20/11/2021
Chief Engineer (HQ)

PERSPECTIVE PLAN FOR INFRASTRUCTURE SERVICE FOR DELHI - 2041
AGENCY: EAST DELHI MUNICIPAL CORPORATION

1. MUNICIPAL SOLID WASTE MANAGEMENT (MSWM)

Aspect	Information required
Generation	Presently – 2600 TPD By 2040 – 6000 TPD
	Present estimations of Green waste – 1300 TPD Dry waste – 30 % and inert – 20% By 2040 Green waste – 3000 TPD Dry waste – 30 % and inert – 20%
Management strategy	Separate management plans (collection, segregation and processing) for: <ul style="list-style-type: none"> • Green Waste • Reusable Waste • Inert EDMC outsourced door-to-door collection of segregated waste collection and expected to achieve segregated collection by March 2021 and processing 2000 TPD- integrated facility at Ghonda Gujran by 2022. 1200 TPD - waste processing through bio - methanization.
	Management plans to include information regarding the following aspects: 1. Improving collection, segregation efficiency at local level (RWA/Mohalla/Market association/Solid waste zone/Wards etc.) EDMC has outsourced collection and transportation of Municipal Solid waste and Street Sweeping waste and any other solid waste specified by East DMC from time to time as per MSW Rules 2016. Broadly the work includes primary collection and transportation of Municipal solid waste (MSW) and street sweeping waste in segregated manner from households, slums, informal settlements, commercial, institutional and other non- residential premises, multi storied buildings, large commercial complexes, malls, housing complexes.
	2. Maximizing wet waste processing (e.g., Composting, Bio-methanation etc.) locally <ul style="list-style-type: none"> • Decentralized accelerated compositing, presently, 10 numbers of 1 TPD capacity are operational and 02 plants of capacity 1 TPD are under progress • Home composting – 50 TPD • Decentralized Bio-methanation – 5 TPD (02 in numbers are operational), 10 TPD (01 in number is in progress) • Target: Decentralized accelerated compositing, 20 numbers of 1 TPD • Decentralized Bio- methanation, 10 numbers of 5 TPD • 1 Material Recovery Facility (MRF) in each ward i.e. 64 numbers • Centralized Bio-methanation – 1200 TPD by September 2022 (a joint venture company is already been formed with NTPC)

	<p>3. Improving sorting and material recovery (MPD will recommend re-purposing of dhalao as material recovery facilities at the decentralized level) etc.</p> <ul style="list-style-type: none"> • EDMC propose 01 MRF centre in each ward deals with recyclable material under process. • Details of existing/ proposed processing facilities on already allotted land. <table border="1" data-bbox="588 412 1386 602"> <tr> <td>Shastri Park</td> <td>C & D Plant- 1000 MT- operational</td> </tr> <tr> <td>Vinod Nagar</td> <td>Workshop/ Parking - operational</td> </tr> <tr> <td>Geeta Colony</td> <td>Workshop/ Parking - operational</td> </tr> <tr> <td>Singhola (Narela)</td> <td>Disposal of silt- operational</td> </tr> </table> <p>4. Reclamation of landfill sites and reuse/recycle of legacy waste</p> <ul style="list-style-type: none"> • Action plan for clearing legacy waste at Gazipur dumpsite is attached herewith as Annexure – IV (a). • After reclamation, land will be used for Technology Park showcasing all the technologies of wet waste processing and recycling of waste. <p>5. Conversion of existing landfills to engineered/scientific landfills</p> <ul style="list-style-type: none"> • There is no such type of proposal, however, whenever land is provided that will be constructed as engineered/ scientific landfills. 	Shastri Park	C & D Plant- 1000 MT- operational	Vinod Nagar	Workshop/ Parking - operational	Geeta Colony	Workshop/ Parking - operational	Singhola (Narela)	Disposal of silt- operational
Shastri Park	C & D Plant- 1000 MT- operational								
Vinod Nagar	Workshop/ Parking - operational								
Geeta Colony	Workshop/ Parking - operational								
Singhola (Narela)	Disposal of silt- operational								
Special plans for:	<p>Integration of informal sector in core SWM system (for improved management vis-a-vis ensuring safety, hygiene and healthy work conditions for the workers).</p> <p>EDMC to establish a system to recognize organizations of waste pickers or informal waste collectors and promote and establish a system for integration of these authorized waste pickers and waste collectors to facilitate their participation in solid waste management including door to door collection of waste.</p>								
	<p>Marketing strategies for compost and other reusable/recycled products</p> <p>As there is less amount of compost produce from plant, the whole quantity of compost is being utilized in, Municipal parks and gardens generated from waste in EDMC area. There shall also be a provision for the households to directly deposit or sell their recyclable waste to Kabadiwala/ secondary market and deposit sales realizations in ESCROW account of EDMC and this amount of EDMC and this amount will be used for payment of collection of garbage.</p>								
	<p>Awareness, capacity building and behavioural changes programs Annexure – IV (b)</p>								
Other information	<p>Key infrastructure or special projects proposed for the plan period, along with details of projects and their timelines</p> <p>2000 TPD Integrated facility waste management and Energy Generation facility will be developed at Ghonda Gujran by September 2022 as a JV between NTPC & EDMC</p> <p>Details of existing/ proposed processing facilities on already allotted land is attached as Annexure – IV (c)</p> <p>Future land requirement (if any) for scientific (engineered) landfill sites, provided only inert are to be dumped</p> <p>Land is required for Engineered/ Scientific Landfills, in future.</p> <p>At Sonia Vihar 100 acre of land is required for disposal of reject/ inert of capacity 200 TPD for 20 Years. This land belongs to DDA.</p>								

2. Key targets that will be included in MPD 41 Action Plan:

Component	Current status	Target for 2041	Phasing Plan			
			Settlement Pattern	20 % (To be accomplished)	50 % (To be accomplished)	80 % (To be accomplished)
MSW collection efficiency	100 %	100%	Nil			
MSW segregation efficiency	25 %	100 %	CGHS and Bulk generators	September 2021	Dec, 2021	March, 2022
			Planned Colonies	September 2021	Dec, 2021	March, 2022
			Un-planned colonies	September 2021	Dec, 2021	March, 2022
			JJ Clusters	September 2021	Dec, 2021	March, 2022
Percentage of green waste processed (e.g. composted or any other processing method) locally	10 %	100 %	In first year – 10% In the 5 th year- 25% In the 10 th year – 100%			
Percentage of recyclable waste sent to recycling centres/industry	-	100 %	In first year – 15% In the 5 th year- 50% In the 10 th year – 100%			
Identification and listing of informal waste workers and units (recyclers, kabariwalas, rag pickers etc.)			List of informal waste workers / Kabadiwalas prepared			
Percentage of identified informal waste workers and units integrated with the formal MSW management plan	10 %	100 %	March - 2022			
Reduction in waste going to land fill sites	50 %	90 %	By September - 2022			
Reclamation of land fill sites (greening and processing of legacy wastes)			140 MT as per action plan attached			

Annexure – IV (a) : ACTION PLAN FOR CLEARING LEGACY WASTE AT GHAZIPUR DUMP SITE

East Delhi Municipal Corporation in maintaining a Sanitary Land Fill (SLF) near NH-24. This SLF site is spread in about 70 acres of Land. About 2000-22090 MT fresh MSW is received daily and about 3000, MT (as an average) of legacy waste is being processed daily. About 3.00 lac MT of legacy waste has been processed at SLF Ghazipur dumpsite. Time line to clear legacy waste of 140.00 lac MT is as

Sr. No.	No. of Trommels/ Equivalent Machines	Month	Daily Qty. Of processed legacy waste (MT)	Monthly Qty. Of processed legacy waste (MT)	Quarterly Qty. Of processed legacy waste (MT)	Cumulative Qty. Of processed legacy waste (MT)	Balance Qty. Of Legacy Waste (MT)
1	15 (10 no. -30mm & 5 no. - 6mm)	01.12.2020	3000	84000	0	300000	13700000
2	15 (10 no. -30mm & 5 no. - 6mm)	01.04.2021	3000	84000	336000	636000	13364000
3	27 (18 no. -30mm & 9 no. - 6mm)	01.07.2021	5400	151200	453600	1089600	12910400
4	39 (26 no. -30mm & 13 no. - 6mm)	01.10.2021	7800	218400	655200	1744800	12255200
5	42 (28 no. -30mm & 14 no. - 6mm)	01.01.2022	8400	235200	705600	2450400	11549600
6	42 (28 no. -30mm & 14 no. - 6mm)	01.04.2022	8400	235200	705600	3156000	10844000
7	42 (28 no. -30mm & 14 no. - 6mm)	01.07.2022	8400	235200	705600	3861600	10138400
8	45 (30no. -30mm & 15 no. - 6mm)	01.10.2022	9000	252000	756000	4617600	9382400
9	51 (34 no. -30mm & 17 no. - 6mm)	01.01.2023	10200	285600	856800	5474400	8525600
10	57 (39 no. -30mm & 19 no. - 6mm)	01.04.2023	11400	319200	957600	6432000	7568000
11	63 (42 no. -30mm & 21 no. - 6mm)	01.07.2023	12600	352800	1058400	7490400	6509600
12	66 (44 no. -30mm & 22 no. - 6mm)	01.10.2023	13200	369600	1106600	8597000	5403600
13	72 (48 no. -30mm & 24 no. - 6mm)	01.01.2024	14400	403200	1209600	9806600	4191200
14	78 (52 no. -30mm & 26 no. - 6mm)	01.04.2024	15600	436800	1310400	11119200	2885600
15	84 (56 no. -30mm & 28 no. - 6mm)	01.07.2024	16800	470400	1411200	12530400	1489600
16	87 (58 no. -30mm & 29 no. - 6mm)	01.10.2024	17400	487200	1481600	13992000	8000
17	87 (58 no. -30mm & 29 no. - 6mm)	31.12.2024	17400	487200	1481600	15453600	-1453600

follows:

1. 25% of legacy waste will be processed by March-2022.
2. 50% of legacy waste will be processed by March-2023.
3. 75% of legacy waste will be processed by March-2024.
4. 100% of legacy waste will be processed by December-2024.

EDMC is making all efforts to achieve all the above mentioned timeline but there are some constraints as below:

1. As the garbage at SLF site Ghazipur has attained the height of about 65 mtrs. and no space available at ground. EDMC has creating space above the garbage at certain locations for installation of trommels. The trommels are being installed after clearing/ processing a stretch of legacy waste and constructing platform over the legacy waste. Installing the trommels in this way, EDMC has been installed 15 nos. trommels of 300 TPD each at SLF site Ghazipur.
2. At SLF site Ghazipur no space is available for stacking of segregated material.
3. Monsoon period and Winter Season reduces the efficiency of processing the legacy waste.
4. Practical problems like break down of machines/ power supply also hampers the progress.
5. EDMC is densely populated and there is no space for filling of this soil like inert material in such a huge quantity. However EDMC is making all out efforts with other agencies and also signed an MoU with NHAI to use this soil like material in their road construction in 2016 but till date no headway achieved. Earlier EDMC has proposed DDA to construct a missing portion of bund between ISBT to Wazirabad Road on Eastern Bank of Yamuna River. In response to this DDA has informed that this matter will be taken up with PWD & I&FC department of GNCTD. Matter has been taken up with these departments for construction of bund on priority.
6. For disposal of RDF matter is being taken up with cement industries as per the RDF utilization policy of Govt. of India.
7. About 12 mtrs. height in certain stretches of dump has been reduced by biomining and efforts are being made to increase the number of trommels to further reduce the height of dump.

Assistance Required for achieving the target:

- NHAI may be asked to expedite their tender for utilization of processed legacy waste.
- Other agencies like this PWD, DSIDC, I&FC, DDA, Northern Railway, DMRC, NBCC, NHAI may be asked for utilization of soil like inert material in low lying area under their jurisdiction.
- PWD & I&FC may be asked to expedite the construction of missing portion of bund on the eastern side of Yamuna River.
- For transporting of the processed legacy waste environmental cess may be waived off.


Executive Engineer (SLF)

Annexure – IV (b) : AWARENESS, CAPACITY BUILDING AND THEIR TIMELINES

The objective of the Solid Waste Management project designed is to modernize the waste management process, and thus reduce the waste collected in Dhalao, Street Corner Bins and Open Sites. For this purpose, emphasis has been laid for door-to-door collection of waste/street level collection of waste and vehicle-to-vehicle transfer of waste for transportation.

To introduce 3 Rs (Reduce, Re-use and Recycle) so as to reduce the load of disposal of solid waste. For this purpose, the concept of segregation of waste (dry and wet) at household level, separate waste handling chain for different kind of waste and recycling centers at ward level have been envisaged.

The Citizen being one of the most important stakeholder in the project, due emphasis is required to have an IEC strategy for increased participation of citizens and residents.

The IEC strategy shall be prepared with an objective to create awareness among target audience and ensure public participation in the municipal solid waste management program envisaged.

This IEC strategy would provide the framework and facilitate EAST DMC to address the communication needs related to implementation of sanitation and waste management in the city.

The main objectives of developing and implementing the IEC campaign are to change the attitude and behavior of the target audience through:

- Increasing level of awareness on the concept of waste accumulation and the way it affects their lives.
- Inducing the waste generators to adopt modern waste management system introduced by EAST DMC such as segregation of waste as 'Dry & Wet Waste' at source, usage of 'door-to-door' and 'street level' collection systems, storage of segregated waste in separate bins, separation of hazardous waste from the regular wastes and safe disposal of all the segregated waste as per the designed waste management system.
- Sharing information about the waste management system placed by the municipal corporation like schedule of collection of different kinds wastes,

free and chargeable facilities, change or update in any fixed schedule/s or route/s, emergency or on-demand facilities, complaint redressal numbers, customer care centres etc.

- Promoting public participation in the successful operation and maintenance of waste management system through sensitisation of citizens, RWAs, Traders Associations, etc.
- Propagating the message that the "Clean City" is a pride of every citizen.
- Approaching Zero Waste situation in due course

1.1. IEC Strategy adopted by East DMC

- a. The East DMC shall its own cost engage a-Consultant to aid and advise the East DMC for carrying out the media campaign.
- b. East DMC to procure all material for providing IEC campaign its own cost
- c. EDMC to implement the IEC campaign.

1.2. Roles of various Agencies

a. Communication Strategy Partner (CSP)/Consultant

- Prepare an IEC strategy for 2040 and budget estimates for the same.
- Define role of East DMC, and CSP in the IEC campaign.
- Prepare suitable strategies for various target groups such as different housing groups (LIG/HIG/MIG/JJ Clusters/ Villages/ Resettlement Colonies/Unauthorized / Commercial Area/ Markets/ daily markets/ SabziMandi/ School and College students etc.
- Establish two way communication mechanisms with stakeholders of the project such as citizens, the media, RWAs/Trade Organizations on one hand and the implementing agencies & EDMC on the other hand.
- Prepare and design Short Films, Advertisement Campaign, Posters, Brochures, Flax, Hoardings, Pamphlets, Stickers, Radio jingles, etc. for the campaign
- Monitor quality and accuracy of contents of the advertisement material
- Lay out ward wise annual plan for conducting campaign events such as: meetings, workshops, street corner plays, movies etc. Detailing number of event content, schedule, target group which are to be conducted by

the Concessionaire in association with RWAs/Trade Associations/ School and collage Managements/ NGOs and East DMC, etc.

- Train resource persons from the East DMC, RWA/ Trade Associations etc. for propagating awareness
- Conduct workshops for staff East DMC and training them by using manuals and other IEC materials
- Any other activity as may be approved by East DMC.

b. The Role of EAST DMC

- Provide all advertising and campaign material to the Concessionaire at its own cost for the IEC campaign during entire concession period
- Printing of campaign materials like brochures, posters, stickers etc., at its own cost and making them available to concessionaires as per plan provided by CSP
- Pursue with various media including cinema halls in public interest to create awareness.
- Issue of Advertisements, Films, Radio Jingles etc., to media at its own cost
- Identifying resource person from the EAST DMC / any other local organizations and training them to propagate awareness amongst staff on continuous basis
- Conducting orientation programs for line department staff.
- Attend events organized EDMC.

Annexure – IV (c) : DETAILS OF EXISTING/PROPOSED PROCESSING FACILITIES ON ALREADY ALLOTTED LAND

Page | 1 Land requirement for various activities for solid waste management upto 2050

Name of Local Body :- East Delhi Municipal Corporation

Present solid waste generation (in MT) :- 2600

Expected solid waste generation 2025(in MT) :- 4000

Expected solid waste generation 2030(in MT) :- 5000

Expected solid waste generation 2040(in MT) :- 6000

Expected solid waste generation 2050(in MT) :- 7500

Details of existing/proposed processing facilities on already allotted land

S. No	Location	Land Owning agency	Area in Acres	Year of allotment	Details of facilities		Present Status	Remarks
					Type	Capacity (in MT)		
1.	Ghazipur	Delhi Govt.	5.6	2008	Waste to Energy	1300	Operational	PPP Facility upto 2035
2.	Shastri Park	DDA	5	2018	C&D Plant	1000	Operational	PPP upto 2030
3.	Vinod Nagar	DDA	2.88	2014	Workshop/ Parking	-	Operational	PPP upto 2029
4.	Geeta Colony	DDA	9.55	2018	Workshop/Parking	-	Operational	PPP upto 2029 not started due to public resistance/ court order
5.	Singhola (Narela)	DDA	7.2	2018	Disposal of Silt	-	Operational	Saturated
6.	Ghonda Gujran	DDA	42.5	2019	Integrated waste management facilities	2000	Under process	To be developed with NTPC and likely to be operational by 2022
Total processing capacity of SWM present /proposed (in MT)						1300/3300		

Details of existing /proposed landfill on already allotted land

S. no	Location	Land Owning agency	Area in Acres	Year of allotment	Present Status	Remarks
1.	Ghazipur	DDA	70	1984	over saturated	Remediation work started

Details of land requirement for future activities in phases upto 2050

S. no	Location	Land Owning agency	Land Requirement (Area in Acres)	Purpose	Capacity	Time for start of operation after allotment	Remarks
1.	Sonia Vihar	DDA	100	Disposal of rejects/inert	200 TPD For 20 Years	18 Months	
2.	CBD Ground Karkardoma	DDA	2	Bio-methanization plant/ Accelerated composting / MRF	10-50 TPD	18 Months	
3.	CBD ground Karkardooma	DDA	2	Bio-methanization plant/ Accelerated composting / MRF	10-50 TPD	18 Months	Accelerated
4.	Near Paper Mkt. Ghazipur.	DDA	2	Bio-methanization plant/ Accelerated composting / MRF	10-50 TPD	18 Months	
5.	Behind MC Pry. School Khichripur.	DDA	2	Bio-methanization plant/ Accelerated composting / MRF	10-50 TPD	18 Months	

