

Building New Cities

A Case Study----- Greater Noida

Lessons from NCR

National Capital Region

- Conceived to disperse Delhi immigration
- Ghaziabad, Faridabad----city extensions
- Gurgaon/Manesar
- Noida
- Greater Noida ---- 1991
- The main states---- Haryana, Uttar Pradesh

Two Models

- Haryana Model---- Broad Land Use Plan by State: Private Developers develop land -----
Segmented Approach
- Uttar Pradesh Model----- State Agency acquires land. Prepares a development Master Plan---- Integrated View

UP Cities

- **Ghaziabad----- extension of old city**
- **Noida----- to relocate Delhi industries**
- **Greater Noida ----- founded in 1991-92**

Greater Noida

- **Handful of new integrated cities**
- **Greater Noida Industrial Development Authority:- Responsible for**
 - **Planning, Development, O&M**
 - **Regulation**
 - **Investment Promotion**
- **A One Stop Shop for the City**
- **Industrial Area Development Act 1976**

Proposed Urban Area

- **Phase-1 (up to 2001)**
 - **Population : 3.0 Lacs**
 - **Urbanisable Area : 5075 Ha**
- **Phase-2 (up to 2011)**
 - **Population : 7.0 Lacs**
 - **Urbanisable Area : 12,000 Ha**
- **Phase-3 (up to 2021)**
 - **Population : 12.0 Lacs**
 - **Urbanisable Area : 20,000 Ha**

Challenges...

Planning and Infrastructure Design

- How do we develop the City Infrastructure
- How do we decide the quality and standard of facilities
 - **Planning for Abundance : Change of Mind Set**
- Providing Housing and Water for all
- How to make the city a pleasant place to live in
 - **Providing Clean, Healthy, and Green Environment**
 - **Harmony of Urban Form and Landscaping**
 - **Life Style compatible lay-outs**

Challenges...

Infrastructure development and its O&M

- How do we ensure development and maintenance after city is populated ?
- Management of Urban Services on commercial principles
- Providing for the controlled growth of Informal sector
- Employment opportunities And Population Explosion : counter magnets, satellite towns...
- Security of citizens

Challenges...

Governance Model

- Decentralisation and delegation of power
- Inclusion of stakeholders
- Shared Vision and Codified Systems
- Simplified Regulations and **Uniform Enforcement**
- **Manage Change: Acceptance of new vision**
- **Champions---** within and without
- Delegate, communicate, public ownership
- Political cohesion and accountability

Challenges ...

Funds

Persistent Cash-flow deficit as cities mature ...

- **Funding the Infrastructure Development and maintenance of cities**
 - **Revenue from tax collection goes to center or states kitty**
 - **Discretionary allocation of budget, at the mercy of center or state who does not control the problems that city is facing**
 - **Nil or abysmally low revenue collection for real municipal functions**

DELHI
230 LACKS

GHAZIABAD
30 LACKS

NOIDA
15 LACKS

GREATER NOIDA
12 LACKS

FARIDABAD
25 LACKS

GURGAON
16.5 LACKS

URBAN SCENARIO

Positioning of Greater Noida

- High Quality of infrastructure
- Land of Plenty:- “Supply to Precede Demand”
- **A Green Lung of the region, marked difference in greenery and openness**----a relief from the urban sprawl of the rest of the NCR
- Landscaped/ Urban Design--Pleasant place to be and live in
- Innovative Planning

VISION FOR THE CITY

- A MODERN, EFFICIENT CITY OF INTERNATIONAL STANDARDS
- AN ECO-FRIENDLY RELAXED ENVIRONMENT:-
 - GREEN, LANDSCAPED, FLOWERS, FOUNTAINS, AESTHETICS.
- LAND OF PLENTY: SUPPLY TO PRECEDE DEMAND

VISION FOR THE CITY

- HOLISTIC PLANNING TO COVER ALL URBANISATION ISSUES.
- PARTICIPATION OF THE RURAL POPULATION IN URBANISATION.
- A PRO-ACTIVE INVESTOR-FRIENDLY FRAMEWORK.

The Development Model

Provide Quality Infrastructure
(Physical and Social)

Attract Industries

Education Hub

Leisure Destination

City Development

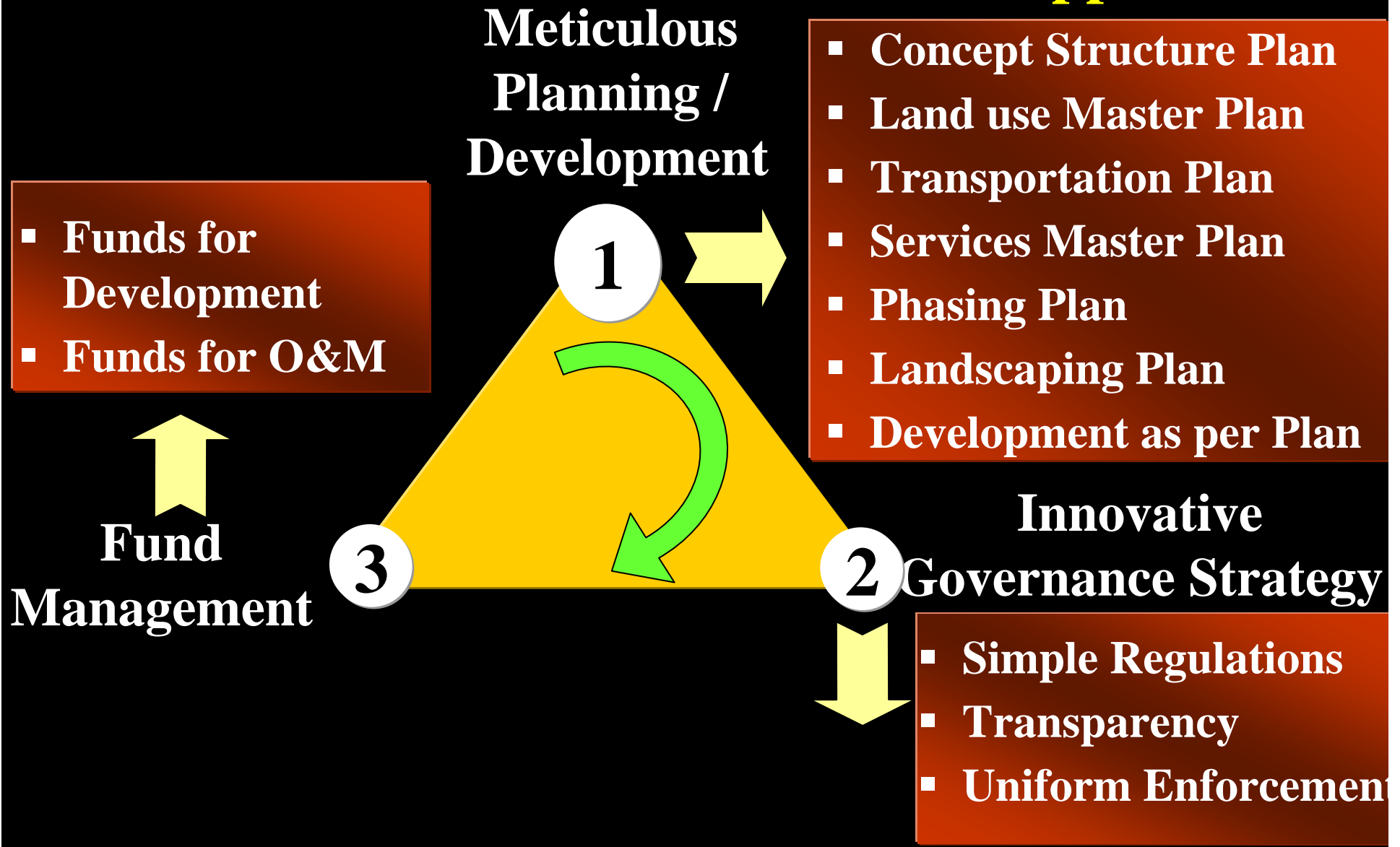
Generate
Employment



How did we approach. . . .

Our Approach to Counter Challenges

... 3 Node Approach



Challenges...

Drawbacks in Planning Process

- LACK OF CLARITY OF VISION: CONFLICTING CLAIMS
- VERY LITTLE EMPHASIS ON IMPLEMENTATION OF PLAN
- DIVORCE OF PHYSICAL PLAN FROM FISCAL PLAN
- **ABSENCE OF TRANSPORTATION MASTER PLAN**
- NO ATTENTION TO
 - LANDSCAPING
 - URBAN DESIGN
 - URBAN FORM
- TENDENCY TO LOSE SIGHT OF THE INDIVIDUAL

Challenges ...

Drawbacks in Existing Indian Cities

- **DIRTY AND UNKEMPT**
- **INADEQUATE AND SUBSTANDARD SERVICES AND FACILITIES**
- **POOR MAINTENANCE**
- **WEAK ENFORCEMENT OF LAWS**
- **INADEQUATE PROVISION OF HOUSING FOR WEAKER SECTIONS**
- **AD HOC FIXES RATHER THAN LONG TERM SOLUTIONS**
- **SHORTAGE OF FUNDS**

Therefore, learning from our existing cities.....

In Greater Noida, focus and emphasis was given on controlled planning, development, regulating unplanned development and on efficient maintenance of the city infrastructure,
all this from day one

EVOLUTION OF THE CONCEPT STRUCTURE PLAN

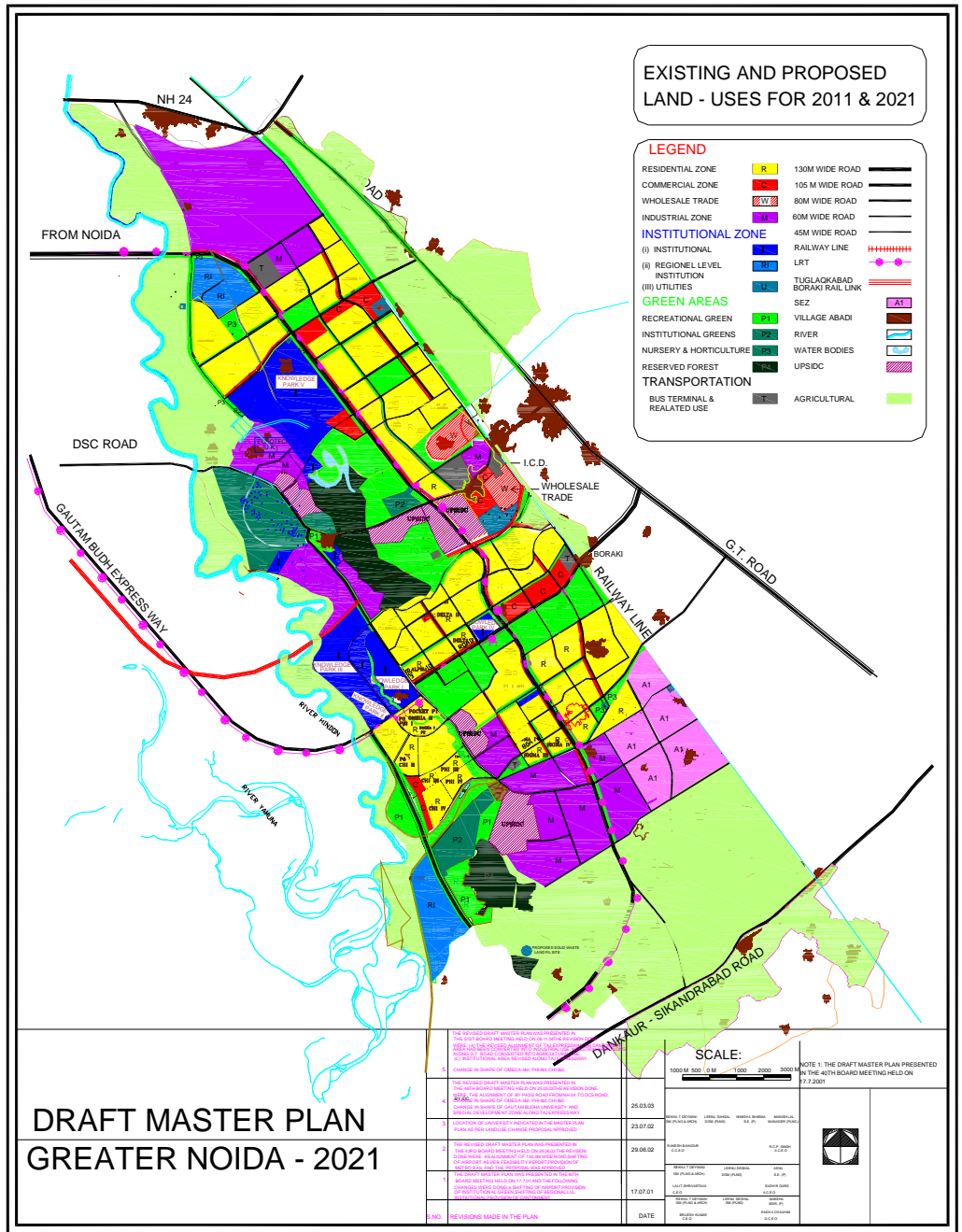
Land Suitability Analysis

- Proximity to linkages
- Proximity to existing settlements
- Ground water availability
- Soil type and soil bearing capacity
- Drainage pattern
- Proximity to ecologically sensitive areas.

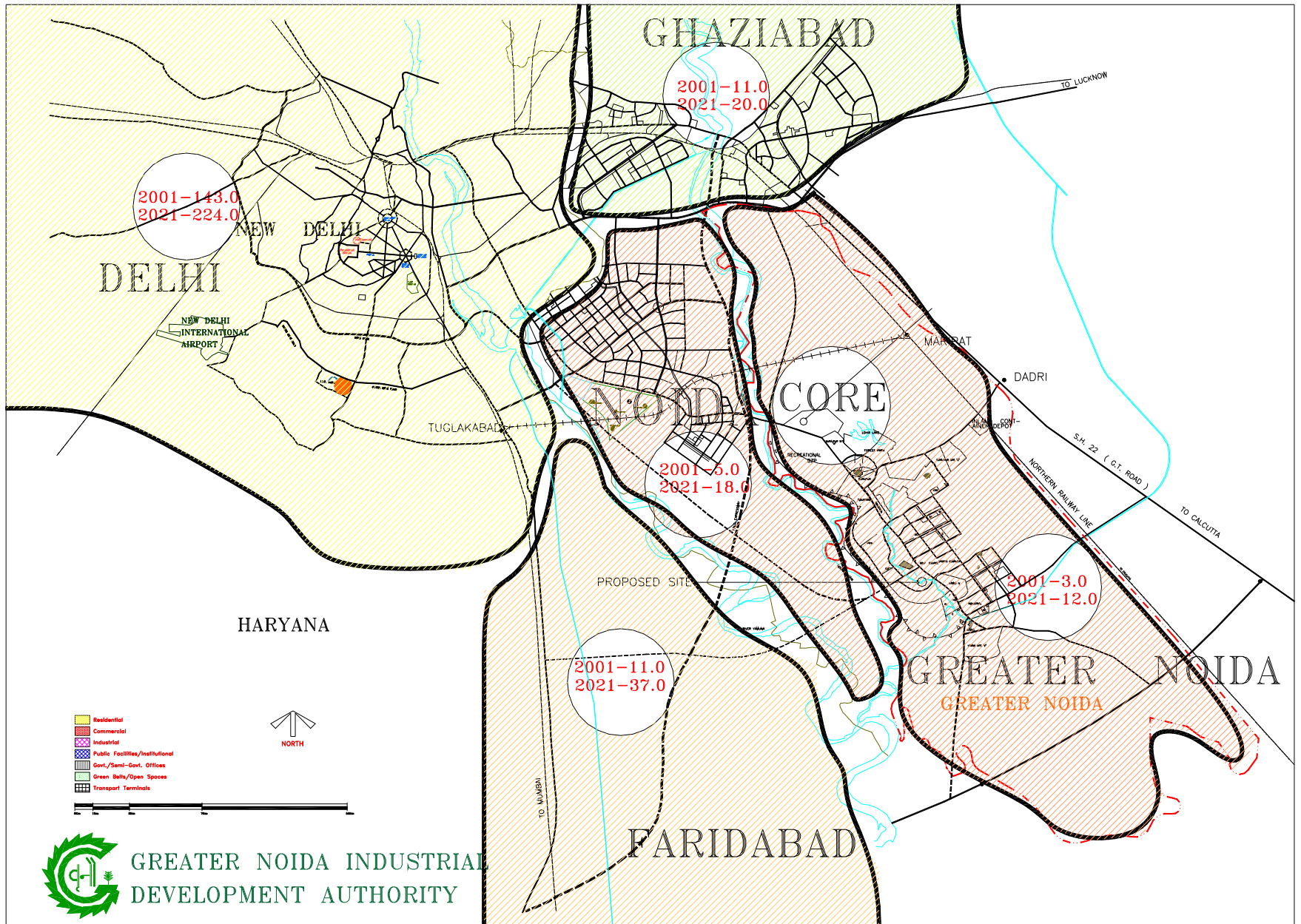
Superimposition by weightage method to identify

- Areas most suitable and moderately suitable for urbanisation.
- Ecologically sensitive areas not suitable for urban development.
- Ground water re-charge areas not suitable for urban development.
- Areas away from main approaches and should be taken up as last priority for urbanisation.

DRAFT MASTER PLAN 2021

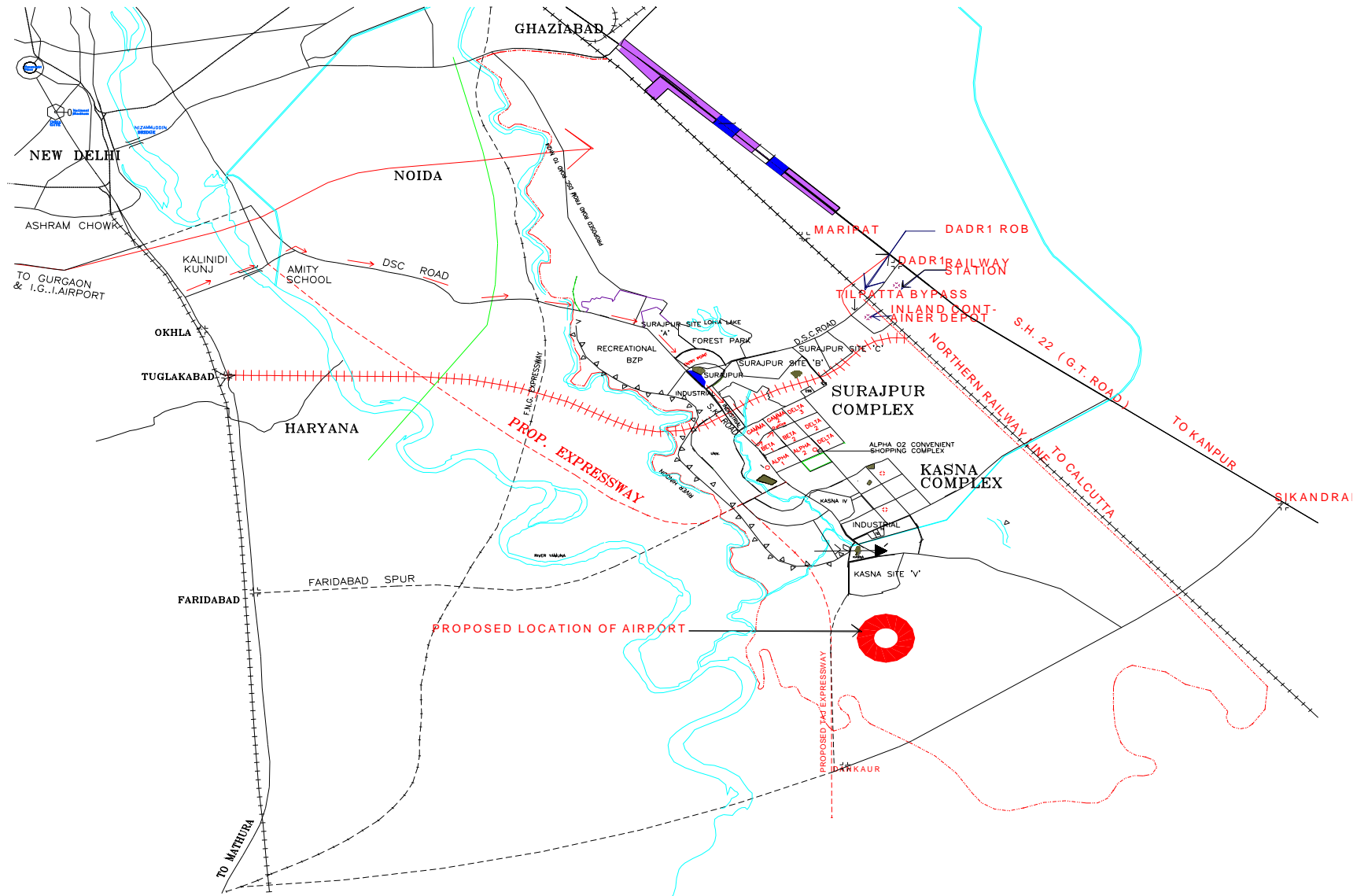


REGIONAL SETTING



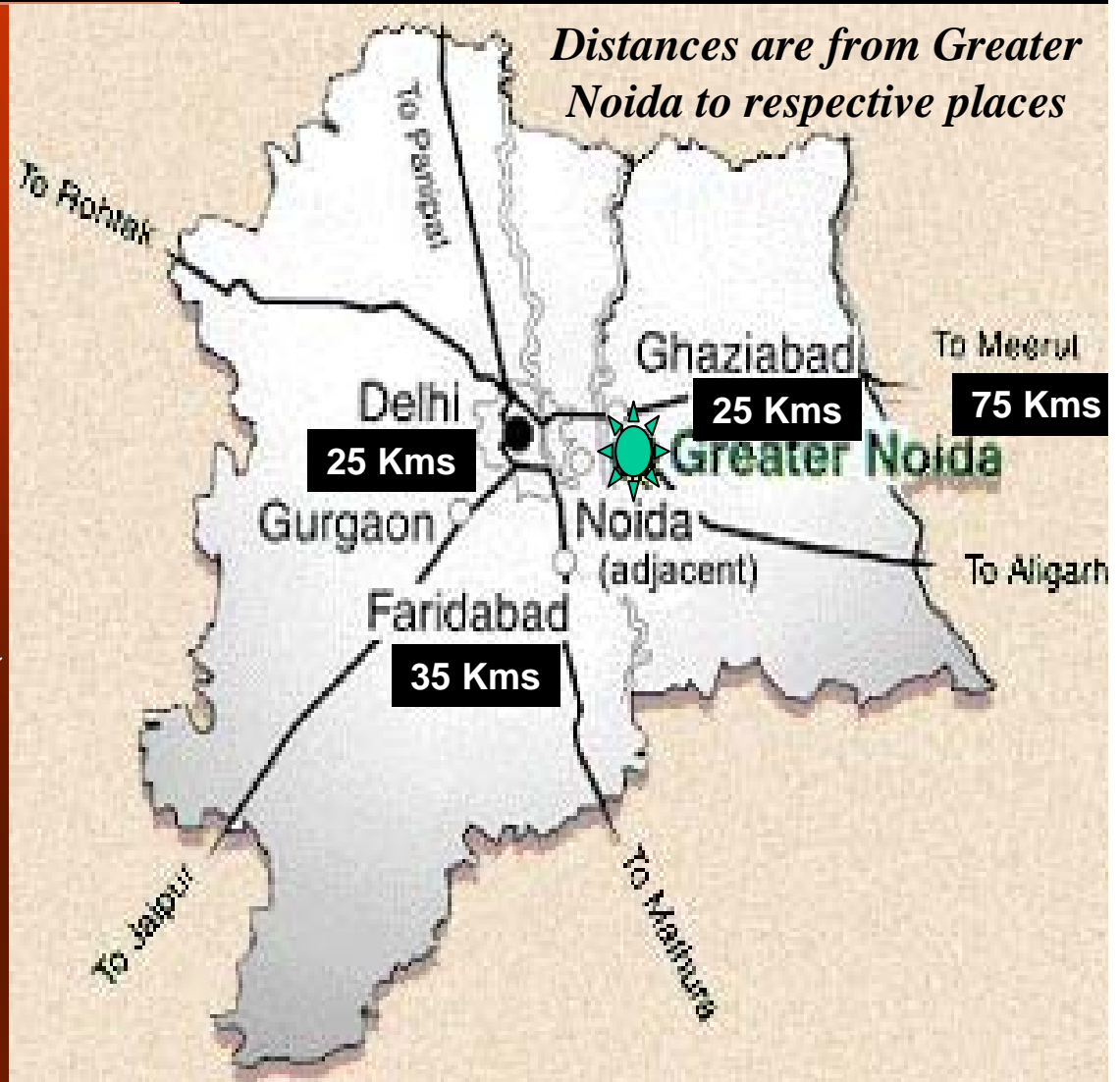


REGIONAL CONNECTIVITY

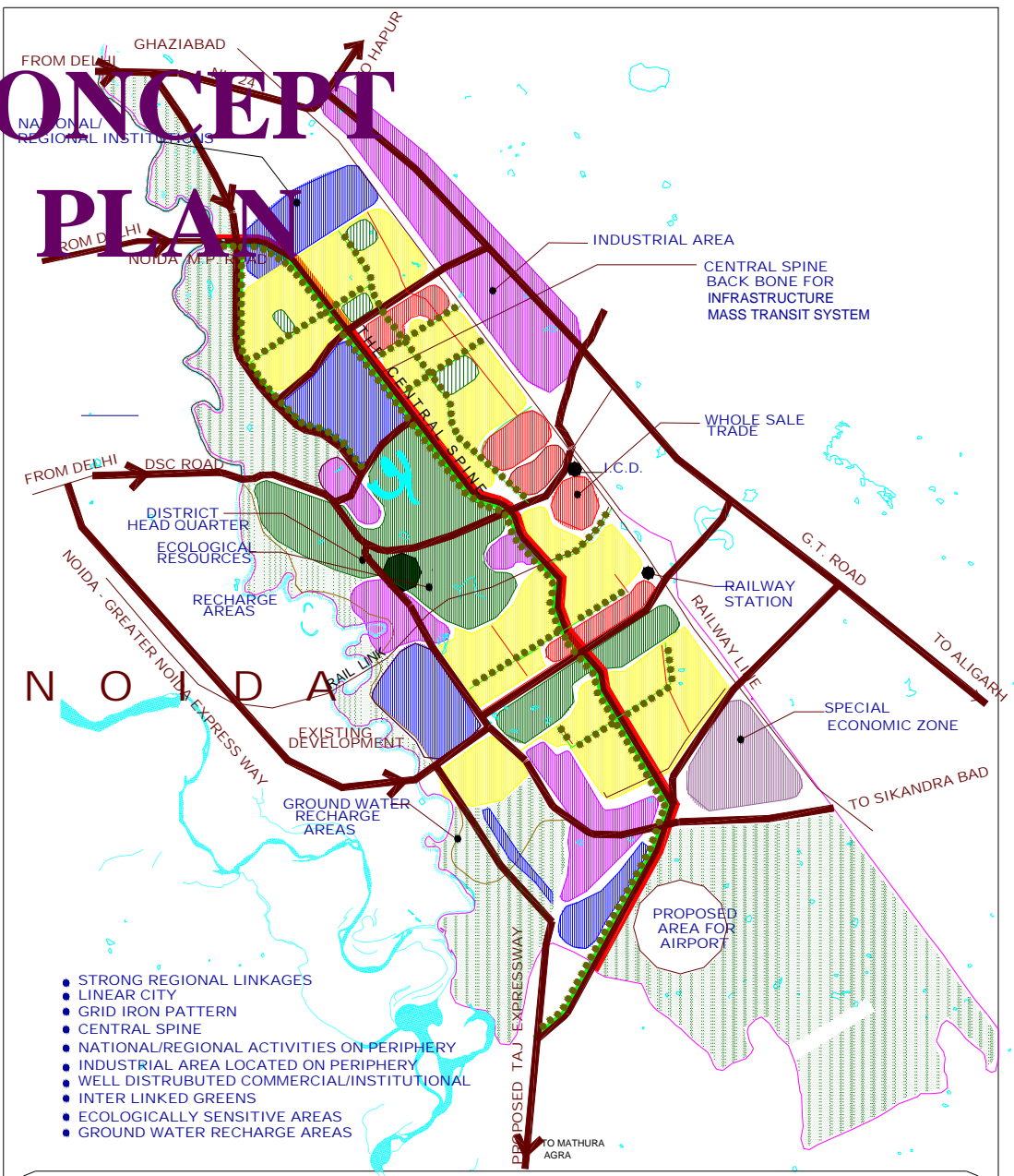


Assessed and addressed the Transportation Linkages as city perceived to be far from Delhi...Distance reduced to 20 min

- **Regional Connectivity**
 - 6 lane Express way
 - Link road to NH-24
 - Rail Link to Delhi
 - Taj Expressway from Greater Noida to Agra
 - Delhi Metro project on anvil



CONCEPT PLAN



- STRONG REGIONAL LINKAGES
- LINEAR CITY
- GRID IRON PATTERN
- CENTRAL SPINE
- NATIONAL/REGIONAL ACTIVITIES ON PERIPHERY
- INDUSTRIAL AREA LOCATED ON PERIPHERY
- WELL DISTRUBUTED COMMERCIAL/INSTITUTIONAL
- INTER LINKED GREENS
- ECOLOGICALLY SENSITIVE AREAS
- GROUND WATER RECHARGE AREAS

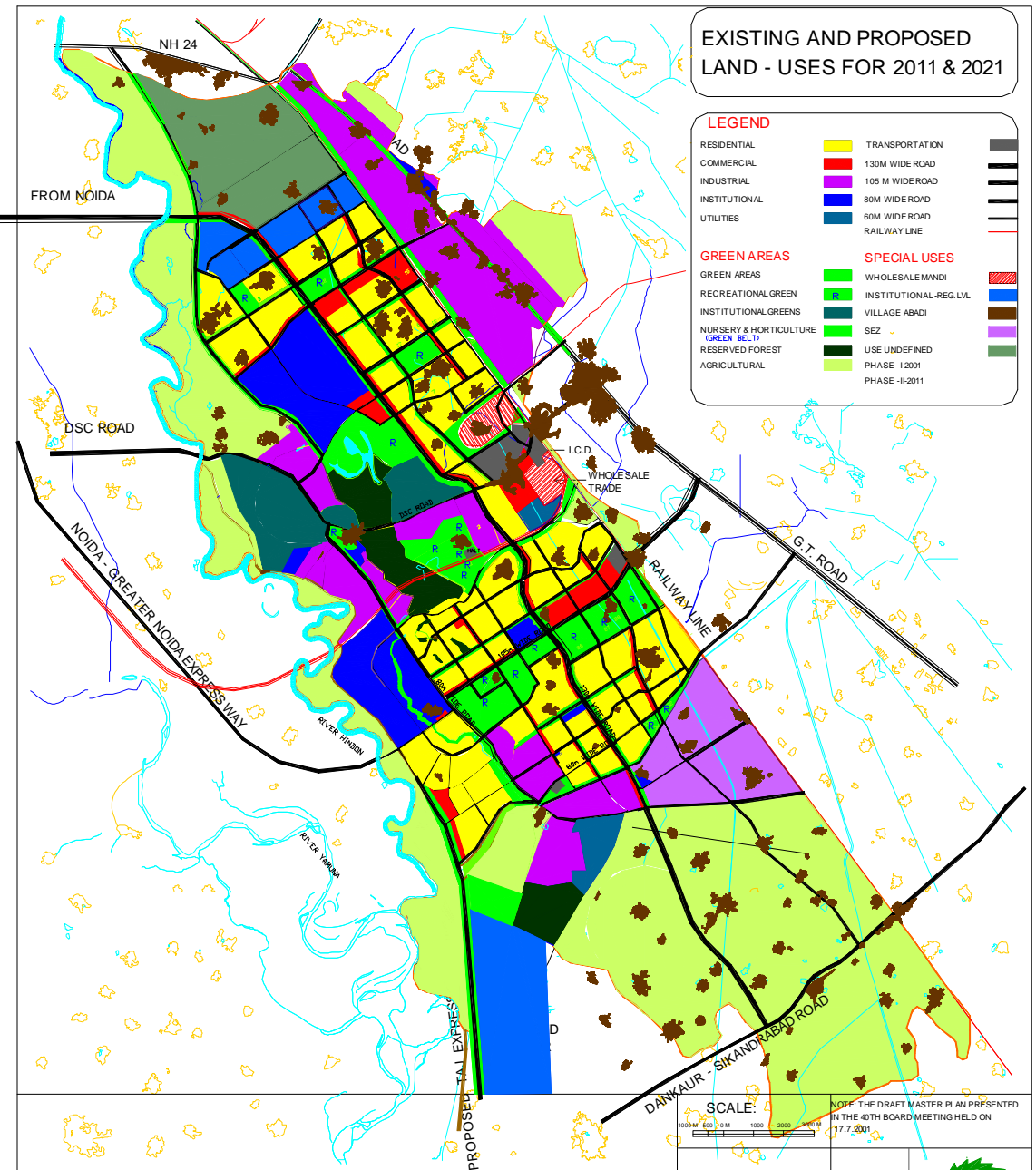


SCALE :
1:50,000

CONCEPT PLAN, GREATER NOIDA - 2021

**EXISTING AND PROPOSED
LAND - USES FOR 2011 & 2021**

LEGEND	
RESIDENTIAL	TRANSPORTATION
COMMERCIAL	130M WIDE ROAD
INDUSTRIAL	105 M WIDE ROAD
INSTITUTIONAL	80M WIDE ROAD
UTILITIES	60M WIDE ROAD
	RAILWAY LINE
GREEN AREAS	
GREEN AREAS	WHOLESALE MANDI
RECREATIONAL GREENS	INSTITUTIONAL-REG. LVL.
INSTITUTIONAL GREENS	VILLAGE ABADI
NURSERY & HORTICULTURE (GREEN BELT)	SEZ
RESERVED FOREST	USE UNDEFINED
AGRICULTURAL	PHASE -I-2011
	PHASE -II-2011



SCALE: 1:10000
NOTE: THE DRAFT MASTER PLAN PRESENTED IN THE 40TH BOARD MEETING HELD ON 17.7.2011

MASTER PLAN, GREATER NOIDA - 2021

REKHA TO DEVIWANI GM (PLNG & ARCH)	LEENU SENGAL SM (PLNG)	NIMSHA MGR (P)		
BRUSH KUMAR C.E.O	RADHACHAUHAN D.C.E.O			

Salient features of the Plan

- **Adequate road and rail linkages** for movement of commuters and freight.
- **Grid iron pattern** of road network with economic activities located on the major routes to support an efficient Mass Transportation System.
- **A 130.0 m. wide road has been planned as the backbone of the linear city for connecting the northern end to the southern part of the city and also to Noida and Delhi.**
- **Regional level landuses** located at the periphery of the city

Salient features of the Plan

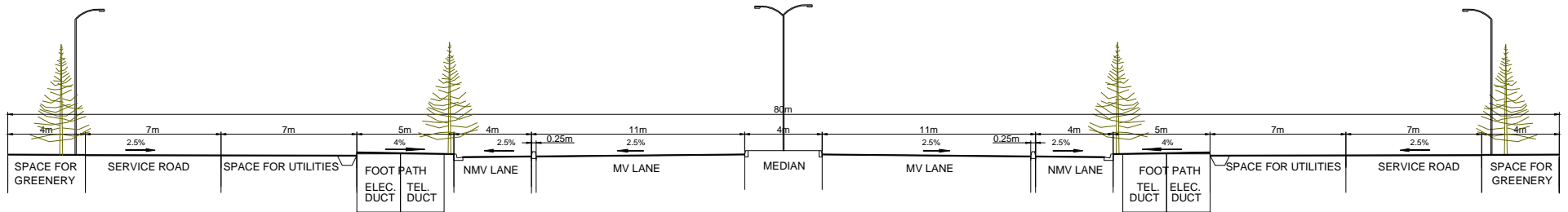
- Major work centers are well distributed throughout the city.
- Industrial , Institutional areas planned on the periphery to cater to the region.
- Industrial, Institutional areas are planned with all common facilities required within the area.
- Residential areas planned with a heierarchy of community facilities and open spaces.

Road Network

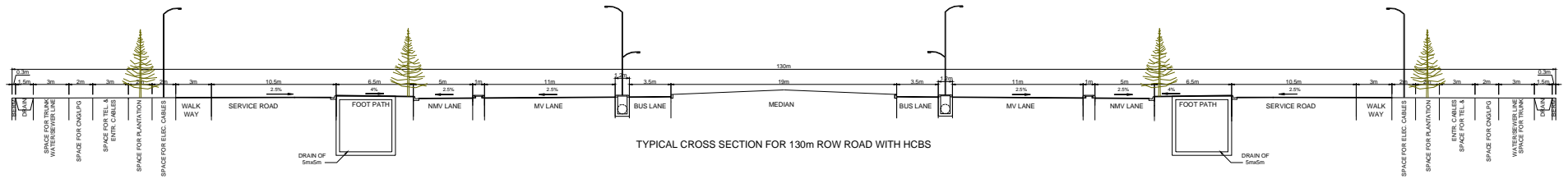
HEIRARCHY OF ROAD NETWORK

- 130m. wide main arterial road (Central Spine from North- west to South-East)
- 105 m. wide the Meridian road.
- 80 m. wide Promenade (S.K.Road) and road along kot escape.
- 75 m. wide Noida-Greater Noida Expressway.
- 60 m. wide sector peripheral roads.
- 45 m. wide DSC Road(existing) road along railway line.
- Typical cross section for roads designed for provision for NMVs, bus lanes, pedestrian facilities, space for all services

TYPICAL CROSS SECTION FOR ARTERIAL & SECTORAL ROADS



TYPICAL CROSS SECTION FOR 80m ROW ROAD



TYPICAL CROSS SECTION FOR 130m ROW ROAD WITH HCBS

PLANNING FOR ALL

APPROACH TO PLANNING



INFORMAL SECTOR



NEIGHBOURHOOD



BLOCK



SECTOR



COMMUNITY



CITY



REGION

Elements of City Planning

- Sector layouts critical in defining a city's life style.
- Parks and playgrounds---- Flowing Greens
--- 45% area under roads and open spaces.
- **Daily Needs at Walking Distances**
- Equitable norms for social infrastructure defined for each sector; provided from the beginning

...Thought-through plan addressing the likely problems of today's cities

- **Informal Sector planned as an integral part of the city**
- **Provision of Kiosks at Strategic Locations**
- **Convenient earmarked places for hawkers**
- **Weekly markets**
- **Sites for housing for informal sector: 5% of residential area**
- **Urbanisation and Integration of Villages with the city**

..... **Smooth Flow of Traffic**

- **Roads built for almost full traffic from the start**
- **No direct access on arterial roads**
- **Design and maintenance norms specified**
- **Pedestrian/Cycle Movement Plan**
- **Liberal Parking Norms**
- **No parking in Road Right of Way**
- **Parking areas identified/developed**
- **Bus bays as part of road design**
- **Bus shelters**

... Urban Design Plan

- **Emphasis on City Aesthetics**
 - *Manicured Landscapes.*
 - *Solid Waste Management System.*
 - **Well planned Street Furniture.**
 - **Harmony of form and colour of buildings.**
 - **Development of Focal Points.**

The distinguishing characteristic of Greater
Noida

.... Environmentally Sustainable ...

The Landscaping Plan

- **Key Features**

- About 25% area reserved for Greenery
- Interlinked green spaces – continuous lung space
- **Green belts along arterial roads to control development, improve aesthetics and environment**
- Introduced innovative concept of institutional green areas
- Detailed tree plantation plan to ensure shade & flowers round the year

..... Pleasing Environment

- **Ensuring Streetscape**
 - **Detailed Signage Plan**
 - **No hoardings permitted in the city**
 - **Controlled Signages and Display Boards**
 - **No-Bills / No Painting on walls - Heavy penalties**
 - **Large Plot owners to install illuminated boards**
 - **Provisioning for Public Conveniences**
 - **Well laid out avenues**

.... Ensuring Urban Form

- **Harmony of Urban Form**
 - **Norms defined for ramps, design / height of boundary walls, plantation, plinth height**
 - **Predefined Colour Scheme for buildings on main roads**
 - **All services provided inside individual premises at the time of initial development**
 - **Building Lines Specified through detailed Zonal Plan**

Elements of City Planning

- **City Level Infrastructure**
- **Land Use Plans/ Zoning regulations**
- **Sewerage and Solid Waste**
- **Environmental Impact– Water Harvesting**
- **Institutions/Industries**
- **Soft Infrastructure**
- **Shelter for the poor**
- **Life style requirements**

The City

- A Human Enterprise
- A segment of land where people have chosen to live and work
- Mosaic of activities and buildings
- Woven together by a network of streets, transportation, utilities
- Held together by social bonds and economic conditions

Role of City Planning

- A City Plan has to arrange all these elements properly as the city develops
- Not simply about the construction of buildings and parking lots on isolated parcels, and the physical infrastructure
- In the aggregate it is about something much larger and significant to all citizens: **community building.**

**Our Obsession was to make Greater
Noida a Modern, Composite and Efficient
City of International Standards**

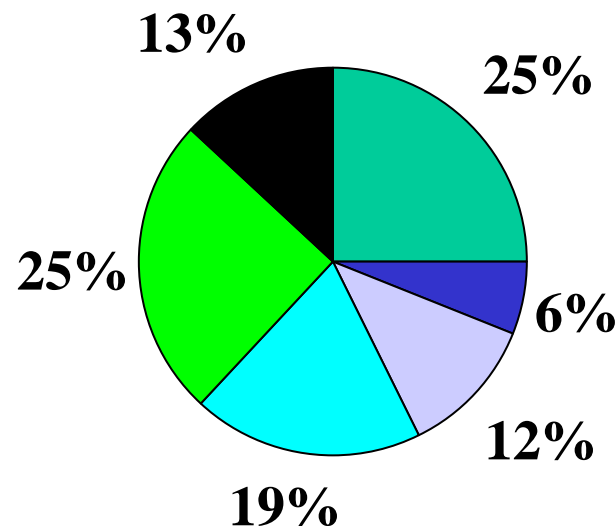
- **Challenge is just not in the visioning and initial development of the city**
- **Maintenance is a continuous process**
- **To ensure sustainability of services, byelaws, maintaining streetscape, controlling informal sector**
- **Merely systems not sufficient:**









THANK YOU

.... Land Use Plan Not only developed but controlled Its compliance

□ Total Urbanisable Area up to 2021 is 20,000 Ha



 Residential	 Commercial
 Institutional	 Industrial
 Green	 Transportation

.... Services Planned and ensured at the stage of Master Plan

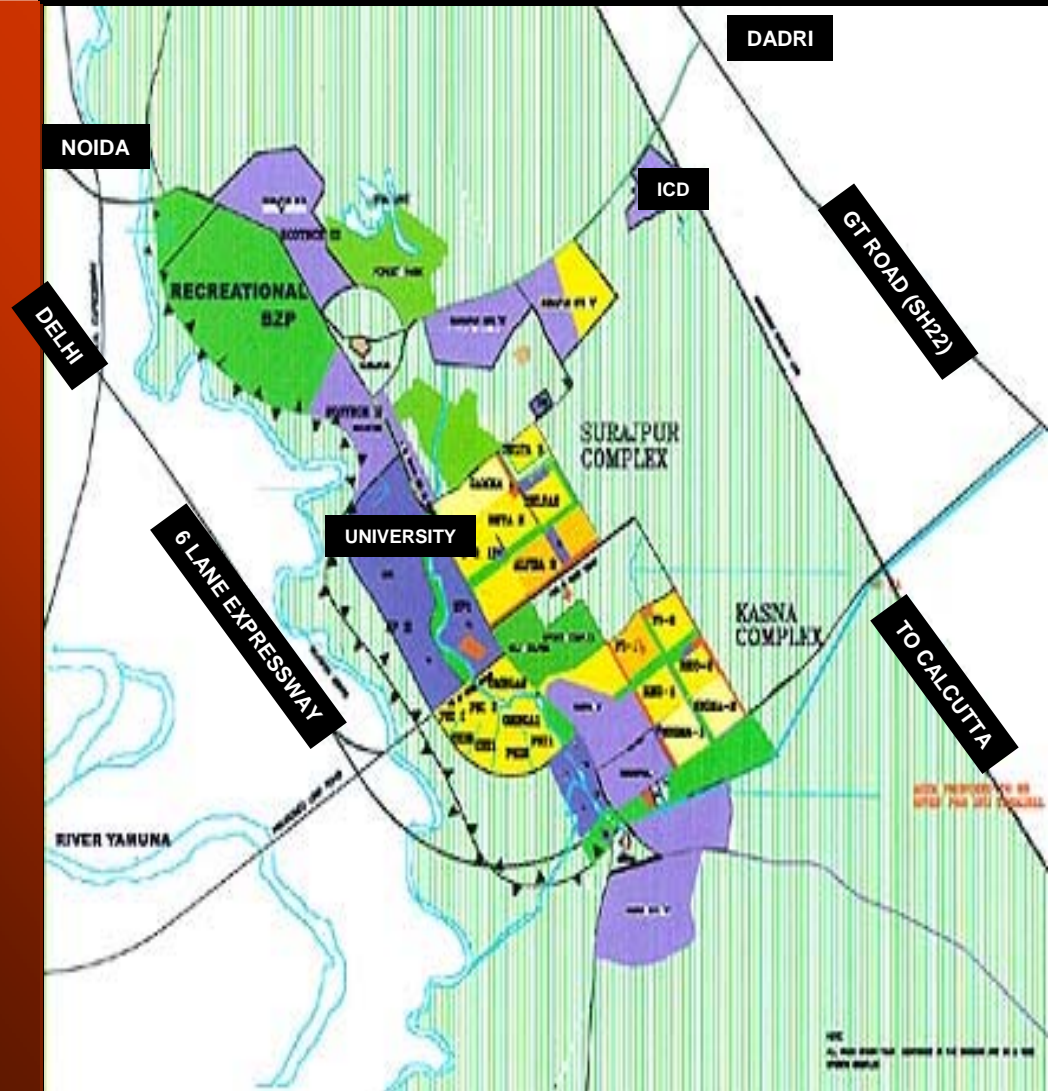
- **Separate Services Master Plans prepared**
 - **Water Supply Network**
 - **Transportation Planning**
 - **Sewerage System**
 - **Power Distribution Plan**
 - **Convergence Network Plan**
 - **Solid Waste Management Plan**
 - **Landscaping Plan**

Provisioning as per these Plans

.... Well planned road network, Can cater to even DMRC's requirement

- **Key Features**

- **130 m ROW** road as the backbone connecting the northern end to southern end
- **Hierarchy of Roads** (sector roads 60-108m ROW)
- **Slow moving traffic only on service lane of arterial roads**



.... Expansion plan to cater to increase in population

- ❑ Phase-1 (up to 2001)
 - Population : 3.0 Lacs
 - Urbanisable Area : 5075 Ha
- ❑ Phase-2 (up to 2011)
 - Population : 7.0 Lacs
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Phasing Criteria

“Supply” always ahead of the “Demand”

Governance and Regulation Model

..... **GNIDA's Mandate**

- **Greater Noida was Set-up in January 1991 under the UP Industrial Area Development Act 1976**
- **The Act mandates Planning, Development, Operations & Maintenance as well as Regulation functions**
- **GNIDA as the Investment Promotion Agency**

Lean Management Structure

- **Lean Management & Operative Organisation Structure**
 - **Outsourcing of activities**
 - **Following the Management contract route to Operate and Maintain the services**
 - **Computer based operative and implementation systems**

.... Evolved the Concept Structure Plan

- *Strong Regional Linkages*
- **Linear City, with Central Spine**
- **Grid Iron Pattern**
- **National / Regional Activities on periphery**
- **Industrial Areas located on Periphery**
- *Well distributed Commercial / Institutional*
- *Interlinked Greens*
- **Ecologically Sensitive Areas**
- *Ground Water Recharge Areas*

Guideline and Systems

- **Minimal Regulation --- Strict Compliance**
- **Emphasis on ‘Envelope Concept’**
 - **Periphery of building (Setback, Ground coverage, FAR, Building height)**
 - **Internal details are prerogative of Owners**
- **Well defined Bye-laws, guidelines & directions for development**
- **Clear time frames for various clearances**
- **Certification of Plans by Architects**
- **Deemed Completion**

Setting Performance Standards

- **Quantitative standards defined for services (Downtime, complaint response time, periodicity & frequency of service, preventive maintenance)**
 - **Power Supply**
 - **Water Supply & Sewage Treatment**
 - **Solid Waste Management**
 - **Convergence Network**
 - **Road Maintenance**
 - **Security of public & private properties**
- **Strict penalties defined for violation of these standards by operators**

Transparent Administration

- **Simplified regulations**
- **Uniformity in enforcement**
- **Exceptions only in very rare cases**
- **System for land allotment and tendering well publicised.**
- **Transparency**

Enhanced Role for Community

Powers have been decentralized and given to Neighbourhood Management Councils, ensuring compliance of laws relating to planning and maintenance of services

Powers, Duties and Responsibilities of NMCs

- **Implementation of regulations, Bye-laws, guidelines, directions**
- **Supervising and organising maintenance of all services and amenities as arranged by Authority**
- **Educate and motivate the residents to follow ‘good practices’**
- **Ensure that the appointed operators perform their duties in the their neighbourhood, viz. Solid Waste Management, Security Personnel(s), etc.**
- **Change in land use subject to NMC concurrence**

3 Fund(s) Management

Challenge of Managing Capex and Revenue Expenditure

- Capital expenditure plan **synchronized with the Master Plan** of the City
- Capital Budget and Profitability Analysis on long term basis to ensure financial sustainability of the city
- Fix on Revenue Expenditure through **management contract policy** to ensure better control
- Accounting Policy in place
 - Achieved double entry system
 - Policy on accrual basis, gives product-wise profitability
 - Separate **reserve funds for expansion and maintenance of services provided for**

Financial Management

*ADEQUATE FINANCIAL PROVISIONING
FOR:-*

--- CREATION OF ASSETS

--- SUBSEQUENT MAINTENANCE

Financial Provision for Creation

- Long term corporate plan prepared --- fund created for future development
- Special funds created for future development and city level projects and facilities
- All costs loaded in pricing of land

Provision for Maintenance

- Part provision made in the capital cost
- Specific items earmarked for each fund
 - For landscaping
 - For urban services

Funds Created for ...

Urban services

- 1) Lease Rent
- 2) User Fees
- 3) Fees and Penalties
- 4) Interest from urban services fund

Greening and landscaping

- 1) Charges for special projects
- 2) Income from sale of green areas.

Innovative ways to ensure sufficient fund flows

- **Enhancement of Revenue Base**
 - Differential pricing mechanism for commercial, residential, industrial and institutional
 - Loading cost of **special projects on the basic sale price**, loaded upfront..
 - **User fee for maintenance** of infrastructure and landscaping, pay as you use concept (for water)
 - Have built in enough **reserve funds to manage the major overhaul and rehabilitation of assets**

**Private Sector
An Equal Partner in City's
Development**

Private Sector to be a Major Player in Civic Services

- **To avoid experience of other cities:-**
 - **bloated staff**
 - **poor services**
- **Mobilise Private Sector Finances**
- **More efficient services**
- **State of art technology**

.... Facilitated The Development Process through private sector participation

- **Substantial Private Sector Participation**
 - **Private Power distribution since 1993 (NPCL)**
 - **Convergence Network (Now Citi Cable)**
 - **Solid Waste Management - waste collection, segregation at source, transportation, mechanical sweeping of main roads**
 - **Residential Colonies and Group Housing**
 - **Malls and Commercial Development**
- **Participation within the framework of the City Plan**

Experience of the Privatisation Process

- **Very Few Players for Civic Services**
- **Too risk averse: risk sharing vs. no risk**
- **Guarantees for 10-20 years required**
- **Emphasis on short-term benefits**
 - **Disregard for quality of services**
 - **Temptation to violate norms with disastrous long-term effects**
- **Need to develop private sector as a good brand**

- **Commitment needed of all the players, public and private**
- **Private Sector Participants to be equally conscious of maintaining norms**
- **Necessary to devise a system to act as a continuous watchdog**
- **Concerned & informed public opinion needs to bring its weight to ensure continued adherence to the vision drafted for the CITY**

Greater Noida: the first city in the wake of Liberalization

Developed a Strategy different from the traditional

Limited Funds (seed capital only Rs. 5.0 crores)

**Financially Viable, High Quality,
Environmentally Sustainable Model**

A Replicable Model

Successfully competes with other cities

**Mind Set and Attitude of
Paramount Importance**

“Can Do” Approach

Plan and Provide Facilities

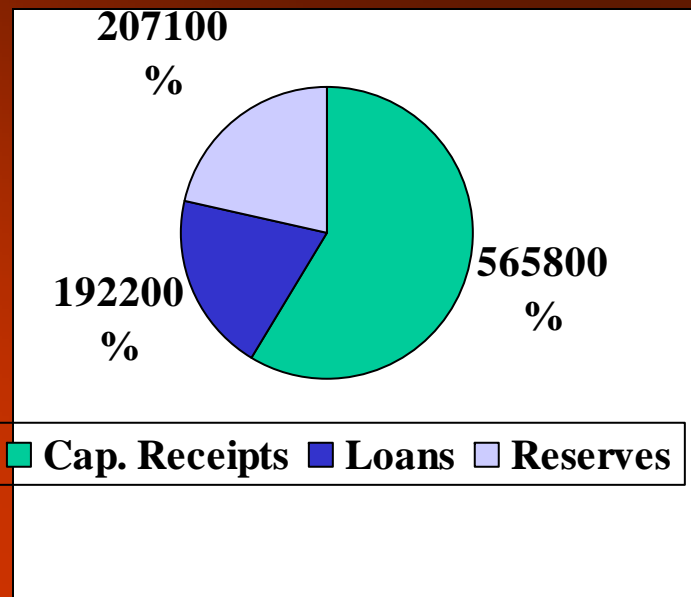
Build Structure and Systems

Glance at the Financial Summary.....

Last Decade

- Started the operation with seed capital of only Rs 5 crores (revolving fund) from UP Govt

Sources of Funds (Rs. 1376 Cr.)



Application of Funds (Rs. 1300 Cr.)

