



Chandigarh Master Plan-2031



CHANDIGARH ADMINISTRATION

[Extract from the Chd. Admn. Gaz. (Extra.), dated the 23rd April, 2015]

CHANDIGARH ADMINISTRATION

DEPARTMENT OF URBAN PLANNING

Notification

The 23rd April, 2015

No. Arch-15/4977.—In order to notify the Draft Master Plan of Chandigarh for 2031 AD a notification No. ARCH-2013/513, dated 11th July, 2013 was issued for inviting objections/suggestions within a period of thirty days. The said period was further extended upto 10th September, 2013 *vide* notifications No. STP-2013/10534, dated 23rd August, 2013. A Board of Inquiry/Hearing was constituted to look into the said objections/suggestions received in pursuance to above notifications,—*vide* order dated 10th November, 2013 and the said objections/suggestions were duly considered. The Government of India, MHA *vide* their letter dated 27th March, 2015 intimated that Chandigarh Administration may take appropriate action for notification of the Master Plan—2031.

In exercise of powers conferred by Section 4(1)(f) of the Capital of Punjab (Development and Regulation) Act, 1952 and Sections 3, 4, 5 and 11 of the Punjab New Capital (Periphery) Control Act, 1952 and all other powers enabling him in this behalf under 239 of the Constitution of India and under the General Clauses Act, 1857 in this behalf, the Administrator, U.T., Chandigarh is pleased

to notify the Final Master Plan of Chandigarh for 2031 AD which may be called as "Chandigarh Master Plan—2031", consisting of the following :—

1. Main Chandigarh Master Plan Report.
2. Annexure-I—Documents containing information tables, letters etc.
3. Annexure-II—Plans and Maps.

The General Public can have access over the said documents on the official website of Chandigarh Administration at the address www.chandigarh.gov.in.

(Sd.)

Chief Administrator,
Chandigarh Administration.

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PREAMBLE

1 INTRODUCTION

In March 1948, the then Government of Punjab in consultation with the Government of India approved the site for the new capital for the state. The first team of architects engaged for planning and designing the city was led by American planner Albert Mayer and architect Mathew Nowicki. The team prepared the Master Plan and detailed out the super block which constituted the basic module of city planning (Refer **MAP 1**). The Master Plan was fan shaped keeping in view the profile of the site. Curvilinear roads defined the circulation pattern punctuated by green belts. Due to the sudden demise of architect Mathew Nowicki in an air crash, second team of architects led by Le Corbusier (also called Charles Edouard Jeanneret), Pierre Jeanneret, Jane B Drew and Maxwell Fry took over. Le Corbusier designed an iconic city, fulfilling not just a utopian agenda, but reflecting concepts of 'modernism' movement that arose in Europe but took root here too.

The city reflects the forceful personality of Le Corbusier in many tangible ways creating modular, geometric and cubist idioms using 'brute' materials yet the sub text was drawn from nature (the head/ lungs / heart / limbs) and incorporated the essentials of site / climate/culture/tradition.



MAP 1 ALBERT MAYER 'S PLAN FOR CHANDIGARH

He ensured that the human resource inputs into the Capital Project would be of impeccable technical and moral standards forging philosophical underpinnings and as rightly observed by an expert , likened Chandigarh '*to an enterprise whose value will soon be proclaimed all over the world*' and to whom '*the city was a sign of harmony born of good intentions, struggles, patience and perseveranceand a spirit of strength and severe simplicity* '.

1.2 THE ORIGINAL PLAN

The original plan was divided into a grid of 30 sectors with the Capitol Complex as well as the Civic Centre its focal points. Sector 17 was designed as the Central Business District and a greenbelt at the centre ran north east to south west. Wide roads planned in a systematic hierarchy provide structure to the city which has well planned facilities. Landscaped green avenues give it amenity value. (Refer **MAP 2**).



MAP 2 LE CORBUSIER'S PLAN (PHASE I) WITH ITS GREEN LUNGS



The First Phase (now deemed the city's 'Historic Core') was designed for 150,000 in low rise plotted development. Phase Two from sector 31 to 47 for the remaining targeted 350,000 was with 4-storeyed apartments for government employees with an increase in the ratio of smaller plots/lesser open areas / nearly 4 times increase in density. The original concept included redensification of Phase I in order to accommodate population of the city growing beyond design population of 5 lakh without changing the character of the city and quality of life. However, no details with regard to redensification mechanism are available except a letter containing two sketches giving the basic approach to achieve the redensification of Phase I. (**Annexure P 1 Letter Dated 4th May ,1957 and Annexure P IA Typed version of the letter**)

MAP 3 -CHANDIGARH (PHASE I & II) AS CONCEPTUALIZED BY LE CORBUSIER



However, with the coming up of Mohali the new town on the south of Chandigarh in the post reorganisation period, the gap between Phase II and Mohali was planned as Phase III of Chandigarh in order to integrate and promote planned development and continue the sectoral grid and the development of the land falling between Phase II and Mohali. Phase III comprises of 'Group Housing Schemes' and four storeyed flats built by the Chandigarh Housing Board and cooperative house building societies instead of plots resulting in higher densities.

Over a period of time, city development has now been extended to the area earlier covered under the Periphery Control Act to meet the emerging needs of development involving setting up of Information Technology Park, rehabilitation of slum dwellers, dairy farm, solid waste management, tourism, transport, sports and recreation etc.

1.3 CHALLENGES FOR THE ' FUTURE PLAN '

Few aberrations taking place around Chandigarh's Master Plan area and the immediate periphery of the Union Territory (UT) have jeopardized its 'Future Plan', forcibly weakening its opportunity to;

- i. Plan in the context of its region
- ii. Plan comprehensively (with minimal friction) within new areas outside the UT boundary, for allowing growth for future residential and work areas
- iii. Check undesirable land uses and activities in the periphery
- iv. Provide, operate or maintain world class infrastructure services due to constraints of land
- v. Enhance the aesthetics, design and urban form compatible with laid down principles
- vi. Maintain the integrity of its heritage
- vii. Integrate all infrastructure services including transport in the Capital City and its extensions to benefit the agglomeration
- viii. Permit inclusive growth in both urban & rural villages.

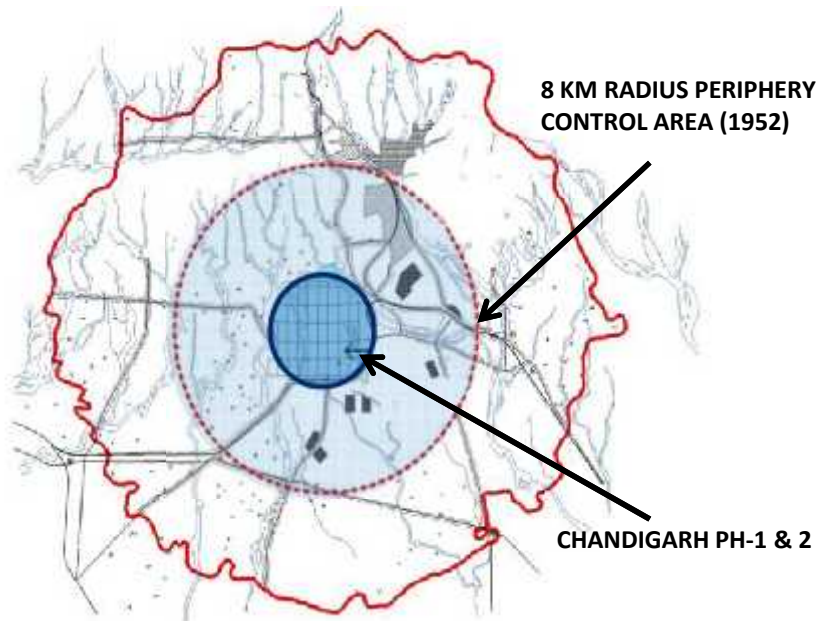
The aforementioned factors appear a formidable challenge for promoting future planned growth and development of Chandigarh Union Territory which call for innovative solutions to be evolved for integrating the development within Chandigarh and adjoining areas falling in the States of Punjab and Haryana.



1.4 A CHRONOLOGICAL ACCOUNT OF THE EXTERNAL FACTORS THAT HAVE BECOME A CHALLENGE FOR CHANDIGARH’S GROWTH ARE:

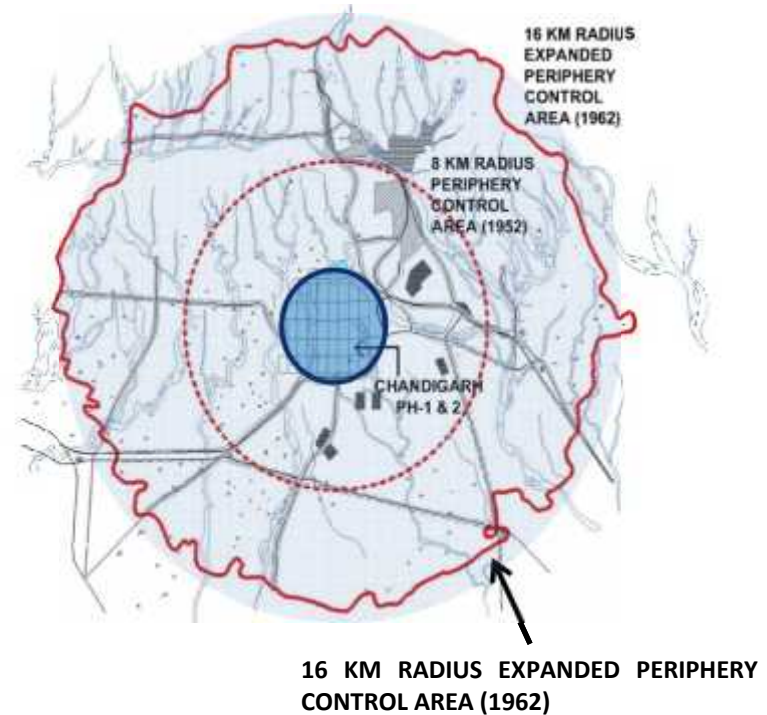
- a) **1952-** Creation of an 8 km radius agricultural belt in the periphery of Chandigarh through the **PERIPHERY CONTROL ACT, 1952 (Refer MAP 4)**. The purpose was to prevent unregulated development around the master plan, maintain a clear rural-urban dichotomy and provide for planned future extension of the city.

MAP 4 CREATION OF 8 KM PERIPHERY CONTROL AREA



- b) **1962-** Establishment of the Army Cantonment, Air Force Station and, the township of Hindustan Machine Tools (HMT) with their offices and other facilities. Extension of the Periphery Control Area to a 16 km radius (**Refer MAP 5**).

MAP 5 CREATION OF 16 KM EXPANDED PERIPHERY CONTROL AREA

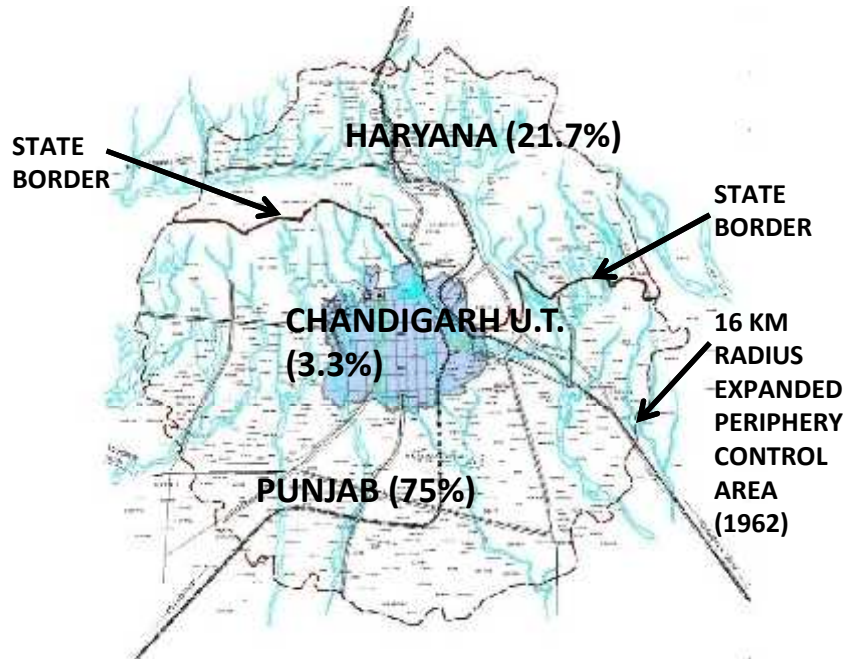


- c) **1966** -Reorganisation of the State of Punjab into States of Haryana & Punjab with Chandigarh functioning as the State Capital of both. Creation of the Union Territory of Chandigarh in 70 sq km as Capital City and 26 adjoining villages in 44 sq km. Out of the 1315 sq km extended periphery, 1021 sq km of the Periphery Control Area went to Punjab, 295 sq km to Haryana with remaining area



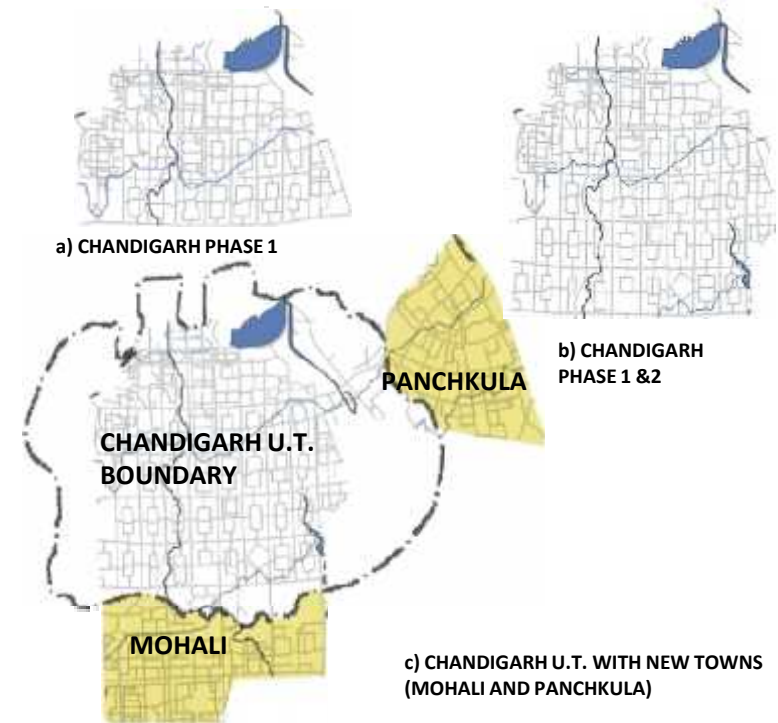
of 114 sq km forming the UT with the Capital City for all its present and future needs. (Refer Map 6) Out of this defined new periphery it was clear that Chandigarh got just 3% land of the original periphery.

MAP 6 DISTRIBUTION OF 16 KM PERIPHERY CONTROL AREA BETWEEN PUNJAB, HARYANA & UT OF CHANDIGARH



d) Post 1966 - Establishment of Mohali township of Punjab in periphery covering 5500 acres and, Panchkula township of Haryana covering 5000 acres. Townships in the periphery emerged as a result of development pressures observed in the form of unregulated growth. (Refer Map 7)

MAP 7 INITIAL NEW TOWNSHIPS IN CHANDIGARH'S PERIPHERY



- e) **1975** - Constitution of a high powered Co-ordination Committee chaired by Secretary, Ministry of Urban Development, Government of India and the Chief Secretaries of both the adjoining states and the Chief Commissioner of UT Chandigarh to resolve matters pertaining to developments around Chandigarh and to suggest measures for not compromising the original intent of the Chandigarh Plan.
- f) **1977** - Preparation of the Regional Plan for Chandigarh's immediate region. Called the 'Chandigarh Urban Complex' (CUC) Plan covering 330 sq km, it comprised of Chandigarh Union Territory (UT), parts of Mohali and its adjoining 27 villages and parts of Panchkula and 23 villages.



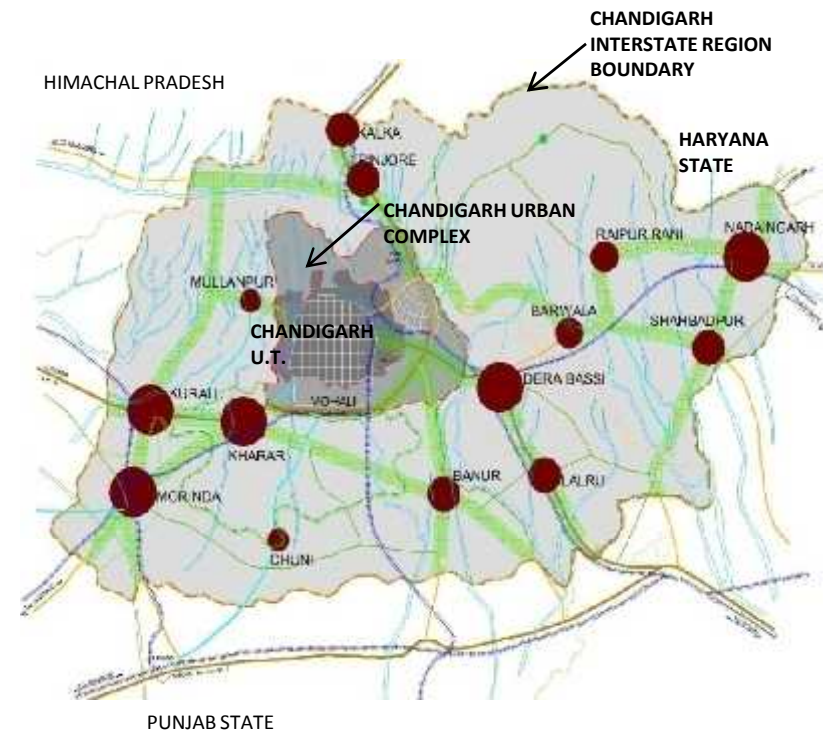
The CUC Plan was approved by the Co ordination Committee. The area of this plan was entirely within the originally conceptualised 8km radius periphery control belt (Refer Map 8). The CUC Plan declared the area north of the Capitol Complex as ‘No Development Zone’.

MAP 8 CHANDIGARH URBAN COMPLEX (1977): DEVELOPMENT OF TOWNSHIPS



g) **1984**-Review of the Chandigarh Urban Complex (CUC) Plan and preparation of a new ‘Interstate Regional Plan 2001 to cater to a population of 25 lakhs distributed in 7 categories of settlements . The Plan revived the 16 km belt of the periphery, assigned 50% population to Chandigarh UT and the remaining to the periphery area in Punjab and Haryana. (Refer Map 9).

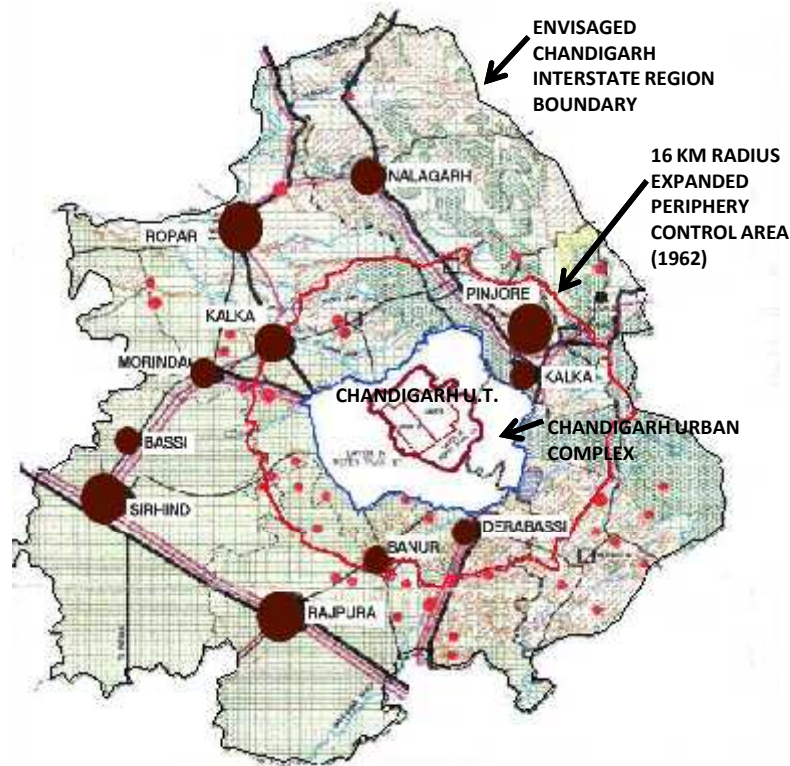
MAP 9 STRUCTURE PLAN: INTERSTATE REGIONAL PLAN (1984)



h) **1999**-Preparation of the ‘Chandigarh Interstate Metropolitan Regional Plan’ (CISMeR Plan) which enlarged the territory of the Plan to a 50km radius periphery control area incorporating Chandigarh UT and 10 tehsils from Punjab, Haryana and Himachal Pardesh. Satellite towns were conceptualized to take the pressure off Chandigarh. No approval was accorded to this Plan. (Refer Map 10)



MAP 10 CHANDIGARH INTERSTATE METROPOLITAN REGION PLAN



- i) **2008**-Notification of the 'GMADA REGIONAL PLAN 2056' by Punjab covering 1021 sq km , creating 7 Integrated Economic Hubs consisting of a huge agglomeration in absolute continuity to the Chandigarh UT and containing major drivers of economic growth (**Refer Map 11**). The area north of Chandigarh and abutting the Capitol Complex created by Le Corbusier and consisting of the village settlements Naya Gaon & Kansal has also been notified as a Nagar Panchayat by the Punjab Government under whose jurisdiction the land falls.

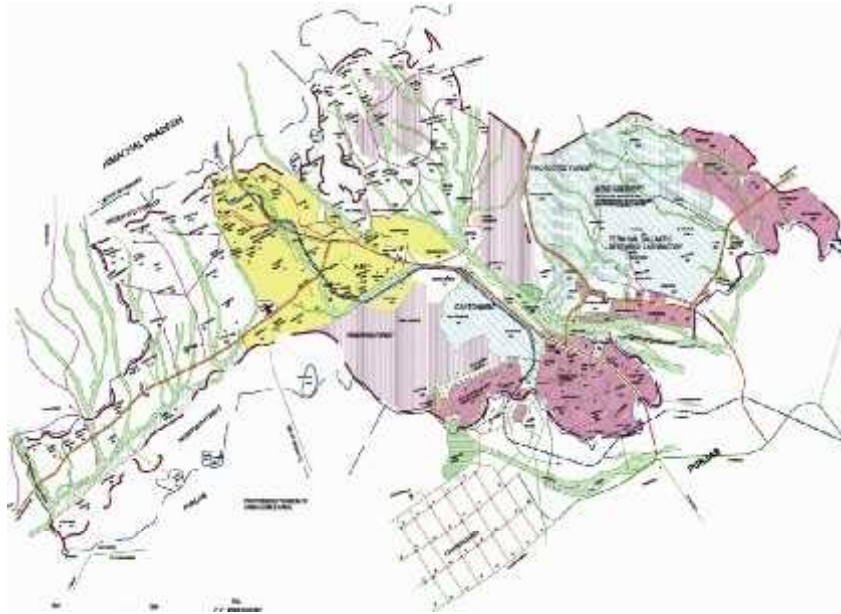
MAP 11 GMADA REGIONAL PLAN 2056



- j) In a similar manner, the Haryana Government has planned 5 settlements, (**Refer Map 12**). Of these, Panchkula and the 'Panchkula Extension-1' across river Ghaggar stand fully developed; Panchkula Extension- 2, Shree Mata Mansa Devi Complex comprising of 1550 acres, close to Sukhna Lake and Kalka-Pinjore Urban Complex are under development.



MAP 12 HARYANA DEVELOPMENT PLAN



k) It is clear from the above sequence of events that actions committed in the periphery have left very limited opportunity for Chandigarh to achieve its Mission of a Plan commensurate with the 'EDICT OF CHANDIGARH' and principles laid down by Le Corbusier (**Annexure P II**).

1.5 CONSTITUTION OF EXPERT COMMITTEE FOR PREPARATION OF CMP 2031 FOR UT CHANDIGARH:

Having understood the constraints facing planning and development, the Chandigarh Administration constituted an Expert Committee for preparation of draft Plan of UT Chandigarh consisting of 11 members.

The Committee was mandated to keep in mind and adhere to various decisions of the Coordination Committee headed by the Secretary, Ministry of Urban Development, GOI and directions of the Hon'ble High Court in CWP No. 4252 of 2008

on (i) the Preparation of a Master Plan for the remaining Periphery Area in the UT of Chandigarh within the scope of the Punjab New Capital (Periphery) Control Act 1952 as also the 73rd and 74th Constitutional Amendments; (ii) Preparation of a Regional Plan for the tri-city of Chandigarh/ Mohali/ Panchkula for guiding future growth in the periphery; (iii) Preventing any further implementation of ad-hoc projects in the periphery till the formulation of the Master Plan as above. The Master Plan Committee was constituted in December 2009 and expanded in May 2010 (**Annexure P III**). Note: (ii) pertains to an Inter-state Coordination Committee.

1.6 STUDY OF ONGOING POLICIES AND PROJECTS OF THE CHANDIGARH ADMINISTRATION:

Whilst the exercise was considered urgent, the ongoing policies and projects were required to be accorded due consideration in the new plan. Some of these were (i) Preparation of the Mass Rapid Transport (MRTS) Plan; (ii) issues of 'shifting' selected activities (grain market/slum rehabilitation etc.) (iii) demand for enhanced coverage by coal depots/building material stores/marla houses/re-densification for Phase I & II, preparation of a heritage plan, etc.

1.7 MASTER PLAN MEETINGS FOR FEEDBACK AND DELIBERATIONS:

The committee held a number of meetings and deliberated on matters concerning both day to day issues as well as issues pertaining to long term planning. Committee also interacted with various stake holders including, trade and commerce, village panchayats, groups representing whole sale markets, NGOs, resident welfare associations, municipal councillors, industrialists, educationists, etc. in order to have first hand feed back of the city and problems/expectations visualized by the city residents.



In addition, all the departments of the Chandigarh Administration were asked to give their vision and proposals for meeting the immediate and future needs of the city relating to their operational areas. Meetings were also held with the representatives of the Government of India and State Governments of Punjab, Haryana in order to synergise the interstate development so as to integrate the issues related to traffic and transportation, heritage, landuse, services etc.

RITES also made presentations regarding their proposals for preparing the Comprehensive Mobility Plan for Chandigarh Urban Complex and improving the transport infrastructure in the city. While evolving the Chandigarh Master Plan 2031, the proposal regarding Mass Rapid Transport System was studied in detail. In February 2010, RITES presented their proposal for the MRTS to a joint group representing the tri-city concerns.

Some issues deliberated by the Committee included preservation of original concept of the plan , maintaining the basic character of the town, preserving ecology and environment, heritage status of the city, protecting the Sukhna Wild Life Sanctuary, protecting the catchment area of Sukhna Lake, promoting sustainable urban development, ongoing development projects, available vacant land, growth and development of villages falling within and outside the sectoral grid, informal residential and commercial sector, developments in the neighbouring towns and future needs of growth and development of the city.

In addition, the Master Plan Committee considered in detail the following:

- Urban design
- Architectural Controls
- Introducing climate friendly environment measures.
- Pedestrian friendly measures and cycle tracks and walk trails
- Revitalization of the City Centre & Sub City Centres
- Completing unfinished projects of Le Corbusier

- Improving aesthetic/urban design/art related aspects
- Actions required for planned village development
- Strengthening Public Transport
- Preventing high rise development in the North dwarfing the Capitol Complex and view of the hills
- Protection of natural rivulets
- Mixed land use development
- Establishment of small, medium and macro Industries
- Issues of through traffic across the city
- Future housing ,institutional areas
- Specific measures for landscaping and greening the city
- Enlarging forest cover and linking existing forests
- Promoting eco-sensitive tourism in villages close to Capitol Complex
- Improving tourism infrastructure and strengthening the city's economic base
- Regional level issues for solid waste management /water supply/drainage /sanitation etc.,
- Measures for inclusive planning including demarcation for night shelters /street vending zones/reception centers/integrating low cost housing for the poor in future housing policies.
- Zero drainage of storm water for large development sites.
- Adaptation of low energy ,locally adaptive materials, labour & technology.

- 1.8 The Committee also studied the report of the Expert Heritage Committee constituted by the Government of India under the Chairmanship of HE, the Administrator, UT, Chandigarh and the approved letter of the Government of India Dated 23/12/2011. The observations/directions of the Government of India on the said report were also examined .



1.9 AN OVERVIEW AND GUIDING PRINCIPLES FOR COMPREHENSIVE CHANDIGARH MASTER PLAN 2031 (CMP 2031)

- Chandigarh has been politically and administratively symbolic of the aspirations of a newly independent nation reflected in a planned capital city imbued with eminence and personality of its planner Le Corbusier. The last six decades have seen it grow at a pace which is now challenging its contemporariness as envisaged by Le Corbusier, yet giving impetus to growth, some modern some organic in its peri urban zone. This has involved transformation of its socio economic, natural and built environment. The framework for guiding its future growth shall remain constrained by an imposed boundary due to re-organisation of states in 1966.
- The proposed plan respects its historical legacy and optimises on its constraints of land. The plan is an attempt to redeem an efficient circulation network and extensive lung space as well as the scenic backdrop of the Shivalik Hills against which lies the dramatic Capitol Complex given its due place of pride. The plan provides a useful base for regulating development and building activity in the entire UT of Chandigarh. Thus the reference area for planning constitutes 144 sq km which includes the 60 sectors in the sectoral grid as well as the periphery areas outside it.
- **The Chandigarh Master Plan 2031** is the first comprehensive plan for developing the city and its periphery within the UT boundary after a spate of adhoc developments impacting its periphery. Some basic postulates for planning need to be emphasised in this context.
 - i. **Chandigarh shall be planned in the context of the region emerging as a result of dedicated efforts of Punjab, Haryana and Himachal Pradesh which surround the city. This postulate accepts the Territorial Development Strategy in the neighbouring region and confines itself to the UT boundary.**
- ii. **Population Dispersion Strategy and the Housing Strategy for CMP 2031 accepts that balanced regional development of the city can be achieved with the New Towns Development within the region.**
- iii. **The Chandigarh Master Plan 2031 envisages that the Metro Plan shall consist of the boundaries of the Sub Regional Divisions of Punjab and Haryana to qualify it for the Integrated Transport and Infrastructure policies as well as the Airport Development Strategy. Together these shall constitute aspects of shared responsibility between Chandigarh UT, Punjab and Haryana.**
- iv. **Developments shall be guided along desirable lines in the new areas. Organic pattern of villages where necessary shall be preserved and conserved / conservative surgery where unchecked growth has taken place shall be resorted to / development of villages shall take place as per notified Village Plans.**
- v. **Chandigarh's architecture shall preserve the vitality of all public and private buildings. Public open spaces shall be created as vibrant community spaces and the left out monuments envisaged by Le Corbusier shall be completed. Urban design shall be the guiding principle for improving the quality of inner and outer spaces.**
- vi. **To make the city more green, more eco friendly, more people friendly, more walking and biking friendly. Mechanism of creating city forests shall be used for improving the micro environment and flora and fauna in the city.**
- vii. **Due regard shall be given to preserve the bountiful natural heritage of forests, wild life sanctuary, green spaces and water bodies within and around the city.**

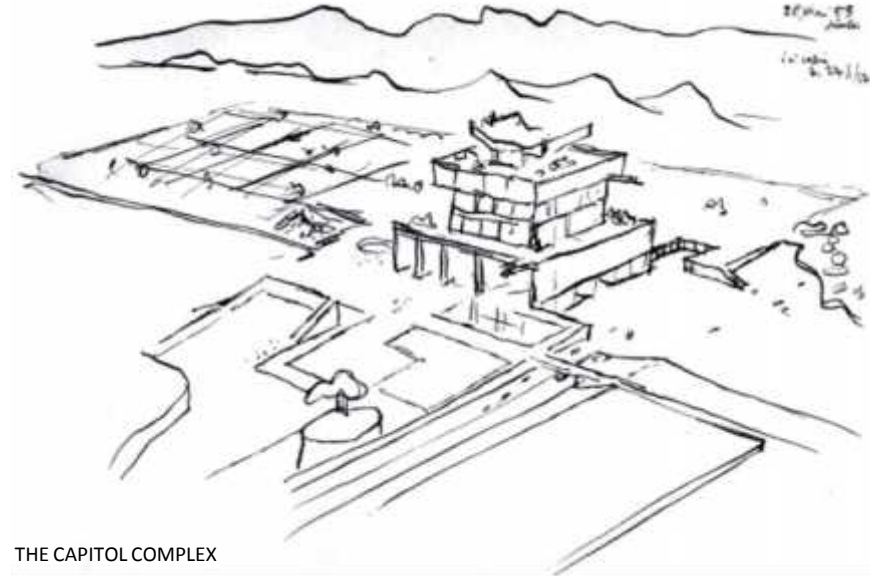


- Briefly , the challenge for Chandigarh is to frame strategies for Chandigarh’s growth aligned to the original principles adopted to the rapidly changing context. Though the metropolis today has fewer issues compared to other similar metropolitan cities, yet the immediate issues relate to:
 - Limited / defined area for the city
 - High degree of traffic congestion
 - Large scale urbanization in the periphery

1.10 SUSTAINABLE DEVELOPMENT

- Incorporating climate change and sustainable development measures
- **A degrading ecology of the northern lower Himalayan Shivaliks as well as the seasonal rivulets on its eastern and western boundary (i.e. Sukhna Choe and Patiali Ki Rao)**
- The pressures resulting from Sustainability vs Development issues (Green Agenda vs Real Estate development)
- **Integrating tourism in Chandigarh’s future economy due to its intrinsic assets of architecture, urban design, landscape, proximity to the scenic and unique backdrop of the Himalayas alongwith creating new opportunities for ecological health and wellness, recreational etc tourism.**
- Issues born of periphery region development and integration of Infrastructure Services such as transport, water supply, storm water drainage, solid waste management, sanitation etc. sustainability
- Addressing the issues of a bipolar city consisting of the very rich and the very poor.

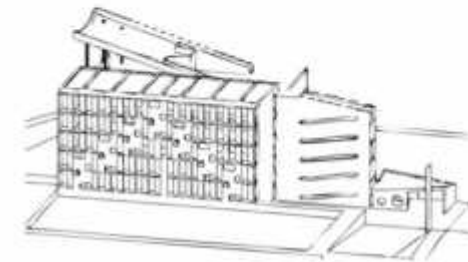
FIGURE 1: Views of unfinished projects of Le Corbusier



THE CAPITOL COMPLEX



VIEW OF THE GOVERNOR'S PALACE



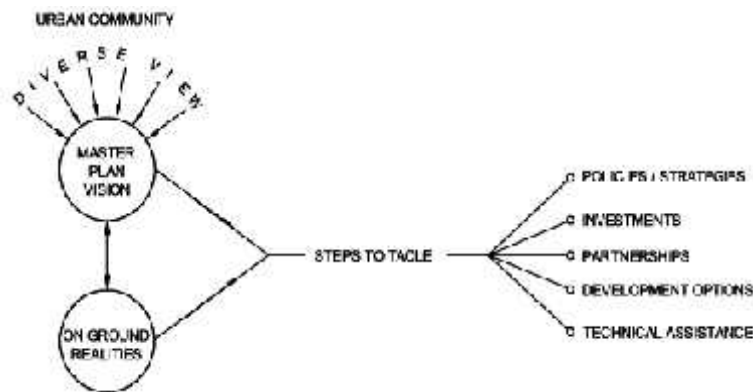
VIEW OF THE MUSEUM OF KNOWLEDGE



1.11 APPROACH TO MASTER PLAN PREPARATION

- The Chandigarh Master Plan 2031 aims to provide an integrated version of an urban community’s diverse perspectives through a unified vision for future development. The on ground reality, when compared to the vision, sets the agenda for action and onward movement. This entails formulating and sequencing policy initiatives, development strategies, civil society partnerships and investments.

FIGURE 2: INVOLVING PEOPLE IN PLANNING



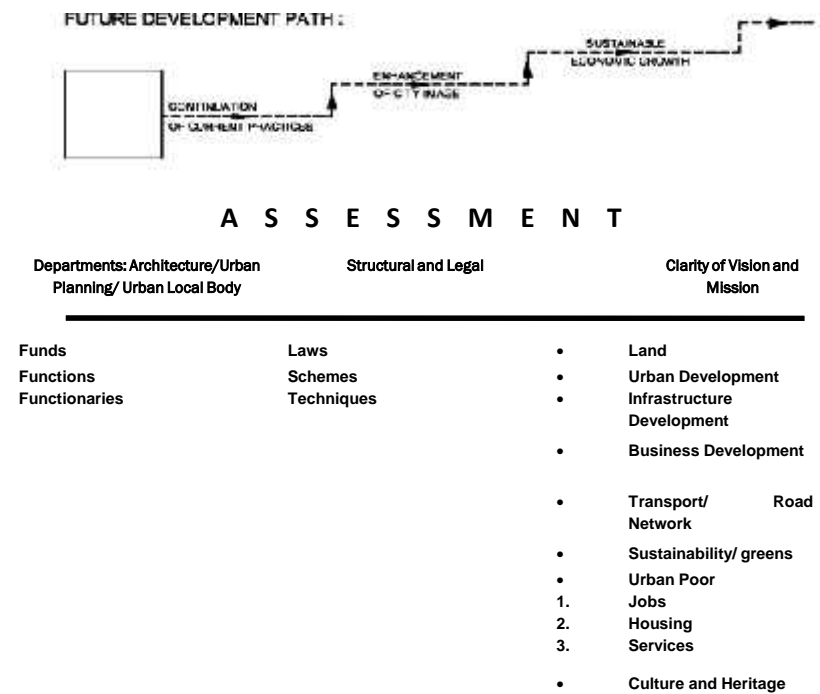
- The Chandigarh Master Plan 2031** is an effort at developing the above with city, central government and local government assistance.
- The Chandigarh Master Plan 2031 aims to respond to challenges of urban growth and the constraints to that growth so that Chandigarh is an economically productive, efficient, equitable and responsive city, with sustainable water, sanitation and other infrastructure services (*ensuring expanded access to the poor*) with increased financial sustainability, includes people’s voice in its development, explores economic potential of its

internationally acclaimed abundant architectural and natural heritage, improves urban governance with technical assistance in plan making, policy and financial structuring.

The APPROACH and process for Master Plan preparation focuses on the;

- Analysis of the city’s current situation
- Vision for future development
- Strategies for development
- Guidelines for plan monitoring

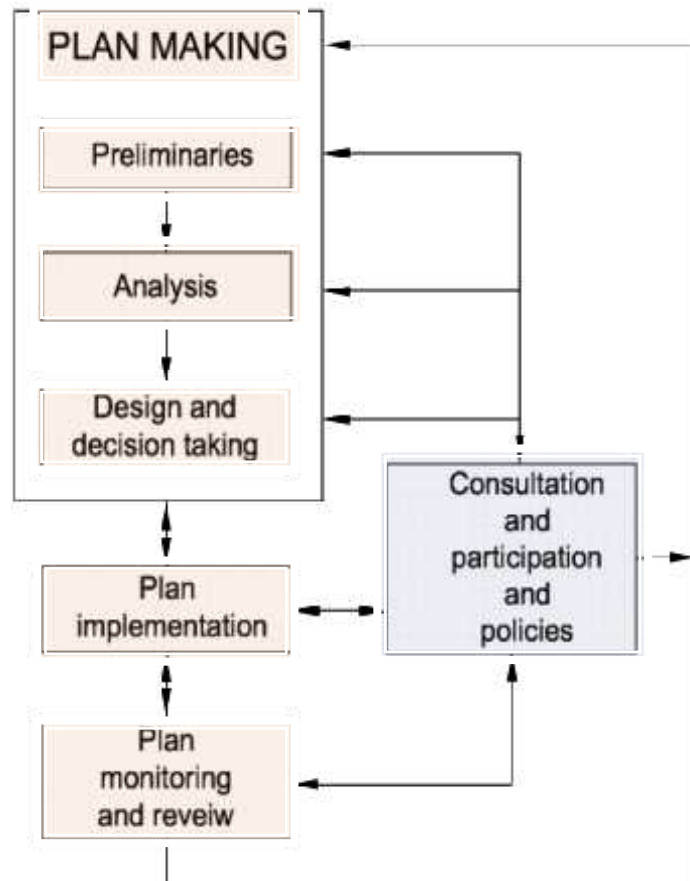
FIGURE 3: CARRYING DEVELOPMENT INTO THE FUTURE





A broad framework for the methodology for preparation of the master plan is given in the figure below

FIGURE 4: PLAN MAKING PROCESS



1.12 THE CHANDIGARH VISION

The Chandigarh Vision shall strive to develop as an administrative city. It shall help instill pride and identity to people in the city being a collective and shared one, and help recognize its inherent strengths, its weaknesses, its opportunities and its threats through a SWOT analysis. This shall help guide civil society, business and citizens to allow legitimate economic growth and development, recognize the city's heritage wealth, enshrine our commitment to equity and inclusiveness and help build sustainability.

The SWOT analysis undertaken provides the basis for the Vision for Chandigarh and was derived from citizens participation as well as the issues and concerns faced by the Chandigarh Administration and the Chandigarh Municipal Corporation in managing the city's growth. The regional perspective and interconnections with the periphery helps to sharpen the vision..

STRENGTHS

- Firmly established sound planning principles yielding a sustainable development ethos for Chandigarh.
- Locational advantage, highly scenic background of hills, existence of forests and natural rivulets, good connectivity with road/rail/air, an abundant tree cover.
- Strong image-ability, refined, iconic architecture, trendsetter in design/aesthetic, international prominence of city.
- Excellent use of natural gradient facilitating gravity related services, state of art infrastructure.
- Specially designed neighbourhoods enriching the quality of life.
- Climatically responsive architecture.
- Aware citizenry.
- A well supported city, both administratively & financially.
- Universally acclaimed rich 'Heritage' and 'Green City' character.
- The decentralized distribution of major work centres.
- A strong hierarchical network of roads for systematic transportation.

WEAKNESSES

- Presence of urban villages with unregulated growth amidst planned sector environments.
- Presence of unauthorised settlements.
- Landlocked city combined with depleting land reserved as green in periphery; limited land available for future growth & infrastructure needs.
- Dependence on Chandigarh for social and other infrastructure by neighbouring settlements.
- Lack of Spatial Policy for introducing change in Regulatory environment (FAR / density / ground coverage / heights / setbacks / architectural controls/ mixed use etc.).
- Emergence of a Fractal City with pattern of economic & social differences.
- City expansion to outer peripheral settlements.
- Poor enforcement of Disability/Fire Safety Norms.
- Poor Operation & Maintenance of buildings.
- Invasion of other uses on open spaces.
- Traffic chaos due to high vehicular density and poor public transportation system resulting in high dependence of personalised modes of vehicles.

OPPORTUNITIES

- City attaining World Heritage status.
- Improving green cover.
- Improving network of cycle tracks, safe mobility for pedestrians, eco trails, forest and wooded tracks between existing gardens – landscaped strips etc.
- Introducing eco sensitive and environmental measures into public and private buildings through incentives (solar panels / roof gardens/vertical greens / rain water harvesting/recycling of grey water/decentralized STPs.
- Introducing Mixed Use zones of sizeable nature as pilot exercise to test impacts/outcomes.
- Introducing Village Improvement Strategy as pilot exercise after assessment of alternatives.
- Introducing an inspirational iconic architectural museum building for displaying diverse successful Spatial Planning Models from international examples – through an International competition for the same. The building can epitomize “Contemporary” in Culture/Architecture/Artifacts/Sculpture/ Installations drawn from the best examples world wide.
- Strengthening role of tourism in local economy integrating regional tourism circuits and promoting new tourism projects for nature – heritage – education – wellness – business – industry.
- Forming Resident Welfare Associations at sector or ward level for resolving contentious local issues / initiating new ideas for healthy engagement of citizens.
- Enhancing employment opportunities for educated youth in modern sectors of the economy.
- Increasing legal security for informal sector workers by creating street vending zones, serviced cycle rickshaws etc.
- Reducing disparity in quality of life and services in the sectoral grid and urban/rural villages and resettlement colonies.



THREATS

- Regionally dispersed townships of two border states which abut Chandigarh (Zirakpur / Kharar / Mohali / Banur/ Derabassi/ Mullanpur / Naya Gaon in Punjab and Panchkula / Panchkula Extension / Kot Behlana / Pinjore/ Mansa Devi Complex in Haryana) have assumed mega development agendas presumably on the strength of their proximity to Chandigarh which can overburden its infrastructure and create unwarranted through traffic movement to other satellite towns.
- Location of solid waste dumping site near rehabilitation colony and rivulets.
- Absence of earthquake (Zone IV) safety and disaster management measures.
- Existence of geographical tectonic fault lines passing through northern Chandigarh at the foothills of the lower shivaliks (near Naya Gaon).
- Proposed high rise buildings in contravention of the spirit of Chandigarh's low profile development.
- Unregulated construction of questionable structural standard in villages and rehabilitation colonies.

Summarised: Chandigarh, now a mature city and a newly arrived metropolis, with its eco-sensitive citizens is awaiting a sustainable urban and economic development, sensitive tourism and business growth in an architecturally acclaimed town set in scenic surroundings, to move forward on principles of sustainability and reduced carbon foot print.

THE CHANDIGARH VISION

Chandigarh Capital City poised to develop as an administrative city and protect, retain, enhance its Green City character and conserve its architectural & planning idiom, whilst striving to reduce spatial socio economic disparities. The capital city can become a Knowledge Center on new frontiers for generating employment opportunities and become an Education/Health Care Hub with good facilities for sports.

The city shall continue to facilitate, promote and enhance the capital functions for which it was originally designed.

Considering the ecological footprint and climate change reality, this capital city can be a torch bearer in eco friendly state of art technologies.

Synergizing development for shared responsibilities in management of critical infrastructure Solid Waste Management (SWM)/ Water Supply (WS)/ transport/ drainage/ roads etc.) alongwith "Housing for all" while maintaining a low to medium density profile shall be the agenda of the city.

The city shall continue to nourish itself through its green spaces and pedestrian friendly development encouraging the use of bicycle.

"Public transport shall be encouraged as preferred mode" with the adoption of an appropriate 'City Mobility Plan' complementary to the Chandigarh Master Plan 2031.



2 REGIONAL CONTEXT

2.1 BACKGROUND

- There is international acceptance of taking the regional context into account while planning cities. Chandigarh had pioneered the conceptualization, planning, legislating and reserving land for future urban growth, thus introducing the regional context into the city plan. The reserved land in the periphery was meant to serve the city with its agricultural produce, and later, to accommodate future population growth. That this provision was hijacked on account of various compulsions has already been discussed in the preamble to this report. This chapter elaborates on the way to move forward, putting into context, the perspectives outlined below.
 - (i) The perspectives of Punjab, Haryana and Chandigarh U.T. Regional Growth Strategy.
 - (ii) Options for Chandigarh.
 - (iii) Issues of commonality.
- Historically 70 sq. kms of land was acquired between the rivulets Patiali ki Rao and Sukhna Choe for Chandigarh's Plan, incorporating mechanisms for control and regulating development. This exercise entailed acquiring land of 17 villages and resettling the villagers elsewhere. During land acquisition for Phase II, the villagers agitated to stall their dislocation which culminated in villages being retained within the sectoral grid.

Later, forces of urbanisation acted on the periphery, leading to a number of planned interventions such as the establishment of the towns of **Panchkula, Chandimandir Cantonment, HMT Township and Mohali**. With them came a number of organic developments in the periphery on the doorsteps of Chandigarh.

Specifically the outward expansion followed a sequence of actions:

- a) A new capital for Punjab was approved in 1949. This incorporated:
 - i. The Chandigarh Master Plan area of 70 sq. km in two phases (1951).
 - ii. A Periphery Control Area for a 8 km radius around the Chandigarh Plan Area (1952) and
 - iii. An expanded Periphery Control Area for a 16 km radius around the Chandigarh Plan Area (1962).
- b) The state reorganisation in 1966 involved restructuring a) above into:
 - i. Chandigarh Union Territory 70 sq. Km + 44 sq. Km = 114 sq. Km.
 - ii. Punjab component of the Periphery Control Area = 1021 sq. Km.
 - iii. Haryana component of the Periphery Control Area = 295 sq. Km.