6	Near Karkardoom Metro Station	DDA	2	Bio-methanization plant/ Accelerated composting / MRF	10-50 TPD	18 Months	
7	Infront of Chand Cinema Kalyanpuri.	DDA	2	Bio-methanization plant/ Accelerated composting / MRF	10-50 TPD	18 Months	
8	Behind Buland Maszid Shastri Park	DDA	2	Bio-methanization plant/ Accelerated composting / MRF	10-50 TPD	18 Months	
9	Near red fox Hospital	DDA	2	Bio-methanization plant/ Accelerated composting / MRF	10-50 TPD	18 Months	
10	Open Land in between Jhilmil drain and ITI Vivek Vihar Boundary	DDA	2	Bio-methanization plant/ Accelerated composting / MRF	10-50 TPD	18 Months	
11	D-Block Krishna Nagar.	DDA	2	Bio-methanization plant/ Accelerated composting / MRF	10-50 TPD	18 Months	
12	Ambedkar Park DDA land Ghazipur Village		3	Bio-methanization plant/ Accelerated composting / MRF	10-50 TPD	18 Months	
13	50 TPD Biomethanization with gas		2	Bio-methanization plant/ Accelerated composting / MRF	10-50 TPD	18 Months	
14	Shastri Park DDA road		2	Bio-methanization plant/ Accelerated composting / MRF	10-50 TPD	18 Months	
15	Sewa Dham road behind open		2	Bio-methanization plant/ Accelerated composting / MRF	10-50 TPD	18 Months	
16	Safeda Park		2	Bio-methanization plant/ Accelerated composting / MRF	10-50 TPD	18 Months	
17	Old Police Station Khajuri		2	Bio-methanization plant/ Accelerated composting / MRF	10-50 TPD	18 Months	
18	In front of furniture centre		2	Bio-methanization plant/ Accelerated composting / MRF	10-50 TPD	18 Months	
19	Behind gagan Cinema		2	Bio-methanization plant/ Accelerated composting / MRF	10-50 TPD	18 Months	
20	Vacant Plot behind Suraksha Nursing Home		2	Bio-methanization plant/ Accelerated composting / MRF	10-50 TPD	18 Months	

Details of low lying area identified for disposal of inert from legacy waste

S. no	Location	Land Owning agency/ Embankment filling	Land available in Acres	Estimated Volume of filling (In CuM)	Time for filling	remarks
1.	Area behind Dayanand Vihar upto Railway Line	DDA	Over 100 acres	80000	12 months	
2.	Shastri Park District Centre & Facility Centre	DDA	Appx. 40 acres	20000	6 months	
3.	Central Business District Shashdara	DDA	Appx. 50 acres	25000	6months	
4.	Near College of Wazirabad Road:	DDA	Appx. 10 acres	50000	12 months	
5.	RPF camp, Police Line	DDA/Delhi Police	Appx. 60 acres	50000	12 months	
6.	Low lying area along Meerut Expressway towards	DDA	Appx. 2 acres	20000	3 months	

	Akshardham					
7.	Site opposite Kondli STP near Noida Border at Kondli.	DDA	Appx. 8 acres	70000	12 months	
8.	Mandoli Extension	DDA	Appx. 10 acres	75000	12months	
9.	Land for district Centre at Dilshad Guarden	DDA	Appx. 12 acres	50000	12 months	
10.	Mayur Vihar Ph-II facility cum shoping centre opposite Chand Cinema		Appx. 20 acres	100000	10 month	

ANNEXURE V: SERVICE PLAN - SOUTH DELHI MUNICIPAL CORPORATION (SDMC)

GYANESH BHARTI

IAS

Commissioner



SOUTH DELHI MUNICIPAL CORPORATION
Dr. SPM Civic Centre, 9th Floor (E1 Block)
Jawaharlal Nehru Marg
New Delhi-110 002

Phones : 011-23225901-5902
Fax : 011-23225903

D.O. NO.D-027/COM/SDMC/2021
Dated: 28/01/2021

अति० आयुक्त (सो०)-II
डावरी सं० 75
दिनांक 11/2/2021

आयुक्त (योजना) कार्यालय
डावरी सं० I-123
दिनांक 29.1.2021

VC Office
Dy. No. 21-DA
Dated 28/1/21

Respected Sir,

Kindly refer to your d.o. letter No.PS/VC/DDA/2021/05 dated 11th January, 2021 regarding submission of Service Plan with regard to Municipal Solid Waste Management (MSWM) for preparation of Master Plan for Delhi 2041.

As desired, a copy of the said Service Plan for MSW Management, in the desired template, is enclosed.

With Regds

Yours sincerely,

(GYANESH BHARTI)

डावरी संख्या 45
दिनांक 01/02/2021
उप-निदेशक (योजना) एच.सी.एन.आर., डी.डी.ए.

Com. (P/G)
Shri Anurag Jain
Encl : as above

Shri Anurag Jain,
Vice Chairman,
Delhi Development Authority,
Vikas Sadan, INA
New Delhi-110023.

11/2/2021
AC (PA) / II

J.B.
02/01/2021

D.O. (reg) / MMA

Kindly Share it with NCHA.

AD (Pg) - II, MMA
09/02/2021
Ms. Nisha, PA

Dravid
08/02/2021

PERSPECTIVE PLAN FOR INFRASTRUCTURE SERVICE FOR DELHI - 2041
AGENCY: SOUTH DELHI MUNICIPAL CORPORATION

1. MUNICIPAL SOLID WASTE MANAGEMENT IN SDMC:

Aspect	Information Required
Generation	<p>Approx. 7000 TPD in 2040-41</p> <p>Estimated green waste- (biodegradable waste): @36%= 2520 TPD</p> <p>Estimated dry waste: @34% = 2380 TPD (Reusable waste paper, textile, plastic and rubber)</p> <p>Inert material @30% = 2100 TPD)</p>
Management strategy	<p>(Collection, segregation and processing)</p> <p>Door to door collection, segregation of green waste (biodegradable waste) and reusable waste through concessionaires and involvement of waste pickers in all four zones of SDMC. Green waste is being processed at Compost Plant Okhla, decentralization bio-methanation plants and through home composting.</p> <p>Inert (C&D waste) is collected in two zones 8t ward level through concessionaires/private contractors and the same is being processed at Bakarwala C&D waste plant and proposed C&D waste plant. Another C&D waste processing facility is proposed at Maidan garhi/Tekhhand for South zone and Central zone.</p> <p>(Improving collection and segregation efficiency) RWA/ Mohalla/ Market association/ Solid waste zone/Wards etc.)</p> <p>Improving collection, segregation efficiency at ward level by awareness through public notices in newspapers, distribution of pamphlets, radios, nukkad natak, education in schools, and interaction with RWAs through concessionaries by involvement of waste pickers. Interaction with RWAs through concessionaires by involvement of waste pickers.</p> <p>Wet waste is processed through composting at Compost plant, bio-methanation plants and decentralization composting at ward level. Three, 1 TPD and 5 TPD plants are presently functioning. One, 1 TPD and 5 TPD are under construction. However, such plants are proposed subject to availability of land. Further, ward composting has been started locally through pits.</p> <p>Material Recovery Facility (MRF) to be setup at ward level for sorting of waste material at FCTS/Dhalaos.</p> <p>Some dhalaos where is possible will be used as material recovery facilities at ward level.</p> <p>Reclamation of landfill site at Okhla (dumpsite) is being done through bio mining of legacy waste.</p> <p>Reuse/Recyclable of legacy waste is being utilized is as under: - Refuse Derived Fuel (RDF): - Waste to Energy plant Okhla and private industries.</p>

	<p>Inert: - NTPC Eco park and Tajpur pit. C&D waste: - At SLF Okhla to cover the dumped waste and making of approaches.</p>
	<p>After completion of bio-mining/remediation of legacy, waste at existing SLF Okhla (dumpsite) will be converted into Engineered/Scientific Landfill/solid Waste Management facility.</p> <p>Establishing the system to recognize organizations of waste pickers and Establish a system for integration of the various waste pickers to facilitate their participation in solid waste management including segregation and door-to-door collection of waste through concessionaires ensuring safety, hygiene and healthy working conditions for the workers.</p> <p>Marketing of compost is being done through concessionaires of composite plant. Regarding other reusable/recycled products is being done through departmental as well as contractors and private participation.</p> <p>Awareness, capacity building and behavioural changes programs is being done through concessionaire as well as sanitation officers of department.</p>
Key infrastructure or special projects Proposed for the plan period, along with details of projects and their timelines.	<ol style="list-style-type: none"> 1. One Compost Plant Okhla, having capacity of 200 MT of MSW per day for making compost is being operated by concessionaire, M/s IL&FS. 2. One waste to Energy Plant at Okhla having capacity of 1950 MT of MSW per day to produce 23 MW of power is being operated by concessionaire. 3. Another Waste to Energy Plant at Tehkhand having capacity of 2000 MT of Solid waste per day to 25 MW of power is under construction. This plant is likely to be functional in 2022. 4. Engineered Sanitary landfill at Tehkhand is to be developed up to Dec 2022. 5. Plant for processing of Refuse Derived Fuel (RDF) Tehkhand will be setup by Indian Oil corporation and NTPC. 6. Plan for processing of plastic waste at Tehkhand will be setup by Indian Institute of Petroleum Research (IIPR). 7. A 200 TPD material recovery facility is proposed at Tehkhand/Okhla under PPP model.
Future land requirement (if any) for Scientific (engineered) landfill sites, provided only inert are to be dumped.	<p>Future land requirement has been prepared and the same is annexed herewith as annexure V (a).</p>

2. Targets to be included in the MPD-2041:

S.no	Component	Current status	Target for 2041	Phasing plan
1	MSW collection efficiency	MSW collection in some areas is being done through concessionaires by involvement of waste pickers in all four zones of SDMC.	Door to door, collection of MSW in entire area of SDMC will be done through concessionaires by involvement of waste pickers.	90% up to 2021 and 100% up to 2025 Subject to the availability of funds and lands.
2	MSW segregation efficiency	MSW segregation in some areas is being done through concessionaires by involvement of waste pickers in all four zones of SDMC.	Segregation of MSW in entire area of SDMC will be done through concessionaires by involvement of waste pickers.	90% up to 2021 and 100% up to 2025 Subject to the availability of funds and lands.
3	Percentage of green waste biodegradable (e.g., composted or any other processing method) locally	10% of green waste is being processed at Compost Plant Okhla, bio-methanation plants, composters, compost pits etc. at ward level.	100% of green waste (biodegradable waste) will be processed at compost plants, bio-methanation plants, composters, compost pits etc. at ward level.	25% up to 2021 50% up to 2023 75% up to 2025 100% up to 2030 Subject to the availability of funds and lands.
4	Percentage of recyclable waste sent to recycling centres/industry	About 10% of recyclable waste is being sent to recycling centres/industry through waste pickers and private participation.	100% of recyclable waste will be sent to recycling centres/industry through waste Pickers and private	25% up to 2022 50% up to 2023 70% up to 2025 100% up to 2030 Subject to the availability of funds and

			participation.	lands.
5	Identification and listing of informal waste workers and units integrated with the formal MSW management plan	Identification and listing of informal waste workers and units integrated with the formal MSW management plan is being done through concessionaires in all four zones of SDMC.	100% Identification and listing of informal waste workers and units integrated with the formal MSW Management plan will be done through concessionaires in all four zones of SDMC.	25% up to 2021 50% up to 2023 75% up to 2025 100% up to 2030 Subject to the availability of funds and lands.
6	Reduction in waste going to land fill sites	Efforts are being done in reduction of waste going landfill site through processing of waste at card level and setting up of new Waste to Energy Plants, decentralized, composting.	Likely to be done in 2030.	80% up to 2023 100% up to 2030 Subject to the availability of funds and lands.
7	Reclamation of land fill sites (preening and processing of legacy wastes)	Reclamation of landfill site at Okhla (dumpsite) is being done through bio mining of legacy waste. Thereafter this land will be converted into green/used for setting up Solid Waste Management facilities.	Likely to be completed in 2030.	100% up to 2030 Subject to the availability of funds and lands.

ANNEXURE – V (a)

REQUIREMENT OF LAND AGAINST THE 1500 ACRES AS PER PROVISION IN DELHI MASTER PLAN 2021 FOR IMPLEMENTATION OF SOLID WASTE MANAGEMENT FACILITIES IN DIFFERENT LOCATIONS IN ALL FOUR ZONES OF SDMC :-

Sr. No.	Name of facilities	Facilities available (In nos.)	Facilities required (In nos.)	Approx. Land required (in sqm./acres)	Approx. Land available (in sqm./acres)	Approx. Remaining land required (in acres)
1	Community Bins/ Receptacles/ (FCTS/PCTS)	92	102	102x300 = 30600 sqm. Or 7.5 acres	92x 250 sq.m or 5.7 acres	1.80
2	Material Recovery Facilities (MRF)	Nil	2x4=8	8x2=16 acres	Nil	16.00
3	Facilities for Kabariwala	Nil	2x4=8	8x1=8 acres	Nil	800
4	Attendance Office for SI/ASI	30	1x74= 74	74x100 =7400 sqm or 1.82 acres	Nil	1.82
5	Training Centre facilities for waste pickers and SDMC staff	Nil	1x4=4	4x600= 2400 sqm. or 0.6 acres	Nil	0.60
6	Workshops and parking space for vehicles engaged in Solid Waste Management.	2	4x4=16	4x4=16 acres	8.0 acres	8.00
7	Processing Disposal of Solid Waste, C&D waste and Residue	1	2	67+425= 492 acres	67 acres	425.00
8	Disposal of inert like soil fine fraction etc.	1	2	10+300=310 acres	10 acres	300.00
9	Processing/ disposal of Plastic waste	Nil	4	4x2=8 acres	Nil	8.00

	Total	859.92 acres	90.70 acres	769.22 acres
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ANNEXURE VI: SERVICE PLAN – NORTH DELHI MUNICIPAL CORPORATION (NORTH DMC)

Sanjay Goel, IAS
Commissioner



NORTH DELHI MUNICIPAL CORPORATION

Office of the Commissioner
4th floor, Dr. SPM Civic Centre
JLN Marg, Delhi- 110 002

VC Office

Op. No. 97-DA

Dated 8/4/21

Dated: 7/4/21

No. D-78/CMR/NDMC/CC/9091

The Vice Chairman,
Delhi Development Authority,
Vikas Sadan, INA,
New Delhi- 110023.

Subject: Service Plan for Municipal Solid Waste Management (MSWM) to be integrated in MPD, 2041

Reference: D.O. letter no. PS/VC/DDA/2021/05 dated 11.1.2021

Dear Sir,

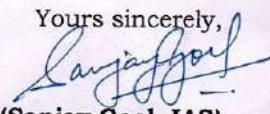
Please find attached herewith copy of Service Plan for Municipal Solid Waste Management (MSWM) & templates to be integrated in Master Plan document, 2041 pertaining to North DMC, sent earlier vide letter no. D-in-C/DEMS/North DMC/2021/D-7 dated 28.1.2021 for your kind information & perusal. The Part C & D of "Annexure-A" of the said report regarding land requirements for various activities for SWM upto 2041 have been modified for additional land requirements apart from the details/ information, already sent.

Accordingly, you are, requested, to please look into the matter and Service Plan for Municipal Solid Waste Management (MSWM) pertaining to North DMC, may be integrated in Master Plan document, 2041 for effective Solid Waste Management in future.

Thanking you,

Encl.: as above

Com (PS)
/s/
9/4

Yours sincerely,

(Sanjay Goel, IAS)



NORTH DELHI MUNICIPAL CORPORATION
OFFICE OF THE DIRECTOR-IN-CHIEF (DEMS)
6th Floor, Dr. SPM Civic Centre, J.L.N. Marg
NEW DELHI-110002



No. - D-m-c DEMS/North DMC/2021/D-7

Dated: 28-01-2021

The Vice Chairman,
Delhi Development Authority,
Vikas Sadan, INA,
New Delhi- 110023.

Subject: Service Plan for Municipal Solid Waste Management (MSWM)

Reference: D.O. letter no. PS/VC/DDA/2021/05 dated 11.1.2021

Sir,

Please find attached herewith Service Plan for Municipal Solid Waste Management (MSWM) & templates to be integrated in Master Plan document, 2041 pertaining to North DMC. It is being forwarded with the approval of the worthy Commissioner, North DMC.

Thanking you,

Encl.: as above

Yours sincerely,

28/1/2021
Director-in-Chief (DEMS)

PERSPECTIVE PLAN FOR INFRASTRUCTURE SERVICE FOR DELHI - 2041
AGENCY: NORTH DELHI MUNICIPAL CORPORATION

1. MUNICIPAL SOLID WASTE MANAGEMENT (SWM) IN NORTH DMC

ASPECT	INFORMATION REQUIRED
GENERATION	Total MSW: 9,000 TPD [assuming population of North DMC 1.80 crore (out of total population of Delhi: 4 crore in 2041)] Present MSW Generation is 4500 TPD
	Green (wet) waste: 3,600 TPD (Bio-degradable) Dry waste: 5,400 TPD (Non Bio-degradable)
MANAGEMENT STRATEGY	<p><u>Present status of SWM is as under:</u></p> <p>Present population of area under the jurisdiction of North DMC is about 90 lacs having about 18 lacs residential units. At present, about 4500 TPD of Municipal Solid Waste (MSW) is generated and collected in six zones per day. Out of which, about 2300 TPD of MSW is collected from Keshav Puram, Civil Lines & Rohini Zones which is collected, processed and disposed off scientifically as per SWM Rules-2016 at Waste Processing Facility/ Waste to Energy (WTE) Plant at Bawana in Narela. The remaining 2200 TPD waste collected from City-S.P, Karol Bagh & Narela Zones is being dumped at Bhalswa landfill site without processing/ treatment. As such there a gap of 2200 TPD of MSW which needs to be addressed and processed. Per capita per day solid waste generation is 0.50 kg (500 gm).</p> <p>In order to ensure scientific disposal of the aforesaid remaining MSW, North DMC has planned to set up another WTE Plant either at Bhalswa SLF site or at Rani Khera in Narela.</p> <p>In pursuance of the matter, an MoU between Indian Oil Corporation Ltd. (IOCL) and North DMC has been signed on 19.1.2021 to set up an Integrated Waste to Energy Facility in the jurisdiction of North DMC by processing of the Municipal Solid Waste.</p> <p>Accordingly, long term tender incorporating provisions of SWM Rules, 2016, for collection & transportation of MSW for remaining three zones i.e. City-S.P, Karol Bagh & Narela Zones have been invited.</p> <p>Management Plan for Solid Waste Management:</p> <ol style="list-style-type: none"> About 55% of solid waste generated in the jurisdiction of North DMC is being processed & inerts are also disposed off scientifically at Narela- Bawana Waste Processing Facility. Salient features of this project/ agreement are as under: <ul style="list-style-type: none"> It is a long term 20 years agreement based on PPP model executed on 17.7.2009 It is an integrated contract for end to end solution of solid waste which includes door-to-door collection (primary), transportation

	<p>from secondary storage depots to the Narela-Bawana Waste Processing Facility, processing (compost & R DF), WTE Plant and disposal of inerts at engineered landfill site.</p> <ul style="list-style-type: none"> • WTE Plant of 24 MW capacity is also operational. • Contract is valid upto year 2029. • Concession area comprises of 64 mpl. Wards (out of total 104 mpl. wards) • At present, about 2400-2500 MT of solid waste is received at this plant & by 2029, waste generation is expected to be 3500TPD. • Regular awareness programs through IEC activities etc. are carried out for reduction, re-use & recycle (3Rs) as well as emphasis is given on segregation of waste at source to improve the SWM. Ultimately, it will reduce the load on the Processing Facilities/ landfill sites. The residents are also made aware for utilising waste as wealth through household/ local composting. <ol style="list-style-type: none"> 2. For remaining waste (45 %), an MOU has been signed between Indian Oil Corporation Ltd. (IOCL) and North DMC has been signed on 19.1.2021 to set up Integrated Waste to Energy Facilities in the jurisdiction of North DMC by processing of the Municipal Solid Waste at Rani Khera. Likely date of commissioning of this plant is Dec., 2022. 3. On pilot basis, decentralised bio-methanation/ compost plants of 5TPD (4 NOS.) & 1TPD (6 NOS.) are being installed under the jurisdiction of North DMC, out of which 2 nos. 5TPD & 3 nos. 1TPD plants are operational. On the basis of success story, these plants would be replicated in all 104 municipal wards. For installation of these plants, adequate land is also required specifically meant for this purposes. Provision of land for solid waste management shall be duly earmarked in the proposed layout plans before notification. 4. 50 TPD recyclable plastic waste processing plant/ facility has also been proposed at Tikri Kalan in Narela. For which, RFP/ tender document is being prepared. 5. Land requirement for various activities for solid waste management upto the year 2041 is annexed as "Annexure – VI (a)". 6. 200 TPD Bio-methanation gas plant based on cow dung is under construction at Bhalswa Dairy and which is likely to commence operation by 31.12.2021. 7. Material Recovery Facility (MRF) having capacity of 4 TPD for sorting of recyclable materials such as paper, plastic, metal, glass etc. will be commissioned at Zakhira shortly. Similar MRFs are proposed in each ward depending upon the availability of land. Minimum land requirement is 1000 sqm for setting up of an MRF.
--	--

	8. Remediation of legacy waste from SLF Bhalswa, which' is in operation since 1994, is being carried out. Out of total 80 lac MT of legacy waste, 11.90 MT has been bio-mined through trammels. Reclamation of the land is likely to be completed by June, 2022.
--	--

2. Key targets that will be included in MPD-2041 Action Plan:

Component	Current Status	Target for 2041	Phasing Plan
MSW collection efficiency	100%	100%	N.A.
MSW Segregation efficiency	55%	100%	By 31.12.2023
Percentage of green waste processed (e.g. composted or another processing method) locally	55% of 1800 TPD = 990 TPD Say 1000 TPD	100% of 6,000 TPD	By 31.12.2023
Percentage of recyclable waste sent to recycling centres/ industry	50%	100%	By 31.12.2023
Identification and listing of informal waste workers and units (recyclers, kabariwalas, rag pickers etc.)	839 nos. of informal waste workers identified	100%	25% by Dec, 22
			50% by Dec, 24
			75% by Dec, 26
			100% by Dec, 30
Percentage of identified informal waste workers and units integrated with the formal MSW management plan	---	---	As above
Reduction in waste going to land fill sites	25-30%	80%	5% in every 5 years
Reclamation of land fill sites (greening and processing of legacy wastes)	ONE no. at Bhalswa	---	By June, 2024

Annexure - VI (a)

Land requirement for various activities for solid waste management up to 2041:

NORTH DELHI MUNICIPAL CORPORATION

Land requirement for various activities for solid waste management upto 2041

Name of Local Body :- North Delhi Municipal Corporation:

Present solid waste generation : 4500 MT
 Expected solid waste generation 2025 : 5350 MT
 Expected solid waste generation 2030 : 6350 MT
 Expected solid waste generation 2041 : 9000 MT

(A) Details of existing/proposed processing facilities on already allotted land:

S. N.	Location	Land Owning agency	Area in Acres	Year of allotment	Details of facilities		Present Status	Remarks
					Type	Capacity (in MT)		
1.	Narela-Bawana	DDA	156.28	14.6.2007	Integrated Waste Processing Facility which includes windrow composting, RDF, WtE Plant & Engineered Landfill	2300	Operational	(i) PPP Facility upto 2029. land was handed over to the concessionaire(M/s DMSWSL) in the year 2009 (ii) 100 acre: Integrated waste processing facility alongwith Engineered Landfill and is in operation since September 2011 consisting of 24 MW WTE Plant, Engineered landfill, Compost Plant & Green Belt of width 15 m (includes work up to year 2029) (iii) 14 acres:- Land handed over to DSIIDC in year 2015 for hazardous waste in terms direction dated 28.04.2015 of Hon'ble NGT. (iv) 30 acre: PPP Facility for solid waste management of Narela Zone for Workshop, Parking Facility etc. for solid waste management (650 TPD)

2	Rani Khera	DDA	55.48	22.3.2016	1. C&D Processing Facility (5.97 acre) 2. Proposed Integrated WtE Plant/ Processing Facility (49.51 acre)	1000 TPD 2500 TPD	—	PPP facility upto 2035. Plant under construction by concessionaire(ILFS) To be utilized for installation of WtE Plant in association with IOCL. The MoU with IOCL has been executed on 19.01.2021 for setting up of Integrated Waste to Energy Facilities in the jurisdiction of North DMC by processing of the Municipal Solid Waste at Rani Khera.
3.	Near PVC Bazar, Tikri Kalan	DDA	4.00 Approx	16.6.2014	Proposed for Plastic Waste Processing Facility	50-100 TPD of plastic waste	Under Process	Tender document is being prepared for processing of the plastic waste

(B) Details of existing / proposed landfill on already allotted land

S. no	Location	Land Owning agency	Area in Acres	Year of allotment	Present Status	Remarks
1.	Bhalswa near Mukarba Chowk on GT Road	North DMC	70.00	1994	It is an un-engineered landfill since its inception. At present, about 2300-2500 TPD fresh MSW is received at this dumpsite. On the directions of Hon'ble NGT, bio-mining/ bio-remediation of legacy waste of about 80 lac MT has been started with the help of trommels.	Remediation work in progress. About 11 lac MT of legacy waste has been processed.

(C) Details of land requirement for future activities in phases:

S. N.	Location	Land Owning agency	Land Requirement (Area in Acres)	Purpose	Capacity in TPD	Time for start of operation after allotment	Remarks
1.	Suitable land for SWM/ Sanitary Landfill	DDA	100 (Minimum)	Waste Processing Facility & setting up of Sanitary Landfill as per Schedule -I of SWM Rules, 2016	4000-4500 TPD	12 months	The land proposed/ allocated shall be free from all encumbrances & suitable for SWM
2.	Different locations in zones (in 104 wards)	DDA	500 sqm per Mpl. Ward	Decentralized Waste Processing/ MRF	5	12 months	In the layout plans, land for SWM be earmarked and be duly notified.
3.	Different locations in zones (in 104 wards)	DDA	1000 sqm per Mpl. Ward	Transfer Stations cum Material Recovery Facility (MRF)	5-10	12 months	In the layout plans, land for SWM be earmarked and be duly notified.

(D) Details of low lying area identified for disposal of inert from legacy waste:

S. N.	Location	Land Owning agency	Land available in Acres	Estimated Volume of filling (in cum)	Time for filling (months)	Remarks
1.	Low Lying area Surroundings of Mukundpur School	North DMC	33	2,33,700	9 months	Disposal of rejects/inert
2.	Low Lying area from Bhalswa to PWD Road	North DMC	5.7	1,61,470	5 months	Disposal of rejects/inert
3.	Main Kanjhawala (Road No.3) near PWD office	DDA	2.06		Approx. 2 years time	Disposal of rejects/inert
4.	Sector-23, Rohini near DCP office 15,000 sqyd.)	DDA	3.1			Disposal of rejects/inert
5.	Road from Barat Vihar to Pansali Colony	DDA	2.06			Disposal of rejects/inert
6.	Begaumpur A-block to Barat Vihar near Begumpur Police Station	DDA	3.1			Disposal of rejects/inert
7.	Near Kali Mata Mandir Barwala Road	DDA	5.17			Disposal of rejects/inert
8.	Inert materials can be utilized by DDA for filling low lying areas In urban villages as well as lands pockets In Rohini, Narcla, Burari	DDA				Disposal of rejects/inert
9.	DDA land near Burari Chowk	DDA				Disposal of rejects/inert
10.	Sector 39, 40 and 41. Rohini DDA land	DDA				Disposal of rejects/inert
11.	Low lying areas in unauthorized colonies	I&FC Deptt., DSIIDC				Disposal of rejects/inert
12.	Construction of embankments of Highways	NHAI				Disposal of rejects/inert

Bio-mining of legacy waste is already in progress at Bhalswa in compliance of the directions of Hon'ble NGT. About 60 lakh MT of inert material is likely to be generated during bio-mining of legacy waste. For disposal of this inert, about **500 acre** of low lying land area is required (taking average filling of about **2.00 metre depth**). The ownership of the land will remain with the DDA. This land area requirement is in addition to the details submitted earlier.

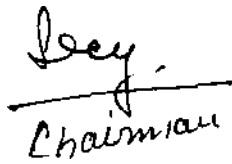
ANNEXURE VII: SERVICE PLAN – NEW DELHI MUNICIPAL COUNCIL (NDMC)

From: "Sh Dharmendra" <chairperson@ndmc.gov.in>
To: "Manisha Gupta" <manisha.gupta2031@dda.gov.in>
Cc: "Murari Lal" <director.coordination@ndmc.gov.in>, "Ramesh Kumar" <moh@ndmc.gov.in>, "Dr. Brij Mohan Mishra" <secretary@ndmc.gov.in>
Sent: Friday, April 9, 2021 8:01:33 PM
Subject: Service Plan for Municipal Solid Waste Management

Madam,

I am directed to attach herewith the write-up/status on the service plan for municipal solid waste management w.r.t. MPD 41 Action Plan.

Venkata Sastry
Head Assistant
NDMC, New Delhi
23743579
23742269


Chairman


28/1/2021

PERSPECTIVE PLAN FOR INFRASTRUCTURE SERVICE FOR DELHI - 2041
AGENCY: NEW DELHI MUNICIPAL COUNCIL (NDMC)

Consider the following approximate population projections for New Delhi Municipal Council:

At present, the fixed population of New Delhi Municipal Council is 2.67 Lakh as per 2011 census.

Low Growth Scenario	Medium Growth Scenario	High Growth Scenario
3 lakhs	3.2 lakhs	3.5 lakhs

The service action plan for master plan of management of Solid Waste of New Delhi Municipal Council for 2041 is as under:

1. MUNICIPAL SOLID WASTE MANAGEMENT (SWM) IN NORTH DMC

ASPECT	INFORMATION REQUIRED	
GENERATION	Total MSW likely to be generated	350 – 400 MT
	Estimates of green waste, dry waste (reusable waste and inert material)	100 MT Wet waste 250 -300 MT Dry waste
MANAGEMENT STRATEGY	Separate management plans (collection, segregation and processing) for;	
	Green Waste	Green waste — Organic waste convertors, Home Composting, compost pits, Biogas Plant and compost plant Okhla (for 100 MT Wet Waste}
	Reusable Waste	Reusable Waste — 25 MT for recycling (NGOs and recyclers)
	Inerts	Inert — Sent to SDMC landfill site from Waste to Energy Plant, Okhla
	Management plans to include information regarding the following aspects;	
	Improving collection, segregation efficiency at local level (RWA/Mohalla / Market Association / Solid Waste Zone/ wards etc.)	Door to door collection of waste and its segregation as per the Solid Waste management Rules 2016 i.e., Wet Waste, Dry Waste and Domestic Hazardous Waste.
	Maximizing wet waste processing (e.g., Composting, bio-methanation etc.) locally	Already explained above.
	Improving sorting and material recovery (MPD will recommend repurposing of dhalaos as material recovery facilities at the decentralized level) etc.	Segregation of waste in situ and also construction of Material Recovery facility for micro segregation of dry

		waste.
	Reclamation of landfill sites and reuse/ recycle of legacy waste	Does not pertain to New Delhi Municipal Council
	Conversion of existing landfills to engineered / scientific landfills	Does not pertain to New Delhi Municipal Council
	Special plans for; Integration of informal sector in core SWM system (for improved management vis-a-vis ensuring safety, hygiene and healthy work conditions for the workers.	Already integrated and providing the mentioned conditions.
	Marketing strategies for compost and other reusable / recycled products).	The compost produced shall be used in horticulture department of NDMC itself. The reusable / recyclables shall be handed over to authorized recyclers.
	Awareness, capacity building and behavioral changes programs.	Already are being run by NDMC in full swing. The capacity and behaviors changes are being evaluated from time to time.

2. Key targets that will be included in MPD-2041 Action Plan:

Component	Current Status	Target for 2041	Phasing Plan
MSW collection efficiency	100%	100%	N.A.
MSW Segregation efficiency	100%	100%	100%
Percentage of green waste processed (e.g., composted or another processing method) locally	100%	100%	100%
Percentage of recyclable waste sent to recycling centres/ industry	20%	100%	Increase by 10% per year
Identification and listing of informal waste workers and units (recyclers, kabariwalas, rag pickers etc.)	100% (already done)	100%	100% done
Percentage of identified informal waste workers and units integrated with the formal MSW management plan	100%	100%	100% done
Reduction in waste going to land fill sites	Does not pertain to New Delhi	Does not pertain to New	Does not pertain to New Delhi Municipal

	Municipal Council	Delhi Municipal Council	Council
Reclamation of land fill sites (greening and processing of legacy wastes)	Does not pertain to New Delhi Municipal Council	Does not pertain to New Delhi Municipal Council	Does not pertain to New Delhi Municipal Council

ANNEXURE VIII: SERVICE PLAN - DEPARTMENT OF ENVIRONMENT, GNCTD AND DELHI POLLUTION CONTROL COMMITTEE (DPCC)

DEPARTMENT OF ENVIRONMENT
GOVT. OF NCT OF DELHI
6TH LEVEL, C-WING, DELHI SECRETARIAT
I.P. ESTATE, NEW DELHI-110002
PH: 23392029

F 10 (1)/Env/2019/169-172

Dated: 09.04.2022

To,

Additional Chief Architect,
Office of Vice-Chairman,
Delhi Development Authority,
Vikas Sadan, I.N.A.,
New Delhi-110023

Subject: Services Plan for Management of Non-Municipal Solid Waste Management in reference to Draft MPD 2041.

Sir,

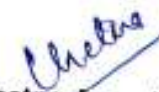
This is in reference to the D.O. letter no. PS/VC/DDA/2021/39 dated 06.04.2021 of the Vice Chairman, DDA with respect to subject mentioned above.

Kindly find enclosed Service Plan for Non-Municipal Solid Waste Management in Delhi, in reference to Draft MPD 2041, from Department of Environment, GNCTD and DPCC, for your information and further necessary action please.

This is being issued with approval of the Competent Authority.

Yours Faithfully

Encl. as above


(Dr Chetna Anand)
Senior Scientific Officer (Environment)

Copy to

1. PPS to Pr. Secretary (Environment), GNCTD
2. PS to Addl. Chief Secretary (Environment & Forest), GNCTD
3. PS to Special Secretary (Environment), GNCTD

PERSPECTIVE PLAN FOR INFRASTRUCTURE SERVICE FOR DELHI - 2041
AGENCY: DEPARTMENT OF ENVIRONMENT, GNCTD AND DELHI POLLUTION CONTROL COMMITTEE

1. SERVICE PLAN FOR NON-MUNICIPAL SOLID WASTE MANAGEMENT IN DELHI FROM DEPARTMENT OF ENVIRONMENT AND DPCC:

Aspect	Information required
Generation	<p><u>Estimates of C& D Waste:</u> Current Status FY 2020-21 (Million MT) : 1.38* (3781 TPD) Target for 2041 (Million MT): 3.66** (10,027 TPD)</p> <p>*Estimation of C&D waste generation in Delhi, as per NITI Aayog Report Jan 2019 “Strategy on Resource Efficiency in Construction & Demolition Sector” – 4,600 MT/day (1.38 million ton per annum) ** Considering 5% annual growth of C&D waste generation in NCT of Delhi</p> <p><u>Bio-Medical Waste:</u> As per gap analysis study got done in 2020 for requirement of numbers & capacities of additional Common Biomedical Waste Treatment & Disposal Facilities (CBWTFs) in Delhi estimated total future biomedical waste generation in 2031 = 80000 kg/day.</p> <p>As per Central Pollution Control Guidelines dated 21.12.2016, prior to allowing any new CBWTF, prescribed authority {Delhi Pollution Control Committee (DPCC) in case of Delhi} is required to prepare an inventory or review with regard to the bio-medical waste generation at least once in 5 years in the coverage areas of the existing bio-medical waste treatment and disposal facility. Prescribed authority is also required to extrapolate the coverage area wise bio-medical waste generation for the next 10 years.</p> <p><u>E- Waste: No concrete data available. E-Waste Inventorisation exercise is proposed.</u></p> <p><u>Plastic Waste generation : 1500 MT/D</u></p>
Management Strategy	<p><u>Management plan for C& D Waste:</u> Processing Capacity of Operational C&D Plants in Delhi (4150 TPD)</p> <ul style="list-style-type: none"> • Jahangir Puri (Burari) – 2000 TPD • Shastri Park – 1000 TPD • Rani Khara (Mundka) – 150 TPD • Bakkarwala – 1000 TPD <p>- (C&D Waste received at 4 processing facilities in Delhi : 3151 TPD)</p>

Proposed C&D Waste Processing Facilities in Delhi (2500 TPD)

- Ranikhera – 1000 TPD (Under Construction)
- Maidangarhi - 1000 TPD
- Libaspur - 500 TPD (Land use to be changed by DDA)

NCT of Delhi will require creation of additional annual processing capacity of 2 Million MT (5479 TPD) by 2041 as below:

By 2026 – 0.5 Million MT (1370 TPD)

By 2031 – 0.5 Million MT (1370 TPD)

By 2036 – 0.5 Million MT (1370 TPD)

By 2041 – 0.5 Million MT (1370 TPD)

Bio-Medical Waste:

For obtaining the authorization mandatory under Bio-Medical waste Management Rules, 2016, every health care facility is required to enter into an agreement with the concerned CBWTF for collection, transportation, treatment and disposal of the waste generated by it. Biomedical waste is collected, transported and treated by two Common Biomedical Waste Management Facilities (CBWTFs) operating in Delhi. In view of expiry of lease of one of the CBWTFs presently operation on land provided by Directorate of Health Services, Govt of NCT of Delhi, the DPCC has called Expression of Interests for bringing up two new CBWTFs on privately owned land for catering to the BMW generation in two regions to cater future generation of biomedical waste in next 10 years i.e. year 2031 **Region 1: Shahdara, East and North East Delhi (fall in the trans Yamuna belt). Region 2: West, South West, Central Districts.**

E- Waste:

- Delhi consisting of 11 districts, so each district should possess at least one collection centre to ease the drop of E-waste.
- At least 3 nos. of E-waste ECO-Park (not less than 5 acres in area), one in each North, South and East regions of Delhi should be created where proper dismantling, refurbishing can be done.
- At least two recycling units should be created in Delhi for efficient work and state board can easily verify the authenticity of dealers, refurbishers, dismantlers whether they are legally tied with recycler.
- ATM can be installed where in return of every electronic equipment, cash back can be provided.
- ULBs can provide toll-free number and door to door services to dispose-off E-waste.

	<p align="center"><u>Service Plan for NCT of Delhi for Plastic Waste Management is Annexure VIII (a).</u></p>
<p><u>Other information</u></p> <ul style="list-style-type: none"> • Key infrastructure or special projects identified during the plan period, along with details of projects and their timelines • Estimated land requirements for projects. 	<p><u>Bio-Medical Waste:</u></p> <p><i>Under the provisions of Bio Medical Rules 2016, the department in the business allocation of land assignment shall be responsible for providing suitable site for setting up of common biomedical waste treatment and disposal facility in the State Government or Union territory Administration and the selection of site for setting up of such facility shall be made in consultation with the prescribed authority, other stakeholders and in accordance with guidelines published by the Ministry of Environment, Forest and Climate Change or Central Pollution Control Board.</i></p> <p>The CPCB guidelines dated 21.12.2016 provides that alternately a CBWTF may also be allowed to establish on a land procured by an entrepreneur in accordance with the location criteria suggested under these guidelines.</p> <p>The DPCC is in process of calling the expression of interests for 2 CBWTFs on privately owned land to cater the need for next 10 years (up to 2031) and project is likely to be completed by end 2022. However looking in to the present and future scenario there is a need to identify 3 plots of lands of size not less than one acre in three geographically distributed areas of Delhi (one in trans Yamuna for East, North East & Shahdara, second in South East, South, South West & New Delhi and third in Central, North, West & North West districts) so that CBWTFs can be made operational on Govt Land post 2031.</p> <p>As per CPCB guidelines, CBWTF shall preferably be developed in a notified industrial area without any requirement of buffer zone (or) a CBWTF can be located at a place reasonably far away from notified residential and sensitive areas and should have a buffer distance of preferably 500 m so that it shall have minimal impact on these areas.</p> <p><u>E- Waste:</u></p> <ul style="list-style-type: none"> • Public Awareness sessions should be organized on regular basis. • Awareness programme for refurbishers, dismantlers, recyclers and dealers should be organized twice in a year.

2. Key targets that will be included in MPD 41 Action Plan:

Component	Current status	Target for 2041	Phasing Plan
-----------	----------------	-----------------	--------------

Percentage of C&D Waste Processed (Fresh + Legacy)	88.4 % [1.22 (3342 TPD)]	100 % 3.66 (10,027 TPD)	NCT of Delhi will require creation of additional annual processing capacity of 2 Million MT (5479 TPD) by 2041 as below: By 2026 – 0.5 Million MT (1370 TPD) By 2031 – 0.5 Million MT (1370 TPD) By 2036 – 0.5 Million MT (1370 TPD) By 2041 – 0.5 Million MT (1370 TPD)
Percentage of Recycled C&D Waste Products (Tiles, Blocks, Reinforcements, filling materials etc.) used.	107.4 % [1.31 (3589 TPD) including Legacy C&D waste products] [Offtake by Govt. Departments - 0.70 (1917 TPD) And Offtake by Private Parties - 0.61 (1671 TPD)]	100 %	

Annexure VIII (a): Service Plan for NCT of Delhi for Plastic Waste Management in respect of Draft MPD 41

1. Application:


Ministry of Environment, Forest and Climate Change, Govt. of India has notified the Plastic Waste Management (PWM) Rules, 2016 as amended by 2018.

- (i) These rules are applicable to every waste generator, local body, Gram Panchayat, manufacturer, Importers and producer.
- (ii) The rule 4 shall not apply to the export-oriented units or units in special economic zones, notified by the Central Government, manufacturing their products against an order for export: Provide this exemption shall not apply to units engaged in packaging of gutkha, tobacco and pan-masala and also to any surplus or rejects, left over products and the like.

2. Salient features of (PWM) Rules, 2016, as amended to date

The salient features of (PWM) Rules, 2016 are described below:

S. No.	Items	Description
1	Purpose	Plastic waste minimization; Source segregation; Recycling; Collection of plastic waste fraction; Adoption of polluter's pay principle;
2	Application	To Every: Waste generator; Local body; Gram Panchayat; Manufacturer; Importers and Producer.
3	Conditions for Carry bags	Shade of Carry Bag should be natural as per IS: 9833:1981; Provision of thickness for carry bags made of virgin or recycled plastic is, thickness \geq 50 microns (made up of recycled or virgin plastic). Thickness of carry bags is not applicable to carry bags made up of compostable plastic; The carry bags made from compostable plastics shall confirm to the Indian Standard: IS17088:2008. The manufacturers or seller of compostable plastic carry bags shall obtain a certificate from the Central Pollution Control Board before marketing or selling; Plastic sheet or like, which is not an integral part of multilayered packaging shall not be less than fifty microns in thickness except where the thickness of such plastic sheets impairs the functionality of the product; Recycling of plastic waste shall confirm IS 14534:1998. Carry bags made of recycled plastics shall not be used for Packaging food stuff; Sachets using plastic material shall not be used for storing, packing or selling Gutkha, tobacco and pan masala; Vinyl Acetate - Maleic Acid - Vinyl Chloride Copolymer,

		shall not be used in any package for packaging Gutkha, pan masala and tobacco in all forms.		
4	Responsible Stake-holders	Local body; Gram Panchayat; Waste Generators; Producers, Importers and Brand Owners.		
5	Marking or Labeling		PET	Polyethylene Terephthalate,
			HDPE	High Density Polyethylene
			V	Vinyl (PVC),
			LDPE	Low Density Polyethylene
			PP	Polypropylene
			PS	Polystyrene
			Others	ABS - (Acrylonitrile butadienestyrene), PPO- (Poly phenylene oxide), PC- (Polycarbonate), PBT- (Poly butylenes terephalate)
6	Prescribed Authority for enforcement of the provisions of these rules;	The State Pollution Control Board and Pollution Control Committee in respect of a Union territory; The concerned Secretary-in-charge of Urban Development of the State or a Union Territory; The concerned Gram Panchayat shall be the authority; District Magistrate or the Deputy Commissioner.		
7	Responsibility of retailers and street vendors	Retailers or street vendors shall not sell or provide commodities to consumer in carry bags or plastic sheet or multi-layered packaging, which are not manufactured and labeled or marked, as per prescribed under these rules; Retailers or street vendors if providing commodities in abovementioned packaging shall be liable to pay fines.		
8	State Level Monitoring Committee (SLMC)	State Government or the union Territory shall constitute SLMC for the effective monitoring of implementation of these rules; The State Level Advisory Body shall meet at least once in Six Month and may invite experts, if it considers necessary.		

9	Annual Reports a) Concerned persons/ Departments	Every person engaged in processing or recycling of plastic wasteshall submit annual report in Form-IV to local body by 30th April (Every year); Every local body shall submit annual reports in Form-V to concerned Secretary-in-charge of the Urban Development Department by 30th June , every year; Each State Pollution Control Board or Pollution Control Committee shall submit annual reports in Form-VI to CPCB by 31st July , every year; The CPCB shall prepare a consolidated annual report on the use and management of plastic waste and forward it to the Central Government along with its recommendations before the 31st August of every year.
	b) Flow of Information	Recycler → Local Body → SPCB/SPCC → CPCB → Central Govt. (Form IV) (Form V) (Form VI) Consolidated Annual Report (By 30 th April) (By 30 th June) (By 31st July) (Before 31st August)

3. Plastic Waste (PW) Generation:

Estimated PW Generation in Delhi: 1500 MT/D

4. Constraints in implementation of PWM Rules 2016, as amended 2018:

4.1. There are a number of constraints in implementation of PWM rules 2016, few of them are given below:

- a) Annual Reports are not submitted on-time by Responsible Agencies/Authorities by 30th June each year;
- b) Monitoring of implementation of PWM Rules by Urban Development Departments & Municipal Bodies is inadequate;
- c) Non-recyclable plastic wastes such as multi layered and metalized pouches and other thermoset plastic poses disposal problems;
- d) Use of sub-standard (<50µm) plastic carry bags, packaging films etc. pose problem in collection and recycling, thus, ultimately dumped on land, drains, rivers,
- e) Co-ordination of DPCC with Local Bodies in enforcement of use of sub-standard (<50µm) plastic carry bags & actions taken by ULBs.

4.2. Recommendations of SLMC:

- a) All departments including ULBs, SDMs and DPCC were advised to adhere to the directions of Hon'ble NGT dated 02.12.16 and 10.08.17 regarding complete prohibition on the use of plastic carrybags made of plastic less than 50 microns and are non- compostable in entire NCT Delhi a prohibition of use of disposable plastic glasses in entire NCT Delhi at hotels, restaurants and public as well as environmental compensation of Rs 5000/- per default. All agencies were directed to expedite the actions of seizure of plastic and imposition of fines.

- b) Further, all ULBs and DPCC were directed to design programmes for creating awareness among general public regarding prohibition on the use of plastic carrybags made of plastic less than 50 microns and are non-compostable in entire NCT Delhi a prohibition of use of disposable plastic glasses of the Plastic Waste Management Rules, 2016 as amended, 2018.
- c) The representative of plastic traders and manufacturing industry were also advised to educate and guide the trades/manufacturers to adhere to the provisions of Plastic Waste Management Rules, 2016 as amended, 2018. The concept of Extended producer's responsibility was also discussed and it was desired that plastic trades/manufacturers association shall give their full cooperation this regard to the ULBs in framing the bye-laws.

5. Environmental issues of PWM in Delhi:

- a) Littering of Plastic Waste in open lands, drains, bus stations, railway tracks, dustbins/dhalaos, roadsides, commercial areas, etc.
- b) Open Burning of plastic waste emit toxic gases, polluting ambient air.
- c) Unscientific/ unregistered plastic waste recycling/manufacturing poses threat to environment specially in residential areas;
- d) Eating/engulfing plastic waste along with food residues by cattles, birds etc.

6. Information, Education & Communication (IEC) Programme

a) What is IEC:

1. To develop communication strategies to promote positive behaviour.
2. Create awareness among various stakeholders.
3. To make development participatory through advocacy.
4. To transfer knowledge, skill and technique to people.
5. To bring transparency in program implementation at field level.
6. To promote the concept of accountability and social audit.

b) Role of IEC in Waste Management:

1. To inform, educate and inspire people to realize their roles and responsibilities and benefits of adopting right waste management practices.
2. To bring motivation, awareness and empowerment.
3. To bring transformational shift in waste management barriers:
4. Practice level barrier
5. Attitude level barrier
6. Knowledge level barrier
7. To reach all communities and to reach out to all kind including children, women, men, youth and elderly people.
8. To create awareness, sensitization and motivation of people to follow right hygiene, sanitation and waste handling practices.

c) Types of Communication:

1. Mass Communication
2. Person to Person Communication

d) Key ways of Communication:

1. At national or mass level TV commercials and advertisement can play role.
2. Handbook, leaflet and brochures.

3. Motivational hoardings catering to Swachh Bharat and posters at critical locations of city.
4. One to one meeting could be held at family and community level, since PWM involves attitudinal change.
5. A city centric waste management book.

e) Funding pattern of IEC Programme:

1. IEC has 15% funds of total central allocation.
2. Out of this **12% is for States to conduct campaigns** on public awareness for different issues of public health, hygiene and environment.
3. Campaign using different means, like short films, radio, plays, workshops, social media and radio. Newspaper and TV are excluded from this.
4. Remaining 3% is for MoHUA to run a national media campaign and to develop standardized methods for campaigning.
5. The **IEC plan made by States should approve by HPC of States**. 50% of the approved fund should be given to ULBs.
6. ULBs have to spend minimum 50% of the ULB funds for IEC. This fund cannot be used for any other purpose, like buying vehicles, construction or maintenance.

7. Technologies for Disposal of Plastic Waste:

- i. Mechanical Recycling.
- ii. Utilization of Plastic Waste in Road Construction.
- iii. Co-processing of Plastic Waste in Cement Kilns & Co-incineration in waste to energy plants.
- iv. Conversion of Plastic Waste into Fuel-oil (Chemical Recycling).
- v. Disposal of plastic waste through Plasma Pyrolysis Technology (PPT).

(i) Mechanical Recycling:

Mechanical recycling involves processing of waste into a product which characteristics similar to those of original product. This process involves the following steps:

- a) **Collection and Segregation:** The plastics materials have varying density; hence they are segregated/separated by floatation process.
- b) **Cleaning, Drying and Sizing:** The post-consumer plastics waste requires proper cleaning and drying. The cleaned plastics waste products should be sized; the dried flakes are fed into an extruder where they are heated to melting state and forced through the die converting into a continuous polymer product or strands.
- c) **Pelletizing:** The strands are cooled by water and cut into pellets, which produces reprocess granules.
- d) **Fabrication into end product:** Reprocessed granules used as raw materials for producing end products.

(ii) Utilization of Plastic Waste in Road Construction:

The process of road laying using waste plastics is designed and the technique is being implemented successfully for the construction of flexible roads at various places in India.

Table1: Protocol for description of road laying process

S.No.	Description	Executing Agency
-------	-------------	------------------

1.	Collection and segregation of plastic waste (Except chlorinated/ brominated plastic waste)	Municipal Corporation, Nagar Nigam, Nagar Parishad & Nagar and Gram Panchayat
2.	Transportation and storage of plastic waste	Municipal Corporation, Nagar Nigam, Nagar Parishad & Nagar and Gram Panchayat
3.	Cleaning and sun drying of plastic waste	Municipal Body or PWD
4.	Shredding of plastic waste (2 to 4 MM size)	Municipal Body or PWD
5.	Heating of stone aggregate (160 °C -170 °C)	Municipal Body or PWD
6.	Adding of shredded plastic waste (5 to10% w/w for 30 to 40 seconds)	Municipal Body or PWD
7.	Coated aggregate is mixed with hot bitumen (Temp155 °C to163 °C)	Municipal Body or PWD
8.	The mix-plastic aggregate Bitumen-mix (130-140 °C) The mix can be used for road laying.	Municipal Body or PWD Construction of polymer (plastics) Coated Bitumen Road

Action Points:

- a) Utilization of Plastic Waste in Road Construction in Delhi Should be promoted;
- b) Promotion and awareness of technology through technology transfer, Newsletters and Direct marketing.

(iii) Co-processing of plastic waste as Alternative Fuel and Raw Material (AFR) in cement kilns and waste to energy plants:

Co-processing refers to the use of waste materials in industry process such as cement and power stations or any other large combustion plants. Co-processing indicates substitution of primary fuel and raw material by waste, recovering industry and material from waste. Waste material such as plastic waste used for co-processing are referred to as alternative fuels and raw material (AFR). Co-processing of plastic waste offers advantages for cement industry as well as for the Municipal Authorities responsible for waste management. On the other hand, cement producers or power plants can save fossil fuel and raw material consumption, contributing more eco-efficient production. In addition, one of the advantage recovery method used in existing facility, eliminating the need to invest on other plastic waste practices and to secure landfilling.

Action Points:

Development of technology for Co-processing of plastic waste as Alternative Fuel and Raw Material (AFR) in waste to energy plants, in Delhi.

(iv) Conversion of plastic waste into liquid RDF (Oil):

Steps involved in conversion of plastic waste into liquid fuel RDF (Fuel) are given below:

- Mechanical segregation of plastic waste from mixed MSW dump yard/storage.
- Transportation of segregated plastic waste through conveyor belt for optical segregation.
- Optical segregation of plastic waste (only HD, LD, PP and multilayer packaging except PVC;

- Shredding of plastic waste and dislodging dust and impurities.
- Transportation of segregated (100%plasticwaste) into feeding hopper(reactor).
- Feeding of plastic waste into reactor for random depolymerization in presence of additives.
- Collection of liquid RDFs (Fuel).
- Collection of rejects and solid waste (charcoal).

Action Points:

Development of technology for conversion of plastic waste into liquid fuel RDF (Fuel)in Delhi from concept to commercialization and promotes awareness of technology through technology transfer, Newsletters and Direct marketing.

(v) Plasma Pyrolysis Technology (PPT)

Introduction:

Plasma pyrolysis is one of the technologies which could be opted for disposal of plastic waste. In Plasma Pyrolysis, high temperature is produced using plasma torch in oxygen starved environment to destroy plastic waste efficiently and in an eco-friendly manner. To find out its performance, Central Pollution Control Board (CPCB) sponsored a project titled "Plastic Waste Disposal using Plasma Pyrolysis Technology" to Facilitation Centre for Industrial Plasma Technology (FCIPT), Institute for Plasma Research, Gandhi Nagar (Gujarat). The experiment has been conducted using different categories of plastic waste such as thin carry bags, metalized and multilayer pouches etc. During the experiment, emission of pollutants i.e. particular matter (PM), Oxides of Nitrogen (NO₂), Carbon Monoxide (CO), Dioxins and Furans were also monitored. The analytical data indicates that the emission of toxic pollutants including dioxins and furans are lower than the prescribed standards for hazardous waste incinerators. Pyrolysis of plastic (polyethylene) provides 90% combustible gases.

Description:

Plasma pyrolysis technology is the disintegration of organic/inorganic compounds into gases and non-leachable solid residues in an oxygen-starved environment. Plasma pyrolysis utilizes large fraction of electrons, ions and excited molecules together with the high energy radiation for decomposing chemicals. In this process the fourth state of matter i.e. plasmas (core temperature is around 20,000°K) is used for dissociating molecular bonds. Different types of plastic waste such as polyethylene bags, soiled plastic, metalized plastic, multi-layer plastic and PVC plastic can be disposed through PPT.

In Plasma Pyrolysis, firstly the plastics waste is fed into the primary chamber at 850oC through a feeder. The waste material dissociates into carbon monoxide, hydrogen, methane, higher hydrocarbons etc. Induced draft fan drains the pyrolysis gases as well as plastics waste into the secondary chamber where these gases are combusted in the presence of excess air. The inflammable gases are ignited with high voltage spark. The secondary chamber temperature is maintained at 105°C. The hydrocarbon, CO and hydrogen are combusted into safe carbon dioxide and water. The process conditions are maintained such that it eliminates the possibility of formation of toxic dioxins and furans molecules (in case of chlorinated waste). This process is used by few Municipalities and hospitals; however, this can be useful for tourist place, hill stations, pilgrimage, coasts and other remote places.

Cost of plasma pyrolysis plant for the disposal of plastic waste:

Approximately plant cost of capacity 1 Ton/day is 1.7 Crore and 6.5 Crore for capacity of 10 Tons/day plant, excluding operational cost. Payback period of plasma pyrolysis plant of higher capacity (>1Ton/day) is around 4 to 5 years. With energy recovery system, plasma pyrolysis plant will be profitable.

Merits of Plasma Pyrolysis Technology:

- The plasma pyrolysis system can resolve the problems associated with particularly non-recyclable and low-grade plastic waste.
- Generation of extremely high temperature in oxygen starved environment makes this technology useful for the safe destruction of plastic wastes.
- This technology (PPT) can safely destroy chlorinated as well as multi-layer plastic wastes.
- The plasma pyrolysis system can be installed in tourist/hilly locations.
- PPT for the disposal of plastic waste along in conjunction with energy recovery makes it economically viable in higher capacity systems.

Action Points:

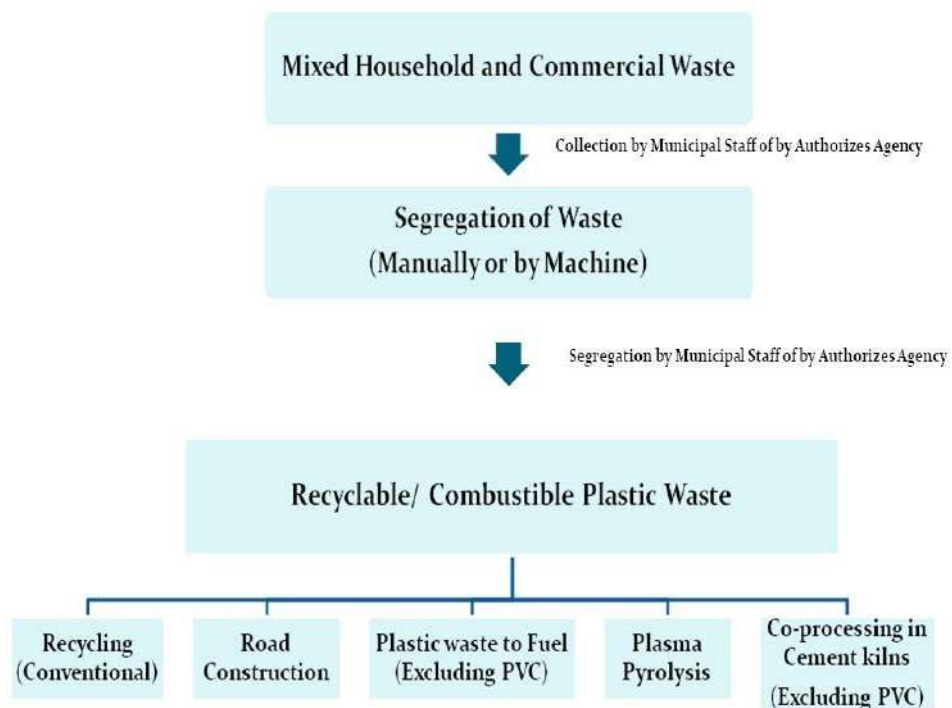
Development of plasma processing technologies in Delhi from concept to commercialization and promotes

awareness of technology through technology transfer, Newsletters and Direct marketing.

Way Forward for PWM:

1. Door to Door collection of MSW in 2 bins (dry& wet) shall enforced by Municipal Authorities;
2. Segregation and recycling of plastic waste should be carried out at Material Recovery Facility (MRF) to be set by each Local Body in Delhi.
3. Organize mass-awareness programme in various districts involving Municipalities & Stakeholders for not using less than **fifty microns** carry bags and anti-littering.
4. Setting up of squads for preventing open burning of PW shall be strictly prohibited.
5. Plastics should be used as a **resource** for recycling, utilized in road construction, energy recovery (such as WtE Co- processing), PW into Oil etc.
6. **Stopping use of single use plastic products** such as carry bags, cups, plates, straw, thermocol products etc.
7. Promote use of compostable products certified by CPCB such as carry bags, cups, straws, etc. as an alternate to conventional plastics.
8. Utilization of plastic waste in different technologies.

Summary of PWM:



- Draft notification was also issued by the Central Government on 11th March, 2021, in exercise of the powers conferred by sections 6, 8 and 25 of the Environment (Protection) Act, 1986 (29 of 1986), for making certain amendments in the Plastic Waste Management Rules, 2016, issued vide G.S.R. 320 (E), dated the 18th March, 2016, for information of the public for making any objection or suggestion on the proposals contained in the draft notification in writing within sixty days w.r.t. thickness of Plastic Bags, Sheets and like shall not be less than 120 microns and non-woven Plastic Carry Bags shall not be less than 240 microns in thickness w.e.f. 30.09.2021. Further, complete ban on single use plastic since 01.01.2022 (single use plastic items: Plates, cups, glasses, cutlery such as forks, spoons, knives, straw, trays, wrapping/ packing films around sweet boxes; invitation cards; and cigarette packets, plastic/ PVC banners less than 100 microns, stirrers. However, above provisions shall not apply to commodities (including carry bags) made of compostable plastic materials (copy enclosed).

Key Targets for Plastic Waste in r/o MPD 41 Action Plan:

Current Status of Plastic Waste:	Approx. 1500 M.T. Per day
Target for 2041:	100 % disposal/ recycling as per PWM Rules

ANNEXURE IX: SERVICE PLAN – DEPARTMENT OF POWER, GNCTD

**GOVT. OF NCT OF DELHI
DEPARTMENT OF POWER
8TH LEVEL, 'B' WING, DELHI SECRETARIAT,
I.P. ESTATE NEW DELHI.**

From: **Power Department** <departmentpower@gmail.com>
Date: Wed, Apr 7, 2021 at 11:10 AM
Subject: Vision Document - Power Department - Master Plan - 2041
To: <lsharma@niua.org>, <bjohn@niua.org>
Cc: ASHOK KUMAR JHA <akjhasundhara@gmail.com>, <ramakant.ece@gmail.com>

Sir

With reference to our discussion yesterday regarding the Vision document of the Power Department regarding Master PAn-2041, may please find enclosed soft copy of the draft document and annexures as desired.

May please see please.

Regards

Power Department, GNCTD

PERSPECTIVE PLAN FOR INFRASTRUCTURE SERVICE FOR DELHI - 2041
AGENCY: DEPARTMENT OF POWER, GNCTD

1. Projections for 2041:

As per the projections, the peak load in Delhi will reach 19000 MW by year 2041. To meet such load, provision in Master Plan have to made for space for power infrastructure that will be required to establish sub stations, distribution transformers and right of way for electric poles and cables to meet future power demands.

Year	Population (in Millions)	Power consumption (in MUs)	Peak Demand (in MW)	Overall installed capacity (MW)
2019	19	33082	7409	7901
2031	24.7	47167*	12269**	14110 [#]
2041	29.1	63389*	19070**	21930 [#]

*assuming power consumption growth rate as 3%

** As per projections of Delhi Transco Limited

[#]15% over and above the estimated peak demand

2. Land Requirement for Power Infrastructure in 2041:

The land requirement has been worked out by Delhi Transco Limited and Delhi DISCOMs broadly in line with norms issued by DDA & Delhi Govt. and as per their experience at ground conditions.

i. Delhi Transco Limited (DTL):

The summary of perspective plan for Power Transmission Services for Delhi-2041 (MPD-2041) as under:

Voltage Level	Tentative Land Req. (sq. m.)	No. of Existing substations	No. of proposed substations (under pipeline or execution)	No. of proposed substations (MPD-2041)	Total
765kV	1,60,000	01	01	02	04
400kV	40,000	07 (including Mandola)	03	09	19
220kV	7000	41	04	36	81

- Total Grid Land: $2 \times 160000 + 9 \times 40000 + 36 \times 7000$ sqm = 9,32,000 sqm

ii. Tata Power Delhi Distribution Limited (TPDDL)

TPDDL majorly serves Northern part of Delhi. The current load in TPDDL area is served by 78 nos. of grid substations which is a mix of 66/11 kV and 33/11 KV. For the 33 kV belt, which is densely populated, it is assumed that the new land would be in smaller sizes and thus it has been considered that a 2 transformer grids (2 x 31.5 MVA, usable 44 MVA). For the 66 kV belt, 3 transformer grids (3 x 31.5 MVA, usable 66 MVA) is considered. Considering a diversity factor for power transformer loading, it is estimated that additional 70 nos. new grid substations will be required to meet normal load growth and an additional 20 grid substations to meet EV charging load. Thus a total of 90 new grid substations would be required. Space required for grids is 1250 sq meters. (50 x 25 sq. mtrs., min. two sides open)

Considering diversity factor between power transformers, feeder and distribution transformers and accounting for bulk consumers, an additional 6850 MW or 7850 MVA of peak load has to be served by distribution transformers. Assuming 50-50 mix of dual and single transformer substation (32sqm), approximately additional 3750 dual transformer (80sqm) and 3750 single transformer substations (total 7500) would be required.

- Total Grid Land: 90×1250 sqm = 1,12,500 sqm
- Total Distribution Transformer land requirement = $3750 \times 80 + 3750 \times 32 = 4,20,000$ sqm

iii. BSES Yamuna Power Limited (BYPL)

BYPL majorly serves the Eastern part of Delhi. Based on CAGR of 3%, BYPL load will increase from the present 1653MW to 3075MW in 2041. After including demand on account of EV and go electric drive, peak load is expected to increase further to 3600MW (approx). Based on peak load of 3075MVA, total grids

required to meet the load is 88 nos. (approx). Considering the present 54 nos grids, land will be required for establishment of 52 new grids. Requirement for EV load will be additional. Land required for each grid will be 2000 Sqm (50 X 40 m). However with emerging technologies, we will try to optimize the land requirement.

To meet 3600 MVA, desired capacity is 7200 MVA considering diversity factor. Based on the same, at least 1873 Nos new 11/0.433kV Substations will be needed. Requirement for EV load will be additional. Land required for each substation is 80Sqm (8 X 10 m). However with emerging technologies, we will try to optimize the land requirement.

- Total Grid Land: 52 x 2000 sqm = 104,000 sqm
- Total Distribution Transformer land requirement = 1873 x 80 = 149,840 sqm

iv. **BSES Rajdhani Power Limited (BRPL)**

BRPL majorly serves the Southern and South-West parts of Delhi. BRPL serves a geographical area of 750 sq kms with current annual peak load growth of about 5.88%. In FY 19-20, BRPL recorded peak load of 3211 MW which is 43.33% of Delhi peak (7409 MW). Assuming same share in 2041, the peak load of BRPL would be about 8263 MW (5052 MW additional) out of Delhi's projected peak demand of 19070 MW.

Key upcoming loads in BRPL area includes, DIAL, DMICDC, RRTS by NCRTC, ITPO, DMRC, redevelopment projects by CPWD (Sri Niwaspuri, Kasturba Nagar, Tyagraj Nagar, Mohammadpur), urban extension in 4 zones (J, K1, K2, L).

Presently, the load in BRPL area is being served by 99 nos. of grid substations which is a mix of 66/11 kV and 33/11 kV voltage levels. Considering a diversity factor for power transformer loading, 115 new grid substations will be required to meet normal load growth. Required space for a grid substation is 50x60 sqm. Each Substation area will accommodate 3 Power Transformers, GIS and 11 kV Panels, SCADA, Shunt Reactors, Batteries, Solar Systems, possible expansion in capacity and possibility to accommodate substation of voltage higher than 66 kV.

Considering diversity factor between power transformers, feeder and distribution transformers and accounting for bulk consumers, an additional capacity of 11788 MVA at distribution transformers level would be required. For each 11/0.4 kV substation with two Distribution transformers of 1 MVA each, there will be space requirement of about 80 sqm.

Space requirement for BRPL:

- a. Total Space requirement for 66/11 kV and 33/11 kV Grid Substation: 115 x 3000 sqm = 3,45,000 sqm.
- b. Total space requirement for 11/0.4 kV substation = (11788/2) x 80 sqm = 4,71,520 sqm
- c. Apart from above (a and b) land requirement for normal load growth, there will be additional requirement of land 57,000 sqm for 19 nos. grid substations and 77,120 sqm for 964 nos. of 11/0.4 kV substation in BRPL area, assuming 10% of normal load demand will be on account of EV charging load in 2041. Upcoming EV charging load includes DTC Bus, ESSL load on SDMC parking and other EV charging stations

With above loading conditions and space provisions, on an average, there would be one grid substation in every 3 sq km and one DT substation in every 50,000 sqm area of BRPL.

v. **Gas insulated sub-stations**

Gas Insulated Substation (GIS) shall be promoted by DISCOMS that will have lesser space requirement. Provision must be kept in Master Plan-2041 for designated spaces in all new development projects and redevelopment projects for establishment of sub-stations, installation of distribution transformers and laying of power cables.

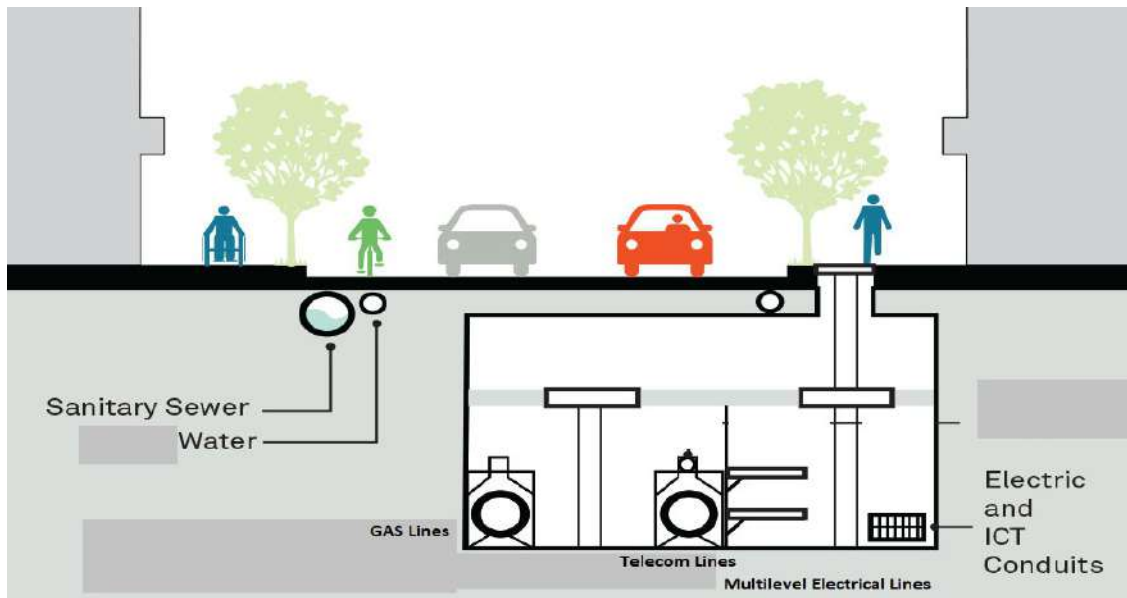
Space for power infrastructure must be provided at right places (near to load centre). Technically feasible space for substations must be allocated for DTL/ DISCOM and proper "Right of way" to be ensured for power poles/ laying underground cable for present and future requirements. The Standard norms for Grid/Substation sizes is annexed as Annexure – IX (a).

3. UTILITY DUCT

Utility Ducts (along and across the roads) are critically required to ensure proper laying of city infrastructure and also to maintain the laid infrastructure. The importance of same is acknowledged by all. Ministry of Road & transport issued circular vide F. No. RW/NH33044/29/2015/S&R(R) Dated 22.11.2016 regarding policy guidelines

for accommodation of Public and Industrial utility services along and across National Highways. New main road development plan shall include the provision for subsurface space allocation among various utilities. That is dedicated corridors for power, telecom, gas, water and sewer need to be developed during the development of roads so that damage to other utilities can be minimized and systematic planning can be made for future growth. This will have a positive impact on the speed utilities can provide new power supply connections as well maintain existing ones. As one of the major reasons for faults in the underground network is damage by 3rd party, utility ducts would result in a near fault free network. This will help to increased ranking in Ease of Doing Business (EODB). Indicative arrangement as below.

Figure 1 Indicative arrangement for Utility Duct



The utility corridor requirement details as below:

a. Subsurface utilities:

Type	Capacity	Corridor Width
66 kV/33kV/ 11kV UG cables for main roads	Around 100 MVA	Min. 1.2m
11 kV & LT U/G cables for interconnecting internal roads	Around 5 MVA	Min. 0.7m

b. Overhead network requirements:

Type	Capacity	Corridor Width
66 kV O/H Double Circuit OH Line	110 MVA	Min. 6m and 2.3m each side
33 kV O/H Double Circuit OH Line	60 MVA	Min. 6m and 2.0m each side
11 kV O/H Line	5 MVA	Min. 1.1m and 1.2m each side
LT O/H Line	0.18 MVA	Min. 1.0m and 1.2m each side

There is a need to ensure constructing utility duct in all newly constructed roads and also explore possibilities to implement same in existing road also.

4. Cost estimates (in Rs. Crore) given by DISCOMs for converting 100% 11kV power cables to underground (without ducting):

	BRPL	BYPL	TPDDL
11kV network	729	27	2369
HVDS network	2574	726	790
Total (in crores)	3331	753	3159
Total Cost	Rs. 7243 Crores		

Under Jagmagati Delhi, initial budget of 50 crores has been kept for FY 2021-22, for conversion of 11kV bare

conductor to insulated conductor.

5. Vehicle switching from Fossil fuel to electricity

The Delhi EV Policy, 2020 envisaged “accessible public charging facilities within 3 km travel from anywhere in Delhi” (Clause: 6.2.1) and the Ministry of Power, Govt vide guidelines and standards notified for Charging Infrastructure for EVs has also envisaged for “At least 1 Public Charging Station is to be available within a grid of 3Km. x 3Km.” DDA should include land planning for creation of Charging Infrastructure for EVs in Master Plan of Delhi 2041.

6. Land/ Space Constraints:

- a) DISCOMs face severe space constraints for substations, feeders and other associated equipment despite taking several measures to reduce footprint of substations (like GIS, E-House, Package Station, etc.). There is rampant encroachment on power infrastructure in many areas leading to reliability, safety and power theft issues.
- b) A clear land policy is required for space allocation for substations, feeders and associated network equipment (like feeder pillars, distribution boxes etc.) in all existing areas based on present load density and future load growth. Land policy should specify land requirement for substations and associated network equipment in new developments including electrification of new areas, private development, EV charging stations and all new infrastructure development projects.
- c) Land Policy needs to incorporate measures to prevent encroachment of power infrastructure.
- d) Key Considerations for land allocation for 66/11kV & 33/11kV Grids:
 - i. 66/11kV or 33/11kV grid is required for serving a load of 35MVA.
 - ii. Based on projected peak load, total grids will be required to meet the load.
 - iii. Considering the present numbers of grids, additional land will be required for establishment of new grids. Requirement for EV load will be additional.
 - iv. Land required for each DISCOM grid will be 2000 Sqm (50 X 40 m). However, with emerging technologies, we will try to optimize the land requirement.
- e) Key Considerations for land allocation for 11/0.4kV Substations:
 - i. Considering 1484 sq. Km area of Delhi and projected population of 29.1 million in 2041, the load density will increase which will probably be highest in India.
 - ii. Typically, 1 Nos substation is required for each MW and thus considering demand density in Delhi, around 15,000 substations/Distribution transformers will be required of different voltage levels.
 - iii. Requirement will be higher for areas with higher load density.
 - iv. Land required for each substation is 60Sqm (12 X 5 m). However with emerging technologies, we will try to optimize the land requirement.
- f) Land allocation to the concerned DISCOM need to be ensured in a time bound manner to maintain the reliability and quality of power.

7. Major reforms undertaken in Delhi

- **The nos. of procedure have been reduced from 3 to 2:** DERC vide order dt.18.12.2020 i.e. called Delhi Electricity Supply Code and Performance Standards (Relaxation) Third order 2020, reduce the number of procedures from three to two for release of Electricity connection the details are as follows:
 - Procedure 1: Submission of application along with all documents
 - Procedure 2: Field inspection & Energisation of connection
- **Time:** For the period to be considered for DBR 2021 (i.e. May 2019 to April 2020), the electricity connections have been provided within 7 days where RoW permission is not required & within 14 days where RoW permission is required by Delhi DISCOMs.
- **The cost of getting electricity connection:** DERC vide order dt.23.10.2019 has reduced the cost for electricity connection for 150kVA consumers from Rs. 25,000/- to Rs. 15,000/-. For sanctioned load More than 5kW and up to 150kW the cost is (Rs. 3000 + Rs. 500 per kW or per kVA as the case may be for the load beyond 5kW), limited to a maximum of Rs. 15000/-.

- **Reliability of Supply:** Following steps are required for improvement of reliability of supply (SAIFI & SAIDI) in long term: Conversion from Overhead to Underground System, Dedicated corridors for laying Electrical network.
- **Steps taken by DISCOM's to improve SAIFI & SAIDI:** Upgraded from the conventional SCADA to Advanced Distribution Management System (ADMS). ADMS is an integrated platform with one user interface for SCADA, DMS, OMS, GIS, ERP, CRM, FFA and Meter Data Management System (MDMS). SAIFI - System Average Interruption Frequency Index, SAIDI- System Average Interruption Duration Index.
- **Formulation of Dig and Restore Policy:** Dig and Restore Policy has been formulated by PWD Department for granting Online Right of Way permission by boarding all the Road owing agency on the single portal i.e. PDM (Plan, Dig & Monitor) software by Delhi Govt.
- Government of the NCT of Delhi has notified self-certification for DISCOM's installations up to 33 kV in place of 650 V vide notification dated 04.01.2017
- Pole mounted transformers capacity enhanced from 250KVA to 500KVA as per CEA gazette notification dated 06.04.2015.
- **Simplification of Documentation for Getting New Electricity connection:** Only 2 documents required i.e. ID proof and ownership proof vide DERC order dated 12.05.2016.
- Revision of application form for Getting New Electricity connection by removing certificate details of Electrical contractor, Lift inspector & Fire services by DERC order dated 24.04.2017.
- New Connections up to 200 KW sanctioned load to be released at LT voltage level in place of 100KW only previously –Guidelines issued by DERC vide order dated 31.08.2017.
- Payment of Demand note for release of electricity connection in first bill for applicants taking supply at LT level vide DERC order dated 31.05.2019.
- Mandatory online applications in lieu of offline option for load above 50KVA as per DERC (Supply code and performance standards) Regulations 2017.

8. Reducing regulatory compliance burden:

Dept. of promotion of Industry and Internal Trade (DPIIT), Govt. of India is Nodal Department for coordinating exercise of minimizing compliance burden on Industries/ business and on citizens. Department of Industries, GNCTD, is nodal agency on behalf of GNCTD. It is to identify further that which regulatory compliances, acts and rules can be repealed, simplified or made online. Thirteen services in consultation with DISCOMs were identified which required compliances from citizens of Delhi and referred to DERC for examining to reduce compliance burden on citizens.

Presently only one compliance has been identified for making it online. The reform is as under:

Dept.	Burdensome Act/Rule & Provision	Short Description	Compliance type	Action to be taken Renewals	Timeline
Delhi Electricity Regulatory Commission	Filing of Petitions under Section 142 of Electricity Act 2003 and other than section 142 of Electricity 2003 before the Hon'ble Delhi	DERC adjudicates on Petitions filed under Section 142 and matters other than under Section 142 of	Filing of Petition	Implement e-filing petitions	31.03.2021

	Electricity Regulatory Commission	Electricity Act 2003			
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9. Renewable Energy and Sustainable Power Consumption

Various efforts are being made within Delhi towards harnessing renewable energy. The overarching national policy through the assigned Renewable Purchase Obligation (RPO) as well as the state level solar policy 2016 sets out clear targets for enabling the transition towards renewable energy. As per the RPO targets for Delhi, it needs to meet about 19% of its consumption from renewable by 2022. The Solar Policy 2016 estimates a solar energy potential of 2500 MW for Delhi and target implementation of 1995MW to be installed by 2025.

The Government of NCT of Delhi launched **“Mukhya Mantri Kisaan Aay Badhotari Solar Yojna”** to install Solar Panels in such a way that farmer(s) can do farming (s) beneath the solar panels. This scheme was devised to facilitate land owners to utilise their lands for economic uses by installing solar panels, thereby minimising misuse, unauthorised constructions and ensuring balanced development and retaining the green character of these areas. The farmer(s) of Delhi can get additional fixed income by installation of solar power plants. The salient features of “Mukhya Mantri Kisaan Aay Badhotari Solar Yojna” is as under:

- Solar Panels at raised structure of 3.5 meters to allow farming on agriculture land of peripheral Green Belt villages.
- No change of land use, farmer(s) to continue farming.
- No investment required from farmer(s), investment to be done by Solar Power Developer.
- Farmer(s) to get ₹ 8333/- per month per acre of land with an increment of 6% per annum upto 25 year, additionally, 6000 units electricity per annum per MW of plant
- Minimum capacity of Solar plant 1 MW, to be installed on 06 acres of land (approximately 1/3rd of the land to be covered by solar plant)
- Evacuation of power to be facilitated by DISCOMs.

Under “Mukhya Mantri Kisaan Aay Badhotari Solar Yojna” the Government Departments were envisaged as the power purchaser, assuming costly power generated through this scheme as solar power plants are to be installed at raised structure.

Further, Government of India launched a scheme named as **“Pradhan Mantri Kisan Urja Suraksha evam Utthaan Mahabhiyan” or PM KUSUM scheme** under which solar power plants can be installed on agriculture land, barren land, pasturelands and marshlands of farmers. This scheme mandates power generated shall be purchased by DISCOMs at pre-fixed levelised tariff or tariff discovered through bidding. The salient features of PM KUSUM are as follows:

- PM KUSUM to be implemented through DISCOMs and DISCOMs are entitled for to get Performance Based Incentive @ 40 paise per unit purchased or Rs. 6.6 lakhs per MW of capacity installed, whichever is less, for a period of five years from the COD.
- Solar plant of capacity 500 KWp to 2 MW. In specific cases based on Techno-Commercial Feasibility smaller than 500 KWp are allowed.
- Power shall be purchased by DISCOMs. Furthermore, Power Department has envisaged merging both schemes for smooth implementation and benefit to stakeholders’ viz. DISCOMs and Farmer(s).
- Delhi DISCOMs have been allocated 62 MW by MNRE, GoI under PM KUSUM scheme.
- Draft documents prepared and letters sent to DERC and Delhi DISCOMs for comments on mode of scheme execution, levelised ceiling tariff and draft PPA.

10. In respect of installation of Solar PVs on rooftop of group housing societies, only 59 societies have installed SPVs. There is a huge scope of installing SPVs in the remaining 1841 societies in NCT of

Delhi. It is therefore proposed that all the remaining CGHS societies and other multi storied societies should be mandated to install solar rooftop plants. With Solar installation on government land, buildings, all private buildings, Delhi can generate about more than 2000MW of solar power. Further, SPVs can also be installed on canals and highways which would enable Delhi to meet 40% of peak demand of power through solar energy. Together with the renewable energy purchases, Delhi can meet more than 50% demand from renewable energy. To sum up, DDA requires to consider the following:

- Making mandatory provision for Solar PV installation in existing buildings also.
- Promote Solar PV installation on vacant land available with government agencies. This can also help in mitigating/eliminating encroachment problems.

11. Building design and layout considerations for reduced demand of HVAC:

- Provision of HVAC to reduce peak load is there in ECBC – 2017 notified by Bureau of Energy Efficiency (BEE), Ministry of Power, GoI.
- Energy Conservation Building Code (ECBC) for commercial buildings was notified by BEE, GoI in 2007 and updated version was notified in 2017.
- The Energy Conservation Building Code (ECBC), is a document that specifies the energy performance requirements for commercial buildings that have a connected load of 100 kW or greater or a contract demand of 120 KVA or greater that are to be constructed in India and is mandated by the Energy Conservation (EC) Act, 2001.
- ECBC encourages energy efficient design or retrofit of lightning & control fixtures in the existing buildings so that it does not constrain the building functions, comfort, health, or the productivity of the occupants and also have appropriate regard for economic considerations (life cycle costs i.e. construction + energy costs are minimized). ECBC defines the norms of energy efficiency of building equipments and takes into consideration the climatic region of the country, where the building is located. Norms have been developed to cater different climatic zones in India such as: Composite, Hot & Dry, Warm & Humid, Moderate and Cold.
- ECBC provides design norms for:
 - Building Envelop: It includes Thermal performance requirements for walls, roofs and windows except for unconditioned storage spaces or warehouses.
 - Comfort Systems & Controls: It includes the energy performance of heating, ventilating, air conditioning and service hot water & pumping and their controls.
 - Lighting & Controls: It includes interior and exterior lighting, day lighting and lamps & luminaries performance requirements.
 - Electrical and Renewable Energy Systems: It includes the energy performance of motors, transformers, DG sets, UPS and energy metering.
- ECBC can effectively be implemented by participation of various stakeholders such as DDA, PWD, MCDs, Council of Architecture, NBCC, DISCOMs, and Private Builders/Engineers/Architects etc.
- In Delhi, DDA prepares and notifies the Building Bye-Laws and provisions of ECBC-2007 have already been included in the bye-laws for some building types by DDA. So far DDA has included the provisions of ECBC in UBBL 2016:
- UBBL 2016 U/s 3.2, table 3.5 (4e), has made mandatory compliance measures (for all buildings having plot area from 50,000 m² to 1, 50,000 m²) as recommended in the Energy Conservation Building Code (ECBC) 2007 of the Bureau of Energy Efficiency, Government of India. However, there are no provisions for making ECBC mandatory (as a whole) for buildings except the area mentioned above, only few components of ECBC incorporated.
- Comprehensive mandatory provision is required to be included in the Delhi's Unified Building Bye-Laws (UBBL) 2016 which comes under purview of DDA. Previously, DDA was requested to

incorporate provisions ECBC in Delhi's UBBL by DDA vide Secretary (Power) DO letter dtd: 01.09.2020. (copy attached)

- Ministry of Housing and Urban Affairs (MoHUA), GoI has also directed DDA vide OM dtd: 21.09.2020 to consider necessary amendments to include the provisions of ECBC guidelines in Unified Building Bye-Laws (UBBL).
- Further, Bureau of Energy Efficiency (BEE), GoI has also launched Eco-Niwas Samhita (ENS) for residential buildings and residential part of mixed land used projects build on plot area \geq 500 square meters in 2018. In the first phase minimum standards for the building envelop was launched to limit heat gain or heat loss of the residential building comprising adequate day lighting potential and ventilation. BEE, GoI is developing Eco-Niwas Samhita part-II for setting up minimum standards for the Electromechanical Equipments for efficient use of energy in residential buildings, which may be released shortly. The provisions of ENS have to be incorporated in Unified Building Bye-Laws (UBBL).
- DDA is being continuously followed up by Power Department for making requisite amendments in UBBL to incorporate provisions of ECBC for commercial & residential buildings.
- It is proposed that DDA should urgently amend UBBL & incorporate the provisions of ECBC for commercial and residential buildings. It is also proposed to promote adoption of Energy Efficiency measures in electricity usage.

12. Installation of smart meters (by DISCOMS)

The planning for installation of smart meter by respective DISCOMs is as under:

S.No	DISCOM	Total Consumers (in lacs)	Total Smart meters installed (in lacs)	DERC approval taken (Nos. in lacs)
1	BRPL	27.3	(4881 numbers)	3
2	BYPL	17.7	(147 numbers)	1.7
3	TPDDL	18.2	2.1	7
4	NDMC	0.7	0.6	-
	Total	63.9	2.7	11.7

- Total Consumer base of Delhi : 63.9 Lacs
- Total Smart Meters installed : 2.7 Lacs
- Balance Smart Meters to be installed : 61.7 Lacs

- Each smart meter costs around Rs. 3000 and approx Rs 6000-7000 including overall logistics. Replacing all balance 61.7 lacs meters with smart meters under CAPEX model, the cost will be around Rs. 3700-4300 crores
- Under OPEX model of EESL, NDMC has installed 60000 meters for project cost of Rs. 61.68 crores for 8 years i.e. Rs. 10280 / consumer for 8 years.
- For balance 61.7 lacs consumers under OPEX Model based on NDMC estimation, the overall cost will be Rs. 6342 Crores for 8 years.
- For targeting all the consumers, DERC will be requested for an early order for approving CAPEX / OPEX model.
- Delhi DISCOMs shall also be asked to go for installation of smart meters for all consumers in NCT of Delhi in time bound manner.

Annexure – IX (a)

Norms for Land Size for different Grids / Substations:

I. GIS (66kV / 33kV)

The guidelines for plot size of GIS substations were framed vide minutes of meeting dated 12.09.2016. The guidelines are as under:

- 50m x 30m (Two side open and rectangular plot. Right of Way of 6m required)
- 55m x 30m (One side open (longer side of plot). Rectangular plot. Right of Way of 12m required)
- 40m x 50m (One side open (Shorter side of plot). Rectangular plot. Right of Way of 12m required)
- In case of irregular shaped plot or no parallel road to plot, the plot size will be decided on the basis of joint inspection of officials of DDA & DISCOMs.

II. DDA order dated 09.09.2003 for Air insulated Sub Stations:

- 185m x 160m: Plot size for 220kV sub stations. Size can be further reduced if 33kV / 11kV not required.
- 95m x 90m: Plot size for 66kV sub stations.
- 60m x 45m: Plot size for 33kV sub stations.
- 10m x 8m: Plot size for 11kV sub stations.

III. Reference for 11/0.4 kV DT Substation space requirement

- Clause 6(4) of Chapter on schedule of charges of DERC Supply Code 2017 read with amendments.
- SDMC Circular dated 30.03.2017 regarding provision of substation space.

Annexure – IX (b)

Clause 6(4) of Chapter on schedule of charges of DERC Supply Code 2017:

(4) The developer/applicant taking supply at Low Tension level for any premises or for re-constructed premises, requiring LT Service connections whose:

- i. total cumulative demand of all floors in the plot/ building for LT service connection exceeds 100 kW/108 kVA; or
- ii. total cumulative built up area of the premises in the plot/building exceeds 1000 sqm; or
- iii. plot of size above 300 sqm or above; shall provide the space for installation of distribution transformers, as per the required load.

Provided that the minimum space required to be provided by the developer/applicant for installation of distribution transformers/ equipment shall be as per circular no. South DMC/0148/SE(B)HQ/Addl. Coml/17 dated 30.03.2017 notified by South Delhi Municipal Corporation or as amended from time to time, annexed at annexure IX (c):

Provided further that the existing consumer shall also be required to provide the space as above, in the event of:

- i. enhancement of existing load on account of additional construction in the premises and consequently the total built up area exceeds 1000 sqm of the plot/building or their total LT Service connections demand exceeds 100 kW/108 kVA; or
- ii. enhancement of load based on maximum demand readings for the electricity connections energized on or after 1.9.2017 and the total LT Service connections demand exceeds 100 kW/108 kVA;

Provided also that if the required space is not provided by the applicant or the developer, the distribution Licensee may refuse the grant of additional load:

Provided also that the consumer taking supply at LT voltage level, irrespective of its sanctioned load or the contract demand as the case may be, shall also provide the space to the licensee for installation of meter, and part of service line up to the point of supply, to the extent that would fall within his premises.

[Explanation: For the purpose of this sub-clause, the built-up area shall be as specified in the plan approved by the authorized agencies. In case, built-up area is not specified in the approved plan, the built-up area shall be taken as the carpet area plus the thickness of outer walls and the balcony]

Annexure – IX (c)

SDMC Circular on Provision of Spaces for Substation

SOUTH DELHI MUNICIPAL CORPORATION
OFFICE OF THE ADDITIONAL COMMISSIONER-I
6TH FLOOR, DR. SHYAMA PARSHAD MUKHERJEE CIVIC CENTRE
JAWAHARLAL NEHRU MARG : NEW DELHI – 110002.

No.South DMC / 0/48 / S.E.(3771a) / Add'l Comr-I / 17 Dated: 30.03.2017

C I R C U L A R

Subject : No requirement of NOC from Delhi Jal Board & DISCOM at the time of sanction of building plans under the Online System – EODB.

Under the "Ease of Doing Business" relating to construction permits, the requirement of NOC from Delhi Jal Board is not required as already communicated by the Chief Engineer (Plg.)W, D.J.B. vide letter No.DJB/CE(Plg)W/2016/138 dated 29.04.2016, stating therein that "Since Delhi Jal Board is a service provider and provides water to the constructed buildings, issue of NOC from DJB for approval of plans / construction permits is not required".

With regard to NOC from DISCOM, there is no need to submit the NOC for sanction of building plans. The built up space for transformer / equipments is to be provided in the plot as per Annexure "A", copy enclosed.

To have the uniformity in the process of Online Sanction of Building Plan, this may be applicable in all the three Municipal Corporations.

This is for necessary compliance by all concerned.



Additional Commissioner-I
South Delhi Municipal Corporation

Distribution:

- 1 Additional Commissioner(Engg.) – North & East DMCs
- 2 All Zonal Deputy Commissioners–South, North & East DMCs
- 3 Chief Town Planners –South, North & East DMCs
- 4 Chief Law Officers –South, North & East DMCs
- 5 Director (IT) – with the request to upload the above circular on the website and a copy of the circular be forwarded through e-mail to all empanelled Architects / Engineers / Supervisors.
- 6 All SEs(Bldg.)HQ –South, North & East DMCs
- 7 All EEs(Bldg.)HQ & Zonal EEs(Bldg.) –South, North & East DMCs
- 8 EE(OBPS), I.T. Deptt.
- 9 AE(OBPS) – to upload the same on Facebook page of EODB.

Copy to:

- 1 PS to Commissioner, South DMC – for kind information of the Commissioner.
- 2 Director (DIPP), Ministry of Commerce & Industry, Udyog Bhawan, New Delhi.
- 3 Special Commissioner of Industries, O/O the Commissioner of Industries, Govt. of NCT of Delhi, Udyog Sadan, Patpargang, New Delhi – for kind information.

Space for Electrical Installations

1.1 **Electric Sub-station** – The norms given in 1.1.1 and 1.1.2 shall be adopted for provision of space for sub-station.

1.1.1 Load calculation criteria based on construction area and applicable load norms

Category/Usage of premises	Applied/approved construction area* per 1000 Sq. ft.	Load requirement as per applicable load norms
Domestic	1000 Sq. ft.	15 KW
Non Domestic	1000 Sq. ft.	25 KW
Industrial	1000 Sq. ft.	40 KW

* Construction Area = (Plot Area) * (FAR) else construction area as per building plan, whichever is maximum

1.1.2 Space Requirements for Electrical Sub-Station

Sl No	Total Construction area (in Sq. m)	Calculated load as per construction area in KW	Space requirement for Utility (LXW)	Minimum space requirement for applicant (LXW) in casse of HT/ Utility in case of electrification	Total Space for Electrical Services in Bldg plan (Sq M)
1	Construction area is as per applied/approved bldg plan.	100 -200	4 M X 5.3 M		21
2		201-800	6 M X 3 M	4 M X 5.3 M	39
3		801-1500	6 M X 3 M	2* (4 M X 5.3 M)	60
4		1501-2200	6 M X 3 M	3* (4 M X 5.3 M)	82
5		2201-2900	6 M X 3 M	4* (4 M X 5.3 M)	103
6		2901-3500	6 M X 3 M	5* (4 M X 5.3 M)	124
7		>3500	Applicant shall approach utility for approval of space and layout		

Notes:

1. In case of special/additional requirements of applicants such as double metering arrangement, N-1 contingency up to distribution transformers, automation etc, then the space requirement may vary. The same shall be considered with the approval of Utility/Licensee.
2. The floor of the sub-station shall have cable trenches of 0.6 m X 0.9 m (WxD), the layout for which will be given at the time of actual construction. This floor shall be capable to withstand minimum load of 10 tones of each transformer/switchgear/metering panel mounted.
3. Please refer enclosed ANNEXURE-I for additional specifications/requirement of electrical substation

ANNEXURE-I

1. **Distance from Electrical lines / Structure** : Substation space shall taken care the minimum clearances as per below table

Description	Vertically	Horizontally
Low and Medium Voltage up to 650 V	2.5 M from the highest point	1.2 M from the nearest point
High Voltage lines up to 33 kV	3.7 M	2.0 M
Extra High Voltage lines beyond 33kV	3.7 M Plus 0.3 M for every additional 33kV or part thereof	2.0 M Plus 0.3 M for every additional 33kV or part thereof

2. Specifications and location of Substation

- a. The substation should preferably be located in separate building within the plot and could be adjacent to the generator room, if any. Location of substation in the basement floors should be avoided, as far as possible.
- b. The ideal location for an electrical substation for a building or a group of buildings would be at the electrical load centre on the ground floor. The floor level of the substation or switch room shall be above the highest flood level of the locality. Generally the load centre would be somewhere between the geometrical centre and the air conditioning plant room, as air conditioning plant room would normally be the largest chunk of load, if the building is air conditioned.
- c. The gate shall open towards outside of the room and shall be painted black.
- d. The approach road shall be minimum 4 meter wide up to substation from the entry gate and height should not be less than 4 meter.
- e. No service such as sewer, air conditioning, water, gas pipes etc. should pass the Electrical Substation (ESS) or the cable trench provided in/outside of ESS.
- f. There should not be any basement/underground water tank or any construction beneath the ESS proposed but relaxation may be accepted subject to submission of certificate from license structure engineer, clearly mentioning that the floor above the basement or water tank can withstand the load of BRPL equipments to be installed inside the substation.
- g. The structure provided for ESS should be weather and fire proof of above referred dimension and should be free of any kind of seepage/leakage. There should be no combustible material kept in side or in the vicinity of ESS.
- h. The above mentioned space requirement does not cover the installation of consumer part.
- i. Substations with oil filled equipment will require great consideration for the fire detection, protection and suppression. Oil cooled transformers require a suitable soak pit with gravity flow to contain the oil in the event of the possibility of oil spillage from the transformer on its failure. Substations with oil filled equipment shall be located at ground floor only. Such substations with high oil content may be housed in a separate service building or a substation building, which is not the part of multi-storied building.
- j. **In case electric substation has to be located within the main multi-storied building itself for unavoidable reasons, then it should be located on the floor close to ground level, but shall have direct access from the street for operation of the equipments.** The provision for installation and removal of substation equipments may be provided from inside the building.

ANNEXURE X: SERVICE PLAN - DELHI TRANSCO LIMITED (DTL)

दिल्ली ट्रांसको लिमिटेड
(राष्ट्रीय राजधानी क्षेत्र दिल्ली सरकार का उपक्रम)
पंजीकृत कार्यालय: अफिमदन, कोटला रोड, नई दिल्ली - 110002



DELHI TRANSCO LIMITED
(A Govt of NCT of Delhi Undertaking)
Regd office : Shakti Sadan, Kotla Road, New Delhi - 110 002
CIN: U40103DL2001SGC111529

No. F.DTL/202/Oprns.plg/DGM(Planning)/20-21/F-18/46

Dated: 16.12.2020

Vice Chairman
Delhi Development Authority
Vikas Sadan, INA
New Delhi-110023
Email:- vcdda@dda.org.in

Subject: Perspective Plan for Power Transmission Services for Delhi-2041 (MPD-2041).

Respected Sir,

This is in reference to your letter no. F.18 (7)2018-MPD-159 dt. 16.07.2020, regarding preparation of perspective Plan for Power Transmission Services for Delhi-2041 (MPD-2041).

In this context, DTL has attended various meeting earlier for "POWER" Base lining Group for MPD-2041 organized by DDA. During these meeting, DTL has presented "Norms/infrastructure/challenges etc. of Transmission Network.

For the preparation of perspective plan for Delhi power transmission network, a load growth around 4% for developed area, 2% for NDMC area and 7% developing area like Dwarka has been considered. Further, the areas which are going to be developed under DDA land pooling policy, a thumb rule being practices in Power sector, for catering power requirement for 16-20L urban population, 1 no. 400k220kV substation and 3 nos. 220kV substation has been considered for ensuring the system reliability.

Accordingly, a DDA zone wise perspective plan for Power Transmission Services for Delhi-2041 (MPD-2041) has been prepared and enclosed herewith. The downstream network (66kV, 33kV, 11kV) as Power Distribution Services for Delhi is required to be provided by the concerned DISCOMs of Delhi.

Pankaj



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Visit us at www.dtl.gov.in, www.delhisldc.org



The summary of perspective plan for Power Transmission Services for Delhi-2041 (MPD-2041) as under:-

Voltage Level	No. of Existing substations	No. of proposed substations (under pipeline or execution)	No. of proposed substations (MPD-2041)	Associated ROW requirement
765kV	01	01	02	67m ROW for overhead (O/H) Transmission line (T/L)
400kV	07 (including Mandola)	03	09	52m ROW for overhead (O/H) Transmission line (T/L)
220kV	41	04	37	35m ROW for O/H T/L or 2x2 mtr for U/G Cable.

In view of the above, it is requested to earmark/allocate land/ROW in Master Plan of Delhi-2041 as per DTL perspective plan for establishment of Power transmission infrastructure (enclosed).

Thanking you.

Enclosures:- as above

Pankaj
16/12/2020

(Pankaj Kumar Vijay)
Dy. General Manager (Planning)



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Visit us at www.dtl.gov.in, www.delhisldc.org

PERSPECTIVE PLAN FOR INFRASTRUCTURE SERVICE FOR DELHI - 2041
AGENCY: DELHI TRANSCO LIMITED (A Govt. of NCT of Delhi undertaking)

1. PROJECTED POWER DEMAND - 2041

As per the trends indicated by Department of Power, GNCTD, the power demand by 2041, is projected to reach 63,389 MU. Peak demand is likely to increase to 19,070 MW. Based on this it is estimated that the total installed capacity would also need to be increased threefold up to 21,930 MW (15% over and above the estimated peak demand). The current installed capacity for Delhi is 7,901 MW thus an additional installed capacity of 14,029 MW needs to be added in the coming plan period. The following Renewable Purchase Obligation targets have been set by MNRE for Delhi- 19% by 2022, 38.5% by 2031 (based on 450GW national target by 2030) and 50.5% by 2041 (further projection of 2030 targets). The total power consumption needs to be met from renewable energy based on these targets. Strategies shall be developed and efforts shall be made along with DISCOMs to meet the set targets.

Areas that are going to be developed under land pooling policy, a thumb rule being practiced in the power sector for catering power requirement for 16-20L urban population, 1 no. 400-220kV substation and 3 nos. of 220kV substation has been considered for ensuring the system reliability. Downstream network (66kV, 33kV and 11 kV) as Power Distribution services for Delhi is required to be provided by the concerned DISCOMs in Delhi.

Table 7: Abstract of total Substation requirements (765/400/220kV)

Sl. No.	Voltage Level	No. of Existing Sub-Stations	No. of Proposed Substations (under execution)	No. of Proposed Sub-Stations	Associated RoW Requirement
1.	765 kV	1	1	2	67m RoW for overhead transmission line
2.	400 kV	7 (Including Mandola)	3	9	52m RoW for overhead transmission line
3.	220 kV	4	4	37	35m RoW for overhead transmission line or 2X2 mtr for UG cable

Table 8: Zone-wise-Perspective Plan for Power Transmission Services (765/400/220 kV) for Delhi MPD 2041

ZONES	Existing 400/220 kV substation	Voltage Level	Requirement for MPD 2041	Tentative area required (in sqm)	Requirement by the Year	Remarks
Zone - A	NIL No ESS in this zone	-	-	-		
		220/33 kV Installed capacity 400 MVA	Asaf Ali Road (Wall city)	Being the land scarcity in the area, minimum area required 7000 sqm.	2027	This will provide power to New Delhi railway station, Delhi Metro Rail and upcoming multi story development.
Zone - B	Dev Nagar (Karol Bagh)	220/33 kV	Under construction			
		400/220/33 kV	IARI Pusa/ Dev Nagar	200 x 200 sqm (40000 sqm)	2025	All the existing 400 KV station in Delhi are at the outer part of Delhi. Due to non-availability overhead corridor, power is being transmitted through underground cables. The 220kV underground cables have the limitations of shorter length and power carrying capacity. Therefore, a strong source of 400 kV level has become the urgent requirement in central part of Delhi. IARI PUSA are seems that 400 KV substation can be established for power requirement of central Delhi.
Zone- C	Sabji Mandi	220/33 kV				

	Sanjay Gandhi Transport Nagar (SGTN)	220/66 kV	Existing			
	Gopal Pur	220/66 kV- 33kV				
	Timar Pur	220/33 kV	Under construction			
	Gopal Pur	400 kV	Up-gradation in under tendering			
New proposal to be included in MPD-2041						
		220/33 kV (400 MVA)	Azad pur	Being the land scarcity in the area, minimum area required 7000 sqm	2031	This substation will be required to cater the natural growth of nearby area and will provide the relief to existing Gopal Pur (33 kV level) and sabji Mandi area
Zone-D	Electric Lane (Harish Chandra Mathur Lane)	220/33 kV		-	-	
	Lodhi Road	220/33 kV				
	Park street	220/66-33 kV				
			Sarojini Nagar	10000 sq.mt	2023	NDMC is in process of Redevelopment of General Pool Residential Accommodation (GPRA) colony at Neetajee Naga, Nauroji Nagar & Sarojini Nagar through NBCC. NBCC has earmarked a piece of land for establishment of 220 kV substations.
Zone-E	Harsh Vihar (East of Loni Road)	400/220/66 kV	Existing Substation			
	Patparganj	220/66-33 kV				
	Gazipur	220/66 kV				
	Preet Vihar	220/33 kV				

Geeta Colony	220/33 kV				
New proposal to be included in MPD-2041					
	220/33 kV	Dwarka Puri/ Shahdara/ Welcome colony	Being the land scarcity in the area, minimum area required 7000 sqm.	Immediate	This proposed substation has been planned for future development to meet the industrial; and residential load growth around Shahdara, Welcome Colony, Seelampur, Jafrabad etc.
	220/66 kV	GTB Hospital/ Dilshad Garden/ Nand Nagari	Being the land scarcity in the area, minimum area required 7000 sqm.	2025	This proposed substation has been planned for future development to meet the industrial and residential load growth around Jhilmil, Dilshad garden, Nand Nagri etc.
	400/220 kV	Geeta Colony	Being the land scarcity in the area, minimum area required 7000 sqm.	2025	DDA may allot an area near existing 220 kV DTL Geeta Colony substation from where 440 kV Transmission line can easily be connected. Therefore, no separate corridor for 400kV transmission line is required.
	220/33 kV	Mayur Vihar	Being the land scarcity in the area, minimum area required 7000 sqm.	2027	This proposed sub-station is for future development to meet the industrial and residential load growth around Mayur Vihar area.
	220/66 kV	Yamuna Vihar/ Loni Road	Being the land scarcity in the area, minimum area required 7000 sqm.	2038	This proposed sub-station is for future development to meet the industrial and residential load growth around Yamuna Vihar area.

Zone-F	Masjid moth	220/33 kV	Existing			
	AIIMS	220/33 kV				
	Sarita Vihar	220/66 kV				
	R K Puram	220/66-33 kV				
	Vasant Kunj	220/66 kV				
	Okhla	220/66-33 kV				
	Tughlaka bad	400/220/66 kV				
	Ridge Valley	220 kV				
	BTPS	220/66 kV (480 MVA)	Under tendering (65 kV level)			
New proposal to be included in MPD-2041						
	400/220 kV	Near Sarita Vihar/ BTPS	200 x 200 sqm (40,000sq m)	2032	To meet the long-term load requirement of south Delhi area.	
	220/ 33 KV (300 MVA)	Nehru Place	Being the land scarcity in the area, minimum area required 7000 Sqm	Immediate	The location has already been earmarked by DDA for establishment of 220/33kV ESS but land has not been handed- over to Power Dept. / DTL yet.	
	220/ 33 KV (300 MVA)	Malviya Nagar	Being the land scarcity in the area, minimum area required 7000 Sqm	2027	During recent communication with DDA has informed that there is earmarked plot for ESS of area of about 3100 sqm in Malviya Nagar. After going through the DDA offer, the plot size is not sufficient. Therefore, it is requested to increase the plot size or earmarked sufficient area for 220 kV ESS at nearby area.	
	220/66KV (480 MVA)	West of JNU	Being the land scarcity in the area, minimum area	2036	This ESS will provide relief to existing 220 KV ESS (Vasant kunj) and will help to manage the load	

				required 7000 Sqm		growth. DDA may kindly earmark an area near Priya PVR area, for easy evacuation of power.	
		220/66KV (480 MVA)	Jasola	Being the land scarcity in the area, minimum area required 7000 Sqm	2038	The ESS that will provide relief to existing 220 KV ESS (Sarita Vihar and Okhala) and upcoming BTPS and will help to manage the load growth. DDA may kindly earmark an area near Okhla waste to power generation plant	
ZONE-G	Peeragarhi	220/ 33 KV	Existing				
	DIAL	220/ 66 KV					
	Naraina	220/ 33 KV					
	Budella	220/ 66 KV	Under tendering				
New Proposal to be included in MPD-2041							
		220/33KV (400 MVA)	Punjabi Bagh	Being the land scarcity in the area, minimum area required 7000 Sqm	Immediate	This ESS is top priority to meet the load growth of the area, a 220 KV ESS implementation is must. DDA may kindly earmarked an area near the road crossing of MG road and Vashisht Kumar Gulla marg (Vacant land) for easy evacuation of power.	
		220/ 66 KV	Aero City	Being the land scarcity in the area, minimum area required 7000 Sqm	2025	To cater the load growth of commercial hub ground airport	
		220/33 KV (400 MVA)	Janakpuri (Pankha road)	Being the land scarcity in the area, minimum area	2029	This will provide relief to existing Panjabi Bagh & Naraina ESS and will help to	

				required 7000 Sqm.		manage load growth. DDA may kindly earmark an area between C3 road and C2 park (vacant land) for easy evacuation of power.
		220/33 KV (400 MVA)	Hari Nagar/ Pratap Nagar	Being the land scarcity in the area, minimum area required 7000 Sqm.	2041	This will provide relief to existing Papankalan-I & Naraina ESS and will help to manage load growth up to 2021 & beyond. DDA may kindly earmark an area near bus depot at Pratap nagar (vacant land) for easy evacuation of power.
		220/33 KV (400 MVA)	Kirti Nagar	Being the land scarcity in the area, minimum area required 7000 Sqm.	2032	This ESS is required to meet the load growth of existing area.
ZONE- H	Rohini-I	220/ 66 KV	Existing			
	Wazirpur	220/ 33 KV				
	New Proposal to be included in MPD-2041					
		220/66 KV (520 MVA)	Rohini Sector-1	Being the land scarcity in the area, minimum area required 7000 Sqm.	2038	This will provide relief to existing Rohini ESS and will help to manage load growth up to 2041 & beyond. DDA may kindly earmark an area near the existing NDPL grid in this sector.
		220/33 KV (400 MVA)	Ashoka Vihar	Being the land scarcity in the area, minimum area required 7000 Sqm.	2029	This will provide relief to existing Shalimar Bagh and Wazirpur ESS and will help to manage load growth up to 2041 & beyond.
ZONE-J	Mehrauli	220/66 KV	Existing			

New Proposal to be included in MPD-2041					
	765/400 (220 kV)	Mandi Village	400x 400 Sq.m. (160,000 Sq.m.)	2030	<p>One 765 kV is required to meet the load growth of south Delhi, will provide grid power to existing and proposed 400 KV ESS. This proposed substation is planned at Mandi Village.</p> <p>This substation is required for major source of power supply to new developing as well as existing area at the south boundary of Delhi. DDA is also requested to provide RIGHT of Way for 765 KV ESS from existing Agra- Jhatikara 765 KV transmission Line.</p>
	420/220 kV/ 66kV	Rang Puri	200x 200 Sq.m. (20,000 Sq.m.)	2027	To provide the 220 KV source to Vasant Kunj and future load growth of nearby area.
	220 KV	Maidan Garhi	Being the land scarcity in the area, minimum area required 7000 Sq.m.	2024	This will provide relief to existing Mehrauli & Okhla ESS and will help to manage load growth up to 2021 & beyond. The location may be earmarked by DDA near/ beneath DTL 220 KV Mehrauli-Tughlakabad overhead Line.
	220 KV	Aya Nagar	10000 Sq.m.	2028	This will provide relief to existing Mehrauli ESS and will help to manage load growth up to 2021 & beyond. Further DTL has no 220 KV ESS in this south

						area to cater to the future load growth.
		220 KV	Fatehpur beri/ Asola	10000 Sqm.	2032	This will provide relief to existing Sarita Vihar & Okhla ESS load growth up to 2021 & beyond will be very difficult to meet without this proposed substation. DDA may kindly earmark an area near Tughlakabad industrial area.
		220 KV	Bhati Mines	10000 Sqm.	2038	This will provide transformation capacity to meet the load growth of this extreme south corner of Delhi.
ZONE-K-1	Najafgarh	220/66 KV	Existing			
	New Proposal to be included in MPD-2041					
		220 KV	Bakkarwala	10000 Sqm.	2027	DDA may earmarked an area to meet the load growth due to new residential colonies like Lok Nayak Puram and other industrial developments are also proposed in this rea. It will much better, if an area may kindly be earmarked near pocket-c of Lok Nayak Puram (vacant land), for easy evacuation of power as the rea is closer to existing 220 kV EHV overhead line
		220 KV	Dichoan Kalan	10000 Sqm.	2036	This 220 KV ESS will be required for long-term load requirement.
ZONE-K-II	Bamnauli	400/220 kV	Existing			
	Papankalan-I	220 KV				

	Papankala n- II	220 KV				
	Papankala n- III	220 KV				
	Dwarka sector-5	400/220 kV	Under Execution (400 kV level)			
	Bharthal	220/66 KV	Under tendering			
	New Proposal to be included in MPD-2041					
		220/66 KV	Dwarka Sector- 23	Being the land scarcity in the area, minimum area required 7000 Sqm.	2034	The load growth is very in this zone. Therefore, this ESS will be required to cater the load in long term.
ZONE-L	Jhatikara	765/400 KV	Existing			
	Tikri kalan	400/220 kV/ 66kV				
	New Proposal to be included in MPD-2041					
		400/220 kV/ 66kV	Jhatikara	200x 200 Sqm.	2023	This zone has been notified to develop under DDA land pooling scheme. These substations are required to cater the load of proposed to be developed under land pooling scheme. Further, DDA is requested earmarked the ROW for 400 KV and 220 KV overhead transmission lines.
		400 KV	Mitraon	200x 200 Sqm.	2036	
		220 kV	Mundela Khurd	10000 Sqm.	2040	
		220 kV	Chawala/ Tejpur	10000 Sqm.	2030	
		220 kV	Dhansa	10000 Sqm.	2030	
ZONE-M	Rohini-2	220/66 kV	Existing			
	New Proposal to be included in MPD-2041					
		400/220 kV/ 66kV	Barwala Sector- 37	200x 200 Sqm. (40,000 Sqm.)	2026	This will meet the demand of land pooling area of zone- N and growing demand of Rohini area
		220 kV	Begampur	Being the land scarcity in the area, minimum area required 7000 Sqm.	2034	No area has been earmarked at this area, but the load growth of residential colonies of sector- 21, 22, 41 Begampur, Pratap vihar and other developments are

						also to be met through this proposed ESS. So, DDA may kindly be requested to allot an area in this zone, positively to meet the load. It will much better, if an area may kindly be earmarked near existing 66 KV ESS at sector-22 Rohini (vacant land) for easy evacuation of power, as the rea is closer to existing 220 KV EHV overhead line.
ZONE-N	Kanjawala	220/ 66 KV	Existing			
	765 KV Narela	Under planning ISTS				
	New Proposal to be included in MPD-2041					
		400 KV	Chandpur	200x 200 Sqm.	2033	Already earmarked in MPD-2021
		220 kV	Nizampur	10000 Sqm.	2036	DDA may allot an area near Daryapur/ Bazidpur to cater to the proposed kanjhaala industrial area.
	220 kV	Qutub Garh	10000 Sqm.	2041	DDA may allot an area near nizampur to cater to the proposed kanjhaala industrial area also DTL do not has any 220 KV ESS at this western area to cater to the load growth.	
ZONE-O	Wazirabad	220/ 66 KV	Existing			
	Kashmiri Gate	220/ 33KV				
	Rajghat	220/ 33KV				
	IP power	220/ 33KV				
	Pragati Power	220/ 66 KV				

	Maharani Bagh	400/220 kV/ 66-33kV	400/220 KV is existing and creation of 66 KV 33 KV Level is under tendering.			
	IP Power	400 KV	Upgradation of existing 220 KV will be done in due course of time.			
New Proposal to be included in MPD-2041						
		220/66 KV	Karawal Nagar/ Sabha Pur (beneath of existing DTL 220 KV overhead transmission line)	10000 Sqm.	2028	DTL do not has any ESS on this North Part of Delhi, only one distribution substation of BYPL is there. To meet the load growth of soniya vihar, Karawal Nagar, Sabha pur, shiv Vihar etc. area, an area may be earmarked for future developments along the Pusta & Beneath of existing DTL 220 KV overhead transmission line (Mandola-Wazirabad- two lines). So that, no separate corridor could be required of connectivity to this.
ZONE-P-I	Bawana	400/220 kV/ 66 kV	Existing			
	Narela	220/ 66 kV				
	DSIIDC Bawana	220/ 66 kV				
	Tikri kurd	400/220 kV/ 66 kV	The project is proposed to be commissioned by year 2023 on land allocated by DDA.			
New Proposal to be included in MPD-2041						
		220/ 66 kV (480 MVA)	Holambi Kalan	10000 Sqm.		DDA may allot an area near Holambi Kalan to cater to the industrial area also with 35 m ROW corridor for overhead transmission line as this area has under development.
		220/ 66 kV (480 MVA)	Budhpur	10000 Sqm.		DDA may allot an area near Budhpur to cater to the industrial area around around siraspur, budhpur,

						Chandpur etc. to cater to the load growth.
		220/ 66 kV (480 MVA)	Bankner Village	10000 Sqm.		DDA may allot an area near Banker to cater to the industrial area around DSIIDC Bawana and Narela etc. to cater to the load growth of residential areas around this location. If possible, DDA may allocate a land near Bankner village area, just beside the existing 220 KV EHV line.
ZONE-P-II	New Proposal to be included in MPD-2041					
		765/400 kV/ 220 kV	Palla Village	400 m X 400 m (160,000 Sqm.)	2041	This area has been notified to develop under DDA land pooling scheme. This sub-station is required for major source of power supply to new developing as well as existing area at the North boundary of Delhi. DDA may allot the land near to the Yamuna Bank and border of Delhi.
		220 kV	Burari	10000 Sqm.	2026	Load demand of nthhu Pura, Burari, Sant Nagar is growing in rapid rate. This substation will provide the relief to existing Gopal pur substation. DDA may allot the land near DTL existing lines. Note: Although the location has been earmarked in MPD-2021.
		220 kV	Mukhmel pur Village	10000 Sqm.	2032	This area has been notified to develop under DDA land pooling scheme.

						DDA may allot the land near DTL existing lines. Note: Although the location has been earmarked in MPD-2021.
		220 kV	Mohmadpur Village		2041	This area has been notified to develop under DDA land pooling scheme. DDA may allot the land near DTL existing lines.

ANNEXURE XI: SERVICE PLAN - INDRAPRASTHA GAS LIMITED (IGL)

INDRAPRASTHA GAS LIMITED, NEW DELHI.

From: **kumar, Sushil (सुशील कुमार)** <sushil.kumar@igl.co.in>
Date: Fri, Apr 9, 2021 at 4:42 PM
Subject: Proposed Data for MPD 2041
To: leenu.sahgal91@dda.gov.in <leenu.sahgal91@dda.gov.in>
Cc: Manisha Gupta <manisha.gupta2031@dda.gov.in>, hitender.bharti98@dda.gov.in <hitender.bharti98@dda.gov.in>, ktiwari@niua.org <ktiwari@niua.org>, nrajadhyaksha@niua.org <nrajadhyaksha@niua.org>, Isharma@niua.org <Isharma@niua.org>, bjohn@niua.org <bjohn@niua.org>, Batra Ashim (अशीम बत्रा) <ashim.batra@igl.co.in>, Bhatia, Sanjeev Kumar (संजीव कुमार भाटिया) <sanjeevk.bhatia@igl.co.in>

Dear Madam,

Please find attached Service Plan of IGL for Gas infrastructure in Delhi. Requesting you to please incorporate the same within the service plans of MPD 2041.

Regards,

Sushil Kumar

DGM (CNG Marketing)

9871659933

PERSPECTIVE PLAN FOR INFRASTRUCTURE SERVICE FOR DELHI - 2041
AGENCY: INDRAPRASTHA GAS LIMITED (IGL)

Government of India is keen on making India a Gas based Economy – Aiming to push share of natural gas in energy basket from present 6% to 15% by 2030. Going ahead there is a need to lay greater emphasis on using cleaner fuels such as PNG & CNG and discouraging the use of polluting fuels such as FO, LSHS, Coal etc. The growing prices of diesel is resulting into decline in production of diesel variants & launching of more and more CNG variants by vehicle OEM’s.

There are opportunities of expanding existing LNG infrastructure. There is also a huge potential for converting in-use diesel trucks/buses to LNG in Delhi. IGL may cash-in the opportunity to create EV infrastructure at existing CNG stations. New Segments such as E-Rickshaws/Two Wheelers can be tapped under battery swapping facilities, being planned by IGL.

Below is the projected growth in CNG, Industrial, Commercial and Domestic sales volumes for the next 5 years. Considering the growth dynamics in the sector, IGL shall update its service plan once every 5 years.

Table 9: Segment wise projected growth in sales volume (MMSCMD)

Sl. No.	Segment/FY	2021-22	2022-23	2023-24	2024-25	2025-26	CAGR
1	CNG	4.06	4.51	5.01	5.56	6.17	11%
2	Industrial	0.13	0.15	0.17	0.19	0.22	14%
3	Commercial	0.11	0.12	0.14	0.15	0.17	13%
4	Domestic	0.32	0.40	0.49	0.61	0.76	24%
Total		4.62	5.18	5.81	6.51	7.32	
<i>MMSCMD: Metric Million Standard Cubic Meter per Day</i>							

Table Source: IGL

CNG: At present there is a shortfall of 35 CNG Stations in Delhi (area required for each station is approx. 1080 sqm); refer Annexure XI (a) for details of area wise requirements. In the next 5 years, 110 new CNG Stations are planned (excluding land pooling zones) and about 20 Nos. of Field Regulatory Station is required in the next 5 years (area required for each station is approx. 100 sqm). The area requirements for a Mother Station is 3000 sqm and for an Online Station is 1080 sqm. Below is the zone wise CNG station requirements for land pooling areas:

Table 10: No. of new CNG stations required for each zone

Sl. No.	Zone name	No. of CNG stations proposed
1.	K1	5
2.	L	10
3.	N	5
4.	P2	4
Total		24

Table Source: IGL

PNG: IGL currently has 9, 66,098 households connected with PNG in Delhi (up to 31.10.2020). 9 lakh households are planned to be connected to PNG in the next 3 years.

Annexure XI (a): Land Requirement for CNG Stations

S.No.	Particular area	Stretch Route Description
1	Ring road Bypass	From Pragati Maidan CNG station to ISBT Kasmiri gate
2	Ring road Bypass	From ISBT to Dheerpur CNG Station
3	Inner Ring road	From Burari Chowk to IGL Shakurpur CNG Station
4	Outer Ring road	From Dheerpur CNG station to Jahangirpuri CNG station
5	Outer ring road	From Janakpuri District Centre to Madhuban Chowk
6	North Central Delhi	Rajouri to Connaught Place (both sides)-1
7	North Central Delhi	Rajouri to Connaught Place (both sides)-2
8	South Delhi	From Hari Nagar Ashram to RKP 12
9	Outer Ring Road	From Rohini Sector 19 CNG Station to Metcalfe House CNG Station
10	Ring Road area	Mayapuri Metro Station to IGL Sarojini Nagar Station
11	Badarpur Border	From Faridabad Delhi Border to CRR1 (towards Delhi)
12	South Delhi	RKP 3 to Nehru place (Both sides of the road)
13	South Delhi	Kalkaji to Andrews Ganj Via Chirag Delhi (Both Sides)
14	South Delhi	Sri Aurobindo Marg to Lado Sarai Hybrid(Both Sides)
15	South Delhi	RKP 12 to Brar Square (Both sides of the road)
16	Mehrauli Badarpur road	Mehrauli to Sarvodaya Enclave (Both Sides)
17	Main Chattarpur road	KR Hospital to Satbari
18	Mehrauli Gurugram road	Mehrauli to Indian Oil Janta Filling Station (Both sides)
19	Lajpat Nagar/Defence Colony	From The Oberoi to Moolchand Flyover Via Lala Lajpat Rai Road
20	South Delhi	August Kranti Marg (Both sides)
21	South Delhi (SDMC)	Kalkaji to Andrews Ganj via Greater Kailash
22	Defence Colony, SDMC, Delhi	Bhisma Pitamah Marg(Both Sides)
23	South East Delhi(SDMC)	Batla House Market, Near By Area
24	South Delhi	Moolchand to Pushpabhawan(Both sides of the road)
25	NH-8	NH8 (Dhaura Kuan to Rajokri), Both Sides
26	South Delhi	AIIMS to Ashram on Ring Road (Both Side)

ANNEXURE XII: SERVICE PLAN – DEPARTMENT OF INFORMATION AND TECHNOLOGY, GNCTD

**GOVT. OF NCT OF DELHI
DEPARTMENT OF INFORMATION AND TECHNOLOGY
9TH LEVEL, 'B' WING, DELHI SECRETARIAT,
NEW DELHI – 110002.**

From: **munish** <munish.sharma@semt.gov.in>
Date: Fri, Apr 9, 2021 at 3:47 PM
Subject: MPD - 2041 - Draft Report
To: <leenu.sahgal91@dda.gov.in>, <manisha.gupta2031@dda.gov.in>, <hitender.bharti98@dda.gov.in>, <lsharma@niua.org>
Cc: PRINCE DHAWAN IAS <prince.dhawan@ias.nic.in>, Santulan Chaubey <santulan@gov.in>, <secyit@nic.in>


Dear Sir / Ma'am,

Please find attached the draft report from IT department on MPD 2041. The proposal has gone to Hon'ble Minister for seeking approval.

Regards

Munish Sharma

IT Department, GNCTD, SeMT.

 **MPD 2041_final 9.4.2021-SS_ver3.pdf**
394K

From: **munish** <munish.sharma@semt.gov.in>
Date: Fri, 9 Apr, 2021, 21:59
Subject: RE: MPD - 2041 - Draft Report
To: <lsharma@niua.org>
Cc: leenu sahal <leenu.sahgal91@dda.gov.in>, Manisha Gupta <manisha.gupta2031@dda.gov.in>, hitender kumar bharti <hitender.bharti98@dda.gov.in>, PRINCE DHAWAN IAS <prince.dhawan@ias.nic.in>, Santulan Chaubey <santulan@gov.in>, Amit Singla <secyit@nic.in>, <bjohn@niua.org>, <ktiwari@niua.org>, <nrajadhaksha@niua.org>

Dear Lovesh ,

We got the approval from Hon'ble Minister , no change. For your info please.

Regards

Munish

PERSPECTIVE PLAN FOR INFRASTRUCTURE SERVICE FOR DELHI - 2041
AGENCY: DEPARTMENT OF INFORMATION AND TECHNOLOGY, GNCTD

Perspective plan for making Delhi digitally enabled as per National Digital Policy:

1. Creating a Robust Digital Communication Infrastructure

- Provide Universal broadband connectivity at 1Gbps to every citizen
- Enable fixed line broadband access to 100% of households
- Achieve 'unique mobile subscriber density' of 100% by 2041
- Enable deployment of public Wi-Fi Hotspots; to reach
- Ensure connectivity to all uncovered areas

2. Implementing a 'Fibre First Initiative' to take fibre to the home, to enterprises and to key development institutions e.g. schools, colleges, hospitals.

- Promoting collaboration models involving state, local bodies and private sector as necessary for provision of shared duct infrastructure in municipalities, rural areas and national highways.
- Facilitating Fibre-to-the-tower programme to enable fiberisation of 100% of telecom towers thereby accelerating migration to 4GB/5GB.
- Incentivising and promoting fibre connectivity for all new development construction.

3. Establishment of a GNCTD Digital Grid:

- Establishing Common service ducts and utility corridors in GNCTD and highway road projects, and related elements.
- Facilitating development of Open Access Next Generation Networks

4. Ensuring a holistic and harmonised approach for harnessing Emerging Technologies

- Synergising deployment and adoption of new and emerging technologies by:
 - i. Creating a roadmap for emerging technologies and its use in the communications sector, such as 5G, Artificial Intelligence, Robotics, Internet of Things, Cloud Computing and M2M.
 - ii. Simplifying licensing and regulatory frameworks whilst ensuring appropriate security frameworks for IoT/M2M/future services and network elements incorporating international best practices.
 - iii. Earmarking adequate licensed and unlicensed spectrum for IoT / M2M services
- Enabling Hi-speed internet, Internet of Things and M2M by rollout of 5G technologies.
- Establishing GNCTD as a hub for cloud computing, content hosting and delivery, and data communication systems and services.
- Leveraging Artificial Intelligence and Big Data in a synchronized and effective manner to enhance the overall quality of service, spectrum management, network security and reliability.
- Information provided in the plan enclosed Establishing Centres of Excellence including in Spectrum Management, Telecom Security and Next Generation Access Technologies.

5. Promoting Start-ups and SMEs:

- Supporting Start-ups with various fiscal and non-fiscal benefits, including:

- Academic collaborations, permissions for pilots and testing, concessions on imported software, mentoring support etc.
 - Promoting participation of Start-ups and SMEs in government procurement
 - Funding pilot deployments through USOF
6. **Setting up of virtual schools:** Govt. of NCT of Delhi will set up virtual schools to provide another channel to the public to pursue with getting education and skills in a formal virtual schooling.
 7. **Digital Delivery of Government Services:** Government of NCT of Delhi will provide all its Government services to the citizens online as well as through mobile. The delivery of these services will be through secured Digi-Locker system. The citizen will use either web portal or UMANG platform to get the Government services.
 8. **Promotion of IT/ITES:** Government of NCT of Delhi has already announced its policy to remove polluting industries from Delhi. Delhi Government will promote clean environment industries like IT and IT enabled services in Delhi.
 9. **Plans for provision of Public Wi Fi:** In the current Wi Fi schemes of providing free wi-fi to the citizens of Delhi rental model is adopted. In this scheme all the bus stops (about 4000 in Nos) are covered. The data limit per user is 15 GB per month. By 2041, GNCTD, Delhi can plan to cover all the area with Wi Fi. This includes the Wi Fi access in all public vehicle and public place including schools, colleges, hospitals etc. The bandwidth at WiFi, Hotspots can go up to the speed of 1 GBPS per user. All the security concern should be taken care while planning the complete Wi Fi network for GNCTD. Smart Poles is the way forward to accelerate the growth.
 10. Key infrastructure or special projects identified during the plan period, along with details of projects and their timelines:
 - **A digitally enabled and connected city:** Delhi shall need adequate infrastructure provisions to support the advent of higher service levels like network of 5G and above, full city fibre coverage, further integration of city's digital systems with IoTs (Internet of Things), Artificial Intelligence (AI), Cloud Computing and Big Data etc. The highly equipped and digitally smart unified command and control centres set up by the local bodies can be the key drivers for effective urban management of Delhi.
 - With increased level of digitalization, data centres may be setup to meet the need for data storage, server management, etc. Such data centres may be developed by public and/or private agencies and can come up in industrial land use as per provisioned
 - Connectivity through fibre-optics is considered to be more efficient in terms of internet speed and reliability of services, "Fibre First Initiative" of NDCP 2018 and regulations of ROW Policy 2016 will facilitate augmentation of telecom infrastructure. Implementation of optic fibre shall be through collaborative models involving state government, local bodies and private sector as required for provision of shared telecommunication infrastructure.
 - Smart poles may be installed in public areas, comprising of CCTV cameras, air pollution monitoring sensors, telecom antenna, Wi-Fi hotspots/ microcells, solar lighting, public address and messaging systems, emergency call box etc., which in turn shall be connected to the digital systems of various city agencies.

11. Back-up plan for connectivity during emergencies/ disasters

Developing a comprehensive plan for network preparedness, disaster response relief restoration and reconstruction

- Strengthening network resilience by:
 - i. Framing and enforcing standard operating procedures to be followed during disasters and natural calamities, including sectoral guidelines for disaster response and recovery applicable to various service providers.
- Developing a Unified Emergency Response Mechanism by:
 - ii. Creating an institutional framework with clearly defined roles and responsibilities, Standard Operating Procedures and technical guidelines
 - iii. Enforcing obligations of service providers to share infrastructure, and ensure interoperability in emergency situations in a network-agnostic, operator – agnostic and technology-agnostic manner.

The draft text document of MPD-2041 and Land Use Plan shall be available at the Reception Desk of Vikas Minar, I.P. Estate, New Delhi-110002 on all working days during the period referred above. The same shall also be available on the following link i.e. <https://dda.org.in/hotlinks.aspx>.

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(D. SARKAR)
**COMMISSIONER-CUM-SECRETARY,
DELHI DEVELOPMENT AUTHORITY**