

UNLIMITED DIMENSIONS OF HEALTH INFRASTRUCTURE

The Most Essential Element of life

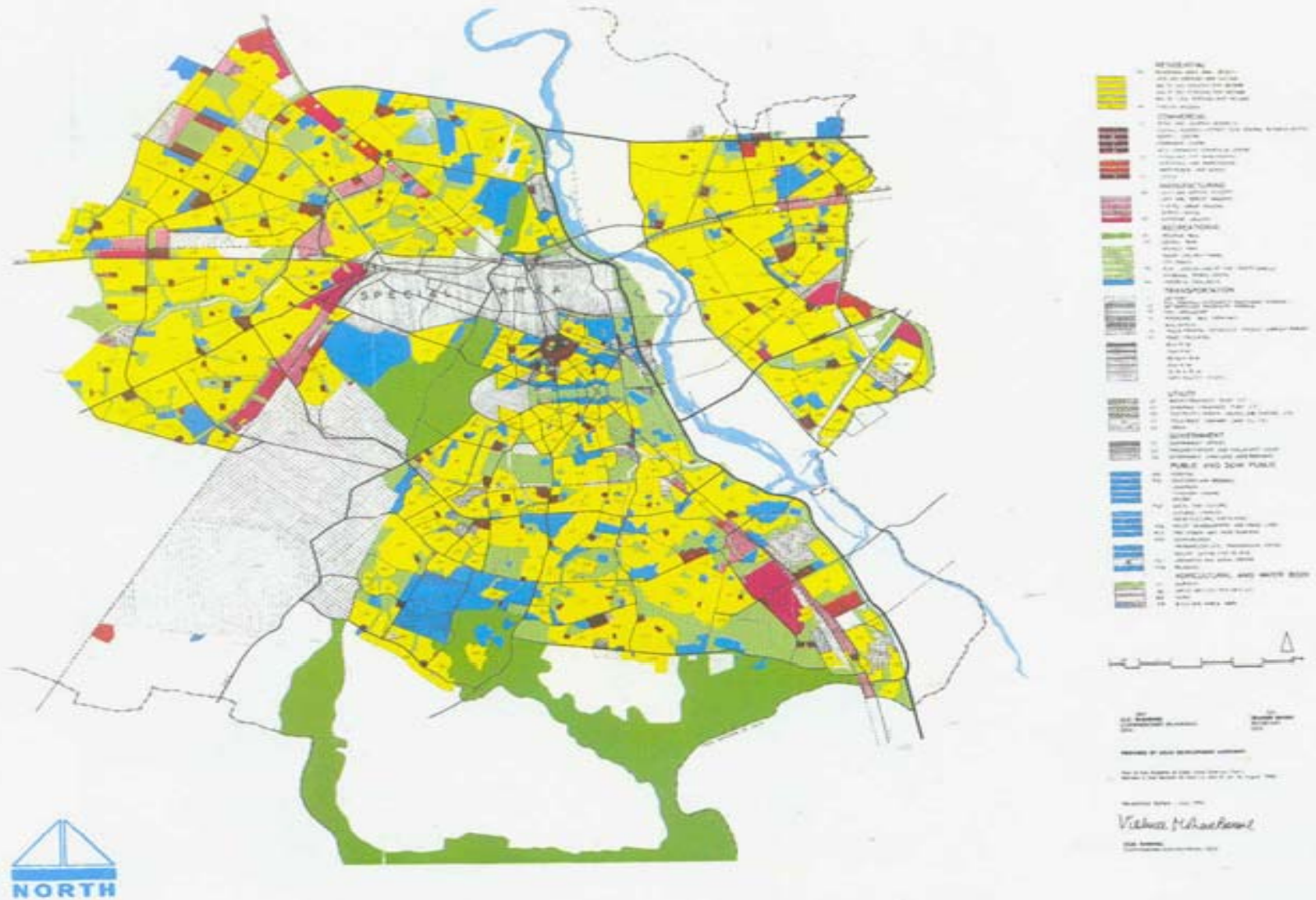
DELHI WITH A CASE EXAMPLE OF TYA ZONE – E

9.05.2009

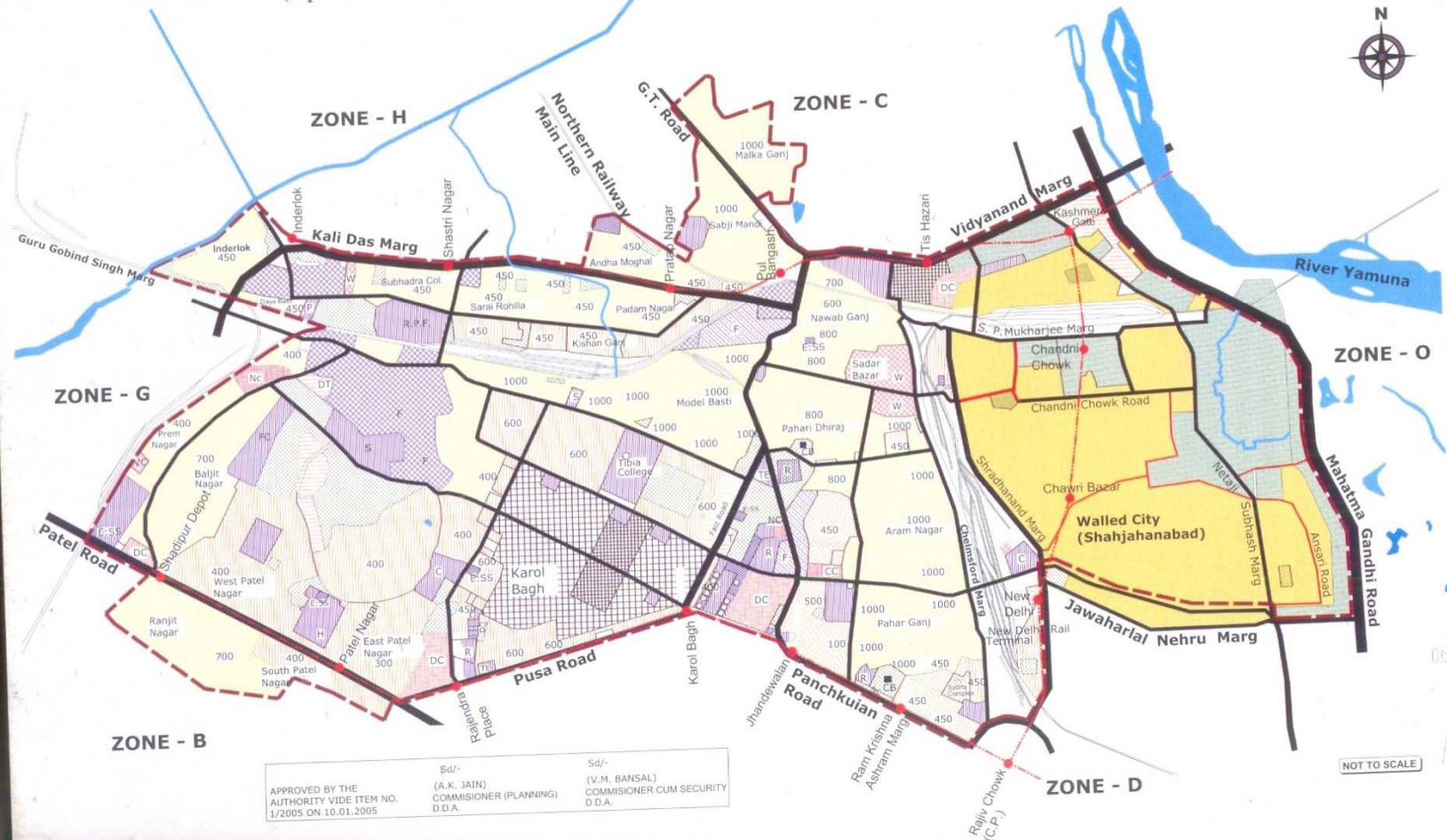
*R.G. Gupta
R.G. Macro Planners Pvt. Ltd.
UPS Campus, Block –A,
Preet Vihar, Delhi - 110092*

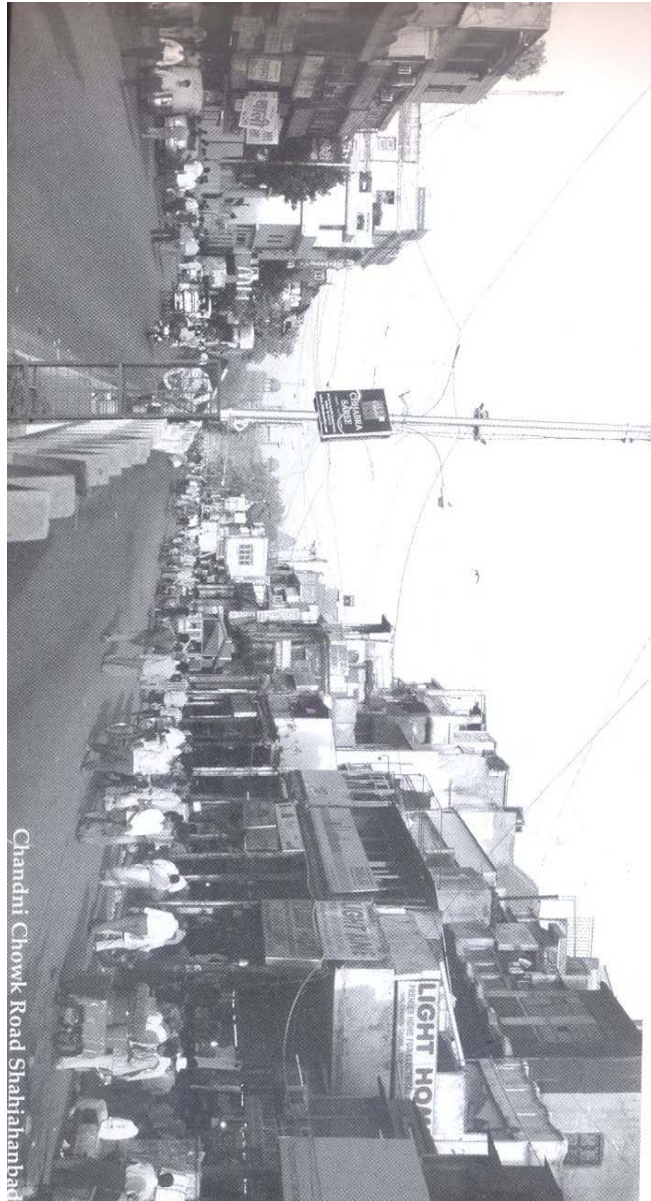
**R.G. GUPTA
POLICY/CITY PLANNERS
WWW.RGPLAN.ORG**

DELHI LANDUSE PLAN - 2001





































Master Plan for Delhi-2021 (Draft)
(Special Area)





Legend

SPECIAL AREA BOUNDARY		TRANSPORTATION	
	Walled City (Shahjahanabad) (Development as per Detailed Plan)		Rail Circulation
	Conservation Area		Bus Terminal & Depot
	Redevelopment Area		90 M. r/w Road
	Main Movement Corridor		60 M. r/w Road
	Karol Bagh (Development as per Regulations)		45 M. r/w Road
SPECIFIC USE ZONE AREAS			30-36 M. r/w Road
RESIDENTIAL			Parking
	300-500 Persons per Hectare		MRTS Route
	550-750 Persons per Hectare	UTILITY	
COMMERCIAL			Water/Sewerage/ Electricity etc.
	District Centre	PUBLIC & SEMIPUBLIC FACILITIES	
	Non Hierarchy Commercial Centre		Hospital
	Whole Sale		School/College
MANUFACTURING			Police
	Light & Services Industry		Facility Centre
	Flatted Group Industry		Cremation & Burial Ground
RECREATIONAL			Communication
	District Park		Religious
	Playground/ Stadium/Sports Complex		Government Office
	Parks/Open Space	URBAN RENEWAL	
	Historical Monuments		Residential Society Persons per Hectare

CONTENTS OF HEALTH INFRASTRUCTURE

1. Levels

i. National, ii. States, iii. Regions, iv. Urban Settlements (Planned One), v. Urban Settlements (Sub-standard areas), vi. Rural Settlements

2. Infrastructure

i. Physical, ii. Circulation, iii. Ecological, iv. Economic, v. Social (2 Slides)

3. For every one in the Society

i. EWS, ii. LIG, iii. MIG, iv. HIG, v. Elites

4. Available Specialties (One Slide)

CONTENTS

Contd.

5. Selection of area

Delhi has 17 Zones out of which only one TYA (E) (6 slides)

6. Classification of health facilities (2 slides)

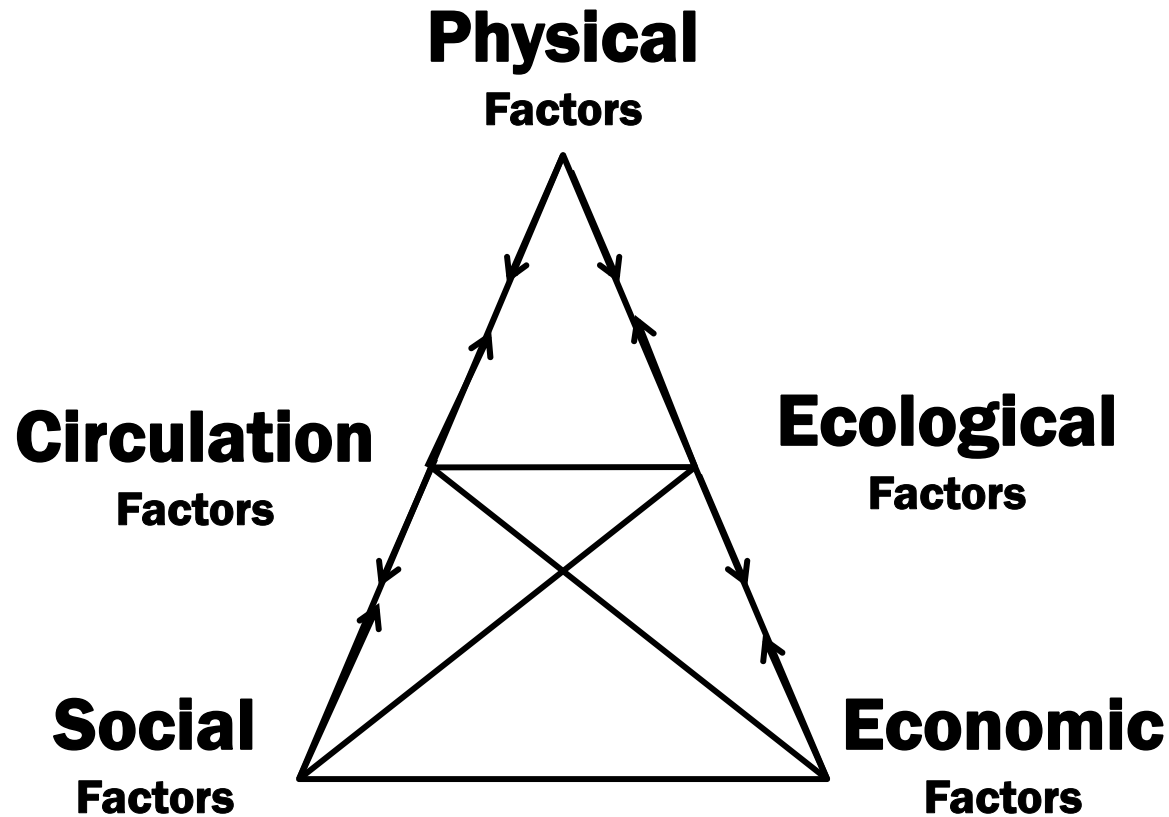
7. Mix use regulations (2 slides)

8. Permissible activities in health infrastructure (one slide)

9. Provisions of Parking and Regulations for basement(s) (2 slides)

10. Principle of achieving the health facilities (2 slides)

2. HEALTH INFRASTRUCTURE DEPENDS UPON



Note: These have been explained in the next two slides

- **Physical Infrastructure** – Water lines & Water Treatment Plants, Sewer lines & Sewerage Treatment Plants, Drainage system of different sizes, Power (Generation, Transmission, Distribution & Metering), Solid Waste Management (Collection, Separation, Transportation & Transformation, Tele-communication of different intensity and capacity
- **Social Infrastructure** – Education (University, College, Senior Secondary & Primary level), Security (Security forces & Police department) Safety (fire), Justice (at different levels), Recreation & Shelter (for EWS, LIG, MIG & HIG)
- **Economic Infrastructure** – Work places, Industrial areas, Commercial areas, Ware housing, Govt. and Semi Govt. Offices.

- **Ecological Infrastructure** – How to stop & control water, air, noise and soil pollution. This is a big task affair and every body has to contribute to it; whether Public sector or Private sector or co-operative one.
- **Circulation Infrastructure** – Roads, Over & Under bridges, Clover leaf, Parking areas at plus and minus levels may be 3 levels below the ground and 4-5 levels above the ground, Bus Terminal, Bus Depot, Railway lines, Ring Railway and METRO in the basement, at Elevated levels; Mono Rail

SPECIALITIES OF MEDICAL LINES

(1) Anesthesiologist, (2) Burns & Plastic Surgeon, (3) Cardiologist, (4) Chest Physician, (5) Dental Surgeon, (6) Dermatologist, (7) Endocrinologist, (8) ENT Specialist, (9) Gastroenterology, (10) General/Laparoscopic Surgeon, (11) Gynecologist & Obstetrician, (12) Nephrologists, (13) Neurologist, (14) Oncologist & Oncosurgeon, (15) Ophthalmologist, (16) Orthopaedician, (17) Pediatrician, (18) Pathologist, (19) Physician, (20) Urologist and (21) Radiologist, (22) many others

HEALTH INFRASTRUCTURE IN MPD -2021 AD

The capital city is strategically located and has many specialized health facilities not only to serve NCTD (1487 sq.km) but many parts of NCR (32,000 sq.m.) specially central areas of NCR **(1. Ghaziabad, 2. Noida, 3. Greater Noida, 4. Faridabad, 5. Ballabgarh, 6. Gurgaon, 7. Manesar, 8. Rohtak, 9. Bahadurgarh, 10. Rai, 11. Sonapat, 12. Loni)**

As per available statistics in 2001 there were 23 types of health units / facilities with 1914 health units and 30667 beds. This gives a density of 2.2 beds per 1000 population against 5 beds per 1000 population as recommended by WHO.

On this basis it has been estimated that there should be 115000 beds by 2021 AD against about 35,000 now as details given in appendix no. -----

6. CLASSIFICATIONS OF HEALTH FACILITIES IN MPD -2021 AD

S. No.	Category	Population (per unit)	Plot Area
1.	Hospital A (501 beds & above)	5.0 lakh	2.5 to 4.5 hect
2.	Hospital B (201 beds to 500 beds)	2.5 lakh	1.5 to 2.5 hect.
3.	Hospital C (101 beds to 200 beds)	1.00 lakh	0.5 to 1.0 hect.
4.	Hospital D (up to 100 beds)	1.00 lakh	0.25 to 0.5 hect.
5.	Other health Facilities a) i. Maternity Home	50000	1000 to 2000
	ii. Nursing Home / Polyclinic	50000	1000 to 2000

	iii. Dispensary	10000	800 to 1200
	b) i. Family Welfare Centre ii. Pediatric Centre iii. Geriatric Centre iv. Diagnostic Centre	50000	500 to 800 each
6.	a) Medical College	10 lakh	As per norms of Medical Council of India/ Regulatory Body (subject to availability of land)
	b) Nursing and Paramedic Institute	10 lakh	2000 (Subject to Nursing Council of India/Ministry of Health norms.

IT WOULD BE TRIED TO MAKE REGULATIONS AND DEVELOPMENT CONTROL ABOUT HEALTH FACILITIES IN MIX LAND USE; SOME DETAILS ARE GIVEN IN THE NEXT SLIDE

7. AREAS OF HEALTH FACILITIES FOR 40 LAKH POPULATION

S. No.	Category	Population (per unit)	Area in Hec/ SM	Numbers	Total area
1.	Hospital A (501 beds & above)	5.0 lakh	3.5	8	28
2.	Hospital B (201 beds to 500 beds)	2.5 lakh	2.0	16	32
3.	Hospital C (101 beds to 200 beds)	1.00 lakh	0.75	40	30
4.	Hospital D (up to 100 beds)	1.00 lakh	0.4	40	16
5.	Other health Facilities a) i. Maternity Home	50000	1500sm	80	12
	ii. Nursing Home / Polyclinic	50000	1500sm	80	12

S. No.	Category	Population (per unit)	Area1 in Hec	Numbers	Total area
	iii. Dispensary	10000	1000	400	40
	b) i. Family Welfare Centre ii. Pediatric Centre iii. Geriatric Centre iv. Diagnostic Centre	50000	650	80	40
6.	a) Medical College	10 lakh	10	4	40
	b) Nursing and Paramedic Institute	10 lakh	5	4	20
	GRAND TOTAL			752	270

8. MIXED USE REGULATIONS FOR HEALTH INFRASTRUCTURE

1. Nursing Home, Clinic, Dispensary, Pathology lab & Diagnostic Centre are permissible:
 - i. 200 SM on 18 M ROW in a Regular Plotted Development;
 - ii. 75 SM on 13.5 M ROW in Rehabilitation colonies;
 - iii. 75 SM on 9M ROW in Regularized Unauthorized colonies, Resettlement colonies, Walled City, Special area & Urban villages
 - iv. In pedestrian shopping street less than 6 M ROW.

2. Subject to following conditions:

- i. Nursing home, dispensaries, clinics and pathology lab shall be permissible on minimum plot size of 100 SM in Regular Plotted Development on 13.5 M ROW; in C&D colonies & 9 M ROW in E,F & G category colonies.
- ii. Condition of plot size and minimum ROW shall not be applicable in Walled City, Walled City Extn., Villages & Unauthorized Regularized colonies.
- iii. Nursing Homes operating in plots abutting Master Plan roads and Zonal Plan roads shall be permissible up to 100% of built up area and the limit on the size of the plot would not apply.

NOTE: FIRST TIME IT IS TRIED TO PERMIT PUBLIC AND SEMI PUBLIC FACILITIES IN MIX LAND USE SUBJECT TO (1) PARKING, (2) CIRCULATION, (3) ENVIRONMENT

iv. **No modification to the building** for using residential premises for non-residential activities, under the mixed use policy, shall be permitted unless the allottee / owner has obtained sanction of revised building plans and has paid necessary fees or charges.

3. DEVELOPMENT CONTROL AND BUILDING BYELAWS WOULD BE PREPARED WITHIN THE AMBIT OF MPD-2021 AD

NOTE: PAYMENT OF FEE MAY BE EASIER BUT TO FOLLOW ANY DETAILED BUILDING BYE LAWS IS DIFFICULT

9. PERMISSIBLE ACTIVITIES IN HEALTH INFRASTRUCTURE

18 Activities namely 1. Hospital, 2. Staff accommodation, 3. Patient & attendant accommodation, 4. Institutional Hostel, 5. Medical College, 6. Parking, 7. Retail Shop (canteen, confectionery, grocery & general merchandise, books and stationery, chemist, barber, launderer, vegetable), 8. Bank extension counter, 9. Clinical Laboratory, 10. Chemist shop, 11. Operation Theatre, 12. Examination room, 13. X-ray rooms, 14. Wards, 15. Reception, 16. Store, 17. Kitchen and

18. Diagnostic Centre **are permissible:**

in 7 use premises namely – (1) Hospital, (2) Primary Health Centre / Family Welfare Centre / Pediatric Centre / Geriatric Centre / Diagnostic Centre, (3) Dispensary, (4) Nursing Home / Maternity Home / Polyclinic, (5) Clinic, (6) Clinical Laboratory and (7) Voluntary Health Service.

WHAT SHOULD BE PERMISSIBLE IN MIX LAND USE HAS TO BE DEFINED AND IT IS A DIFFICULT TASK

10. PROVISION OF PARKING (AS GIVEN IN MPD-2021 AD)

1. @ 2.0 ECS (Equivalent Car Spaces) per 100 sqm. of floor area.
2. Space Standards for Car Parking

S.No.	Type of Parking	Area in sq.m. /ECS
1.	Open	23
2.	Ground floor covered	28
3.	Basement	32
4.	Multi level with ramps	30
5.	Automated multilevel with lifts	16

- i. In existing buildings having plot area of more than 2000 sq.m., extra ground coverage of 5% shall be permissible for construction of automated multi-level parking to provide dedicated parking structures for additional needs.

Other Regulations

- a. Basement(s) up to the setback the maximum equivalent to parking & 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 & other mechanical services & installation of electrical & fire fighting equipments & other services required for the maintenance of the building with prior approval of the concerned agencies, could be permitted & not to be counted in FAR. However, the area provided for services should not exceed 30% of the basement areas.
- b. The basement(s) above the plot level shall be kept flushed with the ground & shall be ventilated with mechanical means of ventilation; and
- c. The ESS, fire fighting installations and underground water tank shall neither be counted in ground coverage nor in FAR.

New Medical Infrastructure required by 2021 AD (as given in MPD – 2021AD)

Components	Unit	Phase I up to 2011	Phase II 2011-2016	Phase III 2016-2021	Target up to 2021
Hospital A (501 beds & above)	No.	9	3	6	18
Hospital B (201 beds to 500 beds)	No.	18	6	12	36
Hospital C (101 beds to 200 beds)	No.	43	17	30	90

Hospital D (up to 100 beds)	No.	43	17	30	90
Dispensary for pet animals	No.	43	17	30	90
Nursing and Paramedic Institute	No.	4	2	3	9
Care centre for mentally and physically challenged	No.	9	3	6	18

HOW MUCH CAN BE FULL FILLED BY MIX LAND USE HAS TO BE WORKED OUT.

11. OUTLINES OF SUB ZONES OF TYA BASED ON 2001 POPULATION

- E-1 Population 250,000**
GT Ghaziabad Railway line in the North;
45M ROW (Road No. 57) in the East;
30M ROW (Road No.73) in South and
M.B. Road in the West.
can be further divided into 3 parts:
Total Area -310, Residential-262, Green/ Vacant-15, Transport-15,Public Semi-Public-15
- E-2 Population 259,000**
30 M ROW (Road No. 67) in the North;
30 M ROW in the East;
GT Ghaziabad Railway line in the South and
M.B. Road in the West.
can be further divided into 3 parts:
Total Area -460, Residential-354, Green/ Vacant-61, Transport-25,Public Semi-Public-15
- E-3 Population 140980**
13 M ROW (Road No.68) in the North;
45 M ROW Loni Road in the East;
GT Shahdara road in the South and
13 M ROW in the West.
can be further divided into 3 parts:
Total Area -320, Residential-260, Green/ Vacant-22, Transport-15,Public Semi-Public-10

- E-4 Population 94,840**
G.T. Shahdara Road in the North; Road No.58 of 45M ROW in the East; 30 M ROW (Road No.71) in the South and 45 M ROW (Road No.57) along Bhola Nath Nagar in the West.
This Sub zone can be divided into 3 parts
Total Area -255, Residential-171, Green/ Vacant-10, Transport-50,Public Semi-Public-5
- E-5 Population 60,600**
13 M ROW (Road No.68) in the North; Railway line to Saharanpur in the East; G.T. Shahdara road in the South and 45 M ROW Loni road in the West.
This Sub zone can be divided into 2 parts
Total Area -150, Residential-125, Green/ Vacant-4, Transport-10,Public Semi-Public-5
- E-6 Population 1,24,560**
45 M ROW (Road No.64) in the North-West; 60M ROW (Road No. 62 & 70A) along Delhi U.P. boundary in the East & South and G.T. Shahdara Road of 45M ROW in the South
This can be divided in to 3 parts
Total Area -325, Residential-230, Green/ Vacant-40, Transport-15,Public Semi-Public-10
- E-7 Population 52,920**
G.T. Shahdara road in the North; Road No. 62 & 56 of 60 M ROW along Delhi U.P. border in the East; 30M ROW in the North of Yamuna Sports Complex in South and 45M ROW (Road No.59) in the West.
This can be divided into 2 parts
Total Area -225, Residential-127, Green/ Vacant-15, Transport-15,Public Semi-Public-20

- E-8 Population – 1,26,300**
Chander Nagar & 30M ROW in the North; 30M ROW along Geeta colony in the East; 30M ROW in the South and 60 M ROW in West (Yamuna River Bund).
This can be dividing into 2 parts
Total Area -175, Residential-114, Green/ Vacant-10, Transport-15,Public Semi-Public-10
- E-9 Population 67,600**
30M ROW (Road No.71) in the North; 45M ROW (Road No.59) in the East & South; 45M ROW (Road No.57) in the West.
This can be divided into 2 parts
Total Area -130, Residential-30, Green/ Vacant-68, Transport-10,Public Semi-Public-20
- E-10 Population 1,24,460**
30M ROW (Road No.73) in the North; 45 M ROW (Road No.57) in the East; Vikas Marg of 45M ROW in the South and 30M ROW along Chander Nagar, Khureji, Laxmi Nagar District Centre in the West.
Total Area -385, Residential-340, Green/ Vacant-20, Transport-15,Public Semi-Public-5
- E-11 Population 66,640**
30 M ROW (Road No.71) in the North; 60M ROW (Road No.56) along Delhi U.P. boundary in the East; Railway line from Nizamuddin to Sahibabad in the South-East and 40M ROW (Road No.57) in the West.
This can be divided into 3 parts
Total Area -415, Residential-294, Green/ Vacant-45, Transport-45,Public Semi-Public-15

- E-12** **Population 1,34,640 (Laxmi Nagar & Shakarpur complex)**
 New road of 30M ROW along Disused Drain in the North; 30M ROW along Laxmi Nagar District Centre in the East; Railway line from Nizamuddin to Sahibabad in the South-East and M.B. road of 60M ROW in the West.
 Can be divided into 2 parts
 Total Area -475, Residential-395, Green/ Vacant-22, Transport-25,Public Semi-Public-10
- E-13** **Population 1,20,000**
 Railway line from Nizamuddin to Sahibabad in the North; Delhi U.P. boundary in the East; NH-24 in the South and Bund road of 60M ROW in the West.
 Can be divided into 4 parts
 Total Area -765, Residential-436, Green/ Vacant-115, Transport-180Public Semi-Public-20
- E-14** **Gonda Area**
 Bounded by Wazirabad Road in the North
 30M ROW Road No. 66 in the East
 30M ROW Road No. 67 in the South
 Marginal Bund Road in the West
 Can be divided into 3 parts
 Total Area -315, Residential-254, Green/ Vacant-18, Transport-15,Public Semi-Public-15
- E-15** **Jyoti Nagar and Loni Road Residential Area**
 Bounded by Wazirabad Road in the North
 Railway line from Delhi to Saharanpur in the East
 30M ROW Road no. 68 in the South
 30M ROW Road along Old Eastern Yamuna Cannel in the West
 Can be divided by Loni Road into 2 parts
 Total Area -240, Residential-157, Green/ Vacant-42, Transport-15,Public Semi-Public-15

- E-16 Nand Nagari and Tahirpur Area**
 Wazirabad Road in the North
 Delhi UP Boundary in the East
 45M ROW Road No. 64 in the South and South East
 Railway Line from Delhi to Saharanpur in the East
 Can be divided into 3 parts
 Total Area -385, Residential-212, Green/ Vacant-60, Transport-20,Public Semi-Public-80
- E-17 Karawal Naga; Gokulpuri and Khajuri Khas**
 Delhi UP Boundary in the North and East
 Loni Road in the East
 Wazirabad Road in the South
 Marginal Bund Road in the East
 Can be divided into 2/3 parts
 Total Area -1735, Residential-1193, Green/ Vacant-165, Transport-105,Public Semi-Public-182
- E-18 Mandoli and Saboli**
 Delhi UP Boundary in the North and East
 Wazirabad Road in the South
 Loni Road in the East
 Can be divided into 2/3 parts
 It is given in item number 17
- E-19 Population 1,72,000**
 Bounded by NH-24 bye-pass of 90M ROW in the North; Delhi U.P. boundary in the East; Hindon Canal in the South-East; boundary along 30M ROW including NH-24 and Hindon Canal near Trilokpuri complex in the South & South-West.
 Can be divided into 3 parts
 Total Area -440, Residential-195, Green/ Vacant-130, Transport-25,Public Semi-Public-15

- E-20 Population 1,20,000**
NH-24 of 90M ROW and 30M ROW in the South of Sanjay Lake towards North-East in the North;
Gazipur drain & Hindon Canal in the South East and South; M.B. Road of 60M ROW in the West.
Can be divided into 2 parts
Total Area -550, Residential-336, Green/ Vacant-50, Transport-45,Public Semi-Public-80
- E-21 Population 2,00,000**
Hindon Canal in the North and North-West, Delhi U.P. boundary in the East and South, M.B. Road
of 60M ROW in the West.
Can be divided into 3 parts
Total Area -730, Residential-395, Green/ Vacant-140, Transport-120,Public Semi-Public-20

Principles of the achieving of quantity and quality of health facilities:

1. Re-planning of Sub-standard areas & low density areas
2. Re-development of Sub-standard areas and low density areas
3. Re-construction of Sub-standard areas & low density areas
4. Planning, development and construction of new areas

5. Public, Private Partnership
6. Use of TDR (Transfer of development
7. Mixed land use along 24M roads with provision of proper circulation, parking areas and environment. Parking areas can be within 0.5 km. from the activity.
8. Higher FAR along High Intensity Traffic Corridor
9. Transparency between Public, Cooperative and Private sector with the help of Website and discussions.

R.G.GUPTA CITY/POLICY PLANNER

Specialist in Urban Planning in the Committee of MCD

Advisor to Meerut Development Authority

Coopted Member of Delhi Vidhan Sabha; BLS.

B.Sc (Agra University), B.Arch (G.Md.) IIT. Roorkee, MCA,

Masters Degree in U.P from SPA (Delhi). P.G.Dip, (RDP) Netherlands,

F.I.E , F.I.T.P. , F.I.I.A. , F. AMDA .

Member-IRC, IBC, IIPA, IIRS, ISRS, IRTI, CIT; Member of IUT

Director-UICT; Dir. – UPS: Dir. -R.G. MP Pvt. Ltd., MD – GNHS:

Ex-Consultant-CBSE, Ex-Secretary-DTTG, Ex-Member Planning-GGS-IPU, Ex. A. Comm. Planning-DDA; Ex-Consultant DSIDC; DTTDC; DAMB; Slum Deptt., DLLPC; .

Ex. Advisor-NCR-Planning Board, Ex. Consultant ” in Urban Planning and Infrastructure Development to “Delhi Jal Board - Delhi Govt” in 1998, .

Ex. Sr. .P. Secy. JC PPV (Joint Parliament Committee on Protection of Plant Varieties & Farmer’s Rights) in Parliament.

Member of Expert Committee on Lal Dora and Extended Lal Dora By GOI; MOUD - (DD) 2006.

Macro Level Policy and Financial Planner UPS Campus, Block-A, Preet Vihar, Delhi-92.

Tel. No. 2244-0117; 6529-8815. Mobile No. 98110 18374.

E-Mail: ram_gopal_gupta@yahoo.co.in Website www.rgplan.org