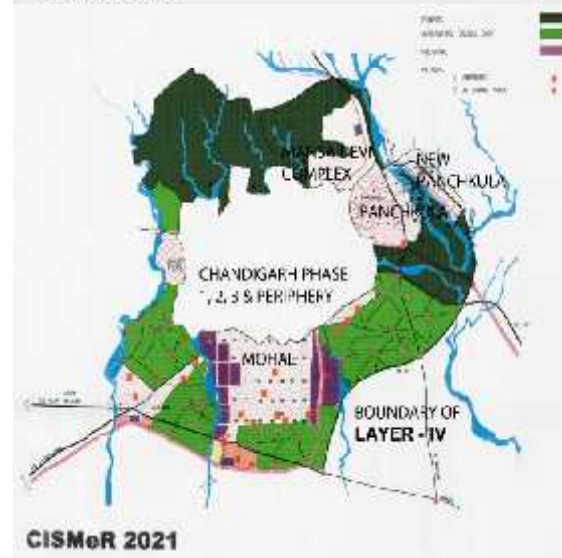
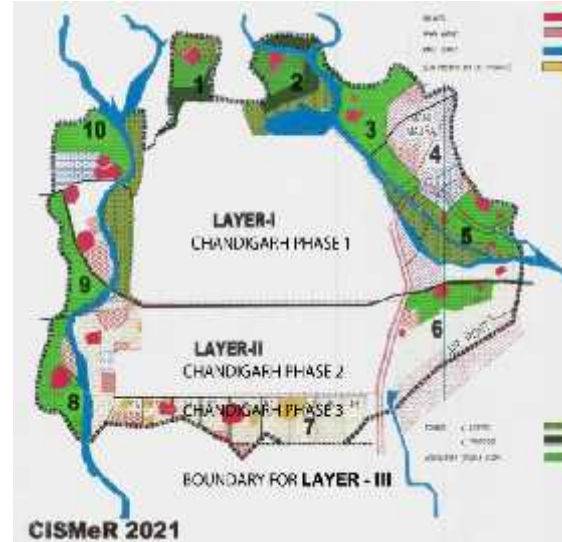
- c) The Chandigarh Urban Complex (CUC) was created by the Ministry of Urban Development, Government of India in 1975 this incorporated
 - i) the Chandigarh UT and
 - ii) a reorganised CUC boundary in lieu of the 8 km radius mentioned in para a).

- d) The Chandigarh Interstate Capital Region (CISCR) as created by the Central Town & Country Planning Organisation in 1984 which incorporated
 - i) the Chandigarh UT
 - ii) the CUC (outside the UT)
 - iii) the 16 km radius Periphery Control Area (outside CUC) and portions beyond the 16 km radius in Punjab and Haryana. This total area measured 2431 sq. km.

- e) The Chandigarh Interstate Metropolitan Region (CISMeR) Plan comprising of **50 km radius** falling outside Phase I of Chandigarh and consisting of 10 tehsils (Punjab 4, Haryana 3, Himachal Pradesh 3). The Plan comprised of six Layers with the 50 km radius being Layer VI and Phase II being Layer II, Phase III being Layer III. A new Layer of 345 sq. km outside Layer I, II and III and named as Layer IV and, Layer V consisting of 16 km radius Periphery Control Belt of 1962.

Each of these layers was meant for a specific size of population. Map 1 to 4 show the 6 layers envisaged in the plan.

MAP 1 SHOWING LAYER III OF CISMER PLAN



MAP 2 SHOWING LAYER IV OF CISMER PLAN



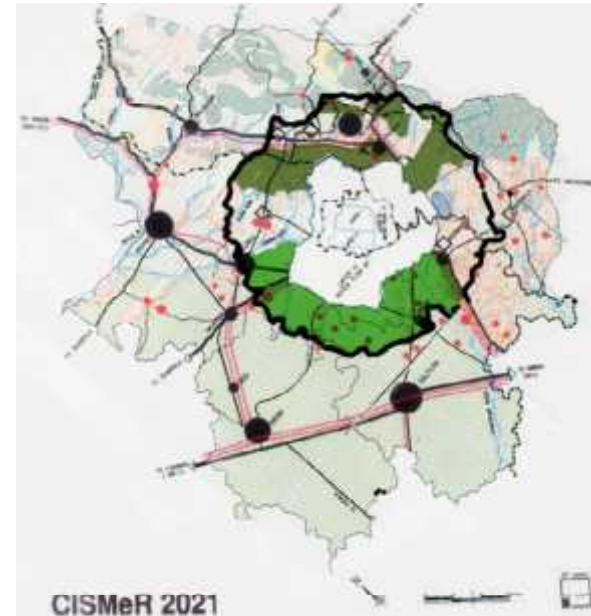
2.2 REGIONAL GROWTH STRATEGIES, PUNJAB, HARYANA

• PUNJAB REGIONAL GROWTH STRATEGY

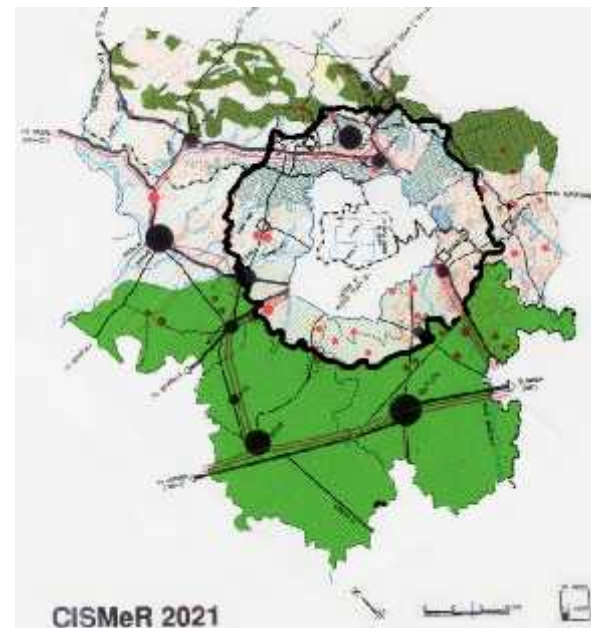
Punjab has created a Greater Mohali Regional Development Authority (GMADA) to prepare an Integrated Plan for 1190 sq. km region around Chandigarh, part of which extends beyond the earlier defined 16 km radius and excludes a minor territory (Kansal & Naya Gaon) in Punjab abutting the Capitol Complex north of Chandigarh (see **Map 5 and 6**) for Greater Mohali Region and Naya Gaon abutting Capitol Complex).

The Integrated Development Plan under GMADA **Map 7** has jurisdiction over 6 Local Planning Areas (**Mohali / Kharar / Banur / Zirakpur / Dera Bassi/ Mullanpur**) each of which has been conceptualized as a HUB for a distinct economy / sector and for which independent plans have been prepared after envisioning their development agenda / defining their Land Uses and integrating them through a network of expressways / road ways / air & rail connections etc. (see **Map 8 to 11** for independent local plans).

MAP 3 SHOWING LAYER V OF CISMER PLAN



MAP 4 SHOWING LAYER VI OF CISMER PLAN

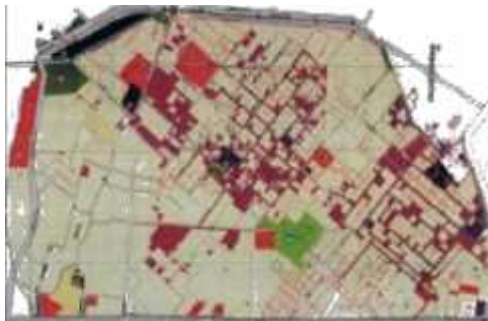




MAP 5 SHOWING GREATER MOHALI REGION WITHIN AND BEYOND 16 KM PERIPHERY CONTROL AREA



MAP 6 SHOWING NAYAGAON N.A.C. NEAR CAPITOL COMPLEX



These developments were notified under **Punjab Regional Town Planning and Development (Amendment) Act 2006** and approved by the Punjab Government in 2008. The plans were prepared by the International Consultants Jurong Pvt. Ltd. based in Singapore.

Effective Zonation has been done for Agriculture / Forests / Industry / Urban & rural settlements / Transport & Communication / New Towns / Road Network. Each Local Plan has designated Densities / Uses / Zoning Regulations. Later, the township of Lalru has been identified and is likely to get a Local Plan in the near future.

- **Haryana Regional Growth Strategy**

Haryana adopted the Punjab New Capital (Periphery) Control Act, 1952, in 1968 with modification (the Periphery Controlled Area was notified vide Notification No. 2415-IV DP-72/1329 dated 21.3.1972 published in Haryana Government Gazette on 4.4.1972). Under the operation of the Haryana Portion of the said Act, chronologically some developments were taken up as under:

Preparation of the 1st Development Plan for taking up Panchkula Project as an Urban Zone (based on Drawing NP PO (P)115/72). Other projects shown as **Special Projects Zone** were **Chandimandir Cantonment** and **HMT township**. Besides these, the **Terminal Ballistic Research Lab (TBRL)** also got established.



MAP 8 LOCAL PLAN MULLANPUR NODE



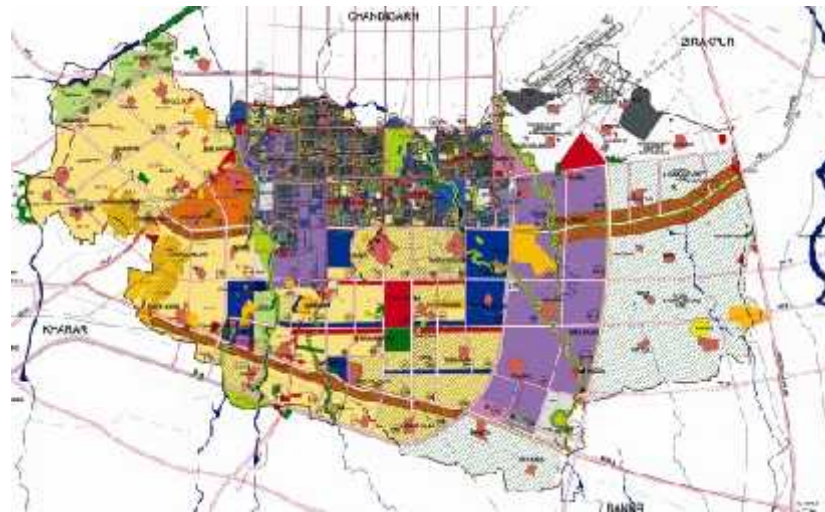
MAP 7 DEVELOPMENT NODES OF GREATER MOHALI REGION



MAP 11 LOCAL PLAN MULLANPUR NODE



MAP 9 LOCAL PLAN KHARAR NODE



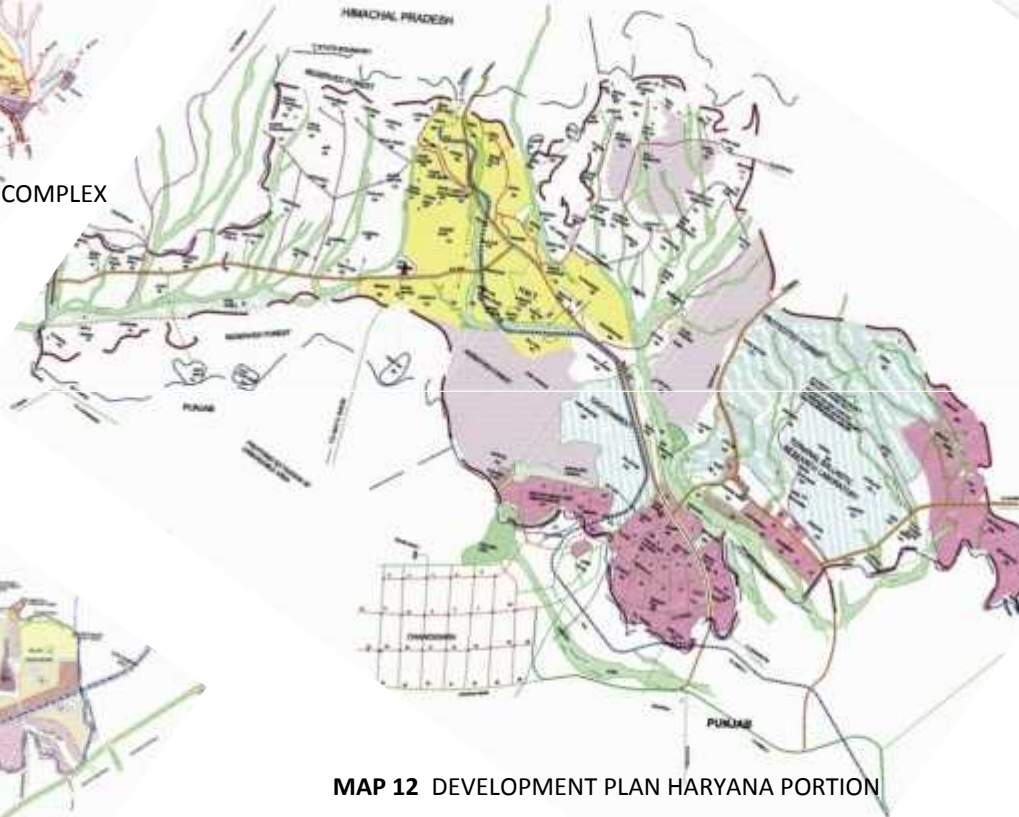
MAP 10 LOCAL PLAN MOHALI



MAP 13 PINJORE KALKA URBAN COMPLEX



MAP 15 PANCHKULA EXTENSION



MAP 12 DEVELOPMENT PLAN HARYANA PORTION



MAP 16 PANCHKULA



MAP 14 SHRI MATA MANSI DEVI COMPLEX



MAP 17 KOT BEHLANA ALIPUR URBAN COMPLEX



- New Urban Zone of **Shri Mata Mansa Devi Complex** was designated (Drawing No. CTP (P) 617-A/83) and the existing stone crushers (Bana Madanpur) were shifted to **Stone Crusher Zone Burj Kotian**.
- **Panchkula Extension** was incorporated (Drawing NO. DTP (P) 155/89) as a new Urban Zone.
- Further addition of Urban Zone were made (Drawing No. DTP (P) 597/2000) of the **Pinjore Kalka Urban Complex** and **Kot Behlana Urban Complex**.
- The latest amendment in 2009 incorporates modification to **Pinjore – Kalka Urban Complex, Panchkula Extension and Kot – Behlana Urban Complex**.

(See Map 12 for consolidated Regional Plan of Haryana portion in the periphery and Map 13 to 17 for five different Local Plans).

Provisions were also made for environmental protection due to the sensitive topography of Shivalik Hills, Kandi belt, plains and river belts, plus the Reserved and Protected Forests & Wild Life Sanctuaries in this zone. The Agricultural Zones were also defined.

Chandigarh (UT) Regional Growth Strategy

- a) Land available for **Phase-III** within the UT and as part of periphery constitutes **44 sq. kms**. This has partly been developed as medium size / high density residential within **13 sectors** in the form of group housing development, alongwith proposed high rise commercial / institutional blocks (to service the population) and located on V2 Vikas Marg of Chandigarh and abutting Mohali. **The sectors of Chandigarh link up with Mohali's sectors.**

Total land under all Phase-III sectors (and including the land under two villages Kajheri / Palsora) is 7.5 sq. km.

- b) In the absence of a master plan, a lot of land lying outside the sectoral grid and located in both parts of the trans Sukhna Choe (in the east) and trans Patiali Ki Rao (in the west) has been developed over the years to accommodate city's growing needs for various purposes in a fairly adhoc manner. The following projects have been developed :

Trans Sukhna Choe

- IT Park towards Manimajra and behind the Sukhna Lake
- Pockets in Manimajra Urban Area
- Slum Rehabilitation at Mauli Jagran/Indira Colony/Raipur Kalan
- Village expansion within the periphery
- Industrial Area Phase-III

Western portion

- Sarangpur Institutional Area
- Milk Colony Dhanas, Residential-cum-Cattle Farm
- Botanical Garden, Sarangpur
- Landfill site and Garbage Processing Plant in Dadumajra
- Vocational Training Centre
- Slum Rehabilitation in Maloya / Dadu Majra / Dhanas
- Village expansion within the periphery (6 villages).



Of the total 44 sq km land available in the periphery control area with UT Chandigarh, land under Phase-III sectors constitutes 8 sq. km with the uncommitted undeveloped land in the remaining 36 sq. km distributed over 17 pockets. This includes land under the 14 villages (see Annexure RCI). Thus the total land available for any dispersion of population, jobs, housing and other civic utilities, facilities and amenities outside of the planned sectoral grid of Chandigarh is 2658 acres.

- **The Co-ordination Committee for Development of Chandigarh**, realizing the fact that Chandigarh is now a **Metropolis** confronted with the **issues of the Inter-state regions**, has taken the initiative to prepare an **Inter State Regional Plan** for Chandigarh for the purpose of integrated planning and implementation and for maximizing the benefits to all. In particular, there are contentious issues of addressing regionally, the components of **Water Supply/Landfills for SWM/ Underground Drainage / Transportation and Inter City Connectivity**: other issues related to **‘Housing for all’**.

Similarly **conservation and safeguarding of the natural and built environment** is important as is the **social infrastructure** availed by all in the region. It is also prudent to consider the region for introducing the **MRTS** within the urban structure of Chandigarh and its adjoining urban region.

In brief, the Regional Plans should be preferred and accorded statutory backing through the establishment of a Board (*like the NCR Board*).

MAP 18 POCKETS OF UNDEVELOPED LAND IN THE PERIPHERY (Excluding vacant pockets of Manimajra)





2.3 A CONSOLIDATED VIEW OF THE PERIPHERY

Given interdependence for the three reference regions mentioned above for serving the projected demands for critical physical and social infrastructure, Chandigarh UT has determined its own demands but has no influence over the demands generated outside its boundaries. It is usual that a mother city becomes the area for performing the core functions and fulfilling demands specially of social infrastructure at the regional level. So is the case with trade and commerce. It is natural to seek bigger markets, better education, dependable healthcare which is only available in Chandigarh. Effects of this demand are felt strongly in the transport sector resulting in congestion on some arterial roads specially at peak times. Floating population and daytime visitors also make demands on water supply and sanitation. These critically affect the day to day problems related to infrastructure.

The CMP 2031 expects a symbiotic relationship with the regional urban areas. It expects that the three partners in development, Punjab, Haryana and Chandigarh UT, should have an understanding and coordination between themselves for sharing key responsibilities for locating some of the spillover infrastructure components of Chandigarh in their territory in view of the land constraints within the city as well augment the physical and social infrastructure in their respective towns to reduce the pressure on Chandigarh. A sensitive and coordinated development is required to safeguard the regions natural and man made heritage.

i. The current Chandigarh Master Plan 2031 alongwith the GMADA Plan 2056 and the Haryana Development Plan should together arrive at a METROPOLITAN PLAN for the perspective year 2031.

ii. The area distribution in the periphery is as under:

Chandigarh	44 sqkm	(3.23%)
Haryana	295 sqkm	(21.70%)
Punjab	1021 sqkm	(75.07%)
Total	1360 sqkm	(100%)

iii. The integrated elements of the three independent Plans, (called the “METROPOLITAN PLAN”) which should collectively form a “Public Transport Strategy” mutually agreeable to all.

2.4 ISSUES OF COMMONALITY WITH NEIGHBOURING STATES

- Need for a Comprehensive Plan for Environmental Protection
- Protection of forest cover in the Shivalik Hills and other such natural areas
- Protection of water bodies and seasonal rivulets against water pollution and waste disposal
- Facilities and services to provide for collection, treatment, disposal of sewage and other chemical and municipal wastes of the community.
- Planning against pollution, avoiding new problems in the future in the course of development and redevelopment.
- Legislating for effective controls to be placed for pollution.
- Air Control Zones
- Noise Control Ordinance
- Road Traffic and Exhaust Emission Standards



- Control of Pollution of Streams & Rural Areas and by Animal Wastes.
- Education and Public Awareness Campaigns.
- Effective Solid Waste Management.
- Disaster Management Plans.
- Augmentation of Green Cover.
- Declaration of Eco Sensitive Zones around Wildlife Sanctuaries.
- Declaration of Agricultural Zones.
- Preparation of Sukhna Management Plan.
- Declaration of Areas and Vistas of scenic value and prevention of any high rise developments in light of the recommendations of the Expert Heritage Committee.
- Declaration of Natural Heritage Zones.
- Decentralization of bulk material markets (Grain/ Fruits/ Building Materials/ Warehouses etc.).
- Dispersion of state level offices to locations outside of Chandigarh.
- Safeguarding the backdrop of the hills and siting of the Capitol Complex.
- Creation of Land Information Systems and use of GIS Technology for basic Mapping System. Institution of a **Committee for Land Protection/ Land Production and Inventory of Scarce Land Resources/ Sensitive Zones.**
- Accurate Mapping of Boundaries of all Sub Regions and Divisions.
- Preparing an International Airport Development Strategy.
- Coordinated development of southern sectors bifurcated by the interstate boundary.
- Creation of a bypass road around Chandigarh to prevent unwanted through traffic.

- Synchronisation of road geometrics /sections/landscaping/ROW of intercity roads.
- Ensuring no direct opening onto regional roads to enable seamless interconnectivity.
- Coordinated interstate bus transport and public transport modes.
- Advertisement and signage control along regional roads.
- Slum free region /affordable housing.
- Ensuring orderly /coordinated built environment /urban design at entry to city.

2.5 OPTIONS FOR CHANDIGARH

- The CMP 2031 has projected a population of 16,00,000 persons. Of these, nearly 6,16,031 are expected to be contained within the existing 47 sectors within Phase I and II; these constitute 38% of the total projected population.
- Remaining 9,60,000 persons (60%) are expected to be housed partially in the Sectoral grids of 48 to 56 as well as parts of Sectors 61 and 63, and partially in the remaining Periphery in 17 designated pockets.
- The quality of these neighborhoods shall imply a much higher density (*averaging at nearly 175 persons per acre*) than the sector neighborhoods of both phases and special measures shall have to be taken to ensure the availability of adequate physical and social infrastructure at par with the rest of the city.



- **The Master Plan recognizes that land available with the UT in the Periphery has to be judiciously utilised to enable the sustainable development of the city.**
- **Chandigarh shall have to strategize on imposing a severe limitation to locating large scale industries , high bulk material stores requiring heavy freight containers etc for transportation on the fragile and limited land resource available to it.**
- The location of Warehousing and Logistics Parks shall have to be determined based on mutual understanding between the neighboring states, *(there being a specific need for them in the region).*

- **INFRASTRUCTURE REQUIREMENTS**

The infrastructure demands for CMP 2031 are as follows:

Water Supply	800 MLD
Solid Waste Management	800 Metric Tonnes
Mandatory area to be reserved for greens	9400 Acres



3 MASTER PLAN AREA

3.1 BACKGROUND

The Master Plan of UT Chandigarh covers an area of approximately 114 sq km.

This includes the nearly fully developed 70 sq km of the area planned by Le Corbusier and his team and the 44 sq km of its 3% share of the 16 km periphery controlled area.

The 44 sq km periphery area of Chandigarh is regulated by the Punjab New Periphery Control Act, 1952 with the exception of the *abadi deh* of the villages falling within it namely Sarangpur, Khudda Ali Sher, Khudda Jassu, Khudda Lahora, Maloya, Dadumajra, Palsora, Kajheri, Raipur Kalan, Raipur Khurd, Behlana, Hallomajra, Makhanmajra, Kishangarh and Manimajra. The area also includes the two natural rivulets of the Patiali Ki Rao and the Sukhna Choe.

The CITY and the PERIPHERY were intended to have clearly defined functions as per the original plan and the **Statute of the Land** enunciated by Le Corbusier. The CITY was meant to be the container and the PERIPHERY the provider, and had warned that overlapping of the functions would result in **anarchy**. **This** important document has been placed as **Annexure MP 1**.

The message seems to have gone unheeded as the PERIPHERY succumbed to the pressure of the CITY as is clear from the changed character of the PERIPHERY, which has not only shrunk in size but has transformed from a purely rural area to a peri urban area.

Portions of the PERIPHERY are fully urbanised and in continuum of the CITY and the rest dotted with pockets of spillover of urban uses which the CITY was unable to provide within its clearly defined boundaries.

Portions of the Periphery have also witnessed un-organized and haphazard growth due to the spillover of the *abadi deh* of the peripheral villages .

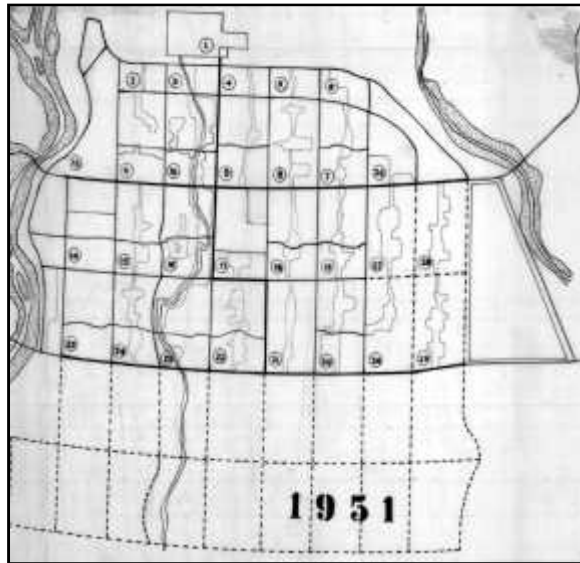
Chandigarh has witnessed unprecedented growth and has further momentum for growth which has to be channelized systematically in order to enable the city to sustain itself within the constraints. The plans depicting the GROWTH OF THE CITY since its inception in the first four decades is an indicator to ascertain the future growth patterns of development in the city (refer **MAP 1 -10**).

3.2 AREA INCLUDED IN THE CHANDIGARH MASTER PLAN

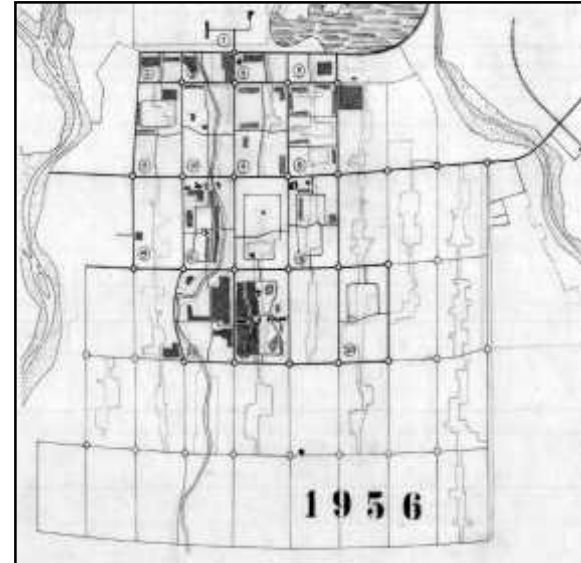
The CMP - 2031 recognizes that restoring the original CITY – PERIPHERY concept in its entirety is well nigh impossible at this stage.

This Master Plan is an attempt to provide a comprehensive holistic vision document prepared after undertaking an exhaustive stocktaking of the ground realities and enunciating future growth and development strategies and directions for the entire area under the jurisdiction of the Union Territory of Chandigarh. The Master Plan area thus spreads across the entire 114 sq km of the area of the Union Territory of Chandigarh. The area also includes the census town of Manimajra which has grown from a small settlement having an ancient history to an area under extreme pressure for development due to its prime location on the Chandigarh Kalka Highway, its proximity to the main city of Chandigarh and the expanding existing towns / development of new towns of the State of Haryana.

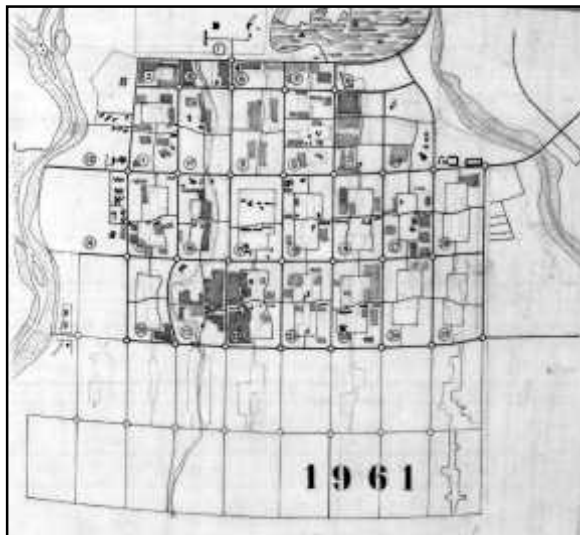
MAP MP 3 -6 GROWTH OF THE CITY



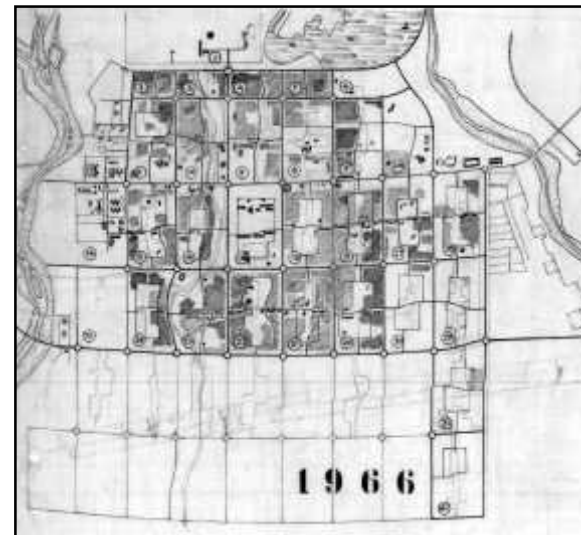
MAP MP 3 CHANDIGARH IN 1951



MAP MP 4 CHANDIGARH IN 1956



MAP MP 5 CHANDIGARH IN 1961



MAP MP 6 CHANDIGARH 1966

MAP MP3 -7-10 GROWTH OF THE CITY



MAP MP 7 CHANDIGARH 1971

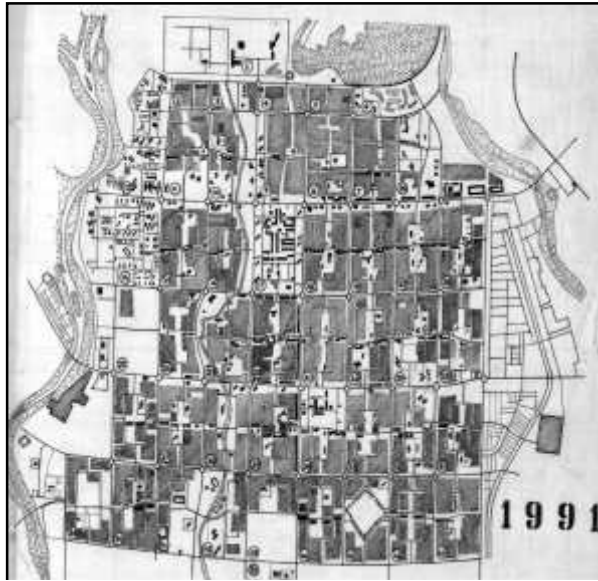


MAP MP 8 CHANDIGARH 1976

MAP MP 9 CHANDIGARH 1981

MAP MP 10 CHANDIGARH 1986

MAP MP 11-12 GROWTH OF THE CITY



MAP MP 10 CHANDIGARH 1991



MAP MP 12 CHANDIGARH 1996



3.3 AREA NOT INCLUDED IN THE CHANDIGARH MASTER PLAN 2031 (CMP) AREA

As per Section 48 (5) and Schedule 13th of the Punjab Reorganization Act, 1966, 26 sq km area of the Sukhna Wild Life Sanctuary on the North of the Capitol Complex abutting the interstate boundary, which was acquired for soil and moisture conservation is in possession of Chandigarh Administration. According to the Forest Department, UT, the area belongs to Chandigarh as per the Reorganization Act, 1966 of Punjab.

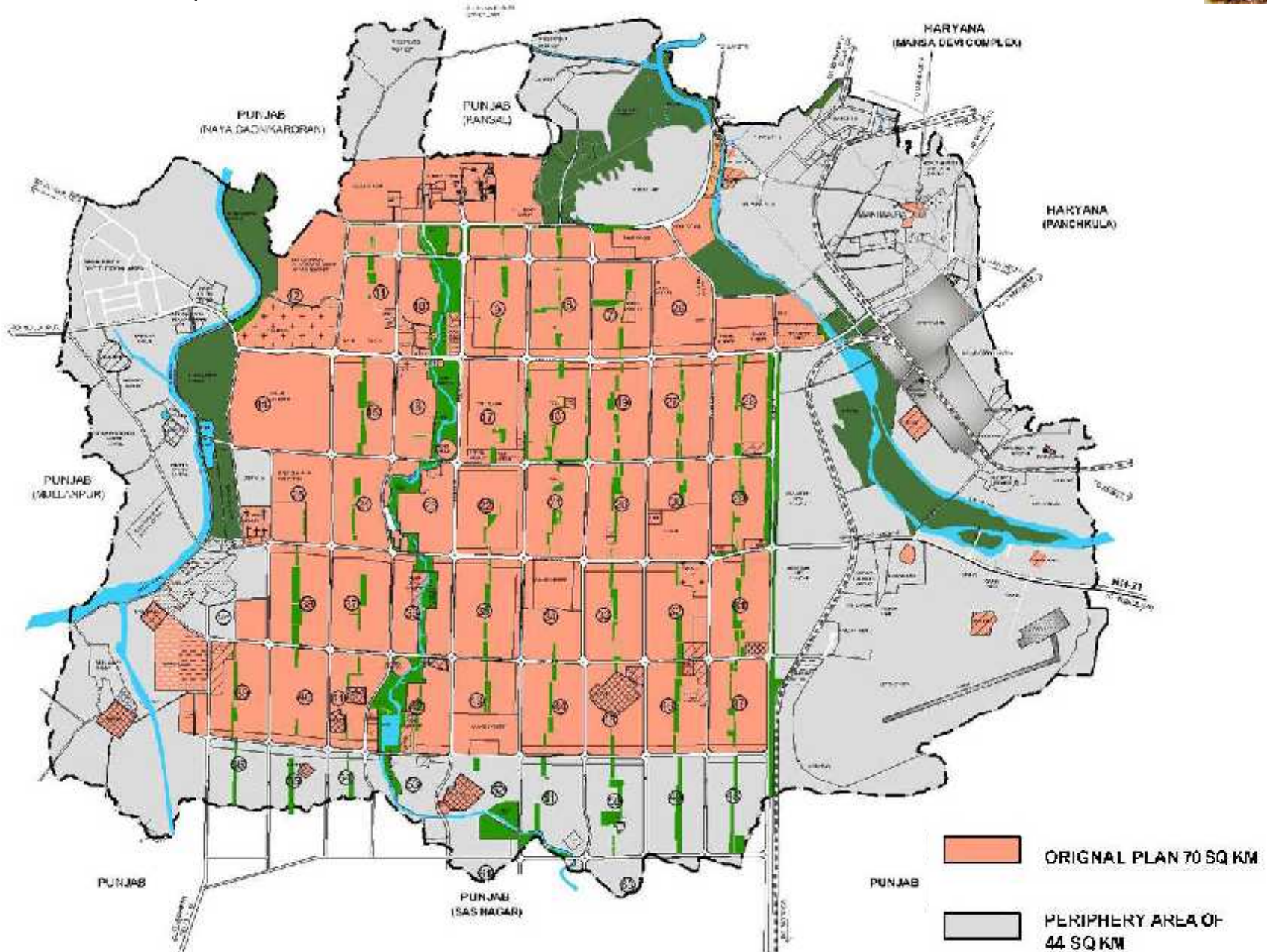
This area has not been counted in the Master Plan area as the same is reserved/notified as Sukhna Wild Life Sanctuary and no other land use is proposed therein. However the CMP-2031 has been prepared giving due consideration to environmental safeguards /measures for the protection of the flora and fauna of the Sukhna Wild Life Sanctuary while defining the landuse, developmental controls, no construction zones for the city as have been elaborated in detail in the Chapter of Ecology and Environment.

PLAN MP1 : AREAS INCLUDED AND NOT INCLUDED IN THE CMP 2031





PLAN MP2 : 114 SQ KM CHANDIGARH MASTER PLAN 2031 AREA





4 PHYSICAL SETTING AND PLANNING CONCEPTS

4.1 LOCATION, EXTENT AND PHYSIOGRAPHY

PHYSICAL SETTING

The Union Territory of Chandigarh is located near the **foothills of the Shivalik Range** in the north-western region of the country and lies between 30 degree 39' N and 30 degree 49' N latitude and 75 degree 41' E and 76 degree 51' E longitude.

It has a geographical area of 114 sq. km. The territory is also the state capital of Punjab and Haryana.

Chandigarh has a cold dry winter, hot summer and sub tropical **monsoon**.

The average annual rainfall ranges between 700-1200 mm. The annual temperature varies between 1 degree c to 45 degree c. Winds are generally light and blow from North West to South East direction with the exception of the Easterly to South Easterly winds which blow for some days during the summer season.



Source – Google Earth

The site selected for the new capital is bound by the two seasonal rivulets of **the Patiali Ki Rao and the Sukhna Choe** on its eastern and western sides. It has a **natural slope from the NE to NW** facilitating drainage.



Source – Google Earth

PATIALI KI RAO



Source – Google Earth

GEOHYDROLOGY

The groundwater in Chandigarh area is present in multilayered aquifers under unconfined and confined conditions. The sand and gravel layers in between clay beds are the main water bearing horizons. The groundwater occurs under unconfined condition down to about 80 m depth in Manimajra area. In other areas, the semi-confined state prevails upto 20-30 m depth. The depth of the shallow aquifer system is less than 30m below the ground level, whereas the deeper aquifer system ranges from 0-45 m below the ground level (CGWB, 2002). Groundwater contour map for shallow aquifers indicates that the groundwater table is above 5 m in the east west part and the water table deepens in the east and north direction.

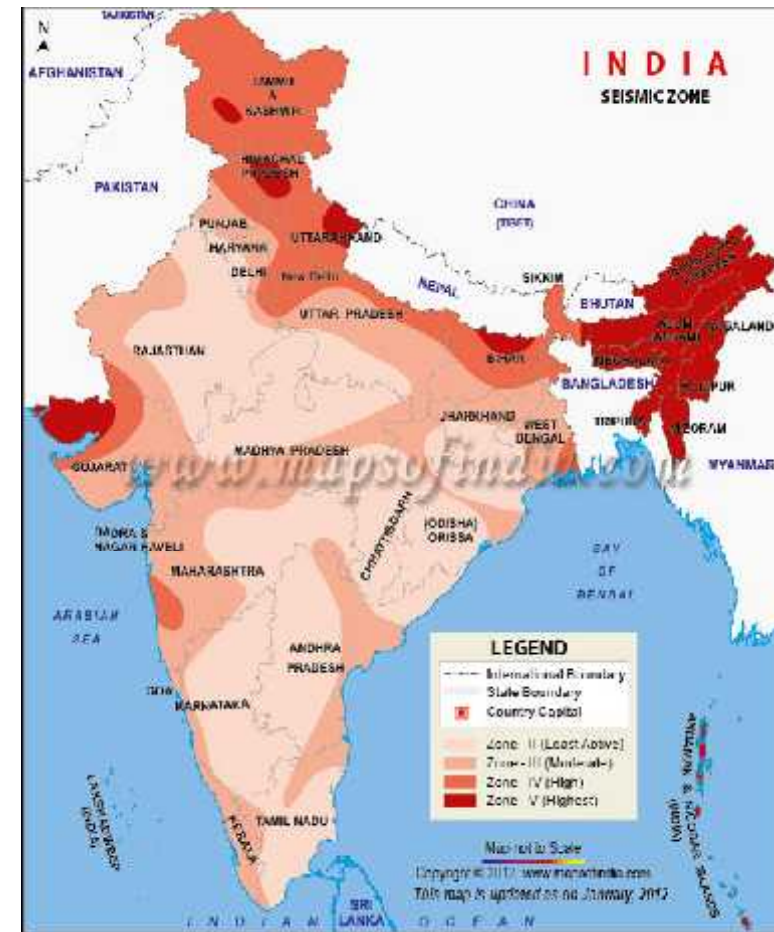


SEISMIC CHARACTERISTICS OF THE SITE

Chandigarh lies in Zone-IV of the Seismic Zonation Map (2002) of India. The Union Territory is located on Indo-Gangetic Alluvium, very near to the active tectonic zone. The Himalayan Frontal Thrust (HFT) passes from the northern boundary of the Union Territory. Along this thrust, the sediments of the Indo-Gangetic Alluvium come in juxtaposition with the Shivalik rocks. The Union Territory, located just south of the Himalayan Frontal Belt, has been included in Seismic Zone IV of the Seismic Zonation Map (BIS, 2002), and, in the last one century, has experienced severe to moderate ground shaking during the 1905 Kangra, 1975 Kinnaur, 2001 Uttarkashi and 2005 Kashmir earthquakes.

The Geological Survey of India, Northern Region has brought out an elaborate report on “Seismic Microzonation of Chandigarh Urban Complex”, which was released on 18th February 2008. The studies indicate the following :

1. The seismic tectonic status of the area reveals that Chandigarh is broadly associated with seismic intensity of VIII on MSK scale and has been categorized in High Hazard Zone.
2. The predominant frequency map suggests that taller structures, particularly of 10 or higher storeys, would experience much greater resonance and, therefore, are likely to have maximum damage under the influence of large earthquakes. Short structures are likely to get away without any pronounced resonance effect and, therefore, are relatively safer.
3. The above findings caution that the design and construction of structures, particularly the high rise ones, should strictly adhere to the Seismic Codes.



Source – Internet website

The fault lines near the Himalayas have been named 'Chandigarh fault' and 'Pinjore fault line' because they are located in these regions,, "It is because these fault lines are active that Chandigarh is prone to tremors.



4.2 SUKHNA LAKE

Sukhna Lake in Chandigarh having an area of 3 sq km India is an artificial lake at the foothills of the Himalayas, the Shivalik Hills and forms part of the Capitol Parc designed by Le Corbusier. This rainfed lake was created in 1958 by damming the Sukhna Choe, a seasonal stream coming down from the Shivalik Hills and was a gift to Chandigarh citizens for enjoyment of peace and tranquillity. The area was declared as a 'Silence Zone' in 2002 .

The Catchment area of the lake falls to the north of the lake in the states of Punjab, Haryana and the UT Chandigarh. The Sukhna Lake is facing **problem of high siltation, drying and weed growth and pollution.** The measures which have been taken for preventing the same and recommendations for future have been dealt in detail in the **Chapter on Ecology and Environment.**

SUKHNA LAKE & RESERVED FOREST



LAKE PROMENADE



BACKDROP OF THE SUKHNA LAKE



ENTRY TO THE LAKE FROM UTTAR MARG



4.3 THE ORIGINAL CHANDIGARH PLAN :HOLISTIC APPROACH TO DESIGN

A holistic approach was adopted for the planning of Chandigarh which combined with the farsightedness, vision and enthusiasm of the leaders have together contributed to the making of a city *a social organism and a work of art*. These interactive-interdependent disciplines are:



PLANNING



URBAN DESIGN



Visionaries of the original plan



ART



ARCHITECTURE



LANDSCAPING



4.4 THE ORIGINAL CHANDIGARH PLAN : PLANNING

THE CHANDIGARH PLAN

Chandigarh was planned as an Administrative Town for a population of 5 lakhs and built in two phases: Sectors 1 to 30 which formed the First Phase, and Sectors 31 to 47 constituting the Second Phase of its development. The City was planned on the principles of CIAM (*Congress Internationaux d' Architecture Moderne*) Theories defining four major city-functions i.e. Living, Working, Care of Body & Spirit, and Circulation.

Le Corbusier conceived the Master Plan of Chandigarh as analogous to Human Body in terms of **Head** (the Capitol Complex, Sector 1), **Heart** (the City Centre, Sector 17), **Lungs** (the Leisure Valley, innumerable open spaces, and sector-greens), the **Intellect** (the cultural and educational institutions), the **Circulatory System** (the network of roads, the 7Vs) and the Industrial Area.



FIG 1 THE FOUR MAJOR FUNCTIONS BASED ON CIAM THEORIES



Sketch courtesy – Prof. Vikram Aditya, University of Washington, USA

Working Areas – The Capitol Complex Sector 17, commercial belts along Jan Marg, Madhya Marg, Himalaya Marg , Udyog Path, Dakshin Marg.

Living - the Sectors

Care of body and spirit – Leisure Valley, Sukhna Lake, parks, green belts, cultural belts and the educational belts

Circulation – the 7v network of roads on a modular grid iron pattern .



4.5 SALIENT FEATURES OF THE CHANDIGARH PLAN

The function of **Living** occupies primary place and has been organised into a cellular system of sectors based on the concept of a neighbourhood unit. Each sector (with the exception of sectors 1 to 6, 12, 14, 17, and 26) has a size of 800m x 1200m which was determined on the parameter of providing all amenities i.e. shops, schools, health centres and places of recreation and worship within a 10-minute walking distance of the residents. The originally planned population of a sector varied between 3000 and 20,000 depending upon the size of plots, the topography of the area, and the urban-design considerations. Every sector is introvert in character and permits only four vehicular entries into its interior to provide a tranquil and serene environment conducive to the enrichment of life.



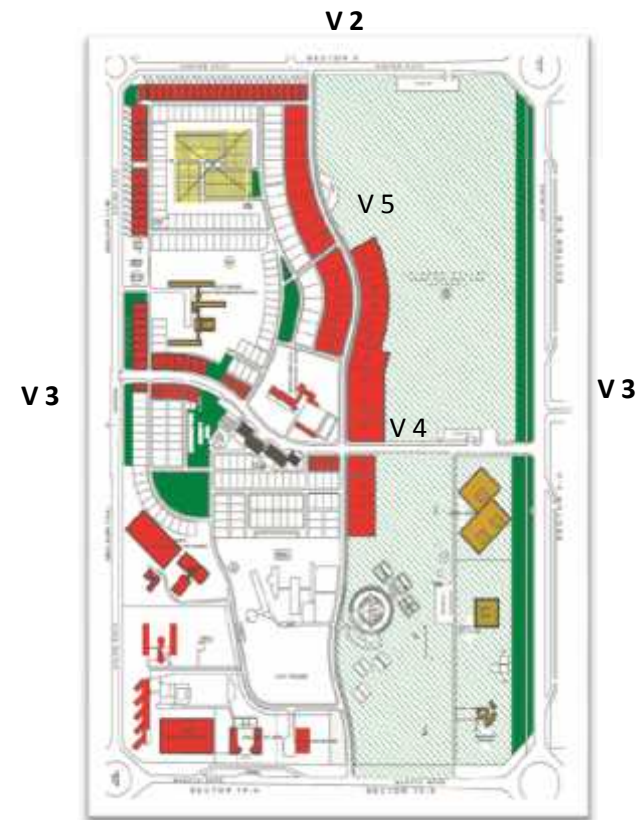
Sector size - 800m x 1200 m determined by maximum 10 minute walking distance from facilities
Introvert planning with sealing walls along main roads so as not to be disturbed by the fast vehicular traffic outside
Emphasis on family life and community living
Schools along green belts safe for children, dispensaries, shopping, community centres, centrally located in 10 minutes walk and bus stops on main road within walking distance.
Parks within 300m
Meandering profile of the V4/V5 to enable slow carriageways
 Comfortable vehicular and pedestrian access right to the doorstep of the house
 Inter-sectoral connectivity along NS green belts.

SECTOR SIZE DETERMINED BY WALKING DISTANCE

Sketch courtesy – Prof. Vikram Aditya, University of Washington, USA



SECTOR 2 IN THE NORTHERN REGIONAL BELT



SECTOR 10 - STANDARDISED SECTOR SIZE



GREEN CITY CONCEPT

Planned as a Green City with abundance of open spaces, Chandigarh ensures that every dwelling has its adequate share of three elements of Sun, Space and Verdure. Location of green belt was in north south direction to link all sectors with the Shivalik range of hills / mountains.

CONCEPT OF 7VS

A well-defined hierarchy of **Circulation** based on Le Corbusier's V7s road-system designed to lead traffic into the city and to distribute it right uptill the dwelling unit. Marg refers to the important avenues (V2), while Paths were referred to less important streets (V3).

LOW-RISE DEVELOPMENT

Planned as a low-rise city, it has developed on the stated principles and, even after sixty years of its inception still retains the original concept to a large extent.

HIERARCHICAL DISTRIBUTION OF POPULATION

Hierarchical distribution of population with the density lowest in the northern sectors and gradually increasing towards the southern sectors.

PURE LANDUSE PLANNING

While detailing out the landuse distribution, the underlined principle adopted in the Master Plan was to allocate different areas for living, working, trade and commerce, industry etc. Accordingly, the sectors were designated for residential, commercial and industrial, institutional uses.

ORDER IN THE PLAN

Underlying concept of order is reflected in the entire plan and in its various components, there is order in the hierarchy of its various uses and their designated location:

- Hierarchy of the circulation system,
- Hierarchy of the commercial centre,
- Hierarchy of the health facilities,
- Hierarchy of the educational facilities,
- Hierarchy of open spaces,
- Hierarchy of living units,
- Hierarchy in the infrastructural services,
- Hierarchy in the extent and nature of architectural control.

However, the residential sectors were planned to include all infrastructure, facilities and amenities subservient/supporting human living involving health care, education, shopping, recreation, open spaces etc. Industries were located on eastern side of the city segregated by 500' green belt from the residential area in order to protect the residential areas from industrial noise etc.

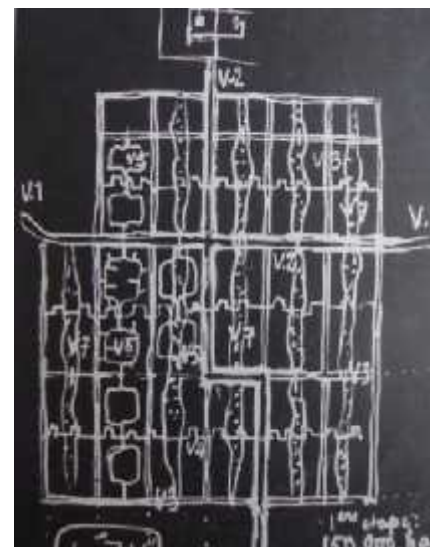


GREEN CITY CONCEPT



ADEQUATE SHARE OF SUN, SPACE AND VERDURE

PLAN – 7VS



CONCEPT OF 7VS

- V1- Fast roads connecting Chandigarh to other towns
 - V2- Arterial roads
 - V3- Fast vehicular roads around the sectors
 - V4- Meandering shopping streets
 - V5- Sector circulation roads
 - V6- Access roads to houses
 - V7- Footpaths, cycle tracks
- Buses will ply only on V1, V2, V3 and V4 roads. A wall shall seal the V3 roads from the sectors.



4.6 URBAN DESIGN: SALIENT CONCEPTS



SITING OF THE CAPITOL COMPLEX



A VIEW OF THE JAN MARG LOOKING TOWARDS THE SHIVALIK HILLS: the seven-storey blocks add a touch of urban habitat to an otherwise pastoral setting.

A city, as a SOCIAL ORGANISM AND A WORK OF ART, is the creation of three disciplines: Town Plan; Architecture; and Landscape. When they come alive as an organic whole they give birth to Urban Design: the Architecture of the City, with its distinct urban form and psycho-social imageability.

Thus Chandigarh stands apart from other cities by virtue of its order, and harmony of the Built-Environment with rich Landscape, Design and carefully-planned arboriculture or roadside tree-plantation, along with following other factors:

- Plan in consonance with nature's magnificent backdrop.
- Orientation of the major roads directed to enable an uninterrupted view of the Shivalik Hills.
- Location of the Capitol Complex at the highest point of the city-site on the foothills.
- Low-rise, low-density development in the first phase of the city.
- Green City concept based on the planning postulates of Sun, Space, and Verdure.
- Urban legislations for harmonious development of the Built-Environment.
- Mechanism to regulate the city's urban form is an extensive range of architectural controls, zoning, building rules, etc. These devices have resulted in a very distinct and harmonious picture.



5. DEMOGRAPHIC PROFILE OF THE CITY

5.1 POPULATION GROWTH

The UT of Chandigarh is a uni-district territory which came into existence on 1st of November, 1966 with an area of 114 sq. kms.

During the last 6 decades (1951-2011), Chandigarh has witnessed a population increase of more than forty four times with the absolute population increasing from 24,261 in 1951 to 10,54,686 in 2011.

As per Census 2011, the population of Chandigarh U.T has crossed the one million mark with its population placed very close to that of the state of Mizoram (10,91,014). The Union Territory recorded a population of 10,54,686 in 2011 with much lower decadal rate of increase in population with only 154051 people being added to the Chandigarh UT during the last decade.

The growth rate of merely 17.10% between 2001-2011 is the slowest since its inception. This is perhaps due to the rapid pace of urbanization taking place in the neighbouring towns of Mohali, Panchkula, Zirakpur, Kalka, Kharar, etc. falling within the 16 km periphery control area.

The details of the total population, decadal absolute growth and decadal growth rate are given in Table D1.1 below:

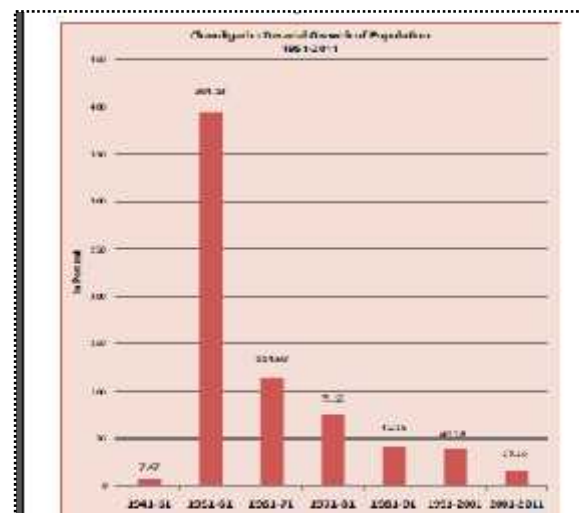


TABLE D1.1 POPULATION GROWTH 1951 -2011)

Year	Total Population	Decadal Absolute variation of Population	Decadal Growth Rate (in %age)
1951	24261	-	-
1961	119881	95620	394.13
1971	257251	137370	114.59
1981	451610	194359	75.55
1991	642015	190405	42.16
2001	900635	258620	40.28
2011	1054686	154051	17.10

Source – Census of India

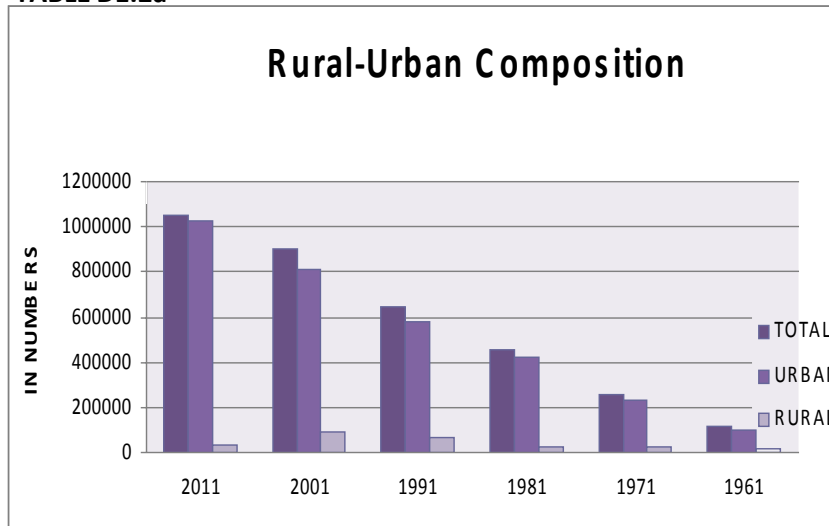


5.2 RURAL URBAN COMPOSITION

The U.T of Chandigarh has essentially become one territory with the urban settlements of Chandigarh and Manimajra occupying a major part of its 114 sq.km area.

As per the census of 2011, 10,25,682 (97.25%) of its population was urban and 29,004 (2.75%) was rural as compared to 82.80% urban and 17.20% rural in the year 1961. The details are at **Table D1.2a**.

TABLE D1.2a



5.3 DENSITY

The population density during the last 5 decades (1961-2011) has increased 9 fold, from 1051 to 9252 persons per sq. km.

The density of the city doubled during 1961-71, when it increased from 1051 persons per sq. km to 2257 persons per sq. km. It went on increasing rapidly in subsequent decades with 3961 persons per sq. km in 1981, 5632 persons per sq. km in 1991 and 7900 persons per sq. km in 2001. With the latest census data becoming available, the density recorded for the Chandigarh UT is now placed at 9252 persons per sq. km in 2011.

Chandigarh shall continue to record higher densities with further population growth , which poses a challenge for maintaining the quality of life and providing basic & essential services even to its poorest residents as envisioned by the city’s planners.

5.3.1 SECTOR WISE DISTRIBUTION OF POPULATION & DENSITY & THE UT’S HOLDING CAPACITY

Detailed analysis of the holding capacity of each sector based on the number of existing or planned dwelling units and their population as per the 2001 census has been done. This is shown in **Table D1.3 (see Annexure Page 7)**.



Further assessment of population density has also been done for different phases of the city's development i.e. Phase I comprising of Sectors 1-30, Phase II comprising of Sectors 31-47, and Phase III with sectors 48-56, 61 and 63.

5.3.2 DENSITIES AS PER ORIGINAL PLAN

The capital city of Chandigarh was planned for a differential pattern of density to accommodate a total population of 5 lakhs. Phase I was planned to be low density development with 9000 acres of land housing 150000 population.

Phase II was planned for higher density with 6000 acres of land accommodating 350000 people.

5.3.3. PREVAILING DENSITIES AS PER 2001 CENSUS

The prevailing density of Phase I of the city as per the 2001 census was 26, whereas for Phase II, it was 60 persons per acre. The density of Phase III (which was added subsequently), has been proposed as approx. 100 persons/acre.

Thus, by 2001, the density of Phase-I had already exceeded the design density when that of Phase-II sectors was the same as was designed. The city however, still has reasonable capacity to accommodate additional population.

5.3.4 DENSITY AS PER HOLDING CAPACITY / PROJECTIONS

As per the population worked out for the city on the basis of its holding capacity, the density of Phase I is estimated to be 34 persons per acre (more than double the planned density), 83 persons per acre for Phase II and 100 persons per acre for Phase-III sectors.

It can be seen that as against the planned population of a sector varying from 15000 – 25000, large variations in population at the sector level have been observed with the highest population of 41,077 being recorded in Sector 45, and the lowest population of only 1 being recorded in Sector 63.

The highest population in Phase I sectors was recorded in Sector 20 was 22,138, whereas in Phase II (31-47), the position is occupied by Sector 45, with a population of 41,077.

TABLE D1.2 DENSITY FOR PHASE I, II AND III BASED ON CENSUS 2001 AND HOLDING CAPACITY

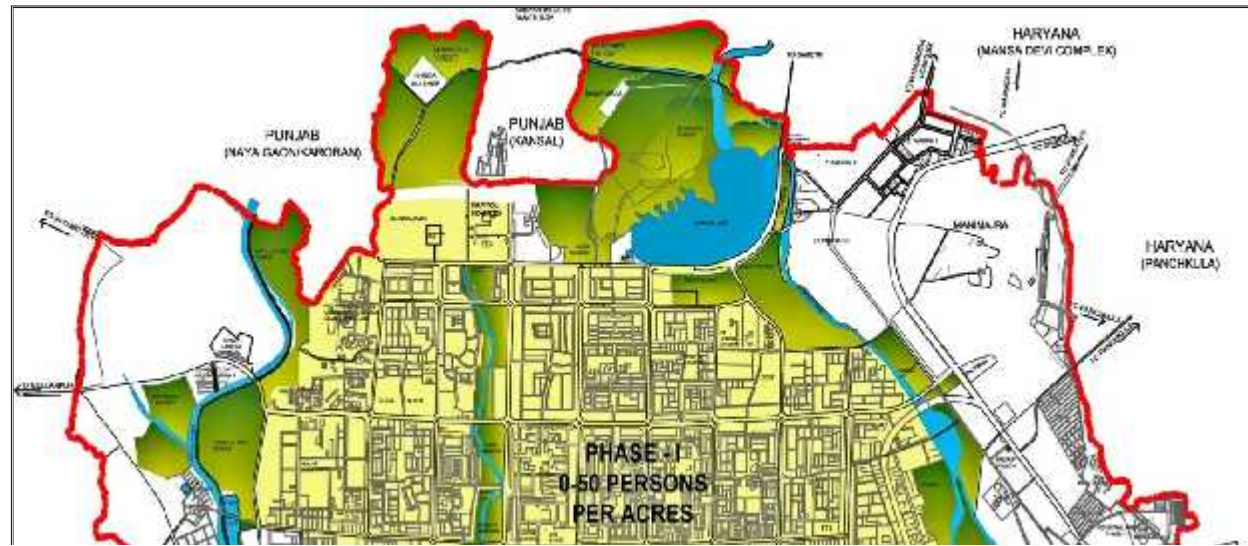
Phase	Planned Density (persons/acre)	Density as per Census 2001 (persons/acre)	Density as per Holding Capacity (persons/acre)
I - Sector 1 to 30	16	26	34
II - Sector 31 to 47	59	60	83
III - Sector 48 to 56, 61, 63	-	Under process of development	100

The density pattern is likely to undergo considerable change in the years to come with the city recording higher growth and development. As per existing trends, the sectors falling in Phase I shall continue to have lower density as compared to the sectors falling in Phase II.

The highest population density will be in the sectors falling in Phase III due to group housing and large scale rehabilitation of the population of unauthorized settlements in these sectors. As per the density calculated according to the holding capacity it can be mentioned that the higher densities will be in Manimajra (161 PPA), Sector 38 West (211PPA), Sector 63(195 PPA) and in Rehabilitation colonies at Ram Darbar (157 PPA). The detail of area and densities for Rehabilitation Colonies is at Table 1.3 (a)

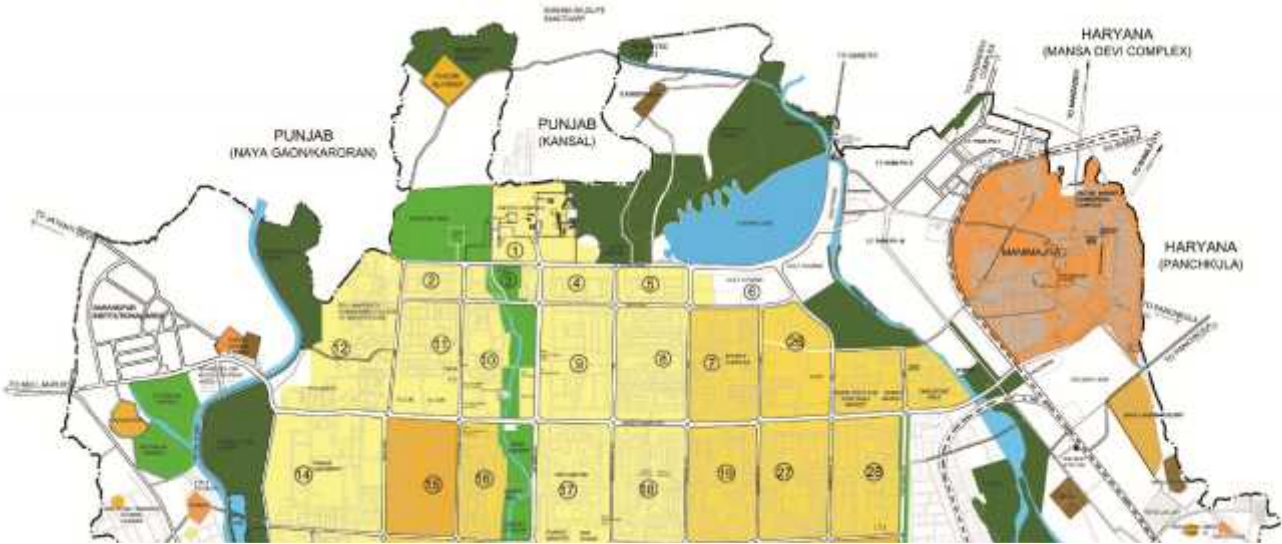


PLAN D1 – DENSITY PATTERN IN SECTORS (AS PER ORIGINAL PLAN)





PLAN D2 - DENSITY PLAN OF CHANDIGARH (AS PER CENSUS -2001)



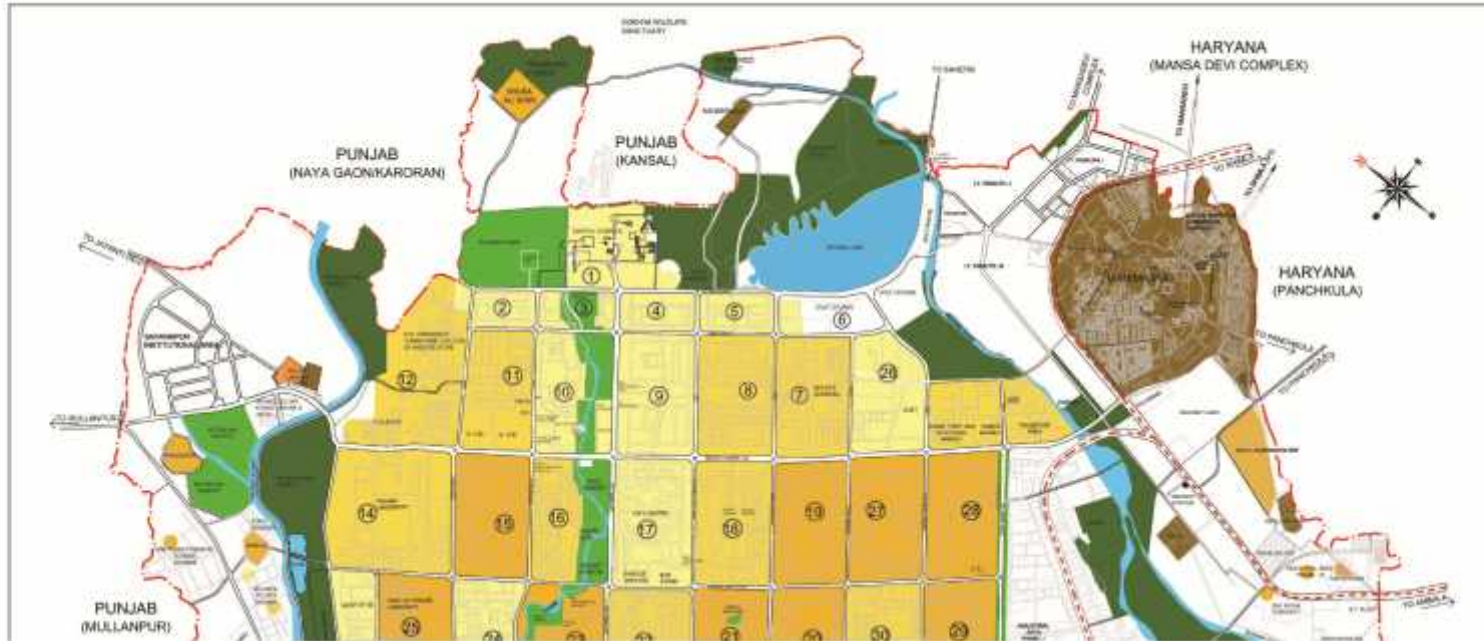
EGEND:

DENSITY (PERSONS PER ACRES)	NO. OF SECTORS
0-25	26
25-50	18
50-100	10
100-150	3

DENSITY PLAN OF CHANDIGARH -2001



PLAN D3 - DENSITY PLAN OF CHANDIGARH (AS PER HOLDING CAPACITY)





5.4 SEX RATIO

As per the provisional population figure of 2011, Chandigarh U.T. recorded a population of 10,54,686 out of which 5,80,282 are male whereas remaining 4,74,404 are female.

As per Census 2011, compared to the all India figure of 940, Chandigarh has recorded a sex ratio of 818. Chandigarh recorded a sex ratio of 777 in the year 2001 as compared to the national average of 933.

The **Table D1.4 (see Annexure Page 13)** gives the prevailing sex ratio in Chandigarh and in India during the period 1961-2011. The sex ratio has gradually increased over the years except in 2001, when it showed a marginal decline. The distribution of population by age group/sex has been shown in **Table 1.5 (see Annexure Page 13)**.

5.5 LITERACY RATE

Chandigarh has always recorded a high literacy rate since its inception due to the high quality of educational infrastructure available in the city. As per Census 2011, 8,09,653 persons were literate in the U.T, indicating a literacy rate of 86.43% (see **Table D1.6 (see Annexure Page 14)**).

5.6 ECONOMIC ACTIVITY

The majority of workers in the UT are employed in fields other than cultivation, agriculture, household industry etc. From **Table 1.7 (see Annexure Page 14)**, it is observed that proportion of cultivators, agricultural labourers, household industry workers and other workers to total workers are 0.6%, 0.2%, 1.1% and 98.1%.

5.7 FUTURE POPULATION PROJECTIONS

In order to have a realistic assessment of the future population, the population estimates have been based on the following four methods.

1. Population projections made by the technical group on population projections constituted by Registrar General, Census of India
2. Population projections based on accepted methods of population projections.
3. Population projections made by various agencies.
4. Population projections based on the holding capacity.



5.7.1 POPULATION PROJECTIONS MADE BY THE CENSUS OF INDIA

The Technical Group set up by Census of India has made projections for Chandigarh's population for the period 2011-2026 (**Table 1.8 (see Annexure Page 14)**). As per the table, Chandigarh will have a population of 14,38,000 in the year 2011, 22,26,000 in 2021 and 25,18,000 in the year 2026. These projections are based on assumed growth rates of 59.67% for the period 2001-11, 54.80% for 2011-21 and 13.12% for 2021-26. However, the actual population in the year 2011 is 10,54,686 which is much lower than the projected population by the Technical Group.

The prime reason for variation is the difference in actual and projected growth rate of the Chandigarh U.T recording the lowest decadal growth rate of 17.10% in its history as against the 59.67% projected by the technical group. Accordingly, even the future population projections for Chandigarh shall be much lower compared to the projections made by the technical group.

5.7.2 Population projections based on four accepted methods

Population projections for Chandigarh U.T. have also been made by the Arithmetic Progression Method, Exponential Method, Incremental Increase Method, and the Geometric Progression Method as shown in **Table 1.8**. As indicated in the table, there are large variations in the projected population using different methods. In order to remove the abnormalities/large variations, law of averages has been made applicable. The table showing population projections made by the Census of India is at **Table 1.9 (see Annexure Page 14)**.

POPULATION PROJECTION OF CHANDIGARH UT BY VARIOUS METHODS

Sr. No	Method	2011	2021	2031
1	Arithmetic Progression	1054686	1241647	1428608
2	Geometric Progression	1054686	1474694	2061962
3	Incremental Increase	1054686	1272457	1521039
4	Exponential	1054686	1882540	3360200
Average		1054686	1467834	2092952

5.7.3 POPULATION PROJECTIONS MADE BY VARIOUS AGENCIES

Taking various population projections into account, it will be realistic to assume that Chandigarh UT will have a population of 13.5-14.5 lakhs by the year 2021 & 15-16 lakhs by the year 2031.

5.7.4 Holding capacity of UT Chandigarh based on Master Plan recommendations

Population for the Chandigarh U.T has also been projected based on the holding capacity of the area. Holding capacity of the city has been worked out based on the following :

- Number of plots carved out for government housing,
- Residential plots made available to the residents for constructing houses,
- Number of plots and dwelling units made available by the Chandigarh Housing Board,
- Dwelling units created in re-habilitation colonies,
- Population of Manimajra in 2011.
- Housing in the villages falling in the U.T.
- Population living in unauthorized settlements.
- Holding capacity of vacant areas in Phase III sectors and the periphery.
- Para-military personnel housed in the area.

Based on the above, the total holding capacity of the U.T of Chandigarh has been worked out as 15.52 lakhs as detailed in **Table 1.10 (see Annexure Page 15)**. While it may not be possible to make an accurate forecast, the expectation is that the UT's population will range between 15-16 lakhs, by 2031 for which the provision of necessary infrastructure should be planned.



In order to maintain the basic character of Chandigarh as an administrative city, unnecessary increase in the population should be avoided. With the coming up of new towns in the periphery in Punjab and Haryana, the excess population can be easily accommodated in those towns. Moreover since the land stock in Chandigarh is limited, the uses related to governance and administration should get priority in the allocation of land. It will be prudent to look at the city and the union territory based on the holding capacity indicated above with population restricted to 15.5 lakhs. Additional population will have to be diverted to the adjoining settlements by viewing the entire context of planning in the regional framework. However, continuous monitoring of population every 5 years will be desirable in order to rationalize the distribution of population. **It will be prudent to consider that population for the area falling in the sectors should not exceed one million.**

TABLE 1.10 HOLDING CAPACITY OF UT CHANDIGARH BASED ON MASTER PLAN RECOMMENDATIONS

Sr. No.	Category	Total Units	Existing Population	Maximum No. of Dwelling Units	Holding capacity
1	Government Plots	24330	-	29925	111116
2	Private Plots	22788	-	22788x3=68364	293965
3	Chandigarh Housing Board	Plot	2255	2255x3=6765	29090
		Unit	30698	30698	132001
4	Others	28963	-	28963	124541
5	Rehabilitation Colonies	61525	-	61525	264558
6	Unauthorized Colonies to be Rehabilitated	20911	69047		69000
7	Villages	-	84235		117929
8	Manimajra	-	117046		136943
9	New residential areas	-	-		200328
10	Paramilitary				50000
11	Total				1529471

Note: (i) Average family size for calculating holding capacity has been taken as 4.3.
(ii) In case of sectors 6,12,17,26E,53& 54 existing population in 2001 has been included in the holding capacity.
(iv) Private plots availing additional FAR / DU's



ADJUSTMENT OF PROPOSED POPULATION IN CHANDIGARH CITY

1	Sectoral Grid	Sectors	Projected Population
	Phase I	1 to 30	270086
	Phase II	31 to 47	345945
	Phase III	48 to 63	201424
2	Periphery	Pocket 2 near Sarangpur	7500
		Pocket 7 near Maloya	45000
		Chandigarh Armed Police Complex	6500
3	Others	Rehabilitation Colonies	264558
		Villages	117929
		Manimajra	136943
		Unauthorized Colonies to be Rehabilitated	69000
		Paramilitary	50000
	Total		1529471 Say 16 lac

* The Population of sectors 48 to 63 has been calculated with a Gross Density of 100 PPA



5.8 DECADAL GROWTH RATE OF GMADA REGION (PUNJAB)

The growth in Mohali's population and its emergence as a part of the tri-city comprising Chandigarh, Panchkula and Mohali started in the seventies. The population of Mohali (then a village) was only 1229 in 1971 but grew by about 39% per year during the period 1971-81 to reach 32,351 in 1981. Though the rate of growth in Mohali's population has declined after 1981 due to a larger base population, it has remained high at over 9% per year during 1981-91 and over 4.5% per year during 1991-2001. The decadal growth rate of other towns in the region is given in the **Table D1.11 (see Annexure Page 16)**.

5.9 DECADAL GROWTH RATE OF HARYANA PORTION

Due to establishment of various special government projects of HMT, ACC Cement Factory, Chandimandir Cantonment, Indian Tibet Border Police Complex, CRPF Complex, Terminal Ballistic Research Laboratory and Panchkula Town, this periphery area has undergone tremendous socio-economic and physical development. Further the development of infrastructure like roads, electricity and rapid transportation facilities, induced large scale immigration from other areas to this region. The population in the periphery area of Haryana has increased manifold in the last three decades. **Table D1.12 (see Annexure Page 16)** shows the projected population of the Haryana portion of periphery controlled area upto 2021.

As apparent from the above projections, the total population of the periphery controlled area would be 14,23,000 in 2021, when projects of Panchkula Extension & Shree Mata Mansa Devi Urban Complex get completed and urbanization in the area adjoining Kalka & Pinjore take place. Accordingly, the urban population would be 65.00%, 75.00% & 85.00% of the total population in the corresponding years of 2001, 2011 & 2021 respectively. The total urban population would be 1209550 in 2021.

5.10 FUTURE TRENDS OF POPULATION IN 16 KM PERIPHERY CONTROL AREA

The provisional population of UT according to 2011 Census is 10,54,686 having increased by 17.1% over the decade. It is a much lower rate of population growth than projections made by different agencies. While availability of more detailed 2011 Census data has to be awaited for analysis of the factors which have contributed to this lower growth rate, it may be conjectured that rising property values in the city, combined with limited availability of land for additional housing, has led to spill over of some of Chandigarh's growth into cheaper alternatives available in Zirakpur, Mohali and Panchkula as well as some of the neighbouring villages such as Kansal and Naya Gaon in Punjab.

It is clear that future trends of the city's growth cannot be seen in isolation from the massive urban development taking place in its periphery falling in Punjab and Haryana.

With little land left for new development, and no major new developments in the pipeline combined with the decision to maintain Chandigarh as a medium rise city at best, the same low rate of population growth during the coming two decades may be assumed. The total projected population for the year 2031 has been estimated at 20 lakh as highlighted earlier to maintain the basic character, the holding capacity of city has been worked out to be 16 lakh (see 5.7.3) with a view to retain the original concept of a green and spacious town and due to environmental considerations. The additional population will have to be diverted to the adjoining settlements by viewing the entire context of planning in the regional framework.



6. HOUSING IN CHANDIGARH

Provision of good quality housing was central to Chandigarh's planning objective of offering "all amenities to the poorest of the poor to lead a dignified life". Initially, two main categories of housing were planned in the city - **public and private**. Subsidized rental public housing for government employees of all categories was built by the government in the early years. In the case of private housing, residential plots varying in size from 125 sq. yds. to 4000 sq. yds. were made available at cost price to individual buyers for building their own houses.

6.1 GOVERNMENT HOUSING

Government housing in the city was initially divided into 13 categories ranging from house for the Chief Minister to the lowest paid class-IV employee. In addition hostels and flats for members of the Legislature were also planned. Plot sizes for government housing ranged from 37.5 sq. yds. to 4000 sq. yds. Most government houses in Phase I were single or double storeyed. Housing in Phase II has much higher density with the largest plot size restricted to 1000 sq. yd. and a large part of it consisting of four storeyed flats. In addition, 800 'cheap houses' were built for poorer non-government workers - the tonga driver, laundrymen, sweepers, and cobblers and later sold to them at nominal prices. Most government houses in the first phase were designed by the expatriate team of architects – Pierre Jeanneret, Maxwell Fry and Jane Drew assisted by a team of young Indian architects. A lot of attention was given to making their design suitable for local climate within severe economic constraints while using local building materials. A plan showing the location of Government housing is at **PLAN H 6.2**.

- **Institutional Housing**

In addition to government housing, institutional housing has been built by parastatal and/or autonomous bodies such as Panjab University, PGI, IMTACH, CSIO, defence establishments and Survey of India, for their employees. In the early years, 620 housing units for industrial workers were also built by the government in sectors 29 and 30 adjoining the industrial area.



AN ARCHED ENTRY TO A GOVERNMENT HOUSING CLUSTER

LOWER CATEGORY SINGLE STOREYED HOUSING. EACH HOUSE HAS COURTYARD IN THE FRONT AND REAR OF THE HOUSE



GOVERNMENT HOUSING DESIGNED BY PIERRE JEANNERET, MAXWELL FRY AND JANE DREW CELEBRATE VISUAL ORDER AS DESIGN DISCRETION.



INSTITUTIONAL HOUSING AT THE PANJAB UNIVERSITY. SEVEN CATEGORY OF HOUSING (WITH PEONS IN A TYPE PROGRESSING TO THE HIGHER ACADEMICIANS IN LARGER G TYPE)

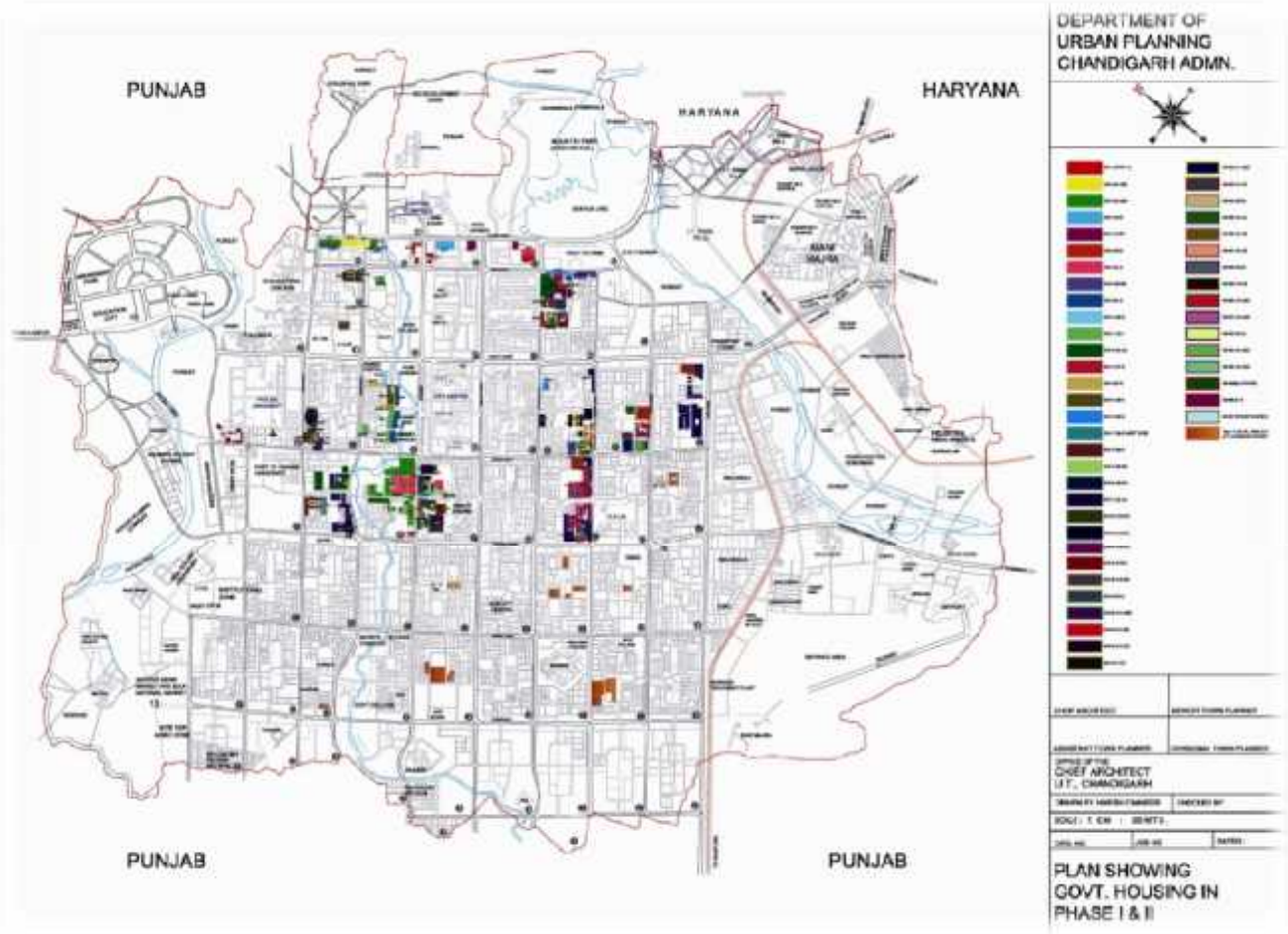


PLAN H6.1 --HOUSING IN CHANDIGARH





PLAN H6.2: LOCATION OF GOVERNMENT HOUSING



Sectors with high concentration of Government Housing

PHASE I
Sectors 7B,16,19, 20, 22 A/D, 23 A/B/C, 24 A/D, 26, 27C, 28 B/C, 29 A/C/D, 30 A.

Phase II
Sectors 31 (Defence), 32 A/B/C, 33A, 35A/B, 38, 39 B/C/D, 41 B/C, 42 A, 43B, 46 B/D, 47B



6.2 HOUSES BUILT BY THE CHANDIGARH HOUSING BOARD

The mandate of Chandigarh Housing Board (CHB) is to build affordable, reasonably priced dwelling units for different socio-economic categories of the city's residents. The detail of dwellings provided year-wise by CHB is at **ANNEXURE-H.1**. The board was established in 1976 by extending the Haryana Housing Board Act of 1971 to the Union Territory. The board also undertakes construction of commercial units and other schemes for Chandigarh Administration and other organizations. CHB is also the nodal agency for implementing the administration's schemes for rehabilitating the residents of unauthorized settlements in the city.

The list of housing schemes by CHB is at **ANNEXURE-H.2 & ANNEXURE-H.2(A)**. Out of these, nearly 42.5% comprising of all the sites and services and most of the EWS units have been provided under different rehabilitation schemes exclusively for the residents of unauthorized settlements. Units in rehabilitation colonies are generally allotted on a hire purchase or license basis with ownership rights being granted only after completing 20 years of stay.

Chandigarh Housing Board has also constructed houses for the poor under schemes like Valmiki Ambedkar Awas Yojna (VAMBAY) and more recently under Jawahar Lal Nehru Urban Renewal Mission (JNNURM).

Prior to creation of the Housing Board, Chandigarh Administration had rehabilitated approximately 12,000 households from unauthorized colonies itself.



CHANDIGARH HOUSING BOARD HOUSING



CHANDIGARH POLICE HOUSING SOCIETY



IAS OFFICERS HOUSES



6.3 PRIVATE HOUSING

Nearly one - third of the private plots have an area of one kanal or above. These account for over two- thirds of the total area allocated for private residential plots in the original master plan. The first phase of the city had low density with residential plots ranging from 5 marla to 8 kanal. The second phase has much higher density with a switch mostly to three to four storey flats with the largest plot size being 2 kanals. About 70% of housing in the city was to be built privately.



PRIVATE HOUSING SECTOR 19 CHANDIGARH



PRIVATE HOUSING SECTOR 18 CHANDIGARH



MIDDLE CLASS PRIVATE HOUSING SECTOR 22 CHANDIGARH



6.4 CO-OP HOUSING SOCIETIES

The southern sectors, including the ones in Phase III of the city are being developed as a high density area. Various Co-operative Housing Societies and Chandigarh Housing Board have been allotted land in these sectors for construction of HIG, MIG, LIG and EWS flats.

6.5 CHEAP HOUSES

A special category of low cost houses was built in sectors 15, 19, 20 and 24 for low income non-government workers during the 1950s and 60s and their ownership transferred to the allottees on payment of nominal charges. Initially built as single storied units, additional floors have been added to them by the owners over time.

6.6 PROVISION OF STUDENTS/WORKING WOMEN'S HOSTELS

Although Chandigarh already has Young Women Christian Association (YWCA), Young Men Christian Association (YMCA), working women's hostels together with students' hostels for various colleges and the university, their availability is inadequate for the increasing demand for such accommodation. The dearth of hostel accommodation, results in outstation students opting for Paying Guest accommodation/hired accommodation in the city/villages. Feedback indicates that despite the deficit within the city to meet the city's own requirement, the limited hostel facilities are often used by the premier institutes of the neighbouring states which lack in adequate facilities.

6.7 RESIDENTIAL ACCOMMODATIONS THROUGH PAYING GUEST SCHEME

Through orders dated 05.09.2006, the Chandigarh Administration permitted the use of residential buildings for paying guest accommodation. The minimum area of the house for paying guest accommodation has been fixed as 10 marla with a condition that portion of the house has to be used by the owner. No extra/new kitchen is allowed and a minimum of 50 sq. ft. is to be provided for each paying guest has to be 50 sq. ft. with provision of toilets at one W.C. for five persons. The norms are being violated much to the disadvantage of the residents of the neighbourhood, who complain of the rowdy environs, parking problems and disturbance throughout the day and night. The students too are left free, unattended and unchecked which is detrimental to the society at large.



COOPERATIVE HOUSING SOCIETIES IN THIRD PHASE SECTORS



STUDENTS/WORKING WOMEN'S HOSTELS IN PANJAB UNIVERSITY



6.8 HOUSING IN UNAUTHORISED SETTLEMENTS

One of the biggest problems of planned urban development is that it is preceded by unplanned settlements of construction labour and other service providers needed for undertaking the planned development. Despite being a totally planned new city the emergence of non-plan settlements and services was an inevitable outcome of the non-integration of socio-economic planning in implementation of the Chandigarh Plan and the virtual absence of holistic housing and employment policies. Recently a policy has been adopted to make it mandatory that all new large housing projects must make at least 15% provision for EWS housing.

Shortage of low cost housing also resulted in villages in the periphery becoming concentrations for lower income urban residents.

The initial unauthorized settlements were located near the Capitol Complex and other areas where city development work was started. Resettlement in peripheral sites with allotment of serviced plots and one room tenements was first undertaken in the mid-1970s mostly on land acquired in villages surrounding the master plan area. Some resettlement was undertaken in the southern sectors. Most of the present unauthorized settlements are located in the southern and eastern parts of the UT. As per a biometric survey undertaken by the Estate Office in 2006, the number of households considered eligible for rehabilitation living in the 18 unauthorized settlements was 23974. The details of unauthorized settlements as per Census 2011 are given in **ANNEXURE H.3.**

Various rehabilitation schemes for residents of unauthorized settlements have been provided as under:

- Sites and Services - (Indira Colony, Dadumajra, Dhanas, Sector 55 & 56).
- Plinth sites - (West of Sector 24, Palsora Colony etc.)
- EWS houses - (Mauli Jagran Maloya, Dadumajra etc.)
- Bare sites - (Bapu Dham Colony Sector 26, Ram Darbar, Sector 56, Khuda Lahora)
- One room tenements in diverse locations.



UNAUTHORISED SETTLEMENTS IN THE CITY



OVERHEAD WIRES –ILLEGAL CONNECTIONS



UNAUTHORISED SETTLEMENTS IN THE CITY



Efforts have been made to provide all basic facilities to the residents of rehabilitation settlements. But major drawback of these resettlements colonies can be summarized as additional encroachment and violation of building bye-laws.

Cramped for space, many households have built additional rooms or toilets and even additional floors (in the case of those provided independent sites). In spite of that, Chandigarh's Sites and Services Scheme in Dadu Majra won a national prize from HUDCO in 1979. More recently, Chandigarh was given a national award under JNNURM for setting aside the maximum area for slum rehabilitation. The Slum Rehabs are provided with 2 bed-room Houses in order to maintain a healthy lifestyle and better living conditions.

6.9 RELAXATIONS ACCORDED BY THE CHANDIGARH ADMINISTRATION :

The biggest problem being faced by most categories of private housing is the need for additional habitable space. This is evident from the large number of building violations being witnessed all over the city, be it in small marla houses or houses on larger plots. Chandigarh Administration has already accorded relaxations to provide relief to all categories of residences. Detailed tabulation of relaxations is given at Annexure H5 (see Annexure Page No. 25). Following is brief of the relaxations

Private Housing

- The FAR of marla houses has been increased up to 2.0 with ground coverage upto 70%.
- The FAR of one kanal but less than two kanal category plots has been increased upto 1.50 and ground coverage upto 50%.
- The FAR of two kanal category has been increased upto 1.25 and ground coverage upto 45%.
The FAR of above two kanal category has been increased upto 1 and ground coverage upto 35%.
An additional habitable floor by permitting use of 2nd floor (barsati floor) is allowed by marginally increasing the height of the houses. Use of upto 25% of the house area has been allowed as office space to professionals such as architects, doctors and lawyers.

- A green house/implement store has been allowed in the rear courtyard of frame control marla houses and on kanal houses under architectural control. Subsequently however the zoning plans of housing were revised and additional ground coverage and covered area permitted as part of the main house
- 3' wide balcony/projections have been allowed in front and rear of the frame control marla houses.
- For the purpose of storage, basement is now allowed under the entire ground floor area instead of the maximum 50% allowed earlier.
- Car porch of temporary material has been allowed within the front courtyard of marla houses.
- Flexibility in size and shape of windows has been allowed in marla houses.
- Mumtias permitted in one kanal and above category of houses to facilitate access for maintenance of services provided on top terrace.
- Additional entry gate in all houses.
- Boundary wall in the rear courtyard of kanal and above houses increased to 5'-11½".

Government housing:

Construction of additional porch, car sheds, security accommodation, additional servant quarters have been allowed as per approved plan to meet the requirements of the occupants.

Cheap houses:

Additional covered area has been permitted in cheap houses by allowing construction of additional floor and increasing the maximum permissible ground coverage from an average of 57% to 75%.



PLAN H6.3: LOCATION OF UNAUTHORISED COLONIES AS PER BIOMETRIC SURVEY OF 2006



UN-AUTHORISED COLONIES

S.NO.	DESCRIPTION
1	KALYAN COLONY
2	KUMHAR COLONY
3	SHAHPUR COLONY
4	RAJIV COLONY
5	GURU SAGAR COLONY
6	L.B.S. COLONY
7	NEHRU COLONY
8	PANDIT COLONY
9	KULDIP COLONY
10	MAZDOOR COLONY
11	COLONY NO. 5
12	AMBEDKAR COLONY
13	KABAR COLONY
14	SANJAY COLONY
15	COLONY NO. 4
16	S.B.S. COLONY
17	MADRASI COLONY
18	JANTA COLONY

Due to pro-active steps taken by the Chandigarh Administration, new rehabilitation colonies have been constructed as per Rehabilitation Plan. Some of the aforesaid colonies have thus been rehabilitated.

Source – Department of Urban Planning, Chandigarh Administration



UNAUTHORISED COLONIES IN THE CITY



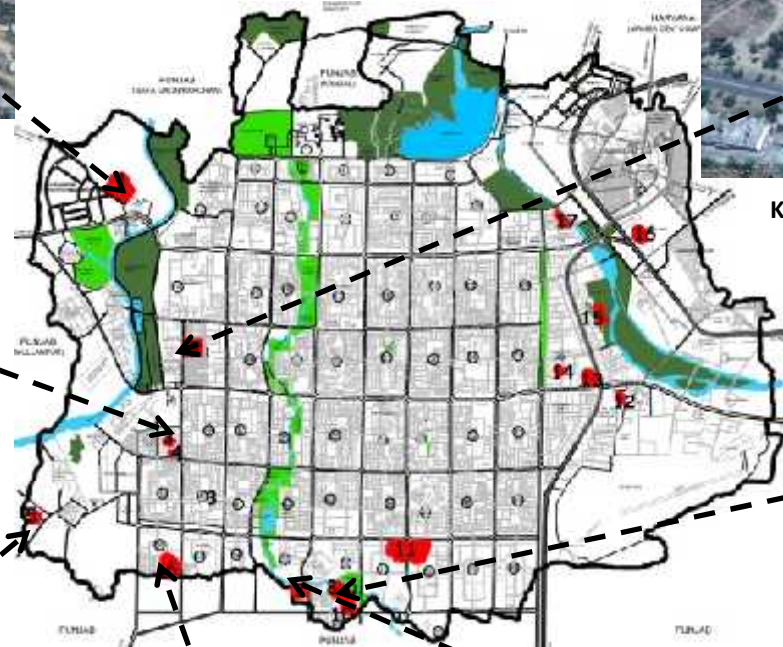
KALYAN COLONY



KUMHAR COLONY



SHAHPUR COLONY



PANDIT COLONY , KULDIP COLONY & MAZDOOR COLONY



GURU SAGAR COLONY



L.B.S. COLONY



NEHRU COLONY

Source – Google Earth images

UNAUTHORISED COLONIES IN THE CITY (CONTINUED)

Chandigarh Master Plan – 2031



MADRASI COLONY



LABOR COLONY NO. 4



AMBEDKAR COLONY



COLONY NO. 5

Source – Google Earth images



6.10 AUGMENTATION OF HOUSING STOCK WITHIN CHANDIGARH SUBSEQUENT TO ORIGINAL PLAN

Additional residential sectors in the 3rd phase

An area of 1870.54 acres (7.5 sq.kms) from sectors 48 to 56, part of 61 and 63 were carved out to provide high density private group housing, rehabilitation colonies, CHB housing and UT employees housing schemes of various categories.

Residential housing schemes in Manimajra

Land measuring 61.21 acres falling between Chandigarh Kalka Road and the interstate boundary with Panchkula was planned for construction of residential cum commercial scheme .

Modern Housing Complex, Phase-I and II

About 60 acres of land was acquired by the Chandigarh Administration in 1989 and was allotted to Chandigarh Housing Board. 2200 dwelling units of various categories have been constructed in the scheme area in the form of four storeyed flats:-

a) Category – I	480	c) Category – III	456
b) Category – II	384	d) Category – IV	960

Modern Housing Complex Phase-III

Land measuring 9.63 acres of land falling in Pocket 4 and 5 acquired by the Notified Area Committee Manimajra have been allotted to Chandigarh Housing Board. 600 HIG independent dwelling units have been constructed at site.

Housing by Army Welfare Housing Organization -

Land measuring 9.63 acres in Pocket No. 4 and 5 has been allotted to A.W.H.O. in the year 1994. 305 dwelling units of various categories in 3 storeyed blocs have been constructed

Milkmen Colony, Dhanas

With a view to relocate the persons keeping milch cattle and carrying on the business of dairying which was creating insanitary and unhygienic conditions in the city, the Chandigarh Administration in the year 1975 notified the Scheme Chandigarh Milk Colony Allotment of Sites Rules, 1975. Only those persons who were keeping milch cattle in Chandigarh for at least one year prior to the notification coming into force and were selling milk to general public and had at least 5 cattle were eligible. Various categories of plots ranging from 5 marla to 1 kanal were planned. The standardized unit was planned with cattle shed on ground floor and residential accommodation on the upper floor. Subsequently, however these houses were allowed conversion to residential plots subject to payment of charges which has defeated the very intent of the scheme. There is at present a mix of pure residential houses and those with cattle. In stead of restricting the cattle to within the premises large number of cattle owners leave them out in the open along road side berms and parks adversely impacting the sanitation and environment of the area.

Government housing

In addition to the government housing planned in the initial stages of the city, various projects for police housing, additional judges houses, officers' and officials' houses of state governments of Punjab and Haryana, Chandigarh Administration, Central Government and ministers' houses, have been developed in various sectors. There is however still a large deficit in the government housing stock which is shared by the governments of Punjab, Haryana and the Chandigarh Administration.



6.11 OVERVIEW OF THE HOUSING SITUATION

Chandigarh was initially planned for a population of 500,000. As per 2001 census however, the population of the Union Territory had increased to 9,00,635 out of which 8,08,515 was urban and 92,120 rural. The availability of dwelling rooms per household as per the 2001 Census is shown in the **Table** below:

Table 6.1 Distribution of households by number of dwelling rooms (2001)

	Total households	No exclusive room	One room	Two rooms
U.T. Chandigarh	201,878	1931 (0.95%)	84,489 (41.85%)	50,056 (24.79%)
Urban	180,576	1725 (0.95%)	69,310 (38.38%)	47,395 (26.24%)
Rural	21,302	206 (0.96%)	15,179 (71.25%)	2,661 (12.49%)

Source: Census of India, 2001, H. Series, Chandigarh

Socio-spatial maps of the city, both within and outside the master plan's sectoral grid, show a remarkably skewed distribution of population density together with a ghettoisation of the poor in unauthorized settlements and the rehabilitation colonies in peripheral locations.

According to the 2001 Census, the average density of Phase I sectors was only 26 persons per acre and that in Phase II sectors 60 persons per acre. In contrast, densities in resettlement colonies in the city's periphery range between 360 to 700 persons per acre.

Table 6.2 Distribution of households by number of dwelling rooms (2011)

	Total households	No exclusive room	One room	Two rooms
U.T. Chandigarh	235061	1.4	39.3	25.4
Urban	228276	Breakup not available	Breakup not available	Breakup not available
Rural	6785	Breakup not available	Breakup not available	Breakup not available

Source: Census of India, 2001, H. Series, Chandigarh



TABLE 6.3: PROPOSALS OF HOUSING AT GLANCE

1. SECTORAL GRID										
Phase	Sectors	Government . Plots		Private Plots		CHB		Other Plots	Total Units	Projected Population
		Existing Plots	Projected Units	Existing Plots	Projected Units	Plots	Units			
I	1 to 30	15063	19540	12110	36330	316	644	5349	89352	270086
II	31 to 47	9081	10385	10678	32034	1939	17144	15072	96333	345945
III	48 to 63 Vacant Areas	186	Yet to be developed	0	0		12910	8542	21638	201424

2. PERIPHERY				
Sectors	Area in acres	Proposed density (PPA)	Population in persons	Remarks
Pocket 2 Near Sarangpur	30	250	7500	Proposed
Pocket 7 near Maloya	178	250	45000	Proposed
Chandigarh Armed Police Complex	52.9	123	6500	Under process
Rehabilitation Colonies			264558	
Villages			117929	
Manimajra	855		136943	
Unauthorised colonies (to be rehabilitated)			69000	
Para Military			50000	
Total			Say 16 lakh	



6.12 MASTER PLAN PROPOSALS

HOUSING POLICY FRAMEWORK

- I. A holistic housing policy framework with the following components shall be adopted to ensure that the needs of all socio-economic sections of the population are catered for to address some of the aberrations in the city's development in the past.
- II. **Ensured provision for EWS in all new housing schemes** - It is proposed that all future new housing schemes or housing built through redevelopment of existing government housing stock must ensure that at least 15% of the total units in them are built for economically weaker sections in line with the National Housing Policy.
- III. **Augmentation of infrastructure in relation to population** - It shall ensure expansion of infrastructure, services and amenities in relation to population to maintain the quality of life.

JUDICIOUS USE OF LIMITED LAND

- I. It must be ensured that the limited land still available for housing development is allocated judiciously for meeting the unmet housing demand of all the different sections of the population.
 - ii. **Group Housing in vacant plots of second phase**
All vacant residential plots in the Phase II sectors which were earlier planned as plotted development should as far as possible be replanned and used for group housing instead of individual plots. This shall apply to cases where a whole cluster /row of unsold vacant plots are available and not to scattered individual plots .
 - iii. **High density Group Housing in vacant areas in Phase III Sectors**
Approximately 215 acres of land in the sectors has been allotted to CHB for housing which is yet to be developed in addition approximately 146 acres of land is also lying vacant in Phase III sectors which is proposed for high density housing development in 4 /6 storey flats to accommodate large number of flats with a gross density of 100 persons per acre. Individual plots allotment shall be discontinued.

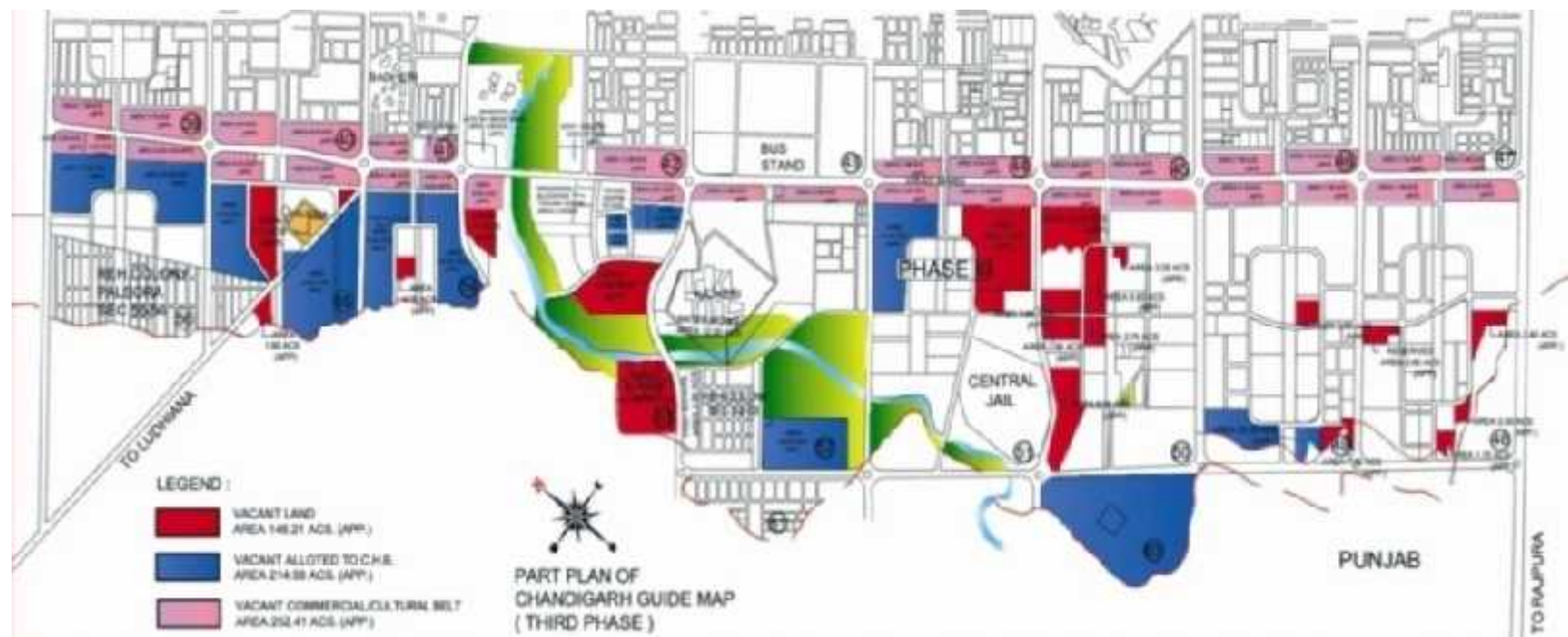


MIXED LANDUSE DEVELOPMENT ALONG VIKAS MARG

The mixed landuse, high rise and high density development proposed in the reserved belts flanking both sides of the Vikas Marg (See Chapter on Commercial Areas and Social infrastructure) shall have residential development on the upper floors and commercial and institutional areas on the lower floors. The proposal shall open up large areas for housing of various categories as per modern day requirements which shall include service apartments, guest houses, hostel accommodations etc. alongwith provisions for the essential community facilities.

The area under residential use shall be worked out on the basis of the comprehensive detailed urban design proposal of Vikas Marg and is over and above the residential areas required to meet the demands of the projected population of 2031 .

PLAN SHOWING STATUS OF VACANT LAND IN PHASE III SECTORS





AUGMENTATION OF GOVERNMENT HOUSING

There is need to make adequate provision of government houses for judges and the staff of the High Court , the ministers and legislative and for the large number of officers/officials serving in various offices in Chandigarh.

MANDATORY PROVISION OF FACILITIES FOR DOMESTIC SERVANTS WITHIN GOVERNMENT HOUSING

No government houses in future shall be constructed without providing facility for domestic servants.



Single Storeyed Government Housing in Sector-19

RE-UTILISATION OF GOVERNMENT HOUSING OF THE FIRST PHASE SECTORS

The Expert Heritage Committee constituted by the Government of India has identified certain single/double storey pockets of government housing pockets in the first phase of the city for redensification. After examining the proposal in detail it is recommended that redensification should not be carried out since it is a very complicated and complex issue and will create lot of problems. It will put pressure on existing infrastructure and would also require making adequate provision of physical and social infrastructure - drinking water, drainage system, parking, schools, colleges, hospitals etc.

However, the identified pockets can be re-utilized by the Chandigarh Administration if required. The heritage considerations shall be kept in mind while reutilizing the pockets. It must be ensured that the lower income group housing are not replaced by a smaller number of higher income group units, thereby further skewing the distribution of population of different socio-economic groups within the sectoral grid.

REFER PLAN H6.4. showing re-utilization of Government Housing pockets identified in the sectors of the first phase of the city by the Expert Heritage Committee constituted by Government of India.

Approval of the Chandigarh Heritage Conservation Committee

Since Phase I sectors have been recommended for Heritage status, the re-utilization of the identified housing /institutional pockets in the first phase shall be undertaken with the prior approval of the Chandigarh Heritage Conservation Committee.



PLAN H6.4:- RE-UTILIZATION OF GOVERNMENT HOUSING POCKETS IDENTIFIED IN THE SECTORS OF THE FIRST PHASE OF THE CITY BY THE EXPERT HERITAGE COMMITTEE CONSTITUTE BY GOVERNMENT OF INDIA.





HERITAGE STATUS TO GOVERNMENT HOUSING

The Government of India has approved the recommendations of the Expert Heritage Committee (EHC) with respect to according heritage status to identified pockets designed by the first team of architects.

There is, however, persistent demand from the occupants of the government housing for allowing need based changes in the government housing which include additional rooms, toilets, stores, office accommodations, servant rooms, construction of porch, car sheds, guard rooms, coverage of verandahs, enlarging window sizes and change of specifications.

The Chandigarh Administration has previously been allowing changes / modifications some of which have even included structural changes.

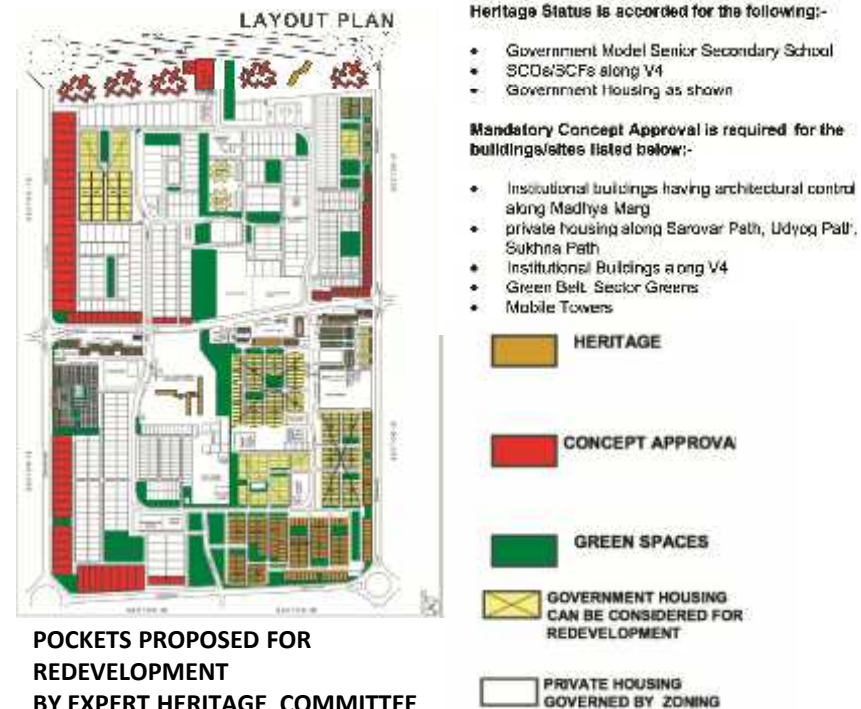
In view of the approved recommendations for according heritage status, further additions and alterations to the identified heritage housing stock should be put on hold till the heritage regulations are put in place. The heritage regulations stipulating the extent and nature of additions and alterations that are to be permitted are to be formulated by the Chandigarh Heritage Conservation Committee (CHCC). The matter is recommended to be put up to the CHCC on priority to address the long pending demands .

Large number of housing stock is also being used by the State Governments of Punjab and Haryana who also need to be sensitized on the heritage aspects and requested to put on hold further additions and alterations till the finalisation of the Heritage Regulations by the CHCC.



GOVERNMENT HOUSE IN SECTOR 5 ACCORDED HERITAGE STATUS BY GOVERNMENT OF INDIA ON THE RECOMMENDATIONS OF THE EXPERT HERITAGE COMMITTEE

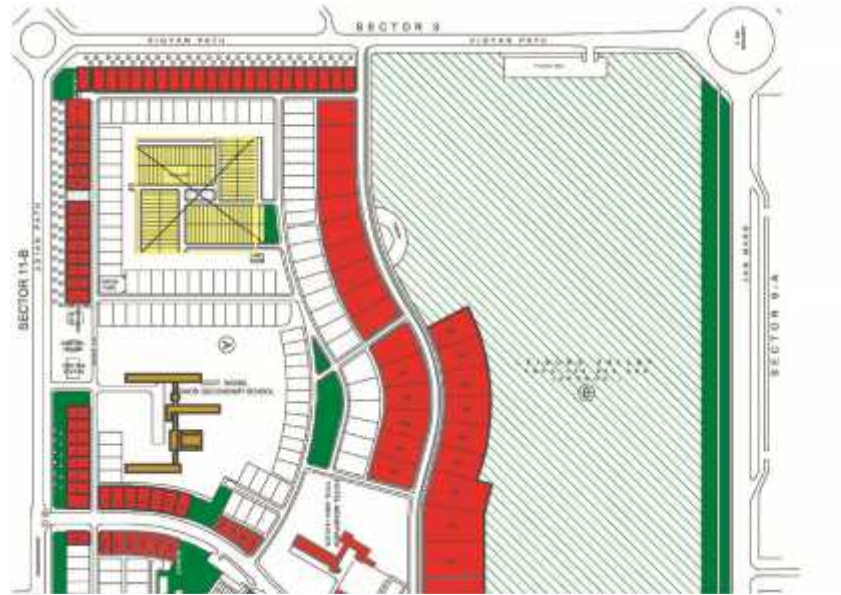
POCKETS OF GOVERNMENT HOUSING PROPOSED FOR REDEVELOPMENT IN VARIOUS PHASE I SECTORS BY EXPERT HERITAGE COMMITTEE CAN BE PUT TO RE-UTILISATION IN KEEPING WITH THE LOW RISE CHARACTER OF THE CITY AND WITH THE PRIOR APPROVAL OF CHCC. REDENSIFICATION IS NOT RECOMMENDED.



POCKETS PROPOSED FOR REDEVELOPMENT BY EXPERT HERITAGE COMMITTEE FOR SECTOR 19



POCKETS OF GOVERNMENT HOUSING PROPOSED FOR REDEVELOPMENT IN THE PHASE I SECTORS BY EXPERT HERITAGE COMMITTEE CAN BE RE-UTILISED. REDENSIFICATION IS NOT RECOMMENDED.



Heritage Status is accorded for the following:-

- Government Museum & Art Gallery campus
- Government College of Art
- Museum of Science
- Government Model Senior Secondary School which functioned as assembly in the initiate stages
- SCFs/SCOs along V4
- Leisure Valley: Fitness Trail, Monsoonal Gorge, Tennis Stadium

Mandatory Concept Approval is required for the buildings/sites listed below:-

- Tennis Courts should retain their earth-sheltered form
- Private Housing along Vigyan Path, Udyan Path, V4 & V5 with back towards Leisure Valley
- Government Polytechnic along Udyan Path
- Home Science College along Udyan Path and Madhya Marg

POCKETS PROPOSED FOR REDEVELOPMENT SECTOR 10



RE-UTILIZATION OF ADDITIONAL INSTITUTIONAL POCKETS

In addition to the government housing recommended for Re-utilization there are other areas in the Phase I sectors with single / double storeyed government houses/institutional housing which shall also be taken up for Re-utilization to enable utilization of the limited land resource in the land starved city after undertaking systematic and comprehensive surveys and review.

The replanning shall involve preparation of a detailed plan for each such identified pocket and a participatory approach involving the stakeholders. The physical and social infrastructure shall also be augmented proportionately.

- Since Phase I sectors have been recommended for Heritage status, the re-utilization of the identified housing pocket in the first phase shall be undertaken in consultation and subject to the approval of the Chandigarh Heritage Committee.
- Some other Tentative Pockets that can be considered for Re-utilization within the first and second phase sectors one enlisted below. These pockets shall however be finalized after detailed stocktaking of ground realities /norms.
- Re-utilization of the Tentative Pockets have however not been included while calculating the holding capacity of the city since the same is subject to feasibility /approval of the private owners.

TENTATIVE POCKETS WHICH CAN BE CONSIDERED FOR RE-UTILIZATION:

- Industrial Houses in Sectors 29 and 30.
- Sector 31 government houses for defence personnel.
- Sector 35B – underutilised spaces & old houses of BBMB Govt. General Pool Houses etc. can be considered for re-planning.
- Sector 35 – double / three storeyed houses of Sector 35 can be considered for conversion into 4 storey houses.
- Sector 37 - EWS houses.
- Sector 47 – vacant plots / double storeyed government housing for defence personnel subject to defence clearance.
- Sector 40 – EWS housing
- Sector 41 – government housing.
- Sector 43/A – large number of vacant plots which can be clubbed and utilised for group housing.
- Sector 44 – large number of vacant plots which can be clubbed and utilised for group housing.
- Sector 50 & 51- approximately 38 acres land can be re-utilized.
- Sector 61 – Housing to be replanned with multi-storeyed flats instead of plotted houses.



ADDITIONAL FAR AND GROUND COVERAGE TO PRIVATE HOUSING

The Chandigarh Administration vide notification dated 16/10/2008 has already permitted increased ground coverage and FAR for all sizes of private residential plots and introduced the concept of zoning in place of frame control. Under these regulations, all private plots can build upto 3 floors with each floor having potential of having an independent unit. There are approximately 23000 private plots of all categories within the sectoral grid of the Chandigarh Master Plan. Assuming that each plot will eventually be built upto 3 storeys with one unit per floor, the total dwelling units available will be 69000 which can house approximately 3,00,000 population.

Approximately 9175 units built by the CHB are single storeyed. By permitting the owners to build upto 3 storeys, another 18350 dwelling units can be added.

Mandatory concept approval of identified areas recommended (see chapter on Chandigarh Heritage)



The varying heights of boundary-walls, construction of green-rooms, covering of courtyards, poor maintenance, uneven setbacks, and other additions and violations, have adversely impacted the order of the Built-Environment, and are a cause of serious concern.



Additional covered area and shifting of rear setback of Frame Control of private houses has impacted the streetscape along V3.

Refer 19.8 of Chapter on Chandigarh Heritage

ENSURING SAFE HOUSING - STRUCTURAL AUDITING OF PRIVATE HOUSING STOCK

There is a large stock of non engineered buildings within Chandigarh which have been constructed without following the codal provisions. The city falls within the high risk prone Seismic Zone IV wherein special measures need to be taken to equip the buildings to be able to withstand earthquakes. Due to the high density development, the unsafe buildings which share common walls, can endanger the life and property of the neighbouring buildings. Some of the major observations are that

- (i) The brick work is not of good quality, mortar between brick work is not adequate
- (ii) Majority of walls are without plaster which make them more vulnerable to salt attack and less durable
- (iii) There are no RCC lintels over wide windows and door openings
- (iv) RCC bands required for structural safety during quakes are not provided
- (v) Vertical reinforcement at corner of masonry walls are not provided.
- (vi) Four storeyed non engineered buildings are very unsafe during quakes. Due to height of four storeyed structures, large bending moments and shear forces are developed at the base which a non engineered building is unable to bear.
- (vii) Vertical alignment of walls is not proper which can cause additional tensile stresses which may cause failure.
- (viii) Clear space between buildings on either side of lane is not adequate due to cantilever projections on both sides.
- (ix) Masonry columns taking load of upper floors on the floor itself without foundation. Due to lateral movement of the ground during seismic activity, the column can become a critical component.
- (x) Masonry columns originating from walls without adequate bond with the wall. During earth quakes, the columns can become critical.
- (xi) Staircases in many buildings are resting on cantilever slab which is not desirable.



- (xii) Load bearing masonry wall of upper storey is not placed above the masonry wall of the storey below. The walls are displaced by about a feet which is not a proper structural arrangement.

There are a large number of buildings which were designed /allotted as single storeyed initially but have been constructed with additional floors without following the structural safety norms /provisions. Such housing stock also needs to be structurally audited.

On the basis of visual surveys, the following areas are recommended for structural auditing:

- Cheap houses in various sectors – Sector 15, 19, 20, 24, 32 etc.
- Rehabilitation colonies - Bapu Dham Colony etc
- Site and Services schemes of Sector 25.
- EWS houses of Sector 29B, & TBRL, OFC houses in Sector 29.
- Housing stock within the old abadi deh of Manimajra as well as in the organic developments around it including, Gobindpura, Mori Gate, Bhara Mal Nagar, Dehra Sahib, Mata Raj Kaur, Darshini Dagh, Thakur Dwara, Shanti Nagar Pipliwala Town, Mariwala Town, Subhash Nagar and Bank Colony.
- Housing stock within and outside the **abadi deh of villages**
- **A systematic examination of the structural safety of the housing units shall be undertaken which will guide follow up action – redevelopment /retrofitting /urban renewal to be undertaken.**

REDEVELOPMENT /URBAN RENEWAL /CONSERVATIVE SURGERY OF EXISTING OLD AREAS AND VILLAGES WITHIN MUNICIPAL LIMITS

In addition to ensuring structural safety in the existing old areas, there are certain congested residential areas in the city, especially in and around the old Manimajra Town which are characterized by poor urban form, high densities, inadequate urban infrastructure, services and lack of community facilities. For these areas, the owners can jointly prepare redevelopment plans on the basis of the redevelopment guidelines to be framed by the Chandigarh Administration.

For each of the identified areas, detailed development plans shall be drawn up which will ensure minimum necessary/feasible level of services and community facilities and services. In addition, building byelaws of these areas should be suitably amended and liberalised to facilitate redevelopment of property. While planning, care shall be taken to ensure that commercial establishments if any should be allowed basically to serve the needs of those living in the lal dora and are to be developed in a manner that they do not open onto main roads and have adequate parking.



Summary

IMPROVEMENT OF THE LIVING ENVIRONMENT OF VILLAGES

The villages retained and integrated within the sectoral grid of the second phase and third phase and those which fall in the periphery controlled area outside the sectoral grid have undergone considerable socio – economic changes and are fast changing their residential character to a mixed landuse development. However, these villages still have a major residential component. The present status of the villages and the pressures and challenges being faced have been dealt in detail in the Chapter on Development of Villages.

Comprehensive development plan for each village shall be prepared based on detailed survey of ground realities to ensure an enriched quality of life for the residents of the villages. Permissibility of mixed landuse to the extent in the Village Rules so as to ensure that it is not detrimental to the predominant residential area, removal of non conforming landuses, upgradation of physical and social infrastructure to address the gaps and meet future requirements. While planning care shall be taken to ensure that commercial establishments should be allowed basically to serve the needs of those living in the lal dora and are developed with adequate parking and without opening onto the main roads.

Dormitory accommodation shall be permitted only as per building rules to ensure healthy and safe living with adequate air, light and ventilation.

Conservative surgery shall be carried where found essential to enable proper road widths for fire tender movement and emergency vehicles and laying of services etc. Since construction activity is going on at a rapid pace in the villages, there is need for regulating construction activity and landuses through strict enforcement with immediate effect and timely preparation of the Development Plans and their integration with the surrounding areas.

Early notification and implementation of villages rules after taking feedback from the public/villagers. It is recommended that the vacant areas around the villages should not be further developed till such time as the development plans are finalised. A participatory approach is to be adopted, involving the residents, panchayats and stakeholders.

PROPOSALS FOR MAKING CHANDIGARH ‘SLUM FREE’

- Chandigarh’s rehabilitation policy conforms with Government of India’s current vision of Rajiv Awas Yojana which aims at inclusive and equitable cities with every citizen having access to basic social and civic services.
- In order to prevent the emergence of new unauthorized settlements, the Administration has already adopted the policy of making it mandatory that 15 % of the dwelling units in all future public residential development must be for EWS/LIG and the same will become applicable even to private residential development. However it is pertinent to mention that in the year 2006 the population living in the slums was approximately 69,000. However as per the Chandigarh census 2011 the population residing in slums is 94,950 persons (Annexure H4). Therefore, strong measures need to be taken to check the further growth of slum’s for making Chandigarh slum free.



NEW HOUSING FOR THE URBAN POOR

- Chandigarh Administration aims to make Chandigarh a 'Slum Free city' by building 25728 small flats for rehabilitating all the residents of unauthorized settlements as per the biometric survey conducted in 2006 under BSUP.
- These flats are being built in 8 identified locations in the U.T. namely, sector 49(1024 small flats), Sector 38 (West) (1120 small flats), Ramdarbar (576 small flats), Maloya-I (8896 small flats), Maloya-II (3648 small flats), Mauli Jagran-I (320 small flats), Mauli Jagran-II (1696 small flats) and Dhanas (8448 small flats). CHB has already initiated work on building 12864 dwelling units.
- All rehabilitation schemes are being planned with neighbourhood community facilities –shopping centres, schools as per norms so as to provide essential facilities within easy reach of the residents .
- Rehabilitation units planned earlier as single room unit with a total covered area of 25 sqm. have now been revised to provide two room units with toilet and kitchen space.

URGENT NEED FOR NEIGHBOURING STATES TO AUGMENT HOUSING FOR THE URBAN POOR

There is an urgent need for the neighbouring states to also increase provision of housing for the urban poor to reduce pressure on the limited undeveloped land left with the UT.

- **Two bedroom houses proposed for rehabilitation schemes**

VIEWS OF PROPOSED TWO ROOM DWELLING UNIT SMALL FLAT SCHEME, MALOYA- I& II, MAULI JAGRAN-I





PROPOSALS FOR IMPROVING EXISTING REHABILITATION COLONIES

- Their planning will be improved to better integrate livelihood opportunities in these colonies.
- Provision shall be made for **community parking spaces** to ease the traffic problems. Provision shall be made for parking not only vehicles but also cycle and auto rickshaws, horse carts, rehris, etc.
- A diversity of designs in terms of size and improved use of open spaces shall be promoted.
- **Participatory planning by CHB** in consultation with the women and men of those to be resettled to ensure improved integration of their needs and priorities in the design of rehabilitation colonies shall be promoted.

Need based changes as per the requirements of the public may be allowed as per norms.

A systematic examination of the structural safety of the housing units shall be undertaken and retrofitting carried out accordingly.

Insitu Upgradation - potential of self-help and incremental housing for in-situ development of unauthorized settlements shall be explored. In the case of long established unauthorized settlements, such as Labour Colony No. 4, in-situ upgradation instead of resettlement in peripheral locations shall be given serious consideration.

In view of the scarcity of land in Chandigarh rental housing scheme is proposed to facilitate temporary stay for migrants to the city to avoid slums.

Provision for accommodation of domestic servants / industrial workers

Owners of houses above 1 kanal using services of domestic servants shall be encouraged to make provision for servants within the premises as per norms .

Systematic examination of structural safety of non engineered housing stock



NON ENGINEERED HOUSING STOCK



REHABILITATION COLONY
SECTOR 25 W



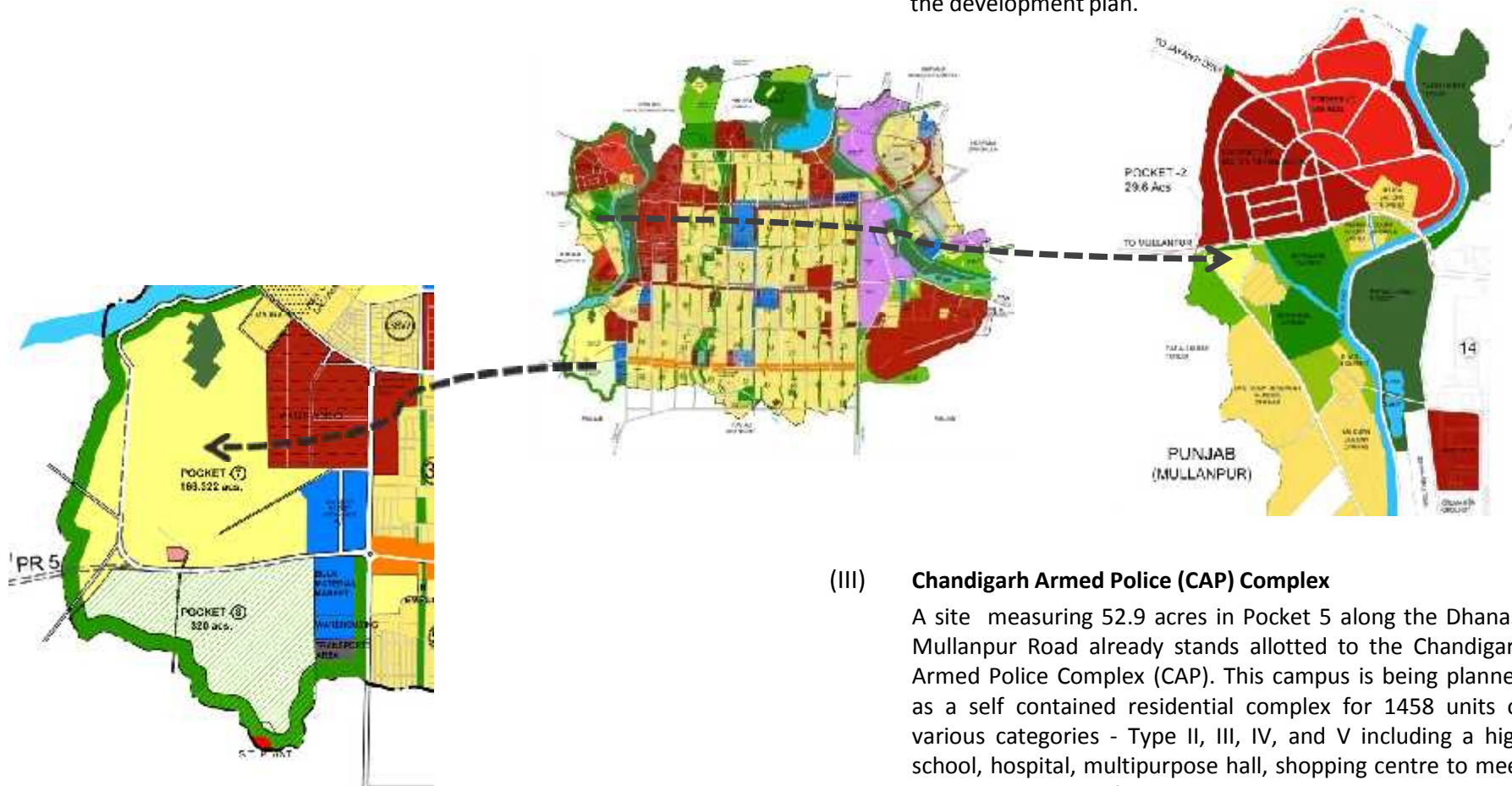
REHABILITATION COLONY –BAPU DHAM COLONY



DEVELOPMENT OF VACANT AREAS IN PERIPHERY FOR RESIDENTIAL USE

(I) In the proposed land use in Pocket 7 near village Maloya, 178 acres of land has been proposed for residential use. The tentative density of the area will be 250 PPA i.e 45000 persons can be provided.

(II) In addition to above approximately 30 acre of area in Pocket 2 near Village Sarangpur has been proposed for residential use. Comprehensive Integrated Development Plan of the abadi deh of village and the areas around it is to be undertaken as per the principles highlighted in the Chapter on Villages. No further development should be taken up in the area till such time as the finalisation of the development plan.



(III) **Chandigarh Armed Police (CAP) Complex**
 A site measuring 52.9 acres in Pocket 5 along the Dhanas-Mullanpur Road already stands allotted to the Chandigarh Armed Police Complex (CAP). This campus is being planned as a self contained residential complex for 1458 units of various categories - Type II, III, IV, and V including a high school, hospital, multipurpose hall, shopping centre to meet the requirements of the Indian Reserve Battalion as well as that of the CAP. An area of approximately 10.0 acres has been reserved for future use. The residential buildings are planned as six storeyed apartments.



GENERAL PROPOSALS

HOSTEL / LOW COST RENTAL ACCOMMODATION

The shortage of low cost rental accommodation for students, single working women and other similar groups shall be addressed by increasing their number in location close to educational institutions and major employment centres. Surveys to assess demand for such accommodation should inform detailed planning.

ACCOMMODATION FOR STAFF AND VISITING FACULTY IN LARGE INSTITUTIONS

Institutions having large plots of land shall be encouraged to develop low cost facilities for conferences, training programmes etc. as well as accommodation for the participants attending them. The Chandigarh Administration shall make suitable policy and zoning provisions to allow provision of houses for regular faculty and other staff members within the campus.

HOMES FOR THE ELDERLY SHALL BE INCREASED BASED ON AN ASSESSMENT OF DEMAND

Night shelters for the homeless shall be increased and designed more sensitively for their needs. An analysis of the shortcomings of existing night shelters together with a study of the experiences with them in other cities, should provide a basis for improving their design and management.

SHELTER FOR THE CYCLE RICKSHAW PULLERS

Cycle rickshaw pullers living at authorized rickshaw stands shall be provided basic shelter and services including drinking water, toilet facilities and drainage. Rickshaw pullers who need to stay at the stands to provide an important service during late nights and early mornings have remained one of the most neglected marginalized groups within city.

POTTERS COLONY in front of cremation ground Sector 25 needs to be constructed at the earliest to accommodate maximum number of potters.

NO NEW PLOTTED DEVELOPMENT

There shall be no new plotted development in the city and only Group housing shall be allowed. The existing height restrictions in the first phase and second phase sectors shall continue to prevail to maintain the low rise character of these sectors. In the 3rd phase sectors and in the residential pockets earmarked in the periphery, a minimum of four storeyed group housing shall be mandated unless otherwise specified in the Master Plan .

STRICT ENFORCEMENT OF BUILDING BYELAWS

There should be strict enforcement of building byelaws and check on illegal encroachments to avoid setting up of slums so that situation of rehabilitation does not arise at all.

MANIMAJRA

As per the approved land use plan of Manimajra in the year 1999, the total area under the residential use has been given as 346 acres. The existing population of Manimajra is approx. 136000 persons. Thus, overall density worked out to 395 PPA, which is on extremely higher side and is not desirous.

It is therefore, recommended that the additional housing stock should not be added for new population/migrants to the town as there are no additional pockets available for residential use. However, an urban renewal exercise of the congested pockets within the town area needs to be carried out to decongest the existing residential pockets and for augmenting the facilities in the area.



7. COMMERCIAL AREAS IN CHANDIGARH

7.1 INTRODUCTION

Commercial areas in Chandigarh were planned to provide adequate, organized retail and wholesale trading activity for the city residents. The city has however emerged as an important commercial hub.

A concept of hierarchical distribution of commercial centers was introduced into the city plan as a departure from the organic developments of the traditional towns. To provide a continuum of commercial areas, the three major city level centres, planned as precincts were interconnected through linear commercial belts along the major arteries.

Similarly, while neighbourhood centres were planned within the residential sectors, these centres were also planned to be connected through underpasses across intercepting V3s to form continuous neighborhood shopping streets running across the width of the city in the East West direction. This concept has however not been implemented.

With the exception of the City Centre, the entire hierarchy of shopping centres were designed on the traditional Indian concept as Shop Cum Flats (SCFs) with commercial activity on the ground floor and residential unit above. The concept was however modified in the second phase wherein flats were replaced by offices thereby introducing the Shop Cum Office (SCO) concept.

The privately owned commercial properties built on standardised plot sizes are governed by architectural controls to ensure uniformity of architectural expression, streamline pedestrian movement through mandatory corridors at ground floor level and have organised advertisement space. While the city centre four storeyed blocks are in concrete, the neighborhood centers have brick and plastered surfaces, jalies and similar orientation.



SHOP CUM OFFICES, CITY CENTRE SECTOR 17



NIGHT VIEW - SHOP CUM OFFICES, CITY CENTRE, SECTOR 17



The shopping centers of the city have undergone internal and external transformations across the years, nonetheless the overall character remains the same.

The commercial centres today pulsate with life and activity throughout the day. Commercial activity has now spread to the upper floors and the prosperous traders have moved out to the main residential area.

Neighborhood shopping centers today no longer serve the residents of the sector alone but also serve other sector residents due to their transformation into specialized shopping centers.

Keeping pace with the city's expansion and to meet modern day requirements of the burgeoning population, new commercial centers/areas have also been added.

However, some of the existing commercial centers are not yet fully developed leaving some areas of the city devoid of facilities.

The city also has a substantial amount of unorganized and haphazard commercial outlets especially in the villages which however addresses certain gaps in the planned commercial centers.

The planning for the future requires a keen look at the existing ground realities to gauge the adequacy and inadequacy of the shopping centers in terms of stipulated norms to fulfill their role as socio-economic and cultural centers. The gaps in infrastructure thus need to be plugged in at each level in the hierarchy.

The existing shopping centers also need to respond to the modern day trends and expectations and thus would need to be suitably retrofitted.

The chapter thus presents a detailed stock taking of the present status of the commercial areas in the city and the policy guidelines and specific recommendations to enable them to meet the aspirations of the people.



NEIGHBORHOOD SHOPPING CENTERS , SECTOR 19





7.2 HIERARCHICAL ORDER OF COMMERCIAL AREAS

The details of commercial areas as per original plan and the subsequent additions to the commercial areas is as under:

7.2.1 COMMERCIAL AREAS AS PER ORIGINAL PLAN

Commercial areas were planned in a well organized hierarchical order to cater to the requirements of the 5 lakh population of the city.

Wholesale trade

- Grain, Fruit & Vegetable Market, Sector 26 on Madhya Marg.
- Timber Market, Sector 26 on Madhya Marg.
- Bulk Material Market, Sector 7 & 26 along the commercial belt on Madhya Marg.

City level shopping centre

- City Centre, Sector 17 at the junction of Madhya Marg & Jan Marg.

Sub city level shopping centres

- Sub City Centre, Sector 34 at the junction of Dakshin Marg & Himalaya Marg.
- Sub City Centre, Sector 43 at the junction of Himalaya Marg & Vikas Marg .

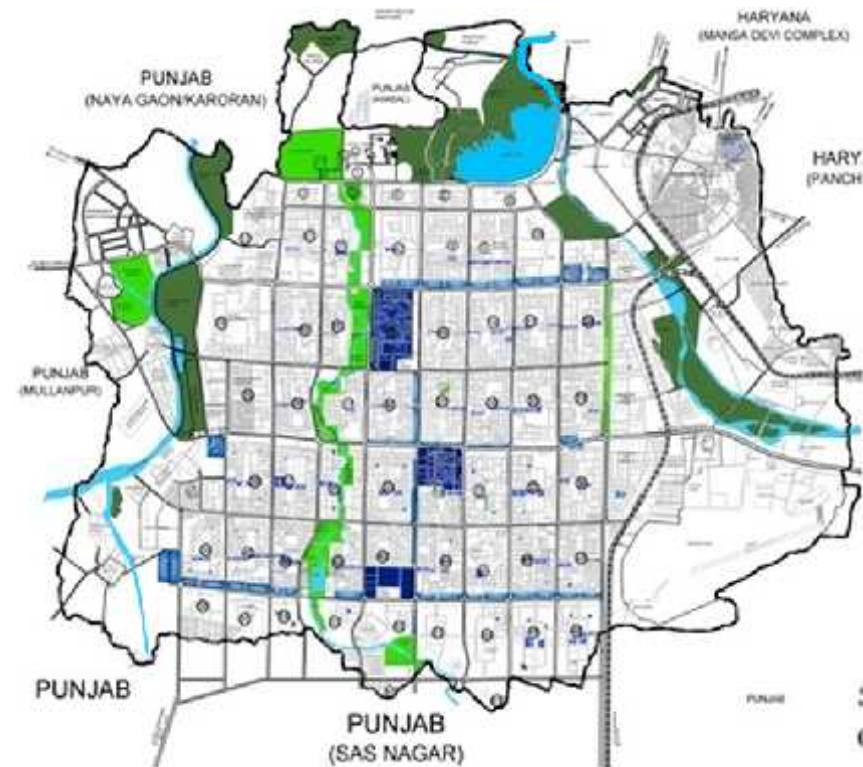
Commercial belts along major avenues are as under :

- Madhya Marg stretch between sector 9 and Sector 26
- Dakshin Marg stretch between sector 20 and 22
- Himalaya Marg stretch between Sector 22 and Sector 43
- Udyog Path stretching across Sector 17/22
- Vikas Marg (North Side) stretch between Sector 40 and Sector 47.

Neighbourhood Shopping Centres

Neighborhood shopping centres have been provided in each residential sector with the exception of the small sized, low density northern sectors i.e. sectors 2, 3, 4, 5, 6 and sectors 25 and 43.

PLAN 1 : SHOWING COMMERCIAL AREAS





7.2.2 SUBSEQUENT ADDITIONS TO THE COMMERCIAL AREAS

7.2.2.1 Additional commercial areas planned within the sectoral grid:

Wholesale markets

- Second grain, fruit & vegetable market, Sector 39 West
- Modern Terminal Market, Sector 56

Commercial belts

- Commercial belt along Vikas Marg (south side) stretching between Sector 48 and Sector 56

Additional Neighborhood shopping centres

Area for neighborhood shopping centres have been earmarked in the layout plans of sectors 48 to 53 of the Phase III sectors. For sectors 54 to 56 and 61 & 63 which are only part sectors, the neighborhood shopping centres fall in the SAS Nagar portion of the sector. In these sectors convenient level shopping centres have been planned.

Convenient Shopping

- Convenient shopping centers have been provided as clusters of 10 to 15 shops at sub sector level in Phase II and III. This category is the lowest in the hierarchy of commercial centres.

7.2.2.2 ADDITIONAL COMMERCIAL AREAS PLANNED OUTSIDE THE SECTORAL GRID:

- Commercial belts in Pockets 2, 3, 4, 5, and 6 Manimajra along the Madhya Marg (Refer Development Plan Manimajra 1990).

7.2.2.3 SPECIALISED COMMERCIAL MARKETS

- Auto repair markets in Sector 28, West of Sector 38, Sector 48 and as part of the Commercial belt along Himalaya Marg in Sector 43 and Sector 52
- Furniture Market as part of Neighbourhood Shopping Centre, Sector 34
- Meat Market as part of Neighbourhood Shopping Centre, Sector 41.

7.2.2.4 DAY MARKETS

- Sectors 7 to 11, 15D, 18, 19C, 20C/D, 22 C/D, 23C, 24, 26, 27D, 37, 38, West of 39, 40, 41, 42 43, 46, 47C.



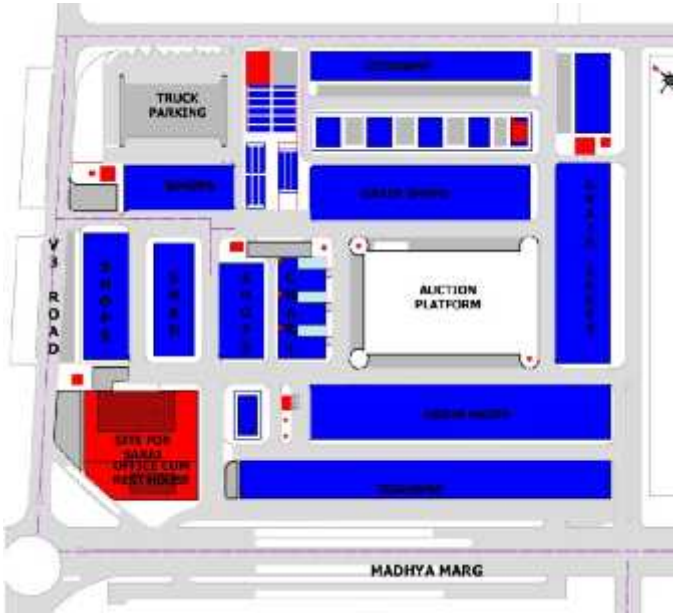
7.3 PRESENT DAY STATUS OF COMMERCIAL AREAS

Quantum Trading

7.3.1 Regional Wholesale Trading-Whole sale commercial outlets

Grain, Fruit and Vegetable Market, Sector 26

The Wholesale Market for Grain, Fruit and Vegetables is located in Sector 26 along Madhya Marg and in close proximity to regional roads, railway station and the industrial area. The wholesale Timber Market Sector 26 and Bulk Material Market Sector 7 & 26 have also been planned adjacent to it. The site has been planned with SCF's / booths, auction platform, parking areas for trucks and public, loading unloading platforms and office of the Marketing Board. The facilities in the market include 72 grain shops, 40 fruit and vegetable shops, 69 godowns, 36 general shops, 82 booths and 3 chakki shops. The mandi also has two banks and a post office.



PLAN 2 : GRAIN FRUIT AND VEGETABLE MARKET, SECTOR 26

Unhealthy mix of heavy freight vehicles with inter city and intra city level vehicles adversely impacts the smooth flow of traffic along Madhya Marg





7.3.1.2 PROBLEMS OF WHOLESALE GRAIN, FRUIT AND VEGETABLE MARKET

The planned location of the Wholesale Grain ,Fruit and Vegetable Market at one end of the city was ideal till the emergence of the township of Panchkula and extensive development in and around Manimajra on its eastern end. Today, this **area is no longer on the fringe of the city.**

To prevent heavy freight vehicles from impacting the smooth flow of traffic along Madhya Marg the movement of heavy vehicles into the city has been restricted between late night to early morning hours. However, the heavy vehicular traffic on the internal streets feeding the Grain Market and adjoining areas disrupts the functioning of the Police Lines located across it.

The **existing infrastructure is unable to meet the current day requirements** as a result of which there are building violations, encroachment of public corridors /pavements /stacking of goods on rooftops by shopkeepers. There is an absence of facilities for the labour too who are left to manage in make shift unhealthy arrangements.

Other issues include **inadequate and poorly maintained public conveniences** resulting in **insanitary and unhygienic conditions** and **poor management of garbage disposal** which is in sharp **contradiction of the image of the City Beautiful’.**



ENCROACHMENT OF ROADS BY STREET VENDORS AND HAPHAZARD/EMERGENCE OF PARKING OF VEHICLES ALONG ROADSIDE.



INADEQUATE INFRASTRUCTURE RESULTS IN VIOLATIONS AND ENCROACHMENTS ON PUBLIC LAND



TENTS PITCHED ALONG V3 ROAD SIDE ARE INCOMPATIBLE WITH THE CITY’S ORDERLY AND PLANNED CHARACTER

To decongest the market, it has been planned to shift the wholesale grain component etc to Sector 39 leaving only retail trade in the Wholesale Grain, Fruit & Vegetable Market Sector 26. The Second Grain Market in Sector 39 is however partially developed as such there is no relief from the problems so far.



7.3.2 TIMBER MARKET

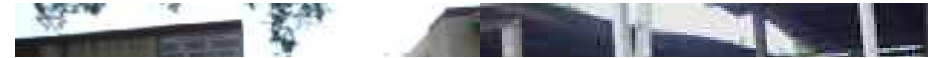
An area of 21.39 acres along Madhya Marg adjacent to the Grain Market in Sector 26E has been earmarked as the Wholesale Timber Market with facilities of timber sites, booths, seasoning sites, parking and green areas. A community centre and fire station have also been planned in the area. An area of 2.63 acres has been kept as 'Reserve'.

7.3.2.1 ISSUES

- An area of 9.31 acres has not been developed due to existing structures of the Public Works Department.
- Poor upkeep and maintenance of open areas and green spaces. Spillover of timber sites onto public land.
- Of the two seasoning sites, one is being used for parking of trucks etc.



VIEW OF TIMBER MARKET FROM MADHYA MARG





7.3.3 WHOLESALE / BULK MATERIAL AND RETAIL SHOPS IN COMMERCIAL BELTS ALONG V2S AND V3S

7.3.3.1 The Bulk Material Markets of sectors 7 and 26 provide the largest show rooms of the city with large courtyards and storage space on the ground floor at the rear of the building. While the public parking and public corridor face the Madhya Marg, the loading and unloading activity goes on behind the showrooms where extensive parking has been provided. To minimize disturbance to the adjoining residential areas, the markets are sufficiently set back from the areas .



SCOs, SECTOR 7

SCOs, SECTOR 26



LOADING AND UNLOADING TOWARDS THE REAR OF THE SHOWROOMS WHERE EXTENSIVE PARKING HAS BEEN PROVIDED

7.3.3.2 ISSUES AND PROBLEMS

Due to economic compulsions, while most of the SCF’s have availed conversion to more profitable and much in demand uses such as hotels requiring large plot sizes – on the other hand marble dealers have squatted on private agricultural land on the peripheral area on the city eg the Dhanas – Mullanpur road.

The existence of the wholesale and the new emerging hotels and commercial activity in the show rooms of sector 7 and 26 creates an unhealthy mix of high end commercial and heavy traffic and noise generating service activity. The problem of parking is acute towards the front of the commercial areas and space for fire tender movement is also obstructed.

Additional covered area has been allowed to the showrooms through partial coverage of rear courtyard, construction of basements, however, there is persistent demand for permitting coverage of entire courtyard and ‘Box Type Structure’ on the pattern of SCO’s of the second phase sectors as well as change in architectural expression.



WHOLESALE SHOWROOMS ALONG MADHYA MARG



7.3.4 CITY CENTRE, SECTOR 17

7.3.4.1 PLANNING CONCEPT

The main commercial and business hub of the city planned and designed by Le Corbusier as the 'heart' of the city has been centrally located at the junction of two major roads the Jan Marg and the Madhya Marg. The City Centre has distinct, institutional, commercial and civic zones .

The commercial area offering the highest order of commercial activity, the Bank Square, the Town Hall, and the State Library are located towards the north and form the core area of the City Centre, while the civic area with the Police Station and its housing, the Fire Station, Parade Ground, Treasury, District Courts, Inter State Bus Terminus, Football Stadium, Exhibition Area is located towards the south of the sector. Institutional/commercial belts have been planned along the City Centre flanking the main roads wherein major hotels, banks, local and central offices have come up.

The core area has been **planned as a pedestrian paradise** of seamlessly interlinked spaces of varying scales offering a variety of spatial experiences. The plaza is surrounded by four storied concrete buildings that lend scale and also provide a buffer segregating vehicular and pedestrian movement within the sector.

The **Neelam Plaza** is a vibrant hub of the city centre. The area pulsates with activity and people especially during the weekly carnivals, and seasonal fairs. The multidimensional use of the space is witnessed through the outdoor exhibitions, street plays, awareness drives by various social and cultural organizations of the city.

7.3.4.2 PROBLEMS AND ISSUES

The City Centre has not been fully realized as per the original plan. The plaza near the State Library was meant to be the main **Chowk** of the commercial hub however due to **predominance of government offices, the area gets deserted after office hours**. During working hours also, the plaza and the double height public corridor of the Town Hall is taken over by the spill over of office activity.

Subdivision of shops and constant remodeling of interiors with rich specifications to accommodate national and international brands and change of trades is witnessed.



INSTITUTIONAL PERIPHERAL BLOCKS



PLAZA NEAR THE BIRD FOUNTAIN



THREE STOREYED ARCHITECTURAL CONTROLLED BRICK BUILDINGS



FOUR STOREYED RCC BUILDING



NIGHT VIEW OF THE CITY CENTRE



282 acres of the City Centre are nearly fully developed but for 2 pockets (2.7 acres and 7 acres) on north of City Centre along Madhya Marg. The area has been shown as ‘reserved for commercial buildings’. Two plots along Jan Marg, one approved for multilevel-cum-commercial use and another plot allotted to a hotel have also not been constructed. The office of the Municipal Corporation is also incomplete. The City Centre presents an uninviting and poor streetscape along the Madhya Marg and Jan Marg, due to non development of the area abutting the main roads.

Non-execution of the Eleven Storied Building of Post and Telegraph Office makes the skyline of the city centre monotonous diluting its intended urban design. The building planned near the main *Chowk* was intended as the focal point of the City Centre scaling in height and volume over the four storeyed buildings of the complex.

The City Centre has witnessed intensified commercial activity resulting in the **extensive commercial use of upper floors of SCOs**. The vertical movement is however not clearly defined and interconnected **since the SCOs were not designed for commercial use**.

Mezzanine floors are being carved out within the built volumes at the expense of making large portion of the ground floor inaccessible to the differently abled .

Extensive use of basements for commercial activity without adequate safety provisions. With the advent of global brands landing in the city, **need for larger floor plates** to cater to the new trends of shopping are being felt which however cannot be addressed within the stipulated architectural controls.

There is an **acute shortage of parking**.

There is congestion in the surface parking areas while there is non utilization of basement parking. The Comprehensive Mobility Plan report prepared by RITES has projected a shortfall of parking space for 3000 vehicles in the centre.



VISUAL POLLUTION DUE TO SIGNAGE, BLACKENING AND WEATHERING OF FACADES
ACUTE SHORTAGE OF PARKING



BROKEN PLAZA FLOORS WITH UNEVEN SLOPE DIRECTIONS CAUSING STAGNATION OF WATER

UNORGANIZED STREET HAWKING ACTIVITIES AND VENDOR MOVEMENT





Other issues include unorganized services such as haphazard fixing of air-conditioning units on building facades and corridors.

An unkempt appearance is a common sight due to poor maintenance of buildings, common public areas, weathering concrete, visual disharmony due to haphazard signage, covering of balconies with glazing, provision of services such as mobile towers, DG sets, solar water heating panels, dish antennas etc.



PAINTING/
PLASTERING
OF FACADE &
COLUMNS



UNAUTHORISED COVERAGE
OF COMPULSORY
VERANDAH



VIOLATION OF
ADVERTISEMENT
CONTROL



AC UNITS
(CONDENSER AND
COMPRESSOR)
HAVE BEEN
PROVIDED IN
COMPULSORY
PUBLIC CORRIDOR



UNAUTHORISED
PAINTING OF
FACADE &
COLUMNS



COVERAGE OF
COURTYARDS
IN THE SCOS
ALONG V4



OPENING OF ILLEGAL SHOPS ON THE REAR OF BRICK FACED SCOS TOWARDS PARKING SIDE.



UNAUTHORIZED CONSTRUCTIONS ON TERRACE, SUCH AS TEMPORARY STORES, DISH ANTENNA, CABLE TOWERS ETC.



UN-ORGANISED INFORMAL SECTOR



WEATHERING OF EXPOSED CONCRETE



7.3.5 SUB-CITY CENTRES SECTOR 34 AND 43:

Sub City Centres of Sector 34 and 43 were planned to serve the 2nd phase southern sectors. These centres will now also serve the 3rd phase residential sectors due to close proximity. Both the sub city centres are only partially developed.

7.3.5.1 SUB CITY CENTRE SECTOR 34

- Planned in 116 acres, only 62 acres have been developed. The undeveloped area is of 54 acres.
- Present planning of the Sub City Centre, though a conventional interplay of linear blocks, lacks focus and identity which is usually associated with collective synthesis of the built environment.
- There is no synergy with the neighboring sectors or with the adjoining residential areas.
- The sub-city centre does not give an impression that one is in a commercial hub of the city. The desired vibrancy and ambience expected out of a Sub City Centre is lacking. Predominance of office space lends an impression of an institutional area in the minds of the residents rather than that of a shopping area.
- The Sector 34 commercial area, presents by and large, a picture of neglect and chaos. Incomplete buildings of the State Library/ Nehru Centre for Performing Art and the undeveloped plaza and plots adjoining the V3 and V4 roads present an unattractive appearance.
- The architectural controls do not lend credibility to the built form and unbridled growth of ugly signboards defacing large proportions of the front facades and encroachments on public verandahs create visual disarray.
- Absence of adequate open spaces and lack of freedom for pedestrian to walk across without fear of being run over makes the area unattractive. In the absence of large pedestrian central core, the area of focus remains diluted as pedestrian paths/piazza are non- contiguous.



PLAN 4 : SUB CITY CENTRE SECTOR 34





- The environment and ambience is un- friendly and unsafe for pedestrians due to non segregation of pedestrian and vehicular movement. The high plinth of building blocks prove a deterrent and hindrance to the differently abled.
- Attempt to take too many roads too deep right in front of shops has not only wasted large area under circulation but has brought in more conflict between man and machine leading to sub-division of space and activities within the shopping centre.
- Parking has emerged as the major bottleneck in the efficient functioning of the sub-city centre. Parking spaces are not adequate to meet the requirements of commercial and office establishments. The centre is likely to witness major problems of traffic and parking if the present pattern of planning and development is continued.

PARKING ISSUES



TYPICAL COMMERCIAL BLOCK



ARCHITECTURALLY CONTROLLED SCOS



POOR MAINTENANCE OF OPEN SPACES



LIBRARY & BLOCK (UNDER CONSTRUCTION VIEW FROM PLAZA)



JUDICIAL ACADEMY, SECTOR 43

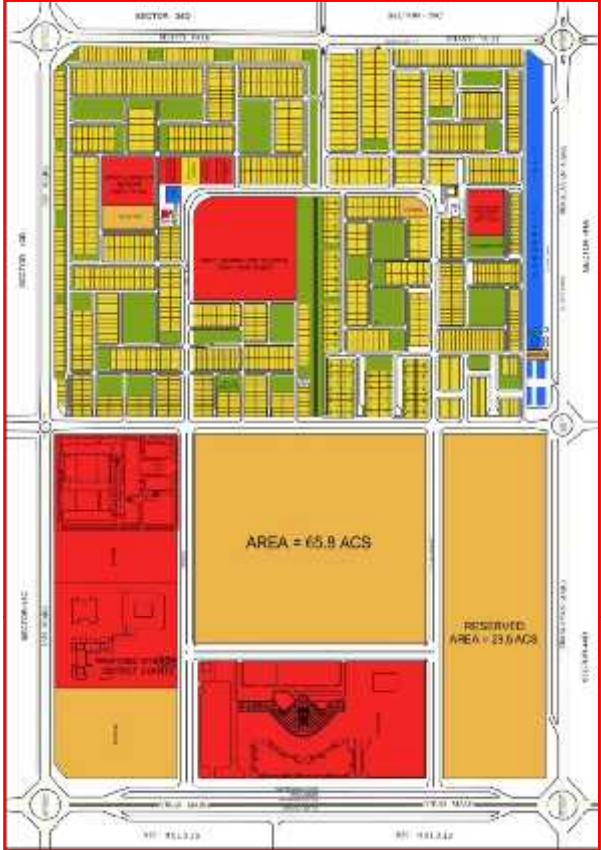
7.3.5.2 SUB CITY CENTRE SECTOR 43

Planned in nearly half of the sector the Sub City Centre occupies an area of 146 acres. Only 43.33 acres has been developed /built so far and 54 acres is undeveloped.

The Judicial Academy and the Interstate Bus Stand have been built and are in use. The Judicial Court Complex with 30 courts has been recently completed and started functioning. The District Courts Sector 17 having only 17 courtrooms has been shifted to the new campus.

These projects fall along the peripheral institutional belt of the centre.

Within the core area, an area of approximately 21 acres of land has been temporarily allotted to the Police Department. The detailed planning of the core area is yet to be undertaken.



PLAN 5 : SUB CITY CENTRE, SECTOR 43



DISTRICT COURTS, SECTOR 43



INTER STATE BUS TERMINUS ON VIKAS MARG SECTOR 43



COMMERCIAL BELT ALONG HIMALAYA MARG



7.3.6 COMMERCIAL BELTS ON V2S/V3S

Commercial belts along major avenues are as under :

- Madhya Marg stretch between Sector 9 and Sector 26
- Dakshin Marg stretch between Sector 20 and Sector 22
- Himalaya Marg stretch between Sector 22 and Sector 43
- Udyog Path stretching across Sector 17/22
- Vikas Marg (North Side) stretch from Sector 40 and Sector 47

7.3.6.1 FUNCTIONAL TRANSFORMATIONS:

Due to the prime location and visibility along the major V2 avenues which convey intercity and intracity traffic, the architecturally controlled commercial establishments have been under constant pressure for re-adaptations. Original use of general trade of the SCOs is now replaced by market forces – concentration of specialised shops such as jewellery, paper marts, computer and electronic goods, electrical and building materials, pharmacists, bookshops, cloth markets, coaching centres, medical diagnostic centres, insurance and banking activity, use of upper floors for commercial purpose etc.

Most of the city's restaurants and hotels, corporate offices, lodging – cum-restaurant sites have come up along these belts. This has resulted in more traffic, parking, loading and unloading of the goods. Further habitable use of basements and subdivision of upper floors into smart offices and cabins has compounded the problem of parking of vehicles, customers and traders. The commercial belts are thus facing acute parking problems as a result of the unanticipated visitor footfall. The underground parking lots are however not being used.

There is a clutter of unorganised services – air conditioners, compressors, mechanical ducts and exhausts especially towards the rear of the shops facing the residential areas.

The residents of certain sectors where residential areas have been planned close to the shopping centres complain of traffic congestion, air and noise pollution due to the commercial activity along the rear service/approach road.

7.3.6.2 PERMISSIONS SANCTIONED /TRANSFORMATIONS OBSERVED :

On the requests of the shopkeepers, the Chandigarh Administration has also permitted certain relaxations within the property. Some of which are:

- Change in facade, provided applied by the entire row.
- Basement permitted beyond the building line upto corridor
- 50% coverage of back courtyard allowed in showrooms of Sector-7 & 26
- 50% coverage of back courtyard allowed in Timber Sites in Sector-26
- In Sector-35 conversion allowed for shop-cum-shop and Lodging cum Restaurant sites .
- Subdivision of shops into two or more bay sites
- In Sector-22-A, B & C, the front verandas are allowed to be covered by providing glazing on front façade
- Additional covered area permitted by allowing coverage of open to sky-cut outs on upper floors. Restaurants have been opened by covering the rear courtyards in Sectors 7 and 26
- Change in floor level of the shop to create mezzanine floor.



7.3.6.3 STATUS OF PUBLIC AMENITIES /INFRASTRUCTURE :

- a) Lack of public conveniences, tea vendors, hawkers occupying green spaces.
- b) Taxi stands, auto stands encroaching upon green spaces.
- c) Vehicular- Excessive traffic volumes during peak hours, mixed traffic, daylong loading and unloading bays.
- d) Parking- Community basement parking not used, Surface parking insufficient, vehicular encroachment upon pedestrian walkways, greens, road dividers, sidewalks.
- e) Pedestrian- No inter sector pedestrian continuity and connectivity, Sidewalks and footpaths do not ensure pedestrian safety. Bus stops are not maintained. The intersectoral connectivity is nonexistent which also contributes to enormous volume of mixed traffic on the V2s.
- f) Cycle tracks are incomplete and missing along the V2s, thus discouraging the bicycle on the street.





7.3.6.4 COMMERCIAL DEVELOPMENT ALONG VIKAS MARG/V2



PLAN SHOWING LOCATION OF UNDEVELOPED VIKAS MARG

- Vikas Marg is a recent V2 which represents the northern edge of Southern Sectors 39-47 and also the southern edge of the newly developed Phase III sectors 48-56. Its ends are marked by the Chandigarh International Airport on the south- eastern side and the Second Grain, Fruit and Vegetable Market Sector 39 on the north western side.

- A 75m to 100m wide belt has been earmarked for commercial and institutional development on either side of the Vikas Marg and now proposed for mix landuse development. But for a few pockets, the Beant Singh Memorial Sector 42, Government College for Girls Sector 42, grid substations Sector 47, Gaushala in Sector 45. which are developed most of the area is yet to be developed. The edge of the Sub city Centre, Sector 43 also abuts the road along which the ISBT has been developed.
- In Sector 53, a site has been earmarked for a Planetarium and a 500 bedded Regional Trauma Centre.
- The Leisure Valley passes through Sector 42 and Sector 53 which has been planned with an artificial lake, Garden of Springs and Garden of Palms. Unauthorized Labor Colony Number 5 occupies parts of Sector 51 and 52. The colony is to be cleared after rehabilitating the residents to the new planned locations.

Vikas Marg

- The road geometry of Vikas Marg has been completed.
- 9 petrol filling stations and temporary liquor vends.
- Two temples also dot the site in sectors 49 (Santoshi Mata Mandir), 50 (Shiv Shakti Mandir).
- A Metro Corridor is also proposed along Vikas Marg as a part of the Comprehensive Mobility Plan for Chandigarh Urban Complex. The **Vikas Marg** as the major artery of Phase III of the city will serve as a counterpoint to the Madhya and Dakshin Marg (also V2s) development and cater to the Southern Sectors of the city.
- **The potential of Vikas Marg lies in the fact that this is the only major area left within the sectoral grid for further development.**



7.3.7 NEIGHBOURHOOD SHOPPING CENTRES

The shopping centres intended to meet the daily requirements of the residents are located along V4 roads and are within a maximum of 10 minutes walking distance from all residential houses of the sector. The linear shopping arcades though similar in concept and architectural expression vary in size and detailed planning in relation to the overall sector plan. The table showing the details of Neighborhood shopping/sectors is at **ANNEXURE C-2**.



SECTOR-19, First Phase Sector – Linear shopping along V4

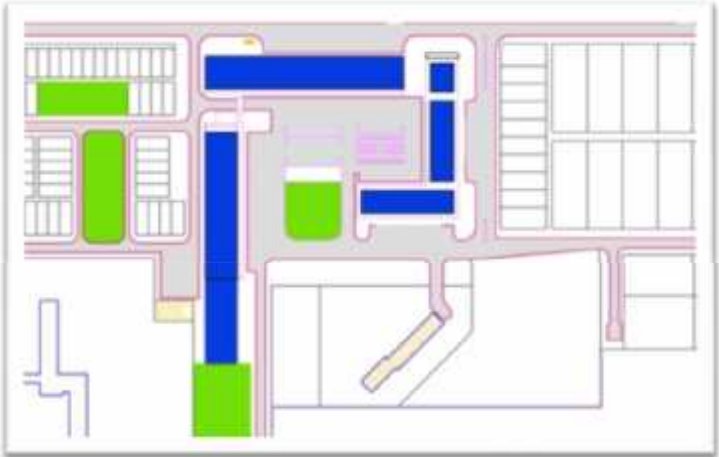
As compared to the neighborhood shopping centres of the northern Phase I, the shopping centres of the southern sectors are planned over larger areas have more foreground and parking spaces and have also been better planned in the context of the adjoining residential areas. The commercial blocks have greater interse distance and perpendicular orientation enabling better living environs to minimise disturbance.



SECTOR-37 –SECOND PHASE SECTORS WITH LARGE PLOTS AND GREATER SETBACK

NEIGHBORHOOD SHOPPING CENTRE, SECTOR 8

The neighbourhood Shopping Centre Sector 8 which is based on Albert Mayers concept and has an introvert plan with rear of shops towards the main approach road is an exception to the general concept. The cluster planning, provision of green open spaces provides better opportunities for enriched shopping experience and for social interaction as compared to other V4 Shopping Centres.



SECTOR-8 -- INTROVERT CLUSTER PLANNING



SECTOR 8 NEIGHBOURHOOD SHOPPING CENTRE



7.3.7.1 ISSUES RELATED TO NEIGHBORHOOD SHOPPING CENTERS:

- **Extensive spread of commercial activity onto upper floors**
The commercial buildings planned on the principle of mixed landuse as Shop Cum Flats (SCFs) have undergone conversion to Shop Cum Offices (SCOs) due pressure of development .
- **Unsafe and poor access to upper floors of commercial buildings**
Conversion from SCFs to SCOs permitted by Chandigarh Administrations mandates entry to upper floors from the front corridor, however the same has been violated. The rear entry to the upper floors generates vehicular movement and parking of vehicles much to the inconvenience of the adjoining residential areas. The staircases designed for residential use also do not comply to the norms for public buildings and are thus unsafe from fire safety point of view. Despite this however a large number of coaching centres etc having large public footfalls operate from these centres which is a matter of concern .
- **Demand of additional covered area**
Although the Chandigarh Administration has facilitated commercial activity in the neighbourhood shopping centres by allowing conversion from SCFs to SCOs , allowed flexibility in internal planning , permitted additional coverage of courtyards, there is however consistent demand from the traders of the first phase sectors for allowing additional covered area on the pattern of “Box Type Structures “ of the second phase.
- **Deterioration in the architectural character of the buildings**
The orderly facades with regulated skylines, footprints and architectural expressions ensured through architectural controls have gradually started displaying signs of urban decay mainly due to gross misuse, poor upkeep and ever increasing demand for commercial space. There is defacement of building materials /external façade /skyline and poor maintenance and weathering of materials.

- **Absence of space for pedestrian movement and community interactive spaces - parking shortfalls**
The shopping centres were planned within walking distance of the residents of the sectors, however due to high usage of personalized modes of vehicles, large inter sectoral vehicular footfall, the areas earmarked for the pedestrians are gradually being diverted for road widening and carving out additional parking space, leaving no space for comfortable walking /community interaction. The problem of parking however persists due to increase in vehicular population.
- **Lack of adequate fire safety safeguards**
Most of the shopping centres lack adequate fire safety safeguards/lanes for fire tender movement since earmarked spaces encroached by vehicles.
- **Absence of demarcated space for street vendors and hawkers resulting in vendors within parking areas/corridors etc .**



Haphazard parking of cars blocking pedestrian pathway and create nuisance in markets



The linear shopping centers of the first phase where the problem of parking especially during evening hours which results in spill over of cars on roadsides blocking entry to the residential houses



Excessive noise pollution created by commercial activities in neighborhoods



7.3.8 CONVENIENT SHOPPING

Convenient shopping centres as cluster of 10 to 15 shops have been provided at sub sector level in Phase II and Phase III sectors of the city which have been planned for higher density as compared to sectors of the first phase where this facility was not provided. This category is the lowest in the hierarchy of commercial centres. These centres are poorly maintained and monitored .



BOOTH MARKET, SECTOR 19

BAY SHOPS, SECTOR 22

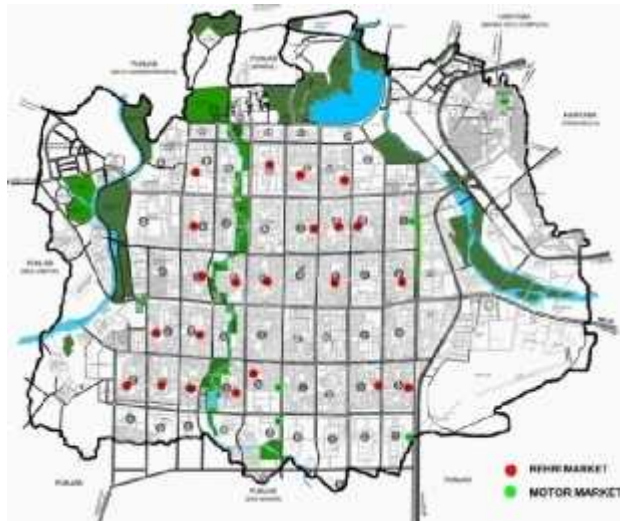


7.3.9 SPECIALISED SHOPPING

The specialized commercial markets are : Auto Repair Markets in Sector 28, West of Sector 38, Sector 48 and as part of the commercial belts in sectors 43 and 52 along Himalaya Marg, Furniture Market Sector 34, Meat Market Sector 41 .

7.3.9.1 AUTO REPAIR MARKETS

- These markets are a latter addition to the commercial stock of the city.
- With the growth of vehicles in the city and in the absence of adequate provision for service shops, neighborhood shopping of some sectors - Sector 21 have been converted to auto repair markets which caused problems of air, noise pollution in the residential areas.
- To address the problem, the Chandigarh Administration subsequently relocated the repair shops to the four corners of the city i.e. Sector 28, West of Sector 38, Sector 48 and as part of the commercial belts in sectors 43 and 52 along Himalaya Marg.



PLAN 6 : EXISTING REHRI AND AUTO REPAIR MARKETS IN THE CITY

7.3.9.1.1 PROBLEMS AND ISSUES

- Large number of **condemned vehicles** are parked in open spaces
- Storage of **flammable material** in basements and showrooms



SECTOR 28 - AUTO REPAIR MARKET INCOMPATIBLE LAND USE WITHIN NEIGHBORHOOD
 POLLUTED AND UPSWEPT STREETS CAUSED BY ROADSIDE WORKERS

Recommendations - Auto Repair Markets

- Policy for ban on parking of condemned vehicles in markets
- Maintenance of public utilities, general upkeep and cleanliness
- Storage/hoarding of inflammable material in basements provision of visitor retiring area

Relocation of Auto Repair Market Sector 28 to Industrial Area Phase II

The Auto Repair Market, Sector 28 is located within the neighbourhood shopping centre of the sector. Though at the extreme end of the sectoral grid, the activity carried out is incompatible with the residential sector due to the air and noise pollution as well as the large inflow and outflow of vehicles throughout the day. It is thus recommended to shift the Auto Market to the Industrial Area, Phase II where there is availability of vacant land.



7.3.9.2 Motor Market and Commercial Complex , Manimajra

Notified Area Committee Manimajra framed a scheme Motor Market and Commercial Complex for allotment of plots to the motor mechanics and repair workers etc. operating on the Old Ropar Road in Manimajra was framed. Approximately half of the land was utilized for planning commercial sites viz. Shop Cum Flats (SCFs) and booths. The schemes has since been executed.

The market located in close vicinity of Chandigarh Kalka Highway and the neighbouring towns serves not only Chandigarh but has emerged as a regional level market .



DETAIL OF AREA :-





Motor Market Manimajra



The problems of Motor Market, Manimajra

The pictures speak volumes on

- Poor state of affairs /lack of management, Maintenance
- Poor amenities and Infrastructure
- Lack of enforcement
- Spill over of activity on roads

RECOMMENDATION

There is need for upgradation of the infrastructure / amenities and proper maintenance / management and enforcement of norms .





7.3.10 Informal commercial sector

7.3.10.1 DAY MARKETS AND MANDIS

The original planners of the city had not foreseen the informal commercial activity which goes alongside the formal shopping areas. Though the plan of the neighborhoods provided for booths, even the same were beyond the reach of the ordinary trader. In the absence of the same, cobblers, barbers, tea stall; bicycle repair vendors etc, challi-walla (corn cob seller), blacksmith have had to fend for themselves in the makeshift arrangements through innovations. The number of rehri might have been much larger but for the in situ up gradation by the Chandigarh Administration which provided nearly three thousand mini-booths / permanent structures in the form of “Rehri markets” across the city.

A scheme namely - **Allotment/Transfer of Built Up Booths in Chandigarh Scheme, 1993** was extended to sectors 7, 8, 9, 11, 15, 18, 19, 20, 22, 24, 27, 29 of phase-I& sectors 37, 38, 40, 41, 42, 46 & 47 of Phase II. These multilevel kiosk markets tend to cater to the needs of the middle/lower middle classes and called **Palika Markets** in popular Jargon.

Rehri markets though catering to the needs of a large chunk of the city’s population are a sore point as far as the city’s architectural character is concerned. This informal retail segment defies architectural order, is a big drain on public infrastructure such as roads parking and sanitation services and breeds general congestion and disorder.

Some of the issues are **lack of fire safety arrangements, violation of the orderly architectural facades, illegal construction and violations/additions spoiling the uniform street picture and a general tendency of spill-over of merchandise on public corridors/pavements.**

Violation of the orderly architectural facades



SECTOR – 19
PALIKA BAZAAR

SECTOR – 20
PALACE BAZAAR



SECTOR – 24
GANESH MARKET

SECTOR – 27
JANTA MARKET



VACANT BOOTHS IN VARIOUS MARKETS

Of a total of 3413 booths constructed in the city a total of 515 booths i.e. 30% are lying vacant in various sectors. But for Sector 19-C, Palika Bazars, Sector 20-D, Sector 26 in which all booths have been allotted, rest of the sectors have large number of vacant/unallotted booths. The markets which have the maximum number of vacant booths are Sectors 39 West where all the 118 booths constructed are vacant, in Sector 38, out of 132 booths constructed 72 booths are vacant and in Sector 42, all 40 booths are vacant. (Refer plan constructed/vacant booths)



PLAN 8 - VACANT BOOTHS IN VARIOUS MARKETS





7.3.10.2 ROAD SIDE WORKERS

- Despite substantial provisions made for the informal sector by the Chandigarh Administration, there are a large number of road side workers in the city.
- The surveys conducted by Municipal Corporation to ascertain the number of roadside workers indicate that the number of road side workers has increased manifold over the years.



7.3.11 WEEKLY MANDIS

10 Weekly Mandis in various sectors of Chandigarh are organized by Punjab Mandi Board on specific days of the week and from specified locations .



PLAN 9 : PLAN SHOWING DISTRIBUTION OF ROAD SIDE WORKERS



7.4 COMMERCIAL AREA ADDED DUE TO CONVERSION OF LANDUSE IN INDUSTRIAL AREA PHASE I & II

CONVERSION OF LAND USE FROM INDUSTRIAL TO COMMERCIAL

In July 2005, Chandigarh Administration announced a scheme for Conversion of Landuse in the Industrial Area Phase-I & II from Industrial to Commercial with the objective of revitalizing the area.

The permitted commercial activities included malls, shops, offices, banks, hotels, restaurants, training institutions etc. Plots with a minimum size of 2 kanals were eligible to seek conversion.

Out of 348 eligible plots above 2 kanals, 82 plots were permitted conversion of landuse. Besides being permitted an increase in the FAR from 1.0 to 2.0, the building height upto 30m as compared to the 18.29m was also allowed.

The policy was however discontinued from 18-09-2008.

Through this policy 659397 sq. meter area of new commercial area will eventually be added to the city . The conversion policy added an additional area of 394320 sq. yds (3548880 sq ft) in 82 converted plots in the industrial area.

70% converted plots opted for hotels / commercial office space for business as such 9 new hotels have come up in the industrial area .

Though the conversion policy has led to a building boom in the Phase I & II of the Industrial Area with shopping malls, commercial complexes, five star hotels and multiplexes being built, it has also generated many problems.

SHOPPING MALL



PARKING WOES IN THE INDUSTRIAL AREA

9 NEW HOTELS HAVE COME UP IN THE INDUSTRIAL AREA, PHASE I & II





There is also an unhealthy mix of high end commercial activity with heavy freight generating activity.

The policy has brought high concentration of commercial activity in certain pockets of Phase-I of the Industrial Area where the project like the Centra Mall, City Emporio, Godrej, L&T, Acropolis etc. are coming up.

The concentration of commercial development can be gauged from the project of Larsen and Toubro site of 21 acres which shall have approximately 17.5 lac sq. ft. as retail mall, office and hotel complex compared to a total of 13.18 lac sq ft approximately of commercial area of the City Centre, Sector 17.

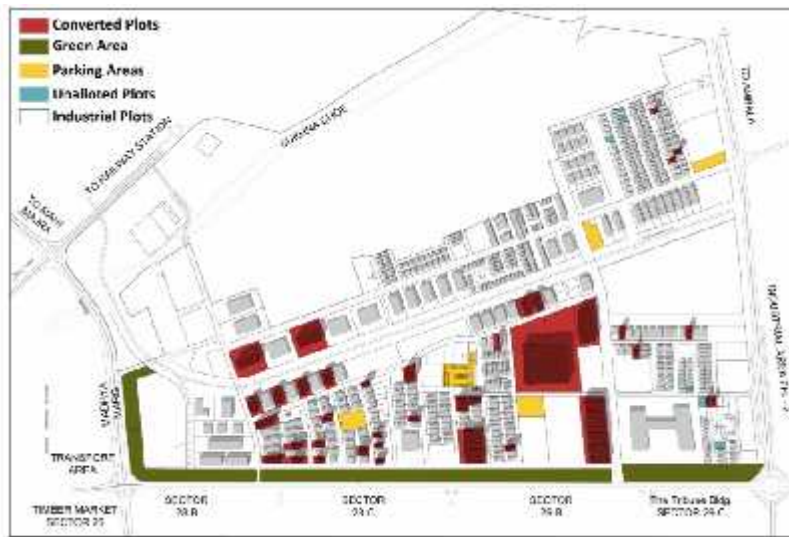
Though the new construction is coming up with state of the art facilities and physical infrastructure and with parking provisions as per norms, however there would **need to gear up the external services proportionately – approach roads to cope with the pressure of increased volume of traffic, water supply, electricity and power supply. Building designs shall also ensure self sustainability.**



Sketch :Department of Urban Planning, Chandigarh Administration

Disproportionately high rise structures coming up which have adversely impacted the well planned and organized urban design of the city.

PLAN 10



PLAN OF INDUSTRIAL AREA PHASE – I SHOWING PLOTS ALLOWED CONVERSION



PLAN OF INDUSTRIAL AREA PHASE - II SHOWING PLOTS WITHOUT CONVERSION



UPCOMING PROJECTS DUE TO CONVERSION OF LAND USE FROM INDUSTRIAL TO COMMERCIAL IN INDUSTRIAL AREA PHASE I & II



3D VIEWS OF SOME OF PROJECTS COMING UP IN THE INDUSTRIAL AREA



**TABLE 1 - PRESENT STATUS OF DEVELOPMENT OF COMMERCIAL CENTRES AND AREAS FOR FUTURE DEVELOPMENT****DETAIL OF COMMERCIAL AREA :**

S.no.	Category of Commercial area		Area of Phases (Area in Acres and Sq. kmts)	Total Commercial Area Planned (Acres)	Status	
PHASE – I AND II SECTORS : (Sector – 1 to 47)			14659.32 Acres (59.34 sq. km)			Yet to be developed (Area in Acs.)
1.	Wholesale Market			47.00	47.00	-
2.	City Centres			544.00		
	a.	Sector - 17	282.00		282.00	-
	b.	Sector - 34	116.00		62.00	54.00
	c.	Sector - 43	146.00		43.33	102.67
3.	Commercial belts along major roads			225.03		
	a.	Madhya Marg	43.00 Acs		43.00	-
	b.	Dakshin Marg	28.66 Acs		24.63	4.03
	c.	Vikas Marg	110.37 Acs			110.37
	d.	Udyog Path	9.87 Acs		9.87	-
	e.	Himalaya Marg	33.13 Acs		33.13	-
4.	Neighbourhood shopping – V4 shopping			238.22	238.22	-
	Total			1054.25 Acres.	783.18	271.07
PHASE – III SECTORS : (Sector – 48 to 56, 61 and 63)			1870.58 Acres (7.57 Sq. km)			
1.	Commercial belt along Major roads			125.19		
	a.	Vikas Marg	121.03 Acs.		Nil	121.03
	b.	Himalaya Marg	4.16 Acs.		Nil	4.16
2.	Neighbourhood shopping – V4 Shopping			35.03	Nil	35.03
3.	Motor Market, Sector - 48			4.43	4.43	-
	Total			164.65 Acres.	4.43	160.22
	Grand Total		16529.90 (66.91 Sq. km)	1218.90 Acres.	787.41	431.29



Commercial area outside the original sectoral grid:		Area in Acres	STATUS
1.	Motor Market Sector 38W	35.03	Developed
2.	Second Grain Market, Sector 39W	74.55	Partially Developed
3.	Modern Terminal Market, West of Sector 56W	42.00	Dropped

City level commercial areas proposed for development

The city level commercial areas which are proposed to be developed by 2031 include areas which are already earmarked but have yet to be developed as well a few additional areas. The details of city level commercial centers is as under:

S.no.	Category of Commercial area	Area in Acres
1.	Part of Sector – 34, Sub City Centre	54.00
2.	Part of Sector – 43, Sub City Centre	102.67
3.	Commercial belt IN Sector – 21 along Dakshin Marg	4.03
3.	Commercial belt along Vikas Marg - Both sides (110.37 North side + 121.03 South side)	231.40
4.	Commercial belt along Himalaya Marg – Sector 52	4.16
5.	Pocket no – 6 (West of Sector – 38W)	44.40
6.	Pocket no. – 13 – (Ware Housing along village Daria)	97.06
7.	Warehousing, Sector – 56W	10.80
		548.52

MANIMAJRA 855.00 Acres(3.46 sq. km)		
1.	Commercial area within NAC limits and Outside of NAC Limits	123.00

Note: The mentioned commercial area includes the area of existing parking lots of the respective markets.

**TABLE 2: EXISTING CITY LEVEL COMMERCIAL AREAS**

Location	Sector	Number of Shops				Total
		SCO/SCF	Booths/ Shops	Dhaba /Eating Joints	Scooter Repair	
City Centre	17	525	91			616
Sub City Centre	34	396	45			441
Madhya Marg	7	60	-	-	-	60
	8	106	-	-	-	106
	9	131	23	-	-	154
	26	62	-	-	-	62
Dakshin Marg	22	65	12	-	-	77
	31	78	-	2	-	80
Himalaya Marg	22	116	36	-	-	152
	35B	80	12	4	-	96
	35C	100	14	4	-	118
	43	72	16	-	82	170
Udyog Path	22	110	7	-	-	117
Cloth Market	20	76	3	-	-	79
Manimajra (Madhya Marg)	-	91	102	-	-	193
					TOTAL CITY LEVEL SHOPS=	2521

Source – Record available in the Department of Urban Planning, U.T., Chandigarh.



7.4.1 ANALYSIS OF CITY LEVEL SHOPPING (AS PER UDPFI GUIDELINES)

Detailed stock taking of the already developed/ earmarked commercial areas in the city both within the sectoral grid as well as outside the sectoral grid in Manimajra and the commercial areas which are likely to emerge as a result of the already approved plots under the conversion policy are developed in the industrial areas has been undertaken and evaluated with respect to the UDPFI guidelines. The details are as under:

7.4.1.1 CITY LEVEL COMMERCIAL AREAS (REFER ANNEXURE C2)

- * Shops required for projected population of 16 lakh (1 for 300 persons) 5333
- Number of existing shops in City Centre 17, (Sub City Centre Sector 34, Madhya Marg, Himalaya Marg, Udyog Path, Dakshin Marg, Cloth Market, Sector 20 Manimajra) 2521
- Available area under commercial (conversion from industrial area) 659397 sqm
2197 shops assuming area of one shop as 300 sqm)
- Available area under commercial (Sub City Centre 34 to be developed) 220642 sqm
735 shops) .

Total number of available city level shops /areas

- Number of available city level shops = 2521 + 2197 + 735 = 5453 (surplus shops = 120)

The Analysis

The analysis indicates that with the existing commercial establishments and commercial area being generated through the 2005 conversion policy, the city is well equipped to meet the City level commercial requirements upto the target year 2031. It is pertinent to mention that the undeveloped commercial areas of the sub city centres sectors 34 & 43 /belts along Vikas Marg and in Manimajra along Madhya Marg have not been taken into account and only the developed areas have been counted .



TABLE 3 : ADEQUACY OF ACTIVITIES IN THE CITY CENTRE/SUB CITY CENTRES AS PER UDPFI NORMS

Activities	Sector 17	Sector 34
Shopping (retail service, repair)	Yes	Yes
Limited wholesale	Yes	Yes
Informal shopping	Yes	Yes
Commercial offices	Yes	Yes
Cinema	Yes	Yes
Hotel	Yes	Proposed
Guest House	Yes	Private
Nursing Home	Yes	Yes
Service Industries	Yes	Yes
Auditorium	No	Yes
Museum	Yes	No
Library	Yes	Yes
Science Centres, Art/ Craft/ Music/ Dance school	No	Yes
Weekly Markets(on close day)	Yes	Yes
Local Govt. Offices	Yes	Yes
Bus Terminal	Yes	No
Fire Station	Yes	Yes
Police	Yes	Yes
Telephone Exchange	Yes	Yes
Electric Sub-station	Yes	Yes
Post and Telegraph	Yes	No
Petrol Pump	Yes	Yes
Conveniences	Yes	Yes
Residential	Yes	Yes

The **Table** indicates that both City Centre Sector 17 and Sub City Centre, Sector 34 are well equipped with the facilities stipulated in the UDPFI guidelines. However, Sector 17 is found wanting in Science Centers, Art/Craft/Music/Dance School. In Sector 34, there is no provision for a post and telegraph office and bus stand. These facilities shall be provided during the revitalization proposed for the City Centres.

ADEQUACY OF NEIGHBOURHOOD SHOPPING CENTRES

Sector wise analysis of the adequacy of commercial centres for the projected population of the sector uptill the target year 2031 of the Chandigarh Master Plan has been carried out.

The analysis indicates that but for four sectors i.e. sectors 10, 21, 29 & 30, the markets carved out at neighbourhood level at initial stage are adequate upto 2031. However, since commercial area has spread to upper floors of the shops, it is recommended that there shall be no requirement of additional shops in these sectors as well.

The planning of neighbourhood shopping centres of the Phase III sectors 49 to 54 is yet to be done, whereas the neighbourhood centre of Sector 55 & 56 fall in Mohali.

Note:

Neighbourhood shopping includes the shopping on V-4 roads of sector 7 to 11, 15, 16, 18 to 25, 27 to 47

- It does not include the convenient shopping areas.
- The area of commercial centres includes the area of existing parking lots of the respective markets.



7.4.2 PROPOSALS OF THE CHANDIGARH MASTER PLAN 2031

Commercial areas in Chandigarh **need to keep pace with the emerging changes in the economic fabric and the future retailing trends and must be seen in the regional context.**

With purchasing power of the citizens of the city moving upwards, more and more spending is likely to be witnessed in the coming decades where premium and quality brands are likely to be in demand. The city is undergoing a gradual transformation towards a different night life duly supported by shopping, leisure and entertainment. **Emerging changes in socio economic fabric** are likely to impact urban fabric. There is demand for outdoor eating, entertainment and shopping is gaining popularity, city fabric is likely to undergo changes.

The future planning of the city has to acknowledge these ongoing transformations and effectively respond to the changes. The most affected areas in this context are going to be the major commercial centres in the city.

Apprehensions have been expressed in certain circles that in the days to come, online shopping trends will pickup and the demand for retail space may actually come down. However, no substantial evidence of the same is available so far which may impact future planning.

There is also scope for making provisions for the informal retail and vendors which cater to a large chunk of the city's masses.

7.4.2.1 GENERAL PROPOSALS FOR ALL SHOPPING CENTRES IN THE CITY

INTRODUCING NEW PLANNING CONCEPTS OF SHOPPING CENTRES IN THE COMMERCIAL AREAS YET TO BE DEVELOPED

Concept of large floor plates to enable greater flexibility of space within the built environment, make provision for underground parking, provide integrated and state of the art services, adoption of new planning concepts in shopping centres yet to be developed is recommended.

The planning and execution should be undertaken for the entire shopping centre and thereafter space rented /leased out on the pattern of shopping malls.



- Large floor plates offering flexibility of interior design in place of the present system of Shop Cum Offices /Shop - cum-Flats
- Integrated services
- Creating community interactive spaces on surface by utilizing subterranean area for parking infrastructure
- The concept of large floor plates, integrated services with adequate parking and pedestrian facilities should be taken as one of the solutions for developing the shopping centers. The Administration should however be free to take a call at the time of development of these pockets.

URBAN RENEWAL AND STREETSCAPING proposal of each existing shopping centre is recommended after detailed stocktaking of the availability and condition of infrastructure - pedestrian footpaths, public conveniences, toilets, drinking water, space of rickshaw stand and auto rickshaw stand, street lights, dustbins, signages, space for street vendors, parking, lighting etc.



REVIEW OF ARCHITECTURAL CONTROLS TO HOLISTICALLY ADDRESS GENUINE MODERN DAY business requirements while keeping into consideration the recommendations of the Expert Committee w.r.t heritage preservation and heritage regulations shall be gradually undertaken. The changes if any should be uniform throughout the commercial centre to maintain the order of the city. The overall architectural character shall be maintained and shall be subject to the approval of the Chandigarh Heritage Conservation Committee.

- **No increase in FAR & COVERAGE shall be allowed to commercial establishments** since this will put additional pressure on the infrastructure and raise demand for augmenting parking spaces.
- **BOX TYPE STRUCTURES** shall not be allowed to existing commercial establishments of the first phase sectors.

ENSURE SAFE AND PROPER ACCESS TO UPPER FLOORS OF COMMERCIAL BUILDINGS.

FIRE SAFETY

Many public buildings of the city including the shopping centres designed by the original team of architects in the early years of the city's growth do not meet the requirement of the Fire Safety Act which came into force much later. Some of the mandates, such as provision of the setbacks around buildings are hard to be met today in the nearly fully developed areas.

In order to adequately address the requirements of fire safety, it is recommended that innovative solutions utilizing modern technology and equipment to advantage should be utilized and workable and practical solutions worked out in consultation with the Fire Department of the Chandigarh Administration. International best practices should also be studied to get feedback for solutions. Delineation and enforcement of fire zone around shopping centers to facilitate fire tender movement, water hydrants, and underground tanks shall be undertaken.

All existing and proposed shopping centers must provide **Fire safety safeguards** and all public safety measures such as CCTV footage and must conform to Energy Efficiency Guidelines.

BARRIER FREE ENVIRONMENT

All the shopping centers in the city shall provide barrier free environment to the differently abled in conformity with the building rules.

PROVISION OF PARKING AREAS

Multi storied or underground parking shall be constructed in existing markets wherever feasible and use of existing underground parking shall be mandated for long term parking. All new shopping centers shall be planned with provision of basements and underground parking spaces to be achieved by undertaking holistic planning and implementation of the centres.

INVIGORATING THE SECTOR WITH INCIDENTAL SHOPPING, earmarked street vending zones, food courts and amphitheatres Integrating the sector in the heritage circuit linking heritage buildings /heritage zones in sectors 9, 22, and Sector 16 Rose Garden. Reserved pockets on the northern end adjoining Madhya Marg shall be planned with modern state of the art buildings which will help make a strong urban design statement demonstrative of the architectural vocabulary of the city. One of the building is recommended for Paryatan Bhawan. The City Centre shall be directly connected to the metro node to meet the requirements of parking.

The above proposals are in sync with the overall recommendations of the Expert Heritage Committee.

DETAILED PROPOSAL FOR CLEANING UP THE FACADES by motivating the shopkeepers /owners of the properties is on the anvil.

There are also proposals to curb building violations through vigilant enforcement efforts.

The external facades of all the shopping centres are very poorly maintained which lend a poor image of the city .



MAINTENANCE BYELAWS

Since the neighbourhood shopping centres fall along the curvilinear V4 roads which provide maximum visibility of the built environment, therefore it is strongly recommended that norms for regular maintenance should be mandated and incorporated in the Building Rules under the head of **Maintenance byelaws**.

7.4.2.2 ADDRESS THE PROBLEM OF UNBRIDLED ADVERTISEMENT HOARDINGS AND BANNERS WHICH MAR THE AESTHETIC APPEAL OF THE ARCHITECTURAL CONTROL

Signage is taking over the frontage of commercial buildings without any regard to the architectural control designs. While the need for additional signage's may be justified and advantageous to the shopkeepers due to spread of commercial establishments onto the upper floor of buildings, however the location, alignment of the signs should be strictly regulated due to the visual pollution that is caused.

The Advertisement Control Order is recommended for review to enable adoption of the latest technological advancements rather than adhering to the non – glow painted signages presently permitted. This is important in today's context since the city is no longer the sleepy town of erstwhile era and has picked up a late night outdoor lifestyle and necessitate that the advertisements should be visible at that time.

7.4.3 IMPACT OF THE MASS RAPID TRANSPORT SYSTEM ON THE COMMERCIAL CENTRES OF THE CITY

Better connectivity to the commercial centres

All the high order city level commercial centres of the city - the City Centre, the Sub City Centres sectors 34 and 43, the Wholesale Grain, Fruit and Vegetable Market Sector 26, the commercial belts and the Industrial Area, Phase I & II which is transforming into a major Commercial and Business Hub are located along the major circulation arteries of the city which enable easy connectivity to the residents of the city and the region. The connectivity to these areas shall be further improved through the proposed Mass Rapid Transport system. All the above mentioned centres shall be linked with the metro in the first phase of the metro project itself which is likely to be commissioned by 2018.

Of these centres, the City Centre shall have the maximum advantage being served by both the North South and the East West Corridors of the first phase whereas the other centres shall have access from one of the corridors. In the Phase II of the metro project, the Sub City Centre Sector 43, the institutional /commercial belt along Vikas Marg and the Industrial Area will be enjoy additional linkages through the metro corridors proposed along Vikas Marg and Purv Marg.

BETTER CONNECTIVITY AMONGST THE COMMERCIAL CENTRES WITHIN THE CITY

Not only will each commercial centre have better connectivity, the metro will also improve connectivity amongst the various commercial centres. This will also greatly facilitate the residents who will benefit from the multifarious choices and options of shopping / recreational and leisure which these centres shall provide. The enhanced footfall shall thus benefit the commercial enterprises as well.



BETTER CONNECTIVITY WITH THE SHOPPING CENTRES OF THE NEIGHBORING towns Since the metro extends into the towns of Mohali and Panchkula, the city centres of the neighbouring towns will also be interconnected which will further widen the choices for shopping and fun. This is an important aspect since these travel corridors will also set in motion developmental pressures. It is pertinent to mention that Mohali is being planned as a Commercial Business District of the GMADA region. A competitive spirit among the commercial centres is thus likely to be generated which will result in further developmental pressures /with each commercial enterprise trying to keep pace .





7.4.3.1 PROPOSALS FOR CITY CENTRE, SECTOR 17

The City Centre is slated for Heritage Grade I status as per the recommendations of the Expert Heritage Committee. As such the proposals for the City Centre are aimed at reinforcing the original concept /and ensuring that all interventions are made sensitively giving due respect to the intended overall ambience and the architectural character of the largest public space in the city.

- **COMPLETION OF THE CITY CENTRE AS PER ORIGINAL PLAN**
Activating the northern end of the City Centre and the plaza in front of the State Library Building as the Main Chowk of activity. At present the entire focus of the City Centre is towards the Neelam Plaza. In keeping with the original concept, the Main Chowk to be activated. This shall be achieved by.
- **Pedestrian connectivity** from the intended promenades along both the axis to be strengthened by proper connectivity. Physical impediments to pedestrian movement (eg the Sehaj Safai Kendra constructed in the promenade from across the Himalaya Marg towards Sector 18 side) need to be removed and the pedestrian walkways clearly defined and area properly landscaped.
- The **pedestrian connectivity from the adjoining sectors** is to be improved through the underpasses across V3s in all four directions.
- **Organised pedestrian movement between the metro nodes** and the city centre. The city centre shall have pedestrian footfalls from the metro interchange point being planned at the Matka Chowk as well as the metro node near the existing Football Ground. The pedestrian pathways and movement to be synchronized.
- **Adequate provision for long term and short term parking** /feeder services /park and ride concept bicycle sharing facilities shall be made at the metro nodes.

- **The City Centre is proposed to be integrated into with the Green Corridor**
 The City Centre shall thus be seamlessly connected with Sector 9 and 22 on the North and the South of the sector.
The City Centre shall also form part of the Chandigarh Heritage Circuit.
- **The construction of the second vehicular bridge on the Jagat – KC road has been initiated .**
 This would help pedestrianise the area connecting major cinemas like KC cinema, Anand Cinema, Jagat Cinema and reactivating the State Library Plaza again. The Chandigarh Administration has already initiated the landscaping of the Chowk.





Sketch :Department of Urban Planning ,Chandigarh Administration

The main chowk is to be further invigorated with outdoor food courts and amphitheatres.



- **WEEDING OUT THE GOVERNMENT OFFICES** especially those which operate from the ground floor of SCOs shall be prioritized in the northern part of the sector and commercial activity promoted in vacated SCOs. This will help decongest the plaza area of the spillover activity of government offices. The Town Hall too can be considered for total /partial dislocation to the southern end of the sector which is also recommended for revitalization.

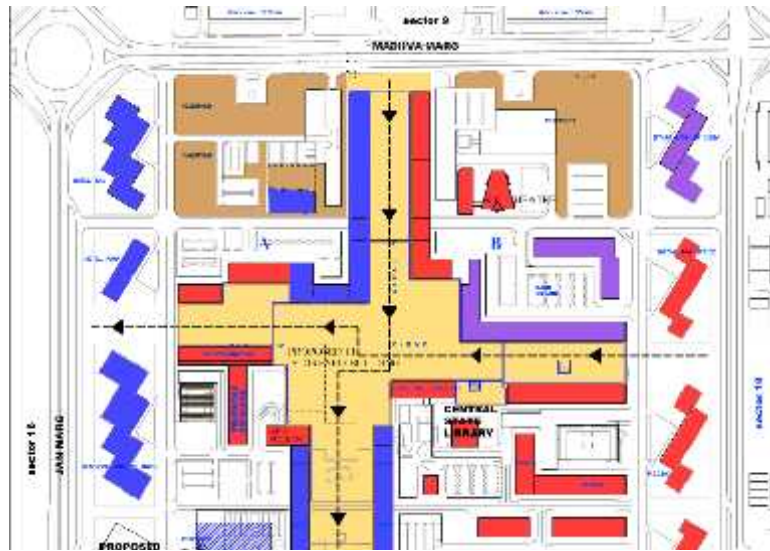


- **DEVELOPMENT OF THE TWO “RESERVED “POCKETS** on the northern end adjoining Madhya Marg which were planned to be taken up *when the time was ripe* are proposed to be cohesively designed as a strong urban design statement showcasing Chandigarh as a Tourism /Modern Heritage Destination and simultaneously define the entry to the revitalized city centre. The city’s Tourist Information Centre, the Paryatan Bhawan and a Habitat Centre are proposed to be housed in the area.

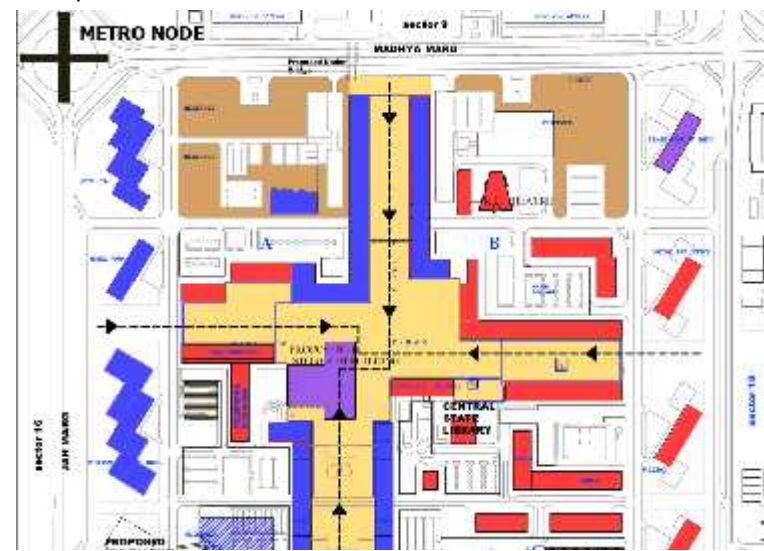


PLAN 12 : PRESENT STATUS AND FUTURE LAYOUT PLAN OF SECTOR- 17

Present status



Future plan

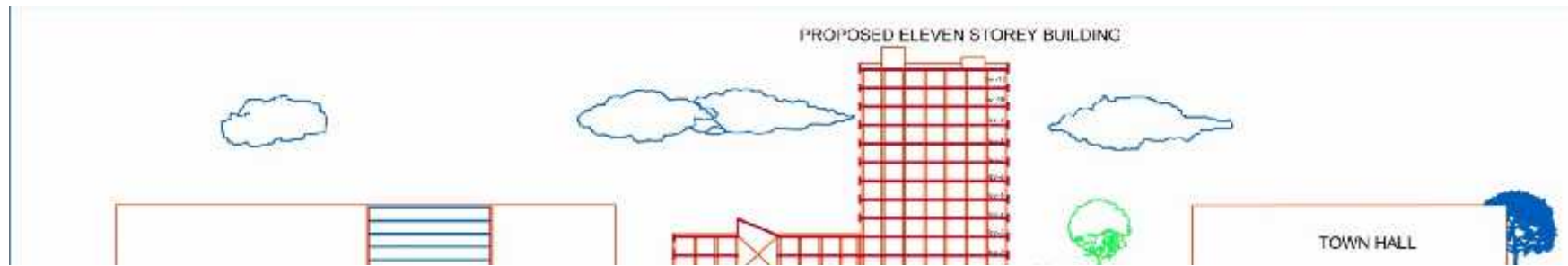




7.4..3.2 CONSTRUCTION OF THE 11 STOREYED BUILDING

(cultural hub)

- Construction of the 11 storeyed building will act as a trigger to reactivate the State Library Piazza with various cultural and commercial activities like banking and working place for offices being integrated and further connected to underground parking through a sub way shown in site plan (below).
- However before undertaking this project, a detailed and thorough study of proper automobile access and exit as well as parking space should be studied.
- Detailed heritage regulations shall specify the nature and extent of interventions that are to be permitted. The approval of Chandigarh Heritage Conservation Committee are to be taken prior to implementation of any new development /reconstruction .





CONCEPTUAL SKETCHES OF URBAN DESIGN IMPACTING OF THE ELEVEN STOREYED TOWER SECTOR 17

SKYLINE OF THE CITY CENTRE WITH ELEVEN STOREYED BUILDING
THE TOWER ACTS AS A LANDMARK AND INVIGORATES THE PLAZA



Conceptual Sketch :Department of Urban Planning ,Chandigarh Administration



Conceptual Sketch :Department of Urban Planning ,Chandigarh Administration

SKYLINE OF SECTOR 17 WITHOUT THE ELEVEN STOREYED BUILDING



7.4.3.3 REDEVELOPMENT OF SPACE USAGE IN SECTOR 17 ALONG JAN MARG

Two Iconic buildings proposed on the two reserve pockets along Madhya Marg shall make a strong entry statement to the City Centre. However these buildings should be sensitively designed in consonance with the special architecture expression of Sector 17 as conceived by Le Corbusier. One of the buildings can be designed as the Paryatan Bhawan due to the close proximity to the proposed major metro interchange node which is expected to witness large visitor footfall on the implementation of the metro .

Metro interchange node proposed at the Matka Chowk

Institutional site (Pocket 12) adjoining Reserve Bank building along Jan Marg

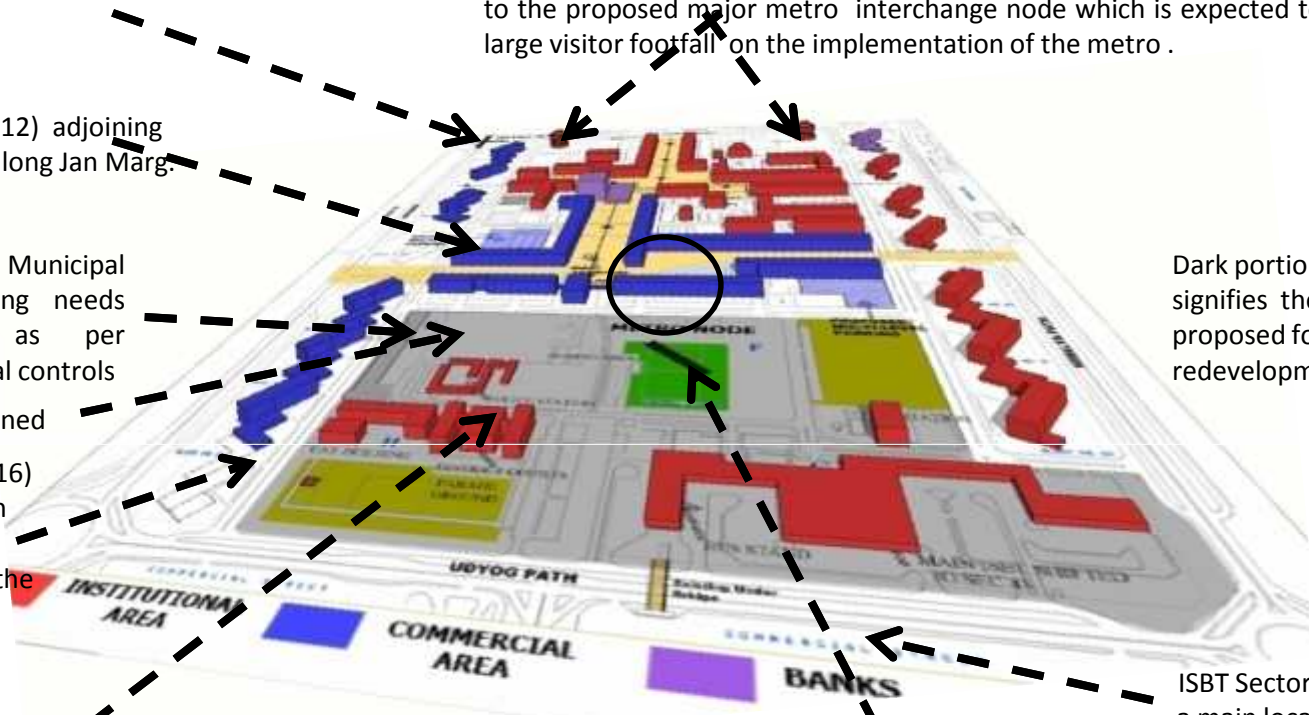
The incomplete Municipal Corporation office building needs to be completed as per standardized architectural controls

Police housing to be retained

Institutional site (Pocket 16) along Jan Marg has been diverted for use as multi storeyed parking within the applicable architectural controls

Dark portion signifies the area proposed for redevelopment

ISBT Sector 17 to be used a main local bus terminus



Revitalisation of Sector-17

Sketch :Department of Urban Planning ,Chandigarh Administration

The operations of District Court have been shifted to the District Courts Complex in Sector 43 adjoining the State Judicial Academy. Optimum utilization of the vacated campus is required. The Hon'ble Building Committee has expressed its desire to utilise the same

The existing Football Stadium is the proposed location of the underground metro station. The proposal should be taken into consideration during revitalisation of the City Centre.



7.4.3.4 CONVERSION OF CINEMA HALLS INTO MULTIPLEXES

Many single screen cinema halls are being converted to multiplexes offering multiple choice of movies, shopping opportunities and food courts. This has been possible through notified scheme 'Conversion of Existing Cinemas to Multiplex Theatres'. The Jagat Theatre has been reconstructed as TDI Mall. The KC Theatre with its curvilinear form has been demolished and is being rebuilt.

The reconstruction of the Neelam Cinema is also in the offing.



NEELAM THEATRE – RESTRUCTURING OF THE THEATRE IS IN THE OFFERING (CONSTRUCTION YET TO BE INITIATED)



THE ORIGINAL KC THEATRE WITH CONCRETE PARABOLIC ROOF



THE PROPOSAL OF RETAINING THE CURVILINEAR ROOF FEATURE BUT WITH OF NEW MATERIALS (CONSTRUCTION YET TO BE INITIATED)



7.4.3.5 FUTURE PLANNING AND MANAGEMENT OF SUB CITY CENTRE SECTOR 34

REDESIGNING THE SUB CITY CENTRE

The issue of making Sector 34 the role model of commercial development in the country has been engaging the attention of the Chandigarh Administration for a considerable time.

A need to redesign the commercial centre has emerged from the fact that though the existing pattern of planning, designing, development, architectural control and built form is generic for day to day commercial activities but still it is not sufficient to position the Sub City Centre as a role model in commercial activities.

Keeping in view the new approach being adopted in the other parts of the country and the world, the sector needs to be redesigned to provide larger sites to attract reputed investors in the area of commerce, entertainment, leisure, shopping etc. A cluster of high rise blocks with large floor plates would be desirable from the urban design point of view.

There is need to review not only the un-built part, but also the already built part, so as to synthesize them in order to create consistency and continuity and an enriched form. There is also need to reorganize and segregate / grade separate vehicular and pedestrian movement. Efforts shall be made to create imageability through a system of murals, sculptures and system of landmarks.

The Chandigarh Administration had earlier through an architectural design competition shortlisted a design for the Sub City Centre. The proposal had recommended the following :

- The Sub City Centre needs to be transformed into a hub for all professionals, business and cultural activities.
- Inclusion of a Habitat Centre as part of the complex would help in creating quality space for reputed corporate and business houses to locate themselves in the area.
- With Chandigarh emerging as destination for numerous countries having people from all walks of life, provision of a Consular Complex would add to the quality of space and would help these countries find a virtual destination in the region.



- Creating a trade center will ensure its positioning as the commercial and business destination both regionally and nationally.
- The attractive positioning due to high degree of centrality and enormous future growth potential.



PROPOSED NEHRU CENTER FOR PERFORMING ARTS AND PLAZA, SUB CITY CENTER SECTOR – 34

EXECUTION OF THE FOCAL BUILDING – NEHRU CENTRE FOR PERFORMING ARTS (NCPA)

The comprehensive planning proposal of the NCPA and its integration with the surrounding plaza and underground parking in the heart of the Sub City Centre, Sector 34 to create more vibrancy and enhanced social and public life.

The Centre comprises of two proscenium theatres of 1360 seats and 250 seats and their ancillary spaces. It also includes food courts, a café library, an experimental theatre & outdoor terrace café and any other suitable activities. The third component of exhibition grounds and hotel sites on the south east has been kept as reserve land for future needs of the changing times.

The planning also integrates the metro on Himalaya Marg and provides pedestrian connectivity.

A theatre street to generate activated street plays, exhibitions and audiences would seamlessly merge into the plaza creating greater opportunity for casual gatherings, chance encounters, recreational activities and a pause point in the hustle bustle of the busy and crowded commercial complex.



PLAN OF NCPA AND PLAZA OF SUB CITY CENTER SECTOR 34



3d views of NCPA





RECOMMENDATION FOR DEVELOPMENT ALONG VIKAS MARG

The Vikas Marg presently undeveloped offers a great opportunity for developing an imageable vocabulary /strong urban design statement at the edge of the planning area of the Corbusian Plan as well as the only large undeveloped area of the city to meet some of the cities growing needs /fill in the gaps of infrastructure.

Since the Sub City Centre, Sector 43 falls along the Vikas Marg, the planning of the undeveloped Vikas Marg and the Sub City Centre, Sector 43 shall be comprehensively addressed so as to synergize the two areas in terms of urban design, circulation, physical infrastructure, distribution of uses etc .

A detailed urban design proposal for the entire 7.2 km long Vikas Marg shall be undertaken which will integrate the existing ISBT Sector 43, the undeveloped sub city centre and the intercepting Leisure Valley on both sides of the road.

At the terminal ends of the belts , Business Districts are proposed in Sector 47 and Sector 56 because of the existing Airport and the Second Fruit, Vegetable and Grain Market, Sector 39.

The Leisure Valley 42 is proposed to be developed as a Green Corridor and a Leisure District with city level parks health clubs, gymnasiums, swimming pools, sports infrastructure and fitness trails etc.

The Central area of the Sub City Centre will be a financial district separated from the Business Districts on both sides with a green/Leisure District.

The Sub City Centre Sector 43 is envisaged as an Interchange 'Node' (ISBT, LBS, and Metro Station).

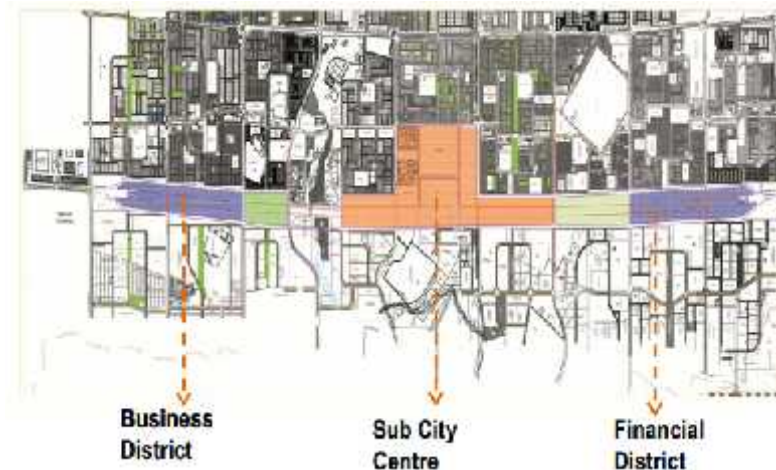
Mixed Use Development to promote all round activity is proposed.

MIXED USE DEVELOPMENT

In order to optimise on the scarce land resource in Chandigarh mixed landuse with commercial and institutional use is proposed with commercial areas on the lower floors of the multistoreyed towers and institutional /residential use above. The proposed development shall thus be a departure from the present proposal which is based on the concept of the Madhya Marg having commercial belt on one side and institutional on the other.

OPEN PLANNING RATHER THAN GATED COMMUNITIES

Another departure from the concept of the Madhya Marg is that in place of plotted development compartmentalized by boundary walls, the planning shall be open with buildings directly opening onto public plaza. The buildings shall be interspersed with greens to maintain the an open and spacious character of the town. The architectural controls to be modulated in keeping with the functional requirements of various land uses while harmonising with Chandigarh's architectural character.





INTERESTING SKYLINE OF UNDULATING BUILDING BLOCKS

An undulating skyline of highrise buildings interspersed with low rise buildings and landscaping is proposed which will integrate the existing bus stand, Sector 43 and the Beant Singh Memorial. The space will seamlessly flow into Leisure Valley wherein the Garden of Palms with the sector lake and the Garden of Springs are being developed in Sector 42 and Sector 53.

The concept shall revolve around self sustaining building blocks rather than SCO enabling greater flexibility of use of internal spaces and experiences. Integrated services, will reduce cost. Energy efficient design. Architecture shall accommodate the latest technology.

Pedestrian promenade shall be created along the stretch which will be activated with open to sky auditoriums, kiosks, fast foodcourts, informal shopping and cultural activity which seamlessly flow into the Leisure Valley.



Comfortable pedestrian linkages to the residential areas on the rear of the street shall be ensured. Eco cabs will ply at podium level to facilitate visitors.

Landscaping, lighting, signages, street furniture to be holistically addressed.

Cross over pedestrian connections across the Vikas Marg to be synchronised with the metro nodes & metro underpasses along the proposed underground metro and the ISBT, Sector 43.

Clear segregation of vehicular and pedestrian movement shall be achieved. The service to the block shall be from the rear of the blocks and not from the main road.

Adequate provision of parking shall be made in multilevel integrated basements to avoid use of valuable land for the purpose.

CONCEPTUAL SKETCH OF VIKAS MARG – PEDESTRIAN PROMENADE SHALL BE CREATED ALONG THE STRETCH WHICH WILL BE ACTIVATED WITH OPEN TO SKY AUDITORIUMS, KIOSKS, FAST FOOD COURTS, INFORMAL SHOPPING AND CULTURAL ACTIVITY WHICH SEAMLESSLY FLOW INTO THE LEISURE VALLEY



Development of Vikas Marg



CONCEPTUAL SKETCH OF VIKAS MARG – STRONG URBAN DESIGN STATEMENT, UNDERGROUND MULTILEVEL COMMUNITY PARKING, UNDERGROUND METRO AND PEDESTRIAN PROMENADES ON EITHER SIDE OF VIKAS MARG

CONCEPTUAL SKETCH OF VIKAS MARG – PEDESTRIAN PROMENADE SEAMLESSLY INTEGRATED WITH THE LEISURE VALLEY AND ADJOINING RESIDENTIAL AREAS OFFERING AREAS FOR LEISURE AND COMMUNITY INTERACTION





7.4.3.6 PROPOSALS FOR NEIGHBORHOOD SHOPPING CENTERS ON V4 STREETS

Sector wise analysis of the adequacy of commercial centres for the projected population of the sector uptill the target year 2031 of the Chandigarh Master Plan. There is no documentation of the norms adopted by the original team for working out the number of shops for each sector. However the previous mode have been evaluated on the basis of UDPFI guidelines being adopted by various sites while preparing the Master Plan. The analysis indicates that but for four sectors i.e sectors 10, 21, 29 & 30 all other sectors are well equipped with respect to 2031 .Since commercial area has spread to upper floors of the shops ,it is recommended that there shall be no requirement of additional shops in these sectors as well.

URBAN RENEWAL OF NEIGHBOURHOOD SHOPPING CENTRE

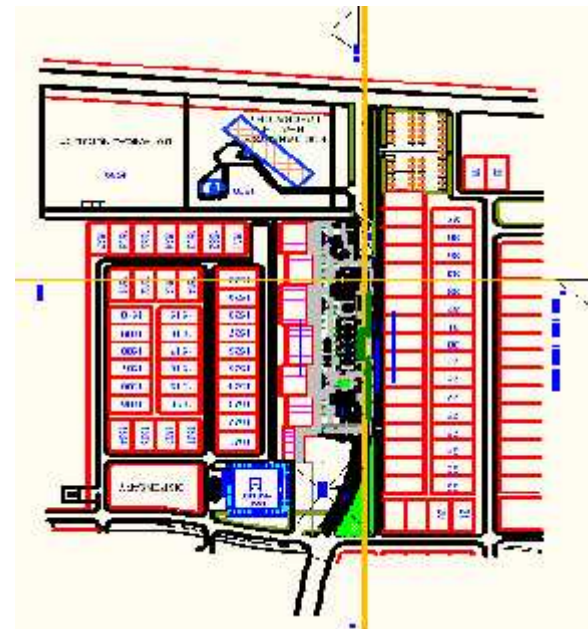
Though major upheavals in the planning of the shopping centers are not anticipated keeping in view the core architectural importance of the blocks, however sensitive planning interventions are proposed to make the shopping centres provide a much more lively and community interactive place and a more fulfilling experience while going about their daily chores .

Accordingly, on a trial basis it is proposed to make the area in front of the shops totally car free/‘no traffic zone’ in one of the sector shopping centers by prohibiting vehicular movement, providing sub grade roads for vehicles and providing underground community parking. The shopping centers would thus be easily accessed by people of all age groups including the physically challenged.

URBAN RENEWAL OF NEIGHBOURHOOD SHOPPING CENTRES

The area now occupied by the road and parking can be integrated with the shopping and provided with street furniture, open-air outdoor sitting along with kiosks for informal shopping and thus making the shopping centers the hub of informal community interaction of the neighborhood. Based on the above vision/objective, the concept is explained through a proposal for Sector 11, V4 Street as below:

- V4 road taken underground dedicated road for houses in front of shopping
- Surface parking in front of shops to be converted into pedestrian plaza
- Informal shops
- Street vendors
- Underground and surface parking on both ends.



PEDESTRIAN FRIENDLY ENVIRONMENT IN SHOPPING CENTRE

Design idea for Sector 11



Conceptual proposal - Revitalized Sector 11 V4 Neighbourhood Shopping Centre



**URBAN RENEWAL OF NEIGHBOURHOOD SHOPPING CENTRES -
DESIGN IDEA FOR SECTOR 11**

Conceptual sketch: Ar. Manmohan Khanna & Associates



THE HIGHLIGHTS OF THE CONCEPT ARE AS UNDER:

- Facilitating community interaction
- Pedestrianization of the shopping centers to make them people friendly
- Organized signages
- Addressing parking needs through provision of community parking
- Integrating the informal sector
- Landscaping
- Energy efficiency in buildings
- Solid waste management
- Fire safety
- Rain water harvesting



7.4.3.7 SECTOR 8 NEIGHBORHOOD SHOPPING CENTRE

The neighborhood shopping centre based on Albert Mayer's plan is a departure from the linear bazaars abutting V4 roads. The existing layout offers great opportunities to the residents for an enriched shopping experience, greater social interaction and outdoor activity. The centre has great potential for further improvement with sensitive interventions. Urban Design proposal for revitalization of the shopping centre to create a more vibrant area with amphitheatre/outdoor seating, landscaping/ floor scape pedestrian areas enhanced and better defined, street art, etc, is recommended.

The proposal should also integrate the adjoining facilities – the community centre, the dispensary etc. thereby creating an environment which is conducive to the adjoining residential houses as well .

7.4.3.8 THE COMMERCIAL CENTRES WITHIN THE INSTITUTIONAL AREAS OF THE CITY – The Punjab University, The Panjab Engineering College, The PGI and all other big institutional areas need to be enhanced and revitalized to meet the modern day requirements of the students. Regular maintenance is also recommended.



SECTOR 8 NEIGHBORHOOD SHOPPING CENTRE –
DURING NON SHOPPING HOURS





7.4.3.9 NEIGHBOURHOOD SHOPPING CENTRES

Heritage status to neighbourhood shopping centres of the first phase

The Expert Heritage Committee has recommended the neighbourhood shopping centres along V4 for heritage status. Neighbourhood shopping centres of sectors 7, 8, 9, 10, 11 fall within the Heritage Zone X, those of Sectors 14, 15, 16, 18, 27, 29 fall in Heritage Zone XI, and those in Sector 20, 21, 22, 23, 30, 24, 29 fall in Heritage Zone XII .

The committee has observed that the privately owned architecturally Shop-cum-Flats along V4, while ensuring uniformity of architectural expression, were climate responsive, ensured cost effectiveness, mandated use of local building materials, and had predetermined space. However, over the years many violations and additions /alterations have been done resulting in visual disharmony. Due to change in shopping patterns, lifestyles, and advanced technologies, there is persistent demand for change in the architectural control.

Limited uniform changes within the existing frame may be permitted on the request of the owners of the entire shopping complex with the approval of the Competent Authority of the Chandigarh Administration.



ORDERLY ORIGINAL FACADES OF THE SHOPPING CENTRES, THROUGH SIGNS OF VIOLATIONS HAD BEGUN TO SURFACE



7.4.3.10 BETTER INTEGRATION OF WEEKLY MANDIS AND THE SURROUNDING AREAS

The apni mandis are being organised on weekly basis within various sectors of the city to enable the residents procure fresh vegetables directly from the farmers.

The mandis should be better organised with proper planning to facilitate efficient functioning and avoid traffic congestion, unhealthy environments and disturbance to the residents of the adjoining areas .

Detailed planning for the temporary mandis should include defined buyer/seller movement, provision of mobile toilets and water posts, and parking spaces for trucks and the public, adequate fire fighting provisions.

Garbage of mandis should be treated at site to reduce the load on the garbage disposal sites /dumping grounds.

7.4.3.11 VENDING AND NON VENDING ZONES IN SHOPPING CENTRES

There is a **need to frame a policy for the street vendors** of Chandigarh, in pursuance with the Government of India directions to all state governments.

The survey carried out by the Municipal Corporation which brings out the existing status of the vendors trades, place of operation etc shall be taken into consideration during detailed planning.

A concerted effort which balances the National Street Vendor's Policy with the city's architectural character is the need of the hour.

In order to address the **National Policy for Street Vendors, demarcation of vending and non-vending zones** should be undertaken within the overall frame work of the **heritage regulations** for identified heritage zones, precincts and buildings recommended by the Expert Heritage Committee.

It is proposed that detailed study of the norms recommended in the Delhi Master Plan 2021 for the informal sector (refer Annexure C4) be taken as a starting point to assess the feasibility of the applicability in the Chandigarh context.



8 INDUSTRIAL AREA

8.1 INTRODUCTION

Chandigarh's Industrial Area was located on the South - Eastern side of the city, in the leeward wind direction to minimize air pollution within the city. Proximity to the railway station and the national highway would also prevent the movement of heavy vehicles within the city. To ensure a pollution free environment in the industrial area only non-polluting industries were permitted and the area and was segregated from the rest of the city by a green belt of mango trees.

Initially, developed over an area of 1200 acres in two phases, the Phase I has an area of 776.14 acres and the Phase II has an area of 486.00 acres. Subsequently the Phase III with an area of 153 acres was planned in the year 1977 as per Chandigarh Urban Complex Plan.

While Phase I & Phase II are nearly fully developed, Phase III is yet to be developed. The detail of the three industrial areas giving plot sizes, status of development is as under:

8.2 INDUSTRIAL AREA PHASE I & PHASE II

Industrial plots

A total of 1966 plots have been planned in Phase I & II ranging from 44 acres (Ordinance Cable Factory) to of 5 marlas. Smaller plots of 5 marlas to 1 kanal constitute 33% of the plots in Phase I of the Industrial Area and 95% of the plots in Industrial Area Phase II.

Other landuses

Besides the industrial plots, the following other landuses have been provided in the Phase I & Phase II industrial area:

Chandigarh Transport Undertakings of Punjab & Haryana covering around 26.09 acres

Slaughter House/Poultry/Flour Mills/ Broiler farm/Dairy Farm covering 24.63 acres

Public Health Stores /Hot Mix Plant covering 28.34 acres

Grid Substations on area of 22.20 Acres

Printing & Stationary Department/ Telephone Workshop on 6.50 acres

6 Parking Lots (9.71 acres).

Godowns of Railways/Central Warehousing (14.73 acres)

Community Services (6.34 acres)

The layout plans of the Industrial Areas Phase I & Phase II are at **ANNEXURE I-1**.

The details of plot sizes in the Industrial Areas Phase I & Phase II are at **ANNEXURE I-2**.

The detail of land earmarked for various projects in the Industrial Area Phase I are at **ANNEXURE I-3**.

A railway line passes through the industrial area connecting the state of Punjab. A railway yard with godown sites have also been proposed which are yet to be developed.



PLAN 1 LOCATION OF INDUSTRIAL AREA PHASE-I, II & III



8.3 DEVELOPMENT CONTROLS

The plots upto 2 kanal are governed by architectural controls, and those above 2 kanal were controlled by zoning. In 2000, an increase in FAR from 0.75 to 1.0 and a 10% increase in ground coverage from 50% to 60% for construction of cycle sheds was permitted to all industrial plots of upto one acre.

8.4 NATURE OF INDUSTRIES AND EMPLOYMENT IN PHASES I & II

The industrial units are mainly ancillary in nature and include manufacturing of sanitary fittings, paper and paper products, printing, industrial fasteners (nuts, bolts and screws), auto and tractor parts, steel fabrication, wooden and steel furniture, electrical appliances, lathes, job tools and dyes, repairing and servicing of cars etc. The industries provide employment to about 23340 persons.

As per feedback from the Director of Industries, there were 2074 micro, small & medium industries in Chandigarh employing 18128 workers which have increased to 2488 units in the 2009-10 employing 23340 workers. The number of large enterprises in Chandigarh, however have reduced from 7 units in 2007-2008 to 4 units in 2009-2010. The number of employees engaged in large scale enterprise have also shown a decline from 2473 in 2007-2008 to 1678 in 2009-2010.

8.5 INDUSTRIAL DEVELOPMENT CUM FACILITY CENTRE:

For the development of industry and providing support facilities to SSI Units, an Industrial Development & Facility Centre providing common facilities has been set up which is being looked after by the Chandigarh Industrial & Tourism Development Corporation since 1978. This centre provide common facilities to the small scale entrepreneurs such as precision tool room facility, heat treatment facility etc.

Residential area

No residential accommodation for the industrial workers was provided in the industrial area however undeveloped housing was provided in the adjoining residential sectors 29 and 30.

Unauthorized residential colony adjoining the industrial area

A large unauthorized Labor Colony 4 occupying nearly 25.5 acres of land has developed adjoining Phase I of the Industrial Area over the last four decades together with smaller colonies where many of the industrial workers live.





8.6 CONVERSION OF LAND USE FROM INDUSTRIAL TO COMMERCIAL

In July 2005, the Chandigarh Administration announced a Scheme 'Conversion of Landuse In the Industrial Area Phase-I & II from Industrial to Commercial' with the objective of revitalizing the area. The permitted commercial activities include tertiary sector: malls, shops, offices, banks, hotels, restaurants, training institutions etc. Plots with a minimum size of 2 kanal were eligible for conversion. The policy was however discontinued from 18-09-2008.

Out of 348 eligible plots above 2 kanal, 82 plots were permitted conversion of landuse. Besides being permitted an increase in the FAR was permitted from 1.0 to 2.0, a building height upto 30m as compared to the 18.29m allowed on industrial plots.

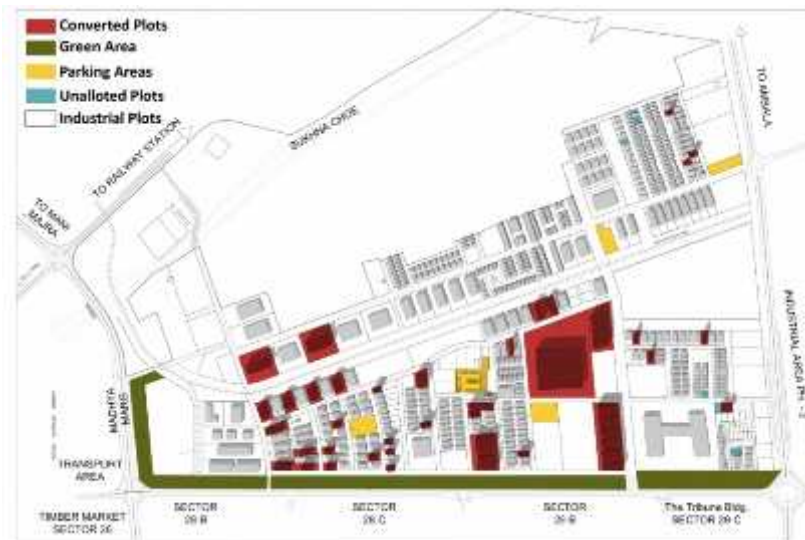
This has resulted in the city being able to adopt new concepts in commercial areas to provide an enriched recreational, leisure and shopping in the one stop destinations having larger floor plates, which are not permissible within the architectural commercial areas of the city .

An additional area of 788640 sq. yards of commercial space has been generated in the 82 conversion plots. The details of plots which have availed Conversion Policy 2005 are in **ANNEXURE I-4**.

There is high concentration of commercial activity in certain pockets. The commercial & office complex which is being developed by the Larsen & Toubro on 21 acres has a covered area of approximately 17.5 lac sq.ft . This area is much more than the total commercial area of Sector 17 (13.18 lac sq. ft) put together.



PLAN 2 INDUSTRIAL AREA PHASE – I SHOWING PLOTS WITHOUT CONVERSION



PLAN 3 INDUSTRIAL AREA PHASE I SHOWING CONVERSION OF PLOTS

ANALYSIS OF ENHANCED FAR FOR VARIOUS CATEGORY OF PLOTS IN INDUSTRIAL AREA PHASE I & II											
PHASE-I	5Marla	7.5Marla	10Marla	15Marla	1Kanal	1K. To 2 Kanal	2K. to 3Kanal	3K. To 4Kanal	4K. To 1 Acre	1 Acre & Above	Total
Original covered area	125		250	375	500	1000	1500	2000	3000	4840	13590
No. of plots	168		140	98	101	121	54	47	51	66	846
Area as per FAR 1	21000		35000	36750	50500	121000	81000	94000	153000	319440	911690
Area as per FAR 1.5	31500		52500	55125	75750	181500	121500	141000	229500	479160	1367535
Enhanced area	10500		17500	18375	25250	60500	40500	47000	76500	159720	455845

PHASE-II	5Marla	7.5Marla	10Marla	15Marla	1Kanal	2 Kanal	3Kanal	4Kanal	4K. To 1 Acre	1 Acre & Above	Total
original covered area	125	187.5	250	375	500	750	1250	1750			5187.5
NO. of Plots	213	106	303	82	286	84	4	42			1120
Area as per FAR 1	26625	19875	75750	30750	143000	84000	6000	84000			470000
Area as per FAR-1.5	39937.5	29812.5	113625	47047.5	214500	126000	9000	126000			705000
Enhanced area	13312.5	9937.5	37875	15375	71500	42000	3000	42000			235000

Total Industrial Sites in Phase-I & II = 1884

Total covered area of Industrial Sites in Phase-I & II = 987370 SQ. YDS.

Total sites allowed conversion to commercial sites in Industrial Area phase-I & II = 82

Total covered area of commercial sites in Industrial Area Phase I & II = 788640 sq. Yds.

Total enhanced area in Industrial Area Phase I & II = 680845sq.Yds.



VIEW SHOWING INDUSTRIAL AREA PHASE – I WITHOUT CONVERSION OF PLOTS



Source- Department of Urban Planning, UT, Chandigarh



Source- Department of Urban Planning, UT, Chandigarh

VIEW SHOWING INDUSTRIAL AREA PHASE – I WITH CONVERSION OF PLOTS



8.7 PROBLEMS IN THE INDUSTRIAL AREA PHASE I AND II

EMERGENCE OF INCOMPATIBLE AND MIXED LANDUSE DUE TO CONVERSION POLICY OF 2005

The conversion policy has generated arbitrary mixing of land use in the industrial area with flashy multiplexes, five star hotels and malls uncomfortably located next to kabari shops, horse cart stands and industries. The new landuses are incompatible in terms of function, public interface, architectural expression and the overall ambience with the old ones and there is pressure to remove the long established old uses and their users.

ADVERSE IMPACT ON THE COHERENCE OF THE CITY'S URBAN DESIGN

With the additional FAR and building height permitted by the conversion policy, many high rise structures are coming up adjoining the low rise architecturally controlled buildings. Some such structures have come up right along the entry to the city along the NH 21 and have adversely affected the city's image of being built on sound urban design principles.

INADEQUACY OF INFRASTRUCTURE

The industrial area's already inadequate infrastructure – water supply, sewerage system and power been aggravated due to non augmentation of the same prior to implementation of the conversion policy. As is evident from the analysis, 788640 sq. yards of commercial activity shall be generated once all the 82 plots which had availed the conversion policy get implemented. Due to enhanced FAR permitted, the total additional covered area shall be to the tune of 680845 sq.yds. Commensurate infrastructure thus needs to be provided in the industrial Area to enable sustainability and efficient functioning .

TRAFFIC AND TRANSPORTATION PROBLEMS

The existing road network and parking areas are insufficient for the increased traffic generated by large scale commercial activities especially malls and multiplexes resulting in traffic bottlenecks.

ABSENCE OF ORGANIZED EATING JOINTS FOR THE WORKERS/ LABOURERS

There is no provision for low cost eating joints and recreational spaces for the workers/ labourers.

UTILIZED VACANT PLOTS

As per feed back received from the Estate Office in the year 2003, 2004 there are 59 number vacant Press sites in Industrial Area, Phase I having areas in the 5 marla, 10 marla and 15 marla category. The details of vacant plots is given in **ANNEXURE I-5**.

LABOR COLONY NUMBER 4

Labor Colony 4 in Phase I now spread over 25.5 acres with about three thousand jhuggies provides an unhygienic environment for its residents due to inadequate sanitation and other services.



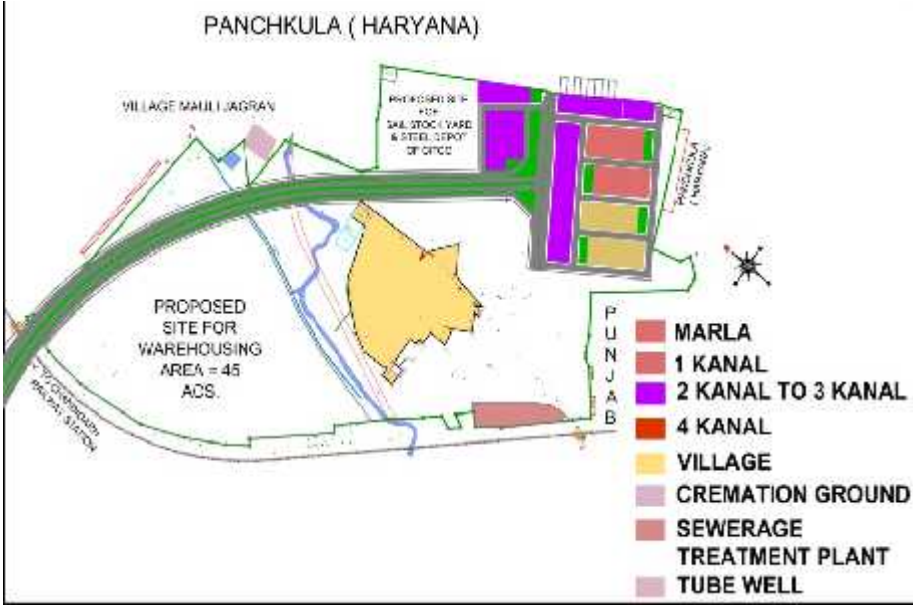


8.8 DEVELOPMENT OF INDUSTRIAL AREA PHASE III

The proposal to establish the Industrial Phase III was initiated in 1977 as a part of Chandigarh Urban Complex Plan which was prepared by the interstate working group as per the direction of the Coordination Committee constituted by Government of India. The Industrial Area for Panchkula was also proposed simultaneously and in close vicinity. Initially proposed on 114 acres later the area was increased to 153 acres. Industrial Area Phase III is located near village Raipur Kalan and Mauli Jagran.

Land for Industrial Area Phase-III was acquired in the year 2003. Detailed planning of phase III of the industrial area was undertaken in 2003. The layout Plan of industrial area Phase-III is shown below. 45acres in the layout plan has been earmarked for warehousing, 10 acres for CITCO, SAIL stock depots, 36.44 acre as reserved/open spaces and 14.65 acre for plotted development. 43.97 acres is allocated for roads and parking. The development of the physical infrastructure is in progress.

It is triangular in shape bounded by link road to Mauli Jagran/ Raipur Kalan, Route No.2 on the northern side, Panchkula/ UT State boundary side and Ambala Chandigarh railway line on south-western side. It has an approach through railway station road from village Daria and the abadi of village Raipur Kalan falls in the Industrial Area Phase-III.



PLAN 4 INDUSTRIAL AREA PHASE-III



PLAN 5 - VACANT AREAS IN INDUSTRIAL AREA PHASE - III



LAND USE IND. AREA PH.-III

TOTAL AREA	=	153.00 ACRES.
1. INDUSTRIAL PLOTS AREA	=	14.65 ACS.
2. SAIL STEEL STOCK YARD AREA	=	10.00 ACS.
3. WARE HOUSING AREA	=	45.00 ACS.
4. SEWERAGE TREATMENT PLANT AREA	=	3.30 ACS.



8.9 INFORMATION TECHNOLOGY PARK

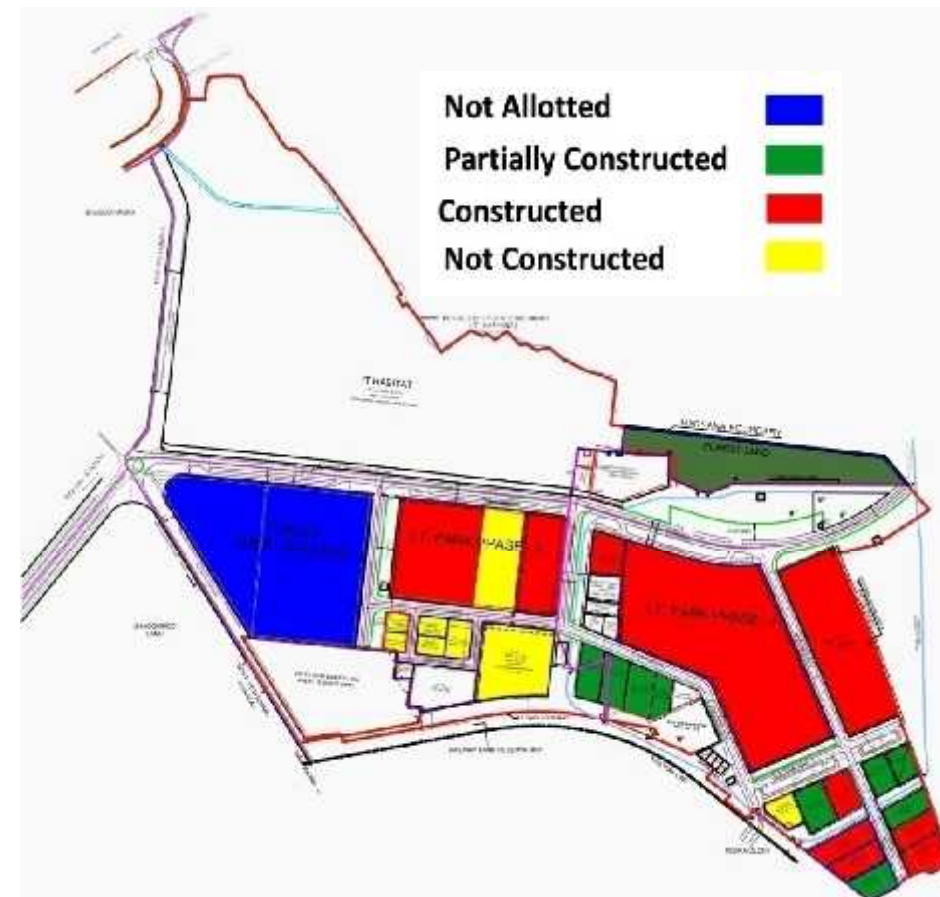
In 2002, Chandigarh Administration set up Phase I & II of an Information Technology (IT) Park, over an area of 123.43 acres and 228.49 acres respectively. The third phase of the IT Park was to be subsequently developed on 250 acres adjoining the Phase I and II.

The layout Plan of I.T Park is at **ANNEXURE I-9**.

Exports to the tune of Rs.700 crores with a manpower deployment of 10000 persons have already started from Phases I & II of the IT Park with companies like IBM, Wipro, Airtel, DLF, Infosys and Tech Mahindra already functioning from there. An Entrepreneurial Development Centre on 1.58 acres has also been set up in the IT Park to provide incubator facilities to new entrepreneurs. The detail of Land use of IT Park Phase-1 & II is at **ANNEXURE I-10**

SR. No.	NAME OF COMPANY	PLOT NO.	COLOURS
1.	The DLF Info-City Developers, Chd. (Campus Site)	2	Red
2.	M/s. Infosys Technologies Ltd. (Campus Site)	B-15 & 1	Green
3.	BEBO Technologies Pvt. Ltd.	D-3	Green
4.	Virsa Systems Pvt. Ltd.	H-6	Green
5.	FCS Software Solutions Ltd.	J-7	Green
6.	IDS Infotech Ltd.	I-8	Green
7.	Second Foundation Pvt. Ltd.	G-9	Green
8.	Net Smartz (India) Pvt. Ltd.	E-10	Green
9.	Amadeus India Pvt. Ltd.	B-11	Green
10.	Microtech International Pvt. Ltd.	A-12	Green
11.	Compact Disc. India Ltd.	13	Yellow
12.	Damco Solution Ltd.	13-A	Green
13.	Karin Informatics, Chandigarh.	14-II	Green
14.	Net Solutions, Chandigarh.	15-II	Green
15.	T.R. Out Sourcing Services Ltd. New Delhi.	16-I	Green
16.	E.D.C.	20	Red
17.	Mahindra Tech. Mohali. (Campus Site)	22/23	Green
18.	Bharati (Airtel) Tele Ventures Ltd. (Campus Site)	21	Green
19.	ESys Information Technology Ltd.	24	Green
20.	KMG Infotech Pvt. Ltd.	25-A	Green

PLAN 6 INFORMATION TECHNOLOGY PARK



SOURCE: Director, Information Technology, UT

RECOMMENDATION DEVELOPMENT OF THIRD PHASE OF IT PARK:

The land use of the pocket measuring 250 Acres is proposed as IT for expansion/ continuity of existing IT complex under Phase I & II with provision of ancillary and other related uses. Detailed planning of the area must ensure preserving the existing eco sensitive nature of the area and the extensive tree cover.

Phase I & II of IT Park need to be put to optimum use by developing vacant plots.



AREA STATEMENT		
I.T. PARK, PHASE-I		
TOTAL AREA - 123.43 ACS		
LAND USE	AREA (ACS)	%AGE
I.T PLOTS	64.27 ACS	52.07
COMMERCIAL PLOTS	4.087 ACS	3.31
UTILITY PLOTS	3.86ACS	3.13
RESERVED PLOTS	1.05 ACS	0.85
GREEN / OPEN SPACES	21.704 ACS	17.58
ROADS / PARKING	28.459 ACS	23.06

I T PARK PHASE II



8.10 MASTER PLAN PROPOSALS FOR INDUSTRIAL AREA PHASE I, II & III

CONVERSION POLICY FROM INDUSTRIAL TO COMMERCIAL NOT TO BE REINTRODUCED

Large scale commercial activity that is coming up in the industrial area as a result of the 'Chandigarh Conversion of Landuse of Industrial sites into commercial activity / services in the Industrial Area Phase-I & II, Chandigarh Scheme 2005', has created manifold problems as highlighted in Section 8.7. The Conversion Policy shall not be reintroduced and the industrial units shall be maintained as industries.

COMPREHENSIVE URBAN RENEWAL PLAN FOR THE INDUSTRIAL AREA PHASE I AND II

A holistic redressal of the problems that have emerged in the industrial area and accommodating the future anticipated growth, through a comprehensive urban renewal plan is recommended.

The plan will address the following areas :

AUGMENTATION / REDESIGNING OF INFRASTRUCTURE – WATER SUPPLY, SEWERAGE, POWER SUPPLY

A comprehensive analysis of the enhanced infrastructural requirements resulting from the conversion policy indicates the need to priorities augmentation of the water supply, power, sewerage disposal and storm water disposal systems.

Assured water supply through Municipal piped water supply connections (Engineering Department has projected enhancing water supply by four new tube wells).

The industries shall also be mandated to generate power through use of solar cells and use energy efficient fixtures and appliances.

Use of green technology/ECBC compliance shall be advocated as per norms.

TRAFFIC & TRANSPORTATION

The area shall have improved connectivity with the city and the region on the implementation of the second phase of the metro project where the underground metro line and metro stations have been proposed along the adjoining Purv Marg.

Detailed proposals for streamlining connectivity and accessibility by removing bottlenecks, segregating service and public movement and parking areas, augmenting the road network shall be worked out for the industrial area.

PROVISION OF CYCLE TRACKS AND PEDESTRIAN PATHWAYS - Safe mobility for pedestrians and cyclists by providing dedicated lanes/tracks and paths /pavements shall be planned.

PROVISION OF UNDERGROUND PARKING LOTS, TAXI STAND SITES in Industrial Area Phase-II on the sites earmarked for parking.

PROVISION OF LOW COST DHABAS/EATING JOINTS for the workers/ labourers in Phase I and II of the Industrial Area.

Tree plantation along the Railway line

The railway line passing through the industrial area has industrial plots on either side which shall be protected by thick plantation of indigenous trees species.

LANDSCAPING OF INDUSTRIAL AREA

An afforestation and landscaping plan needs to be prepared for the industrial area which shall include roadside plantations and development of green open spaces. The few scattered vacant plots in Industrial Area Phase I & II are proposed to be developed as open spaces for the industrial labour.

PROVISION OF NIGHT SHELTERS in all three Phases of Industrial Area.

NO FURTHER INCREASE IN FAR FOR THE EXISTING INDUSTRIAL PLOTS

The Industrial Associations' demand for an FAR of 2 in view of the shortage of space being experienced shall not be acceded to prevent further strain on the inadequate infrastructure.



DEMARCATIION OF ADEQUATE VENDING ZONES FOR STREET VENDORS IN APPROPRIATE LOCATIONS IN PHASE 1 and PHASE 11 OF INDUSTRIAL AREA SHALL BE MADE.

SOLID WASTE MANAGEMENT

Solid waste management of the industrial area shall be a top priority for which in depth study and analysis of the nature and quantity of waste generated by different industries shall be undertaken ensuring segregation and safe disposal of hazardous waste. A comprehensive solid waste management plan utilising best practices shall be evolved to ensure the cleanliness and hygiene of the industrial area. The attempt shall also be to recycle waste so as to ensure that there is minimum load on the existing dumping ground which is already under pressure.

UPGRADATION OF THE COMMUNITY FACILITIES

The existing community facilities in the industrial area need to be renovated /upgraded with higher specification to match the corporate offices/commercial outlets that have come up in the area. A conference hall with business centre facility is proposed to be provided.

With the changes resulting from the conversion policy, emergence of high rise towers, the emergency services in the area shall be geared up to address the requirements.

EXHIBITION-CUM-CONVENTION CENTRE:

A site measuring 26.14 acres has been allotted in Hallomajra to develop a state of the art Exhibition-cum-Convention centre. The Centre would be the hub of fairs and exhibitions in the city at one place.

REVIEW OF MARLA INDUSTRIAL PLOTS GOVERNED BY ARCHITECTURAL CONTROLS

The architectural controls of plots size 5 marla to 15 marla shall be reviewed to better utilise the area and to address modern day requirements. While framing such a policy, the overall architectural vision and the ethos of Chandigarh will have to be kept in mind, particularly the recommendations of the Expert Heritage Committee. Under no circumstances any concession should be given in an adhoc /piecemeal manner. Uniformity and equity be ensured in the whole process.

PROVISION OF INDUSTRY AND MSMED ACT, 2006

The Punjab Capital Development & Regulation Building Rules, 1952 under Section 2 (xxi) provides that factory has same meaning as in the Factories Act, 1948. Further that the Factories Act provides for a definition of the Factory as under:

Factory means any premises including the precincts therefore – (i) Wherein ten or more workers are working or were working on any day of the preceding twelve months, and in any part of which a manufacturing process is being carried on with the aid of power, or is ordinarily so carried on, or (ii) Whereon twenty or more workers are working or were working on any day of the preceding twelve months, and in any part of which a manufacturing process is being carried on without the aid of power, or is ordinarily so carried on. Factory does not include a mine as it is covered by Indian Mines Act, 1952 or a mobile unit belonging to the armed forces of the Union, a railway running shed or a hotel, restaurant or eating place.

To put it in a nutshell, factory means (i) any premises including precincts (ii) where ten or more persons are engaged in manufacturing process with the aid of power or (iii) twenty or more persons are engaged in manufacturing process without the aid of power.

However, in 2006 the Government of India has got enacted “The Micro, Small and Medium Enterprises Development Act, 2006 (MSMED)” to facilitate the promotion and development and to enhance the competitiveness of the Small and Medium Enterprises. The above Act provides definition of Enterprise, Medium, Micro and Small Enterprise as under:-

Section 2(e) “Enterprise” means an industrial undertaking or a business concern or any other establishment, by whatever name called, engaged in the manufacture or production of goods, in any manner, pertaining to any industry specified in:

- * the First Schedule to the Industries (Development and Regulation) Act, 1951 (65 of 1951) or engaged in providing or rendering of any service or services;



- Section 2(g) “Medium Enterprise” means an enterprise classified as such under sub-clause (iii) of clause (a) or sub-clause (iii) of clause (b) of Section(1) of Section 7;
- Section 2(h) “Micro Enterprise” means an enterprise classified as such under sub clause (i) of clause (a) or sub clause (b) of sub-section (1) of Section 7;
- Section 2(m) “Small Enterprise” means an enterprise classified as such under sub clause (ii) of clause (a) or sub clause (ii) of clause (b) of sub-section (1) of Section 7;
- The Chandigarh Administration has been received representations from time to time to allow the industrial plots for activities provided/ allowed in above MSMED Act. The matter was also discussed in a meeting of Master Plan Committee held on 20.7.12 wherein the Master Plan Committee members were of the following views :
- Bringing ware houses of industries apart from the ones in Industrial Area is not a good idea.
- Warehousing and Manufacturing are separate functions. Warehousing is commercial whereas manufacturing is industrial. Chandigarh is based on segregation of functions and separation of Land Use specific to those functions. It should be kept that way.
- New land should be allotted at new prices for Warehousing.
- Warehousing will generate more traffic. There are already a glut of Offices in IT Park.
- The matter was further deliberated in 77th meeting of Master Plan Committee held on 25-10-2012 with representative of the Industrial Association, wherein the members of the Association apprised that at central government level, the MSMED Act is being implemented for allowing the various compatible industrial activities in the notified industrial zones in various cities.
- However, one segment of representatives submitted that it is the mandate of Chandigarh Administration to adopt the said Act as a whole in the Industrial Area, Chandigarh. Therefore, all the compatible industrial and other activities should be allowed in these areas to promote the industrial activity in Chandigarh by enhancing its financial viability. Whereas, the other segment of these representatives was of the view that the activities like IT, Warehousing (for industrial site only), ITES, service centre, service station may be permitted in the existing Industrial Area of Chandigarh, without altering the Architectural Controls applicable on these sites.

ADDITIONAL ACTIVITIES TO BE PERMITTED IN THE INDUSTRIAL AREA:

With regard to issue of expanding the list of activities permitted to plot holders in the industrial estates, the UT Administration may consider this matter appropriately in future and decide upon policy relating to any additional activity on its own or with the approval of Central Government and after taking into account relevant issues relating to traffic circulation, availability of civic infrastructure in the area etc.

Industrial plots should be used to develop and run the industries and for no other purposes. This is done to meet the demand of those who want to establish and run the industries.



THIRD PHASE

The layout which stands prepared for the acquired land of 153 acres of the third phase of the industrial area includes proposals for warehousing on 45 acres, CITCO SAIL yard on 10 acres and industrial plots 14.65 acres.

CHANDIGARH MASTER PLAN 2031 PROPOSALS

ADJUSTMENT OF EARMARKED PLOTS OF INDUSTRIAL AREA PHASE III IN THE INDUSTRIAL AREA PHASE I AND PHASE II

Since there are nearly 150 vacant plots in the Industrial Area Phase I & II, it is recommended that the plotted development should not be carried out in the third phase industrial area and the possibility of adjustment in the vacant plots of Phase I & II may be explored subject to legal opinion.

CONCEPT OF FLATTED FACTORIES

With a view to optimise on the limited vacant land, concept of flatted factories shall be introduced for small scale / service industries in the third phase of the industrial area and in the area yet to be allotted in industrial area phase I and II in place of plotted development.

ADOPTING BEST PRACTICES FOR WAREHOUSING

The sites earmarked for warehousing can be developed adopting the best modern day practices and technology.



GREEN BUFFER AROUND THE VILLAGE RAIPUR KALAN

A green buffer shall be provided around Raipur Kalan village located in the middle of the industrial area Phase III to act as a buffer from the industrial activity together with land for augmentation of social infrastructure and residential requirement of the village.

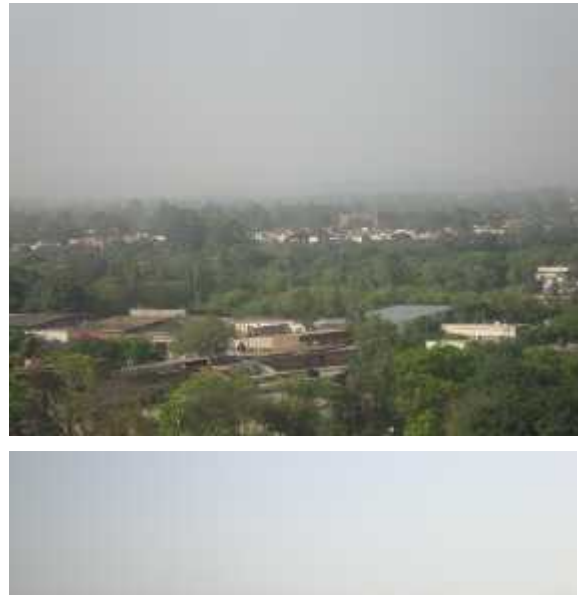
ADEQUATE PROVISION OF INFRASTRUCTURE

No city sewerage system is existing at site for discharging of internal sewerage of the proposed Industrial area. A site for a Sewerage Treatment plant adjacent to the existing cremation ground with an area of 6200 sq m. is recommended.





HIGH RISE BUILDINGS HAVE COME UP AS A RESULT OF CONVERSION OF INDUSTRIAL PLOTS IN THE INDUSTRIAL AREA





9. SOCIAL INFRASTRUCTURE AND OFFICE COMPLEXES

The Chapter gives a brief account of existing Social infrastructure and office complexes and the vision for the future. The chapter has two sections:

- a) Social Infrastructure
- b) Office Complexes

9.1 INTRODUCTION

As a socialist utopia, Chandigarh had a mandate to fulfill and to provide the best of amenities to all segments of the society. Today, the city is hailed as a city of convenience and comfort.

Land values in the city have escalated in an unprecedented manner over the last 50 years, owing to the city's acquired status of being the country's most favored address, its state of art health and education infrastructure and comfortable living.

In Chandigarh, the social infrastructure includes educational and health facilities, places of worship and recreation which range from neighborhood level to city level facilities. The high order of the social infrastructure, generous numbers and its equitable distribution for the targeted population of 5 lakh in the original plan (Phase-I & II) have contributed to the high standards of quality of life of the city residents. The provisions made were inherently farsighted and progressive which have not only helped cope up with the additional population pressure of the city but also have been able to serve the neighbouring towns and the expanding northern region.

The concept of the neighbourhood unit aimed at wholesome family life and comfort provided for meeting all the daily needs- shops, community centres, dispensaries within easy walking distance of the residents has been replicated throughout the sectoral grid .

Vertical green belts support schools, sports and health facilities for the sector and were aimed at providing pedestrian links to other sectors. To ensure equitable distribution of facilities of the subsequent addition of the third phase sectors the southern belt were also developed on the neighbourhood concept.

The city level infrastructure has also been augmented to keep pace with the growth in population, technological advancement and modern day requirements of healthcare, education and recreation by carving out new areas and making need based additions in the existing infrastructure.

While villages retained within the sectoral grid are planned to share the sector level facilities, the Chandigarh Administration has also strived to provide basic urban amenities in the rural villages as well. For higher order, the villagers avail city facilities which are within easy reach. The new residential colonies developed in the pockets outside the sectoral grid have also been planned with neighbourhood level facilities.



A PRIVATE SCHOOL IN SECTOR
45

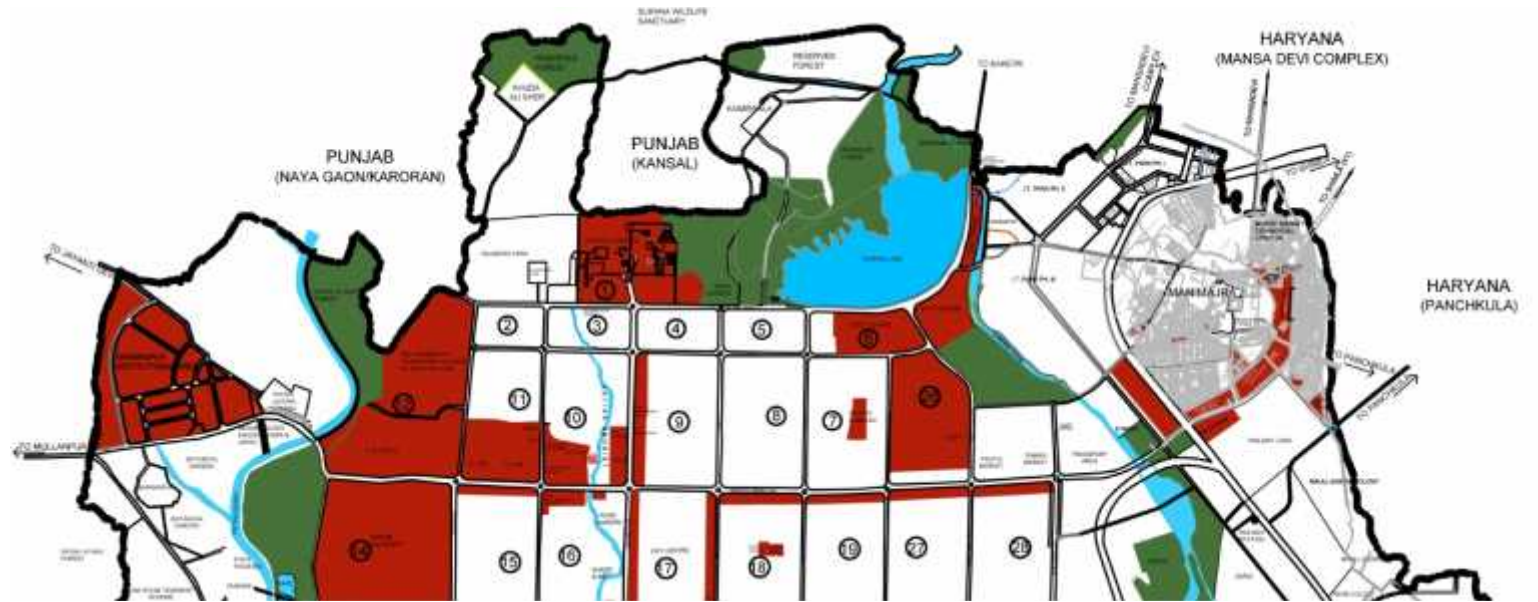
ADMINISTRATIVE BLOCK PEC
UNIVERSITY OF TECHNOLOGY
SECTOR -12



GANDHI BHAWAN, PANJAB
UNIVERSITY, SECTOR 14



PLAN -1 : INSTITUTIONAL AREAS FOR CITY LEVEL FACILITIES





9.2 MAIN OBJECTIVE FOR SOCIAL INFRASTRUCTURE

9.2.1 MAINTAINING HIGH ORDER OF SOCIAL INFRASTRUCTURE

The endeavour of the Chandigarh Master Plan 2031 is to ensure that the city continues to maintain the high standards of health, educational, recreational, institutional, religious facilities for the projected population of 16 lakhs by 2031 despite the constraints of its limited land resources. Chandigarh is to be culturally, socially and economically vibrant where every individual has gainful employment, each family has access to basic amenities of life and each community is self contained and self sufficient. Growing on the state of the art healthcare and health education facilities the city shall strive to become a centre for excellence in healthcare.

9.2.2 HERITAGE STATUS AND HERITAGE REGULATIONS

Many institutional buildings and campuses have been recommended for Heritage status as per the recommendations of the Expert Heritage Committee and include government schools, colleges, institutional belts. (Refer Chapter on Heritage). The heritage status of the campus and the heritage regulations applicable /zoning regulations shall be the guiding parameters while carrying out additions/alterations in these campuses .



9.3 DETAILED ANALYSIS OF THE SOCIAL INFRASTRUCTURE AND PROJECTION OF FUTURE REQUIREMENTS

With a view to ensure adequate provision of sector and city level facilities for future requirements of the targeted population, detailed analysis of each category of education, health, recreational / cultural facilities viz the UDPFI norms has been carried out and gaps identified to make provisions therein As highlighted in the chapter of demography, the holding capacity of the city has been assumed as 16 lacs.

9.3.1 EDUCATIONAL FACILITIES

A hierarchical distribution of educational facilities was maintained in the original plan.

THE CITY LEVEL FACILITIES include the Punjab University, the technical institutes- Punjab Engineering College & University, Government Colleges, Chandigarh College of Architecture (CCA), Government Medical College and Hospital (GMCH) Sector-32, Post-graduate Institute of Medical Education and Research (PGIMER), Central Scientific Instruments Organization (CSIO) etc. and Colleges.

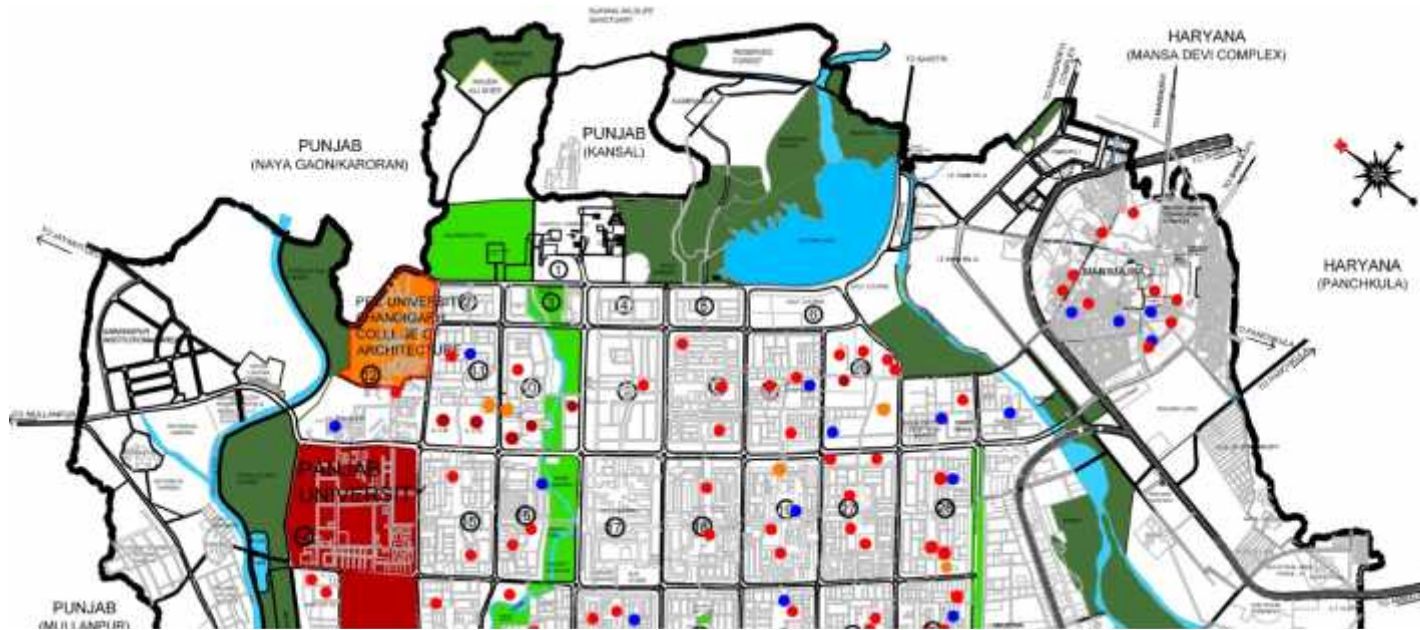
THE NEIGHBOURHOOD EDUCATIONAL INSTITUTES include Higher Secondary Schools /Senior Secondary Schools as well as the Primary Schools .

The adequacy / in adequacy availability of educational institutions in the city as per UDPFI guidelines is shown in the **TABLE S-1** and their location is shown in **PLAN** .

TABLE S1- THE ADEQUACY / IN ADEQUACY OF EDUCATIONAL INSTITUTIONS IN THE CITY

Category	Existing	Required as per Holding Capacity	Shortage (as per holding capacity)
UNIVERSITY	1	1	Sufficient
Technical Institute	2	2	sufficient
Colleges	12	13	-1(one college proposed in P.No.9 Manimajra). One Commerce College coming up in Sector-50, Chandigarh
Higher/S.S. Schools	127	107	+20
Primary Schools	33+127 (Part of High Sr. Sec. School)	167	-7

PLAN - 2: THE LOCATION OF EDUCATIONAL INSTITUTIONS





9.3.1.1 COLLEGES

City level educational facilities have been provided in the institutional areas in various sectors of the city Sector 12, Sector 26 and along the major avenues.

REQUIREMENT OF COLLEGES

As per UDPFI guidelines, one college is required for 1.25 lakh population. Therefore, 13 colleges are required in all for the projected population of 16lacs . Sector planning has made provision for 12 colleges which leaves a deficit of one college .

Recommendation

The requirement of an additional college shall be met through the college site proposed in Pocket Number 9, Manimajra.

As regards **professional institutions**, there are two Engineering Colleges i.e. Punjab Engineering College (PEC) and Chandigarh College of Engineering (CCET) and two **Polytechnics** in the city **which are sufficient to address the future requirements as well.**

9.3.1.2 SCHOOLS

Although adequate at aggregate level, the sector wise spatial distribution of schools in many sectors is inadequate in relation to the population.

The southern sectors 48 to 56 and part of sector 61 and 63 which are in the process of being developed only have High/Senior Secondary Schools at present.

CONSTRUCTION OF SCHOOLS AT NEIGHBOURHOOD LEVEL

Neighbourhood concept to be maintained while making provision of schools.

Construction of schools is recommended in the sectors found wanting in the facility. Each of these sectors will eventually have two Primary Schools and two High/Senior Secondary Schools (each High/Senior Secondary Schools will also have a primary unit).

REDUCING DEPENDENCY OF THE NEIGHBOURING STATES ON THE EDUCATIONAL INSTITUTES OF THE CITY

There is a near absence of Government Schools/Colleges in the neighbouring towns of the city which puts great pressure on the educational infrastructure of Chandigarh while at the same time also deprives some of the residents of the city from the facility due to limited seats.

RECOMMENDATION

NEIGHBOURING STATES TO BE REQUESTED TO MAKE PROVISION OF NEIGHBOURHOOD SCHOOLS AND COLLEGES WITHIN THEIR RESPECTIVE STATES TO REDUCE BURDEN ON THE CITY.

It is recommended that the vacant pockets in the sectors should be utilized to meet the deficit of health/ education infrastructure in the sectors wherever required. Health/ Education should be given priority for the use of the vacant pockets.



FUTURE OUTLOOK FOR SCHOOLS AND COLLEGES

Retaining the essence of original planning concepts

The planning, architectural design and detailing of the campuses has helped generate atmosphere conducive to healthy learning. Campus space concept viz-a-viz the built form is very innovative in that varied spaces have been created to generate interaction from large scale to intimate dialogue so that formal and non-formal education may go on side by side smoothly and fruitfully. This concept should be maintained while planning new complexes as well as augmenting facilities in existing campuses.

No additional FAR

No additional FAR shall be allowed to educational institutes. However additional land can be allotted to educational institutes.

No additional height

In order to maintain low rise character of the city, the public government and commercial buildings should continue to observe the height restrictions prescribed in the architectural controls and zoning regulations. No additional height shall be allowed.

Optimization of available resources in education in neighbourhood and city level facilities

The following steps are planned for rationalization of available spaces and resources available in various educational institutes situated in the city so that the best possible utilization may take place.

Space auditing of large institutional campuses in the city and preparation of Master Plans to fill in city level gaps

A holistic and comprehensive approach is proposed for which vision documents of each campus is to be drawn for a minimum of 30 years to assess the requirements of academics, administrative, sports, hostels, physical infrastructure, which shall be translated into master plans after carrying out space audits /structural audits. Adhoc additions and alterations should not be undertaken.

Modernization of infrastructure is the need of the hour. Converting existing class rooms into smart class rooms has already been initiated by the Chandigarh Administration and same should be carried out in other institutions.

E-Governance Setting up of new labs/modernization/up gradation of labs shall be taken up in a big way in various colleges.

Re-utilization / replanning of large institutional plots

Many government institutions in the city have large plot sizes and remain underutilized. In a city which is facing extreme shortage of space, it would be desirable to make optimum utilization of space. Over the years, need based additions and alterations have been carried out in the form of additional blocks etc. The single storeyed/double storeyed buildings can be considered for re-utilization/re-planning.

Augmentation of the hostel accommodation and guest facilities is recommended

An acute shortage of hostel accommodation is felt, which compels the students to opt for paying guest accommodation in the sectors adjoining the institutes or to take rooms on rent. A large number of residential houses in the city/the villages of the city are providing the facilities.

Strict enforcement of the Paying Guest Scheme is recommended to ensure comfortable and safe living accommodation to the students as well as to ensure that the activity does not cause inconvenience to the residents of the neighbourhood.

Concept of sharing facilities

It is proposed that large college campuses in the city which are underutilized should be utilized optimally to fill in the gaps of other institutions by providing facilities such as hostels, guest houses, sports facilities, seminar/conference halls / auditoriums etc which can be a bank to be shared by other institutions of the city.



FINE ARTS MUSEUM PUNJAB UNIVERSITY SECTOR 14

PROPOSED ALUMNI HOUSE GOVERNMENT COLLEGE FOR BOYS SECTOR 11 CHANDIGARH



9.3.1.3 PANJAB UNIVERSITY

- The Panjab University, Sector 14 is spread over an area of 550 acres (2.2 km²) in sectors 14 and 25 of the city of Chandigarh. University has 75 teaching and research departments and 15 Centers/Chairs for teaching and research at the main campus located at Chandigarh.
- The original plan of Sector 14 for the University was prepared by Pierre Jeanneret. Each building has been designed in harmony with all other buildings of the campus creating an atmosphere of aesthetic charm and contemplative calm.
- The campus has however expanded much beyond the original plan to meet its requirements, Sector 25, south of the university has been utilised for the purpose.

RECOMMENDATION

Existing Campus:

- For future planning of the campus, a master plan should be worked out with the approval of the Chandigarh Heritage Conservation Committee **/and the competent authority of the Chandigarh Administration** before undertaking any new construction.
- The Administrative Block, Typical Arts Block, Gandhi Bhawan, Science Block, Boys Hostel, Library, and Fine Arts Museum have been given Heritage status and steps should be taken for their careful conservation and preservation.

Additional Land

- Adequate provision of land to meet the requirements of the Panjab University for the next 50 years is to be provided on priority. The Panjab University has requested for 180 Acres additional land (including compensation of the 78 acres handed over by PU to the Chandigarh Administration for development of slum rehabilitation in Sector-25 (69 Acres) and primary school (9 Acres) for its expansion .



STUDENTS ACTIVITY CENTRE
PANJAB UNIVERSITY



A.C. JOSHI LIBRARY
PANJAB UNIVERSITY -
A HERITAGE STRUCTURE

Keeping in view the growing requirement of quality education and research in ever emerging fields-genetic engineering, biotech, stem cell, nano technology to name a few, it was decided that 145 acres of acquired land which is free of litigation and vacant at Sarangpur should be earmarked for the Panjab University, except 8.8 acre reserved for Metro Terminal.

In addition, the land yet to be acquired in the Sarangpur Institutional Area will be primarily used for the Panjab University and the PGI being institutes of eminence. Some land of which may also be used for other institutional purposes as may be decided by the Administration.



9.3.1.4 Punjab Engineering College/Deemed Technical University, Sector 12:

The Panjab Engineering College, Sector 12 is deemed technical university. The college has a huge campus with potential of large scale expansion. Infrastructural development to facilitate multifaceted expansion including starting new academic programmes, innovation centres to carry out consultancy / research projects in collaboration with Industry / Research Organization .

A master plan for campus revitalization has been undertaken.

The new facilities to be added include a multi-facility-cum-synergy centre, new academic block, hostels, residences, guest house expansion setting up additional post graduate and undergraduate laboratories and research facilities, renovations and extension of existing buildings, campus development and student facilities etc.

Modernization & Computerization through smart class rooms, audio visual & internet connectivity facilities in the academic area, hostels, conference halls is also planned.

The expansion will be a valuable asset for the city and the region as it will help proper utilization of the large campus.

Up-gradation of PEC to an IIT

The upgradation of PEC to an IIT is recommended. Possibility of upgrading the required infrastructure within the existing campus shall be explored. Additional land required, if any, can be provided within earmarked Institutional areas.



PEC UNIVERSITY OF TECHNOLOGY SECTOR 12, CHANDIGARH

9.3.1.5 CHANDIGARH COLLEGE OF ARCHITECTURE

The college shares its campus with that of the Punjab Engineering College .With the proposed introduction of Post-Graduate courses in the college, additional administrative and academic facilities are required to be provided promptly.

Recommendation

Detailed space auditing of the existing infrastructure is required to maximize utilization of space .

The campus has been recommended for Heritage status due to it having been designed by Le Corbusier. The uniqueness of building-space concept lies in the fact that work areas and circulation arteries are built into the same basic cell, which is then multiplied several times over around central courtyard to form the total building.

The ingenious cell makes the learning process participatory as no space is compartmentalized. The roof profile while allowing north light illumination facilitates studio work and also gives the campus its unique form.

Any addition/alteration shall be strictly as per the heritage regulations and shall be subject to approval of the Chandigarh Heritage Conservation Committee.



CHANDIGARH COLLEGE OF ARCHITECTURE SECTOR 12, CHANDIGARH



9.3.1.6 CHANDIGARH COLLEGE OF ENGINEERING & TECHNOLOGY, SECTOR-26, CHANDIGARH

This is an institutional campus within area of 39 acres consisting of buildings for Diploma Wing and Degree Wing, residential campus, hostels. Out of the above area, 6 acres have been earmarked for the infrastructure development of degree wing where block-A and B have already been constructed consisting of labs, classrooms, tutorial room etc.

Recommendation

The campus needs to be modernized with state of the art facilities. Construction of additional workshop block, administration block with computer centre and library.

Construction of women hostel with a capacity of 250 students for the diploma wing.

Upgradation of multipurpose hall into an auditorium with a capacity of 600.

The ICU functioning in the campus of the CCET, it is recommended that the same be relocated to an alternative location and hostels presently occupied by it be returned to CCET to meet deficit. This would facilitate both the college and the ICU.



CHANDIGARH COLLEGE OF ENGINEERING & TECHNOLOGY, SECTOR-26, CHANDIGARH

9.3.1.7 APO, BPO and Skill Development Centres

Land for development shall be provided in the Institutional/Industrial pockets earmarked to facilitate service oriented employment within the city. Skill Development Centres shall also be developed in keeping with the national vision for capacity building to provide excellence in trades.



EDUCATION- GOVERNMENT SCHOOLS

It is brought out that some of the schools built on large plots are in poor state of maintenance. Proper upkeep is essential. The Chandigarh Administration is actively considering developing the large open spaces as playgrounds which can be shared by the children and youth of the neighbourhood.

An analysis of the lot sizes of the existing schools of Secondary and Higher Secondary brings out that in the northern Phase-I sectors, the plot size of various schools is much more as compared to UDPFI norms of 4 acres.

Thus these schools provide extensive scope for expansion within the campuses when required. It is however observed that the residents do not necessarily use the schools of the sector, and give preference to schools of their choice.

GOVERNMENT HIGH SCHOOLS - RECOMMENDED FOR HERITAGE STATUS

Heritage status recommended for a large number of schools of the first phase (refer Chapter on Heritage). Additions and alterations in the large campuses to be as per heritage regulations.

The neighbourhood concept is not fully successful with reference to schools. This can only be successful if the facilities and standard of education is brought at par in government schools for various disciplines of education. Proactive steps need to be taken in this regard .



NEW DESIGN OF GOVERNMENT HIGH SCHOOL



PRIMARY SCHOOL SECTOR 49-D CHANDIGARH
NEW GOVERNMENT SCHOOLS KEEP THE CHANDIGARH STYLE OF ARCHITECTURE ALIVE WITHOUT ACTUALLY IMITATING IT



9.3.2 HEALTH FACILITIES

Chandigarh has advanced medical facilities which cater to the needs of the residents of the city as well as the surrounding regions.

The main hospitals are the Post Graduate Institute of Medical Education and Research (PGIMER)Sector -12 (1500 beds), Government Medical College and Hospital Sector-32 (675 bedded hospital) and Government Multi Specialty Hospital (GMSH), Sector-16 (500 bedded hospital with addition of 60 beds) and the **Institute of Mentally Retarded Children**.

In addition, the city has Shri Dhanwantry Ayurvedic College in Sector 46, Homoeopathic Medical College & Hospital in Sector 26, 50 bedded Primary Health Centre in Manimajra, Poly Clinics in Sector 22 and Sector 45.

9.3.2.1 NURSING HOMES

Under the Administration's policy for **Conversion of Residential Area into Nursing Homes**, a number of nursing homes are running in residential areas.

Nursing home sites have also been planned in Sector-33, 39, 44 and 46 which are providing basic/specialized facilities to the city residents.

9.3.2.2 DISPENSARIES AND POLYCLINICS

The city has a large number of Civil Dispensaries, Ayurvedic and Homeopathic dispensaries spread all over the city along with Poly Clinics (Community Health Centers) which cater to Primary and Secondary Health needs of the citizens. However, a large number of Civil Dispensaries in various sectors and villages and dispensaries under AYUSH are at the planning stage and to be taken up .

The plan showing the location of health facilities is placed as **PLAN 3** and the Table showing adequacy/inadequacy of medical facilities in various sectors.

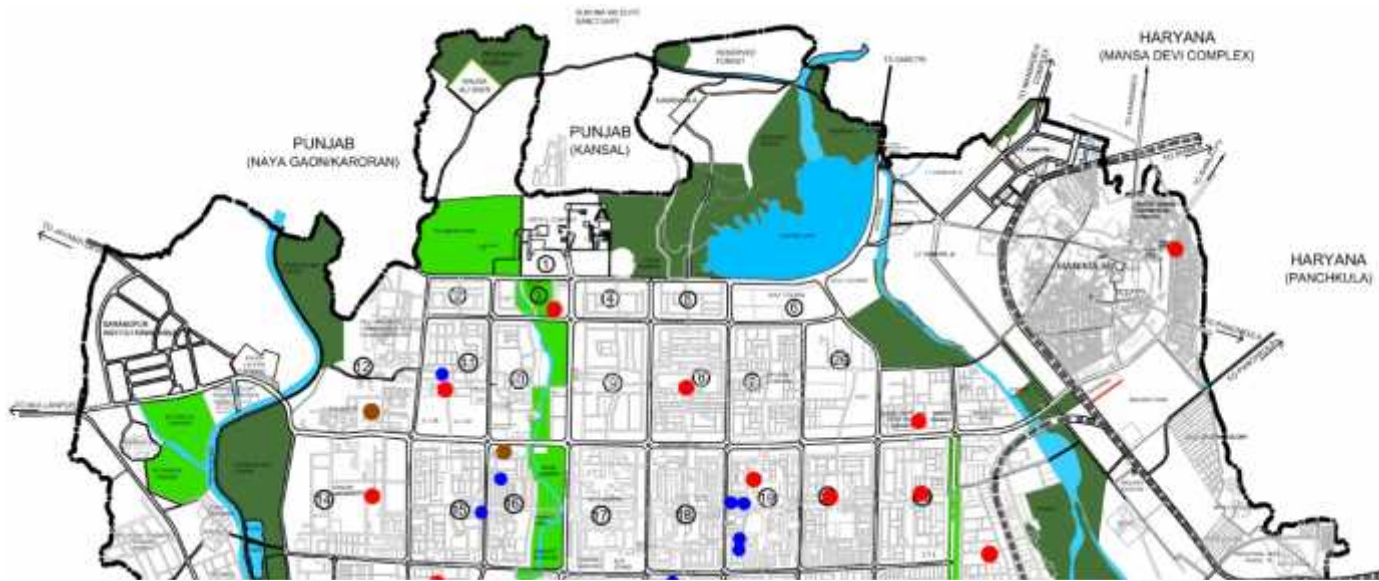
TABLE S2: ADEQUACY/INADEQUACY OF HEALTH FACILITIES

Category		Existing	Required as per Holding Capacity	Shortage (as per holding capacity)	Remarks
General Hospitals (1 for 2.5 lakh)	5+1 (proposed)	6	7	1	
Dispensaries/ Polyclinics	Sectoral Grid	40	55	15	There is shortage of 15 dispensaries and one hospital in the sectoral grid of the city.

The Table at Annexure S2 gives an elaborate list of Civil Dispensaries which are existing and proposed



PLAN- 3 LOCATION OF THE HEALTH FACILITIES WITHIN THE SECTORAL GRID





9.3.2.3 ADDITIONAL HOSPITAL IN THE CITY

There shall be a requirement of seven hospitals in the city whereas there are only six hospitals at present. Provision of an additional site shall be made in the southern sectors of the city to ensure equitable distribution across the city.

9.3.2.4 REGIONAL TRAUMA CENTRE

A 10 acre site for a modern Regional Trauma Centre with a capacity of approximately 300 beds as an extension to GMCH -32 which is to be the hub of healthcare facilities has been proposed. Retrofitting /redevelopment /augmentation of facilities in the existing hospitals to better equip them for future.

The PGI, General Hospital Sector 16, GMCH 32 which are the main hospitals of the city are under extreme pressure since these serve not only the residents of the city but also the region. The following is recommended in respect of these tertiary care hospitals.

9.3.2.5 UPGRADATION OF THE POST GRADUATE INSTITUTE OF MEDICAL EDUCATION AND RESEARCH (PGI), CHANDIGARH

The PGI which has been established on 277 acres of land provides high quality patient care besides being a training ground in all important branches of health activity and undertakes community based research, attends to 17 lacs OPD cases, 66,000 indoor patients, 43,000 emergency cases, 11,320 emergency operations, over 1.25 lac procedures, 3.55 lac radio Diagnosis cases (source PGI) and a referral centre for several northern states.

The existing infrastructure is grossly inadequate to meet the current and the future requirement in all three areas of patient care, medical education and research.

The institute has a bed capacity of more than 1500 at present has but not made any major capacity enhancement since inception except some additions in terms of OPD Block, Advanced Pediatric Centre, Cardiac Centre, Drug De Addition Centre, Advance Eye Centre and New Emergency Block.

With a view to augment the facilities to meet additional requirements, a comprehensive master plan is being prepared by the PGI authorities, The proposals include:

- Modernization of Nehru Hospital, Research block A and B, additional hostels for doctors both bachelors and married, hostels for nurses, houses for faculty / National Institute of Paramedical Sciences (NIPS). Augmenting hostel facilities for nursing students.
- Augmentation of teaching block for nursing students.

- 250 bedded hospital for Cancer Care.
- The detailed planning includes rationalization of vehicular and traffic movement, introduction of a trolley bus system within the campus & pedestrian movement with elevated pathways for efficient patient movement.
- With a view to optimize the available land and decongest the campus, single storeyed housing which is more than five decades old is proposed to be re-densified /re-planned with higher densities and with modern day requirements.

9.3.2.6 EXPANSION OF PGI

It was decided that 105 acre land recently vacated from slums after their rehabilitation should be earmarked for second campus of PGI as Institutional/Residential for Institutions for PGI in Sector 50, 51, 52, 53, as this land is ideally situated in the southern boundary of the city along a broad road and having PGI's expansion there will reduce the pressure on the main building which is already un-wieldy with a foot fall of 45 lac patient annually.

It was noted that though this piece of land was shown in the draft Master Plan as residential, but will better serve the needs of the town and surrounding areas as a hospital and research centre for decades to come, being directly accessible to Punjab, Haryana and Himachal by highways.

In addition, the land yet to be acquired in the Sarangpur Institutional Area will be primarily used for the Panjab University and the PGI being institutes of eminence. Some land of which may also be used for other institutional purposes as may be decided by the Administration.

9.3.2.7 STATE GOVERNMENT OF PUNJAB & HARYANA SHOULD BE MOTIVATED TO CONSTRUCT MEDICAL CAMPUS AT PAR WITH PGI

The State Governments of Punjab and Haryana should also be motivated to construct medical facilities at par with PGI which can be used by the masses of their respective states to reduce the pressure on PGI.



MASTER PLAN OF POST GRADUATE INSTITUTE OF MEDICAL EDUCATION AND RESEARCH, CHANDIGARH

EXISTING BLOCKS

1. NEHRU HOSPITAL
2. TRAUMA CENTRE
3. LINEAR ACCELERATOR
4. RESEARCH BLOCK
5. CAFETERIA
6. KAIRON BLOCK
7. NURSES HOSTEL
8. ADVANCE PEDIATRIC CENTRE
9. ENGINEERING OFFICES
10. ADVANCE CARDIAC CENTER
11. REGIONAL EYE CENTER
12. NEW OPD BLOCK
13. MULTILEVEL PARKING
14. MEDICAL SCHOOL
15. MARRIED DOCTOR HOSTELS
16. HOUSING
17. NURSING INSTITUTE
18. NURSING INSTITUTE
20. HOUSING TYPE 1
21. HOUSING TYPE 3
22. HOUSING TYPE C
23. SARAI SHOPPING
24. RELIGIOUS STRUCTURES

PROPOSED BLOCKS

- SB 1- SUPER SPECIALTY BLOCK 1
- SB 2- SUPER SPECIALTY BLOCK 2
- SB 3- SUPER SPECIALTY BLOCK 3
- SB 4- SUPER SPECIALTY BLOCK 4
- SB 4A- SUPER SPECIALTY BLOCK 4A
- SB 5- SUPER SPECIALTY BLOCK 5
- SB 6- SUPER SPECIALTY BLOCK 6
- SB 6A- SUPER SPECIALTY BLOCK 6A
- MP 1- MULTILEVEL PARKING 1
- MP 2- MULTILEVEL PARKING 2
- C1- COMMUNITY CENTER
- C2- GYMNASIUM
- C3- TENNIS COURT
- C4- SHOPPING
- C5- SCHOOL
- C6- COMMUNITY PARK
- STP 1- SEWAGE TREATMENT PLANT 1
- STP 2- SEWAGE TREATMENT PLANT 2
- SS 1- SUBSTATION 1
- SS 2- LAUNDRY

- UT- UTILITY
- WS- WORKSHOP
- H1 – HOSTEL 1
- H2 – HOSTEL 2
- H3 – HOSTEL 3
- T2 – TYPE 2 HOUSING
- T3 – TYPE 3 HOUSING
- T4 – TYPE 4 HOUSING
- T5 – TYPE 5 HOUSING
- T6 – TYPE 6 HOUSING
- EXISTING INSTITUTIONAL
- EXISTING RESIDENTIAL
- PROPOSED RESIDENTIAL
- PROPOSED INSTITUTIONAL
- PEDESTRIAN WALKWAY
- ROADS





9.3.2.8 GOVERNMENT MEDICAL COLLEGE & HOSPITAL, SECTOR 32, CHANDIGARH

The campus has been planned on the concept of a modular system with self-contained modules for specific functions in a plot size 36.9 acres. The campus planning was comprehensively undertaken in the 90s and is being developed in a phased manner as per the modular design. Various building blocks have already been constructed i.e Emergency, OPD, OT, Administrative, Service, Parking, Sub Station blocks. This is a modern hospital providing 696 beds in various departments and specialties. The modular system enables segregation of the flow of patient movement thus eliminating congestion. The provision of a central core space in each block reduces circulation areas while bringing in abundance of light and ventilation. Though functional and a great asset to the city, the following facilities which are still to be executed are recommended :

COMPLETION OF THE CAMPUS AS PER THE ORIGINAL MASTER PLAN IS STRONGLY RECOMMENDED.

Completion of Block E – the building to house pre & para clinical college departments, central stores, laboratories, workshops, tailoring section, College of Nursing with intake of 100 seats, lecture theatres and Staff Canteen.

Completion of Block J planned as double storey service block.

Construction of Block- F seven storey administrative block with central library, college administration & Museum of the Anatomy Department.

9.3.2.9 REGIONAL INSTITUTE OF PARAMEDICAL SCIENCES (RIPS)

No additional buildings be planned in the campus as the same is already over congested. Space auditing of the existing buildings so as to put the unutilised areas to effective use.

9.3.2.10 CONSTRUCTION OF THE SECOND PHASE OF THE RESIDENTIAL COMPLEX

22.5 acres of land in Sector 48-D stands allotted for construction of second phase of the residential complex for various category of houses, hostel Complex for girls and boys, community centre and guest house and multi level parking.

Recommendation - There shall be provision of Sports Complex in Sector-48 adjacent to this campus in Chandigarh to provide recreational facilities for doctors and medical staff as per the guidelines of Medical Council of India.

9.3.2.11 GOVERNMENT MULTI SPECIALTY HOSPITAL SECTOR 16

The 500 bedded hospital (with additional capacity of 60 beds) has been upgraded to the level of a Multi-Specialty Hospital. In the year 2004, the Health Department prepared a master plan keeping in view its present and future needs wherein a phased programme was evolved for creating new facilities on vacant land /demolishing old obsolete construction in a phased manner.

The execution of the New OPD Complex has been completed.

Since there has been a time gap in the planning and execution of the project it is recommended that the master plan should be reviewed to ensure that the latest requirements are addressed and adequate physical infrastructure such as parking, roads etc., are provided.

9.3.2.12 REGIONAL INSTITUTE FOR MENTALLY RETARDED CHILDREN, SECTOR 31

The institute presently has special education block, administrative block and medical care block. Completion of the institute as per overall Master Plan of the campus is recommended to provide vocational workshops, multipurpose hall, hostels and housing for the essential staff

9.3.2.13 REGIONAL INSTITUTE OF MENTAL HEALTH, SECTOR 32

To cope with the increased demand from the residents of Chandigarh as well as neighbouring states execution of the campus is proposed .





LAYOUT PLAN OF THE MULTI SPECIALTY HOSPITAL, SECTOR 16



3D VIEW OF THE NEW OPD BLOCK OF THE MULTI SPECIALTY HOSPITAL, SECTOR 16



LAYOUT PLAN – GOVT. MEDICAL COLLEGE & HOSPITAL
32, CHANDIGARH

SECTOR



9.3.2.14 DISPENSARIES AND POLYCLINICS

The following dispensaries have been proposed but yet not executed:

Already proposed but construction not undertaken yet.	Dispensaries at Janta and Kumhar Colony, Sector 25, Khuda Ali Sher, Sector 38 (West), Behlana. Further, the upgradation of dispensaries at Kaimbwala, Maloya and Hallomajra as per I.P.H norms is under process.
New Proposal/fresh requirements.	Dispensary site already identified in Sectors 48, 49, 50, and 52 and design process to be undertaken as per fresh scope of work.
	Sector 42, 51, One dispensary in either Sector 54 or 55, Kishangarh, IT Park, Vikas Nagar

Chandigarh Master Plan 2031 proposals:

The following proposals are planned for development of Health Sector in the city:

- **Upgradation of 50 Bedded Community Health Center, Sector-22**, Chandigarh to 100 Bedded Hospitals for MCH Services.
- **Upgradation of Poly Clinic at Village Burail** (near Sector 45), Chandigarh into 50 Bedded Hospital.
- **Construction of Subsidiary Health Center at Village Behlana**, Raipur Khurd, Kishangarh.
- **Upgradation of Rural Health Care Services at Village Kaimbwala and Civil Dispensary to Primary Health Centre** at Village Mauli Jagran.

- **Four new Dispensaries are proposed to be opened** subsidiary Health Center in Sector 52, Sector 38-West Sector 48, sector 63.
- **Construction of Six Sub Center Buildings in Rural Areas** at village Daria, Raipur Kalan, Behlana, Sarangpur, Khuda Lahora, Raipur Khurd.
- **Health facilities for alternative systems of medicine:** Construction of new Government Ayurvedic Dispensary, Manimajra / IT Park, Chandigarh for running Ayurvedic as well as Homoeopathic Dispensary. (site to be earmarked), opening of one morning till night dispensary at Government Ayurvedic Dispensary, Sector 24, Chandigarh and *Sector 8, Chandigarh*.
- * **Establishment of Homoeopathic Dispensaries:** Three new Government Homoeopathic Dispensary, Sector 41 (Badheri), Sector 52, Sector 30. Opening of morning till night dispensary at Government Homoeopathic Dispensary, Sector 34, Chandigarh.
- The absence of the dispensary facilities in other sectors is compensated by charitable dispensaries. A dispensary site in each sector is to be provided which will add 10 more dispensaries which will include one each in the third phase southern sectors 48 to 56 and part of Sector-63.



9.3.3 CULTURAL CENTRES IN THE CITY

Care of Body in Spirit is one the major function of the city's plan. Various culture facilities have been provided in the city which include both city level as well as neighbourhood level facilities.

The Government Museum & Art Gallery Sector-10, Fine Arts Museum, auditoriums of the Panjab University, Kala Gram, Cinema Halls, Auditoriums, Bhawans and Tagore Theater Sector 18 are the major cultural centres of the city. Almost all educational institutions of city have multi-purpose halls. Some facilities like Beant Singh Memorial, Sector 42 are under construction.

Neighbourhood Cultural facilities include community centres/places of worship, E-Sampark centres.

9.3.3.1 City level cultural centres

Government Museum & Art Gallery, Sector-10 designed by Le Corbusier, adjoining the Leisure Valley forms a prominent landmark along Jan Marg, the ceremonial road leading to the Capitol Complex.

The campus has a cluster of other buildings which include the Government College of Art, the Architecture Museum and the Science Museum.

9.3.3.2 Cultural Centres in the City

The Chandigarh Administration has plans to make Chandigarh as one of the important tourist destinations. The following proposals are envisaged for the growth of the cultural sector in the city:-

Development of Museum and Art Gallery buildings:

A comprehensive proposal for renovation and upgradation of the Museum has been initiated by the Chandigarh Administration to revitalise the museum with state of the art and latest technology which is to include upgradation of the Natural History Museum with addition of *Butterfly of India Section and a Section on Ecology*.



ART GALLERY, SECTOR 10

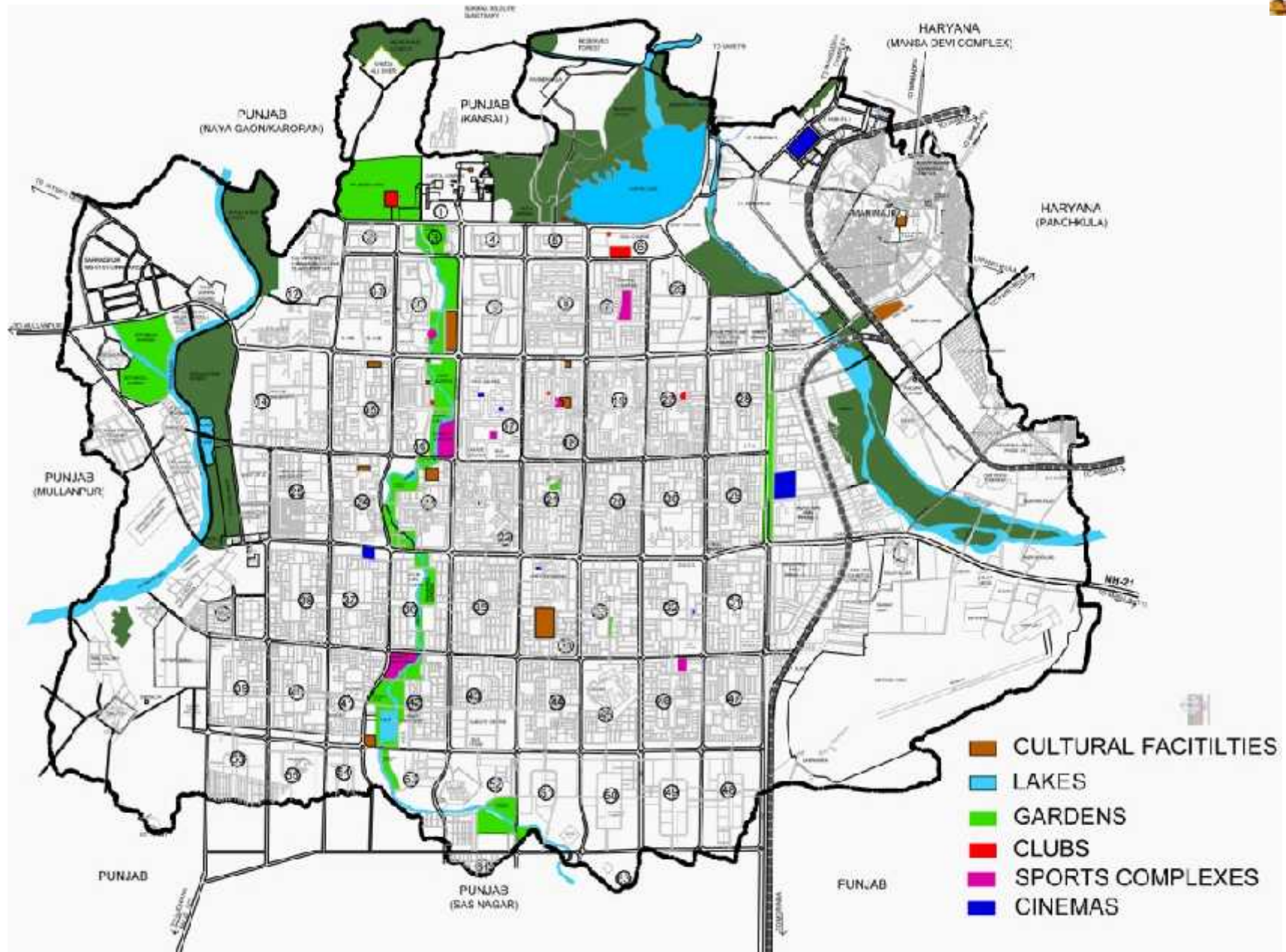


CHANDIGARH ARCHITECTURE MUSEUM, SECTOR 10

A Dinosaur park is proposed to be added as an extension to the Dinosaurs of India section. Development of Child Art Gallery to display works of art created by the children of the region and will have a special section of works of art created by the physically and mentally challenged children and slum children. Interactive Creative Centre for the young artists (ICCYA) in the Government to provide space and environment to the young artists for development and popularization of art practice.

Recommendation:

The campus located along Jan Marg has been recommended for Grade 1 Heritage Status and development shall be strictly as per Heritage regulations and with the approval of the Chandigarh Heritage Conservation Committee.





9.3.3.3 CINEMA HALLS/MULTIPLEXES

The original plan made provision for 8 Cinema Hall sites spread across the city, three of which were in the neighbourhood Shopping Centres (Jagat Theatre, Neelam Theatre, KC Theatre). The design, external façade of the cinema halls was controlled through the **Schematic Design Control**.

With a view to promote Tourism and Entertainment Industry, the Chandigarh Administration notified the scheme **“Setting up of Multiples Theatre and Conversion of Existing Cinemas into Multiplex Theatres Scheme, 2007”** wherein in place of a single screen three or more separate theatres along with commercial use was permitted subject to conditions. Due importance was given for maintaining the special character of the building while retaining the existing ground coverage.

The Expert Heritage Committee while appreciating the imaginative design of Kiran Cinema designed by Ar Maxwell Fry has recommended the building for heritage status. It has been stated that the same should be done in dialogue with the owner. With a view to ensure that the landmark building of the city is retained a policy of incentives as advocated by the Expert Heritage Committee for all private buildings requiring conservation shall be evolved based on best practices in the world.



KC THEATRE, SECTOR 17 HAS BEEN DEMOLISHED



KIRAN CINEMA – RECOMMENDED FOR HERITAGE STATUS



THE JAGAT THEATRE, SECTOR 17 HAS BEEN DEMOLISHED AND REBUILT



TDI MALL RECONSTRUCTED AFTER DEMOLISHING JAGAT CINEMA



9.3.3.4 BHAWANS

In addition to community centres, various bhawans in the city are also being used for organising exhibitions, fairs, religious functions, solemnising marriages etc. The bhawans are Lajpat Rai Bhawan and Guru Gobind Singh Bhawan in Sector 15; Panchayat Bhawan, Sector 18; Ramgharia Bhawan Sector 27; Himachal Bhawan, Sector 28; Gulati Bhawan Sector 33; Kisan Bhawan, Khukhrain Bhawan Sector 35 and Sood Bhawan Sector 44 and the Mahila Bhawan is under construction in Sector 38.

9.3.3.5 BANQUET HALLS/MARRIAGE PALACES

At present the city is mainly dependent on the neighbouring towns particularly Zirakpur, Mohali etc. for large scale social functions. Two sites have recently been earmarked for banquet halls/marriage palaces in the UT at Manimajra and Hallomajra.

9.3.3.6 FILM CITY

To facilitate production and post production work and to provide training to technical personnel related to film industry, a Film City shall be set up within the city. Land would be acquired in Sarangpur.



9.3.3.7 Augmentation of cultural facilities



An area of 14.18 acres was allotted to the Department of Culture, Government of India for setting up of an Artisan Village at Manimajra on the Chandigarh Kalka Highway.

The first phase of the project which include the restaurant complex, open air theatre, NZCC Office, restaurant complex, open air theatre, accommodation for artists have been constructed.



Since 2008 theme based National Crafts Mela has been held every year showcasing the rich cultural heritage and traditional handicrafts of the country. The melas have been a great success.



PLAN - PROPOSAL FOR DEVELOPMENT OF THE SECOND PHASE OF KALAGRAM WITH PERMANENT SPACE FOR EXHIBITIONS OF DIFFERENT CULTURAL ZONES

CMP 2031 Proposal

Setting up of additional infrastructure in Kalagram, Manimajra (2nd phase development)

Completion of the 2nd Phase of Kalagram which would include permanent pavilions of the zonal cultural centres, art and craft shops, multipurpose hall, exhibition space, work shops, food court, open air theatre, offices, multilevel parking etc.

Plot adjoining the Kalagram which has also been allotted to the Kalagram to be developed as a multistoreyed hostel campus for the visiting craftspeople with provision of underground parking.



Hotel

Chandigarh was originally planned for equal distribution of facilities catering to the administrative functions for which the city was envisaged. However, CITCO being the nodal agency to promote tourism in and all around Chandigarh was the main force behind development of tourist accommodation in terms of hotels and lodges like Hotel Mountview, Shivalik View, Park View etc. The market force had a large concentration of economical tourist hotels in front of ISBT-17, as a major tourist resource to the city as it was only connected by road in its earlier years. The Administration responded to the market forces & allotted/auctioned a large number of LCR sites along the Himalaya Marg in Sectors 22, 35 & 43.

Since the very inception a large number of lodging and boarding facilities were available in the institutional belts by the State Government of Punjab, Haryana and UT in terms of UT Guest House, Punjab Bhawan, Haryana Niwas and guest houses in all the central institutions like PU, CSIO, IMTECH, PGI, NTTTR, CPWD,BSF, TBRL, ITBP, PEC, Commonwealth Secretariat etc. for the officials visiting the capital city. There are many tourism training institutes like AIHM, CIHM who had also developed hotels for training of their students and providing economic facilities to tourists preferring southern sectors.



NEW HOTELS
IN CHANDIGARH



A few years back when the Chandigarh Administration made tourism as its main focus, large players in hospitality industry like the Taj Group, JW Marriott, Bharat Hotels, Lemon Tree, Park Plaza, etc. besides the local players like Aroma Hotel, Piccadilly Hotel and Sunbeam Hotel started diversifying and expanding their businesses. Over the last few years many five star hotels have developed along Jan Marg in Sector-17, on Dakshin Marg in Sector-35, Business Hotel in IT Park etc.

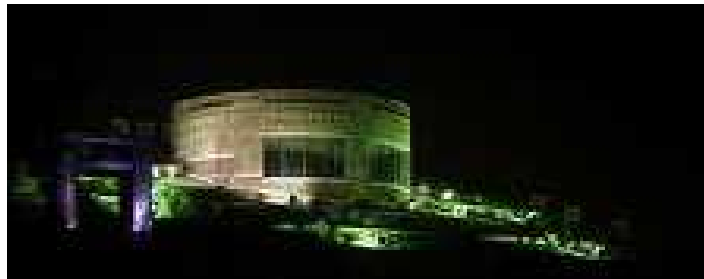
The conversion of industrial sites to commercial has resulted in concentration of a new hotel zone in the Industrial Area of the city. Similarly, number of hotels are being developed in the peripheral towns of the city near Zirakpur, Mohali, Panchkula resulted in a boom of hotels in the tricity.

There are various hotels and lodges in the V4 markets in sector 17, 18, 24, 22 & 10. A large concentration of hotels and restaurants have also been now developed in Sector 26 on Madhya Marg.



BEANT SINGH MEMORIAL AND CENTRE FOR PERFORMING AND VISUAL ARTS, SECTOR 42, CHANDIGARH

This memorial building and centre for Performing and Visual Arts on Vikas Marg adjoining Leisure Valley in Sector 42, Chandigarh is under construction on a site measuring 11.9 acres. The important components of this complex include Sarwadharam Repository, Library, Samadhi, Conference and Media Centre, Cafeteria, Exhibition-cum-Multipurpose hall, Auditorium, Guest House, public plaza, amphitheatre, arcade. The Library and Samadhi have been constructed at site along with the pool, the public plaza and the amphitheater. Completion of the campus is strongly recommended.



BEANT SINGH MEMORIAL, SECTOR 42, CHANDIGARH



BEANT SINGH MEMORIAL, SECTOR 42, CHANDIGARH



BEANT SINGH MEMORIAL, SECTOR 42, CHANDIGARH



DEVELOPING A CULTURAL HUB IN SECTOR 42

A cultural hub is proposed to be developed in Sector 42 which will include the Beant Singh Memorial, **Lake in Sector 42**, **Palm Garden**, **Tourist Information Centre**

The Leisure Valley with its lake is already popular with the residents of the city especially for chatt puja. The Palm Garden is being developed with a tourist information centre. The Leisure Valley will integrate with the urban design proposal of the Vikas Marg which has been conceptually as a major cultural hub in the pedestrian promenade and mixed landuse development.





TOURISM / CULTURAL PROJECTS IN PIPE LINE

There is a proposal to bring Chandigarh city in the tourism circuit of this region for which various steps have been planned as detailed below :

A) PRAYATAN BHAWAN

Tourism Department of Chandigarh Administration intends to construct a new regional Prayatan Bhawan (Tourism Bhawan) in Sector 17 for the promotion of tourism and facilitation of tourists visiting Chandigarh where regional tourism offices of the states of Punjab, Haryana, Himachal Pradesh and Jammu and Kashmir shall be established under one roof for convenience of the tourist..

B) NEHRU CENTER FOR PERFORMING ARTS, SECTOR 34

Another cultural hub in the Sub City Centre of Sector 34 with ample commercial activity of hotel & restaurant sites in Sector 35 & newly upgraded multiplex in the vicinity shall be a major attraction in the heart of the City. Another redevelopment plan with underground parking under the pedestrian plaza, abutted with flexible floor plate multi-storied commercial / institutional blocks will meet the new needs of changing cultural & commerce needs.

A State of the Art Convention Centre has been envisaged for the promotion of Chandigarh as a popular M.I.C.E destination. Nehru Center for Performing Arts shall have the facility of an international convention center and theaters. The centre would comprise an auditorium for 1,500 persons and one smaller for 250 persons, two conference halls, a cafeteria and parking spaces.

C) TAGORE THEATRE

This Theatre with a capacity of 840 persons has been recently upgraded but needs to be integrated with a cultural circuit of the region however experimental theatre and underground parking is yet to be constructed.





9.3.3.8 Libraries

Since the very beginning the original Chandigarh plan had a large number of equally distributed public facilities including public libraries and auditoriums:

- The Phase I plan had a provision of public library near the Town Hall in Sector 17 in a area of **58,000** sq.ft. housing two lakh volumes with an average increase of 5000 volumes per year. This Central State Library has various sections like children section, reading rooms, reference library, circulation section, american centre corner, digitized media library alongwith supporting facilities of the Auditorium and a National Portrait Gallery.
- One public library in Sub City Centre, Sector 34 was built upto two floors in the first phase to cater to the population of Phase I & II of Chandigarh and the total building with an approximate covered area of 1,10,100 Sq.ft is now being completed in four phases.
- An extension of the central library has also been provided in village Manimajra besides a mobile library which caters to the need of the remaining areas of the city.
- Chandigarh being educational hub having facilities for more than 100 government schools and super specialized institutions has libraries of various interests catering to the needs of the entire population.
- Besides the above facilities, libraries have also been provided in all institutional institutes. The Panjab University, PGI, PEC University, CSIO. INTECH. GMCH, NTTTR and all government and private institutes having specialized library to cater to specialization of institutes in the city.
- In addition to the above, many societies and associations have reading rooms and libraries for public the Durgadass Society in Lajpat Bhawan, Sector 15, Rama Krishan Mission, Sector 15, Gandhi Samark, Sector 16, CRRID, Regional Institute of English, Sector32, State Institute of Education, Sector 32, Regional Institute of Special Education Sector 32, Institute of Engineers Sector 19, ITPI, Sector 35.

- All major religious and cultural institutions have also been planned with reading room/library component for the Beant Singh Memorial in Sector-42, Gandhi Bhawan in Sector-14 (PU), Ramgarhia Bhawan, Radha Swami Satsang, Jain Library, Indira Holiday Home, Sector-24, YMCA, Sector-11.
- A reading room and library component has also been planned in all the community centres of the city.

In addition, the change in building bye laws has allowed opening of cyber cafes in residential areas, in view of the changing technologies where internet is the major source of information replacing the use of physical library. Further more, the following projects in future shall bring new areas through which major information source can be given to public at large:-

- I) Museum of Knowledge at the Capitol Complex was envisaged as a central research and information centre to disseminate major schemes and policies of the governments stationed in the Capitol Complex for easy and quick disposal of policy issues by the executive, legislature and judiciary.
- II) A major public library is also being planned for the cultural centre of Beant Singh Memorial. The library consists of a central atrium, Reception-cum-Waiting area, Main Hall having library and pre function, two floor, digital library, Orderly Visual Room, Office, Conference Hall, Computer room, Cafeteria, Kitchen and Lecture hall with a special Punjab History and Culture Section, Children Section, Book browsing.
- III) The Convention Centre and Exhibition halls planned in Sector-31, IT Park, Sub City Centre of Sector-34, Judicial Academy in Sector-43, besides general and cyber libraries in the Community Centres.



9.3.3.9 AUDITORIUMS

Chandigarh has a large number of auditoriums built in the educational, cultural and specialized institutions catering to the socio-cultural needs of the society. Major details are as under:-

- **PGI, Sector 12**-Auditorium with a capacity of 1000 persons and two small auditoriums for 400 +250 persons and a Nursing Auditorium for 500 persons.
- **Panjab University, Sector 14** Law auditorium of about 100 persons and many small halls in each department.
- **Sarai Building, Sector 32** with a capacity of about 1000 persons
- All educational Institutes and various government and public schools having auditoriums.
- An upcoming modern **Nehru Centre for Performing Arts, Sector 34** with two large auditoriums and parking facilities.
- An ultra modern auditorium in **High Court, Sector 1, Judicial Academy, Sector 43** and Law Bhawan, Sector 37.
- Besides the above facilities, all five stars and major hotels have exhibition-cum-convention facilities to cater to the needs of the corporate clients. The new Convention Centre-cum-Hostel Centre is planned in the IT Park in Kishangarh.
- **Bal Bhawan, Sector-23** caters to the special needs with auditorium, open area theatre, library, crèche and similar educational and cultural facilities.
- From the above, it is evident that Chandigarh is well equipped in terms of auditorium which can cater to future needs.



GROUNDS/PLACES FOR EXHIBITIONS

- Chandigarh being a state capital and a business hub of the region attracts a number of visitors. Various exhibitions are held in the city for which provisions are made in City Centre, Sector 17 as Parade Ground and Exhibition Ground.
- The Kalagram, Manimajra is used for organizing the National Crafts Mela.
- The undeveloped portion of the Sub City Centre, Sector 34 is also used as mela ground.
- The Confederation of Indian Industry, Sector 31 and various bhawans particularly the Panchayat Bhawan, Sector 18 and the Lajpat Rai Bhawan, Sector 15; Bal Bhawan, Sector 23, Kisan Bhawan, Sector 35 and hotels are also popular venues for exhibitions.



LAYOUT PLAN

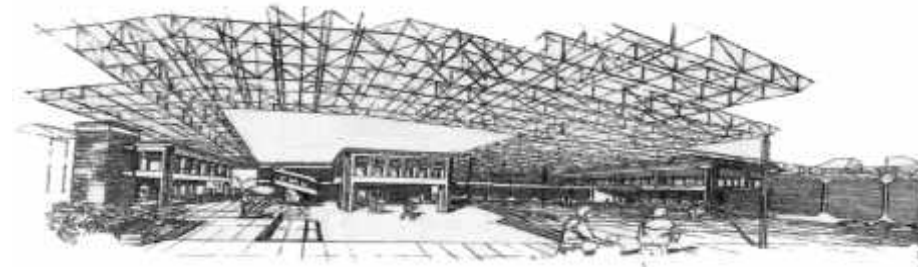
RECOMMENDATION

PERMANENT EXHIBITION CENTRE

To meet the growing needs of the city the Chandigarh Administration in 1996, envisaged as the **Permanent Exhibition Project** on the lines of Pragati Maidan in New Delhi, though on a much smaller scale to provide an organized and dedicated all year round space for Trade Fairs and exhibitions in place of the makeshift arrangements in hotels, *Bhawans etc.*

The site for the same was identified in Sector 31, and design short listed through design competition. However the project did not take off.

This is a basic facility which is required to be provided for the citizens of Chandigarh.



PERMANENT EXHIBITION GROUND, SECTOR 31



9.3.3.10 COMMUNITY CENTRES

There is a shortage of 16 community Centres as per the holding capacity of the sectors.

Provision of a community centre shall be made in each of the high density southern sectors, rehabilitation colonies which are yet to be planned and developed.

In the already developed sectors the provision will be made as per the requirement during detailed planning where land is available for such kind of facilities.

All new community centres shall be planned with state of the art modern day facilities – large halls/ dining areas / libraries /sampark centres, indoor and outdoor recreational areas / swimming pools, gymnasium, library, indoor game, bridal room and shall have richer specifications.

The existing community centres shall also be renovated to bring them at par with the modern day requirements. To better equip the centres, scope for expansion/addition and alterations of buildings shall also be examined on case to case basis and carried out subject to availability of space and developmental /planning norms.

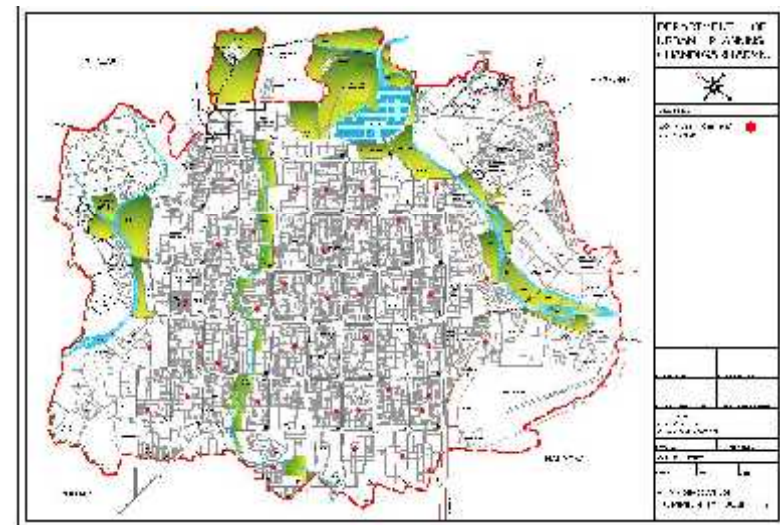
The Mahila Bhawan Sector 38, and community centres which is already under construction will provide additional assets to the city.

category	Existing	Required as per Holding Capacity	Shortage (as per holding capacity)
Community Centre/Dharmshala	31	53	22

Community facilities in Villages

While villages of sectoral grid are to be catered by the cultural facilities provided in the sector, the villages outside sectoral grid shall be ensured of all urban community facilities while undertaking development plans of each village as has been highlighted in detail in Chapter on Development of Villages.

Basic infrastructure like : educational, health facilities along with community centre / dharamshala have already been provided/existing in villages. **For further details, Refer Table no: 14.1 to 14.9**





- **Community Centre Sector 22, Chandigarh spread over 1.8 acres** providing the facilities that includes Library, Sampark centre, Dormitories, Public utilities.



COMMUNITY CENTRE – EQUIPPED WITH STATE OF THE ART FACILITIES UNDER CONSTRUCTION IN SECTOR 49.



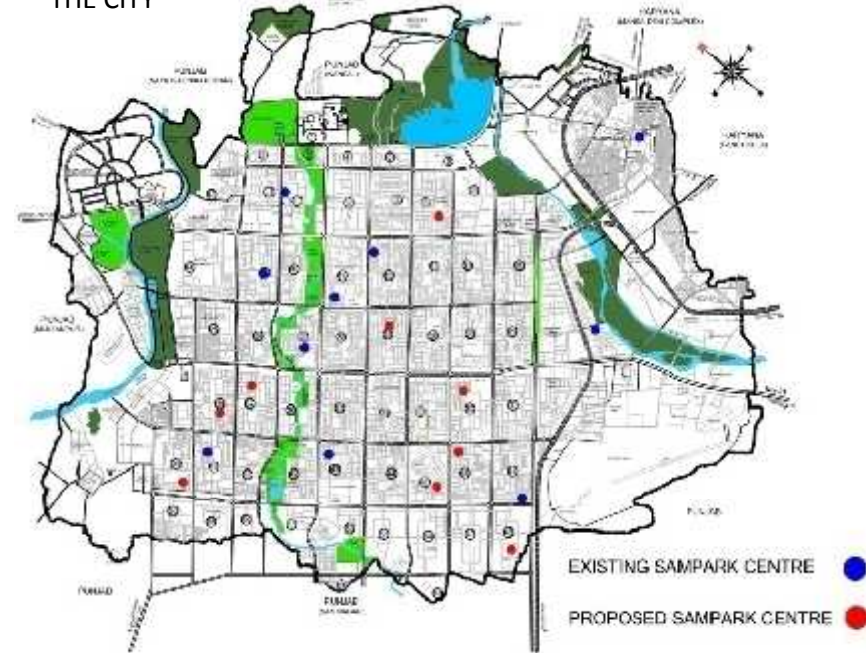
9.3.3.11 E SAMPARK CENTRES

Project E Sampark was initiated to bring together the services of all the departments under one single umbrella and give citizens of Chandigarh a “multi-service” - “single-window” experience apart from eradicating the undue harassment for visiting the various departments. It has been the endeavour of the Chandigarh Administration to continually strive to extend the facility across the city for which E-sampark centres have been opened in various sectors. The number of services extended have also been increased over the years. Plan showing the location of the existing and proposed E-sampark centres is given on the side.



E SAMPARK CENTRE

PLAN SHOWING LOCATIONS OF EXISTING E SAMPARK CENTRES AND PROPOSED SITES OF E SAMPARK CENTRES IN THE CITY



Gram sampark

The E-governance has also spread to the villages and various services are provided in the 12 E Sampark Centres and 13 Gram Sampark Centres in the villages of UT, Chandigarh.

Jan Sampark services from these centres are also being provided for information and facilitation services to the citizens including registration of grievances and applications under Right to Information.



9.3.4 SOCIAL WELFARE

Rain Basera/Night Shelters

The study conducted by the Jawaharlal Nehru Urban Renewal Mission (JNNURM) indicates that there is requirement of 8 fully functional night shelters in the city.

Five night shelters/labour hostels already exist in sectors 17, 26-E, 28, 29 and Pocket No.2 & 3 of Manimajra and two sites in Sector-15 & 28 are lying vacant. However, there are a lot of homeless people who take shelter in the public corridors, bus queue shelters etc. at night.

Recommendation

In every 4-5 sectors one *Rein Baseras* Night shelter should be constructed for the needy people. The identified sites in Sector 15 and Sector 28 should be utilised. The existing night shelters shall be maintained and not diverted to other uses.

Juvenile Home, Sector 25, Chandigarh developed on 0.79 acres provides accommodation for both boys and girls separately.

Vocational Training & Production Centre, Sector 46 Chandigarh is spread over 1.18 acres with training class rooms, multi-purpose halls, record rooms, utilities, dormitories, etc.

Creches - 47 crèches are being run through voluntary organizations in the city

Recommendation

Sites for six more crèches (Day Care Centres) in Sector 48D, Sector 42B, Sector 11A, Sector 10D, Sector 24 and Sector 36D which have already been identified should be developed. In view of the growing female worker population the provisions shall be reviewed and augmented.



REGIONAL INSTITUTE FOR MENTALLY AND HANDICAPPED CHILDREN-
ASHADEEP, SECTOR 31



JUVENILE HOME

HALFWAY HOME SECTOR 47



VOCATIONAL AND PRODUCTION CENTER SECTOR 46



* **Anganwadi Centres**

At present, 420 Anganwadi Centers are functioning under :

ICDS Project in villages, labour colonies and various sectors of Chandigarh where there is concentration of economically weaker sections of society. Proposal of **80** more such centres is recommended which include anganwadi buildings in various villages.

The villages are Dhanas, Palsora, Khudda Ali sher, Khudda Lahora, Chaman Colony Dhanas, Ambedkar colony, Dhanas, Palsora Colony Sector 55 and 56 and Janta Colony, Sector 25.

* **Senior Citizen Home**

Chandigarh has taken proactive steps to attend to the needs of the different strata of society / the under privileged citizens. A senior citizens homes have been set up in Sector 43 for providing a secure and homely atmosphere to the senior citizens living alone in Chandigarh and with paying capacity. The institute has rooms with attached toilets, a health center, multi-purpose hall, dormitories, medical facilities and a day club. In case of emergency, there is medical tie up and ambulance arrangement with the Government Medical College Hospital, Sector 32, Chandigarh. The home is being managed by the Chandigarh Child and Women Development Corporation.

Another Old Age Home has been set up in Sector 15, Chandigarh.

Recommendation

A site for the Old Age Home in Sector 34 has been earmarked . The same is recommended for execution.

World Senior Citizen Day at an old age home in the city





- **Hydrotherapy Pool-cum-Activity Centre Prayaas, Sector 38, Chandigarh**

There is a proposal for construction of Hydrotherapy Pool-cum-Activity Centre in Prayaas, (Rehabilitation centre for children), Sector 38, Chandigarh with 2 Hydrotherapy pools for handicapped children and youth with change rooms, cafeteria, kitchen, thrift shop, lobby, multipurpose hall, computer centre, art room, music room, indoor games room and plant room for provision of engineering services etc. has been planned.

- **Drug de-addiction centre**

A drug de-addiction centre is operational in PGIMER to take care of patients addicted to substance abuse and another one is operating in Government Press Building Sector-18, Chandigarh.



- **Hydrotherapy Pool-cum-Activity Centre Prayaas, Sector 38, Chandigarh**

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- **Drug de-addiction centre**

A drug de-addiction centre is operational in PGIMER to take care of patients addicted to substance abuse and another one is operating in Government Press Building Sector-18, Chandigarh.



9.3.5 PLACES OF WORSHIP

The city has many temples, gurudwaras, churches and masjids/dargahs in different parts of the city.

There is a **conspicuous absence** of any place of worship in the Northern belt of residential sectors 1 to 6.

Some old temples like Hanuman Temple in Sector 32 & Kali Temple in Sector 19 (along Madhya Marg) were integrated within the sectors during initial planning. The Gurudwaras in Sector 8 & 34 also have historic background being connected with the visit of Guru Gobind Singh and Guru Teg Bahadur respectively. These places of worship have however transformed in character due to additions and alterations over the years.

Recommendations

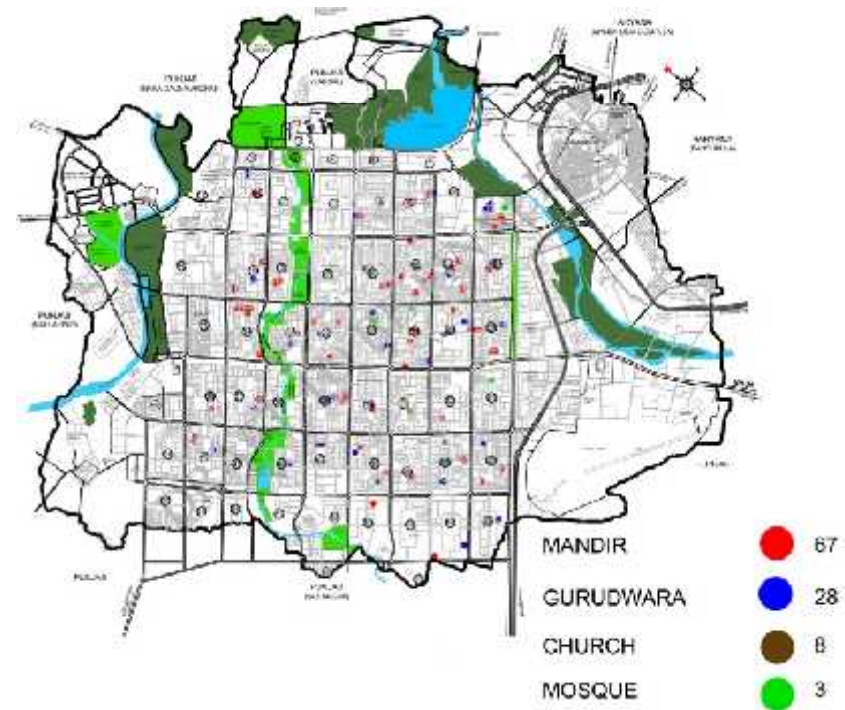
Owing to their unique architectural detailing, the Church in Sector 18, Mandir in Sector 23, Mosque in Sector 20 and Gurudwara in Sector 22 have been recommended for heritage status. Certain other religious buildings like, church in Sector 18, 19, Mandir in Sector 44 have been sensitively designed to blend with the Chandigarh style of architecture. As per the 2001 Census, the city's population has 707978 Hindus, 145175 Sikhs, 35548 Muslims and 7627 Christians. Provision of additional places of worship needs to be made as per the distribution of population by various religions.

To meet with the shortage of places of worship, it is proposed that new sectors / colonies to be developed should have provision of religious sites for different communities.

Category		Existing	Required as per Holding Capacity	Shortage (as per holding capacity)
Places of Worship	Sectoral Grid	106	166	60

Source; Department of Urban Planning, Chandigarh Administration

PLAN SHOWING LOCATIONS OF PLACES OF WORSHIP IN CHANDIGARH





MOSQUE IN SECTOR 20 - ONE OF THE FOUR RELIGIOUS STRUCTURES WHICH IS RECOMMENDED FOR HERITAGE STATUS - HERITAGE REGULATIONS SHALL BE MADE APPLICABLE.

LUXMI NARAYAN MANDIR IN SECTOR 44 B - SENSITIVE BLENDING WITH THE CHANDIGARH STYLE OF ARCHITECTURE. THE INDIGENOUS VOCABULARY SHOULD BE ENCOURAGED





9.3.6 POLICE STATIONS

The city has 13 police stations distributed across various sectors. As per Chandigarh UDPFI guidelines one police station is needed for every 90,000 persons according to which the UT will require 18 police stations to cater to the projected population of 16 lac. While Phase-II sectors have several police stations, Phase-III sectors are found lacking although the density is high in these sectors. A table showing the availability of Police Station in the sectoral grid is given below and the Plan showing the location of Police Stations is given on left side:

		Existing	Required as per holding capacity	Shortage (as per holding capacity 20 yrs later)
Police Station	Sectoral Grid	13	18	5

Source – Department. of Urban Planning, Chandigarh Administration

Recommendation:

Additional police stations need to be earmarked in areas found wanting to ensure equitable distribution.

9.3.7 CREMATION/BURIAL GROUNDS

The city’s main Cremation Ground, Muslim Graveyard, Christian Cemetery and Children Burial Ground are operational in Sector 25 (W) and in addition, there is another cremation ground in the Industrial Area Phase I and in Manimajra are also operating. Besides, various villages falling in the peripheral area of Chandigarh also have cremation grounds and graveyards .

Recommendation

- In Manimajra, the existing cremation ground once on the outskirts of the village today falls on Chandigarh-Kalka road which is highly urbanised. Hence, the site is now inept for cremation ground and needs to be discontinued.
- Shifting of Cremation grounds of villages falling within habitable areas is recommended.

PLAN SHOWING LOCATIONS OF POLICE STATIONS IN CHANDIGARH

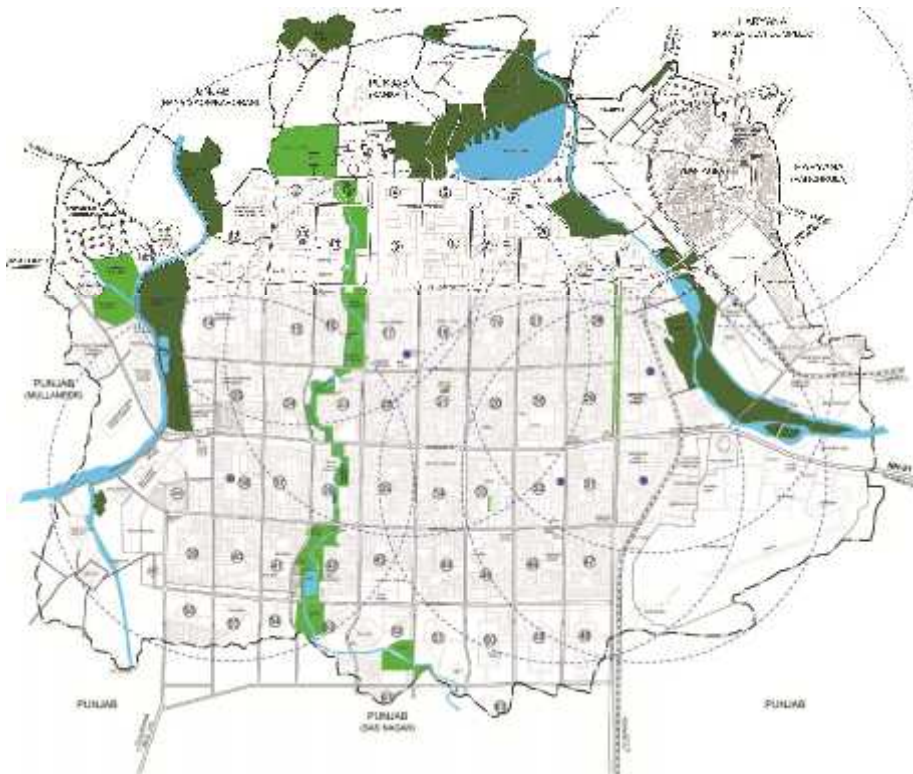




9.3.8 FIRE STATIONS (1 FOR 2,00,000)

A plan showing the location of Fire Stations in various sectors is at **ANNEXURE-S.M.3.** along with table showing adequacy and inadequacy. Although the existing fire stations are adequate for the current population, two additional fire stations will be required as per the holding capacity of the city. A site has been proposed in IT Habitat and another site will be earmarked in the southern sector during detail planning of the sector. There is one fire station available for every 200000 persons in the city.

PLAN SHOWING LOCATIONS OF FIRE STATIONS IN CHANDIGARH



		Existing	Required as per Holding Capacity	Shortage (as per holding capacity)
Fire Station	Sectoral Grid	7	9	-2



9.3.9 FUEL FILLING STATIONS (PETROL PUMPS)

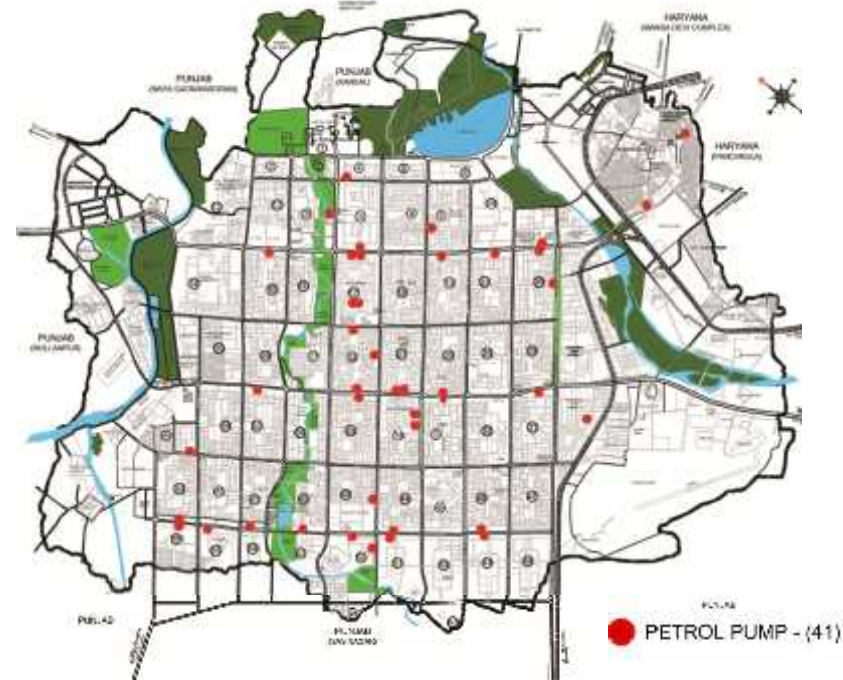
The number of petrol/CNG/LPG pumps in the city is sufficient for the projected population. The filling stations across the city were governed by the Schematic Design Control. The following table indicates availability of petrol pumps in the city vis-a-vis the requirements.

Availability of Petrol Pump in the city

		Existing	Required as per Holding Capacity	Shortage (as per holding capacity)
Petrol Pump	Sectoral Grid	40	36	+4

Source

Department. of Urban Planning, Chandigarh Administration



Plan Fuel Filling Stations (petrol pumps)

Subsequently the additional land, provision for commercial outlets, ATMs etc were permitted to enable upgrade the outlets into one stop point for the convenience of the residents.





9.3.10 SPORTS FACILITIES

The city has infrastructure for almost all types of sports with several well equipped sports complexes, sports clubs (with facilities for swimming, athletics, tennis, gymnasium, football, cricket, golf, etc.) and hostels for sports persons. The city has a Cricket Stadium in Sector 16, Hockey Stadium in Sector 42 with international standard Astro turf and a Lawn Tennis Stadium in Sector 10.

Several sectors also have swimming pools.

The infrastructure in the city is capable of holding international tournaments such as Davis Cup (Tennis), Indian Premier League (Hockey) etc.



CRICKET STADIUM SECTOR 16 – PROPOSED UPGRADATION OF THE STADIUM IN KEEPING WITH THE ORIGINAL CHARACTER.

HOCKEY STADIUM, SECTOR-18

Hockey Stadium situated adjoining Tagore Theatre in Sector 18 is spread over 2.86 acres area with a pavilion building having office, players rooms, toilets etc. for 1200 viewers. A six-a-side play field for trainees has been proposed.

ATHLETIC STADIUM, SECTOR-46

Athletic Stadium, Sector 46 is situated adjoining Government College, Sector 46, spread over 5.99 acres with a pavilion building and viewers capacity of approx. 600. The stadium has a hockey ground, 8 lanes athletic ground, two basket ball courts and two volley ball courts.

Recommendation

A proposal of a double storey block after dismantling existing pavilion building is recommended for upgradation of the stadium and other facilities.

SPORTS COMPLEX, SECTOR-7

Sports Complex, Sector-7 is situated along V4 road opposite shopping complex, spread over an area 9.64 acres (approx.) having capacity of 1250 persons approximately. It has a facility of 2 indoor squash courts, a gymnasium hall, with 4 open basket ball courts & 2 volley ball courts etc.

Recommendation

A proposal of multipurpose hall with facility of 2 indoor badminton courts with seating facility of 1000 persons approx., multi Gym, rest rooms for players, office and other related infrastructure which have been planned should be executed subject to approval of CHCC since the **complex falls within the heritage zone and all interventions shall be strictly as per the heritage regulations and with the approval of the Chandigarh Heritage Conservation Committee.**



FOOTBALL STADIUM, SECTOR-17

Football Stadium situated near Bus Stand, Sector-17, spread over an area of approx. 3.60 acres having rectangular shape ground. It has a pavilion building having office, players rooms, gymnasium, with capacity of approximately 1000 viewers.

The future developments shall depend on the redevelopment scheme of the south western part of Sector 17. A Metro node has been proposed at the present location of the stadium along North- South Corridor which would be need to be integrated in the plan. The football stadium will thus need to be relocated.

CRICKET STADIUM, SECTOR-16

Cricket Stadium, spread over an area of 15.32 acres approximately along the N-choe is a part of the Leisure Valley having seating capacity of 25,000 visitors. The stadium has facilities like conference room, gymnasium, rest rooms for players and coach room, dining hall for players and other related infrastructure. indoor games, gymnasium restaurant, Various food courts and public toilets have been provided below seating steps for public during matches. 6 nos. high mask lights has been provided all around the pavilion for day and night matches.

The additional VIP pavilion and a block of players rest rooms and other related playing activities which is under the consideration of Chandigarh Administration should be executed .

TENNIS STADIUM, SECTOR-10

Tennis Stadium situated along N-choe, in the Leisure Valley, is spread over an area of approx. 8.6 acres and has a seating capacity of 4200 visitors.. The structure has been sensitively designed with earth sheltering around it so as not to be over bearing on the natural environs of the Valley

It has 2 central tennis courts of international standards inside the pavilion building. Below the seating steps, an administrative block, hostels for players (girls and boys) has been provided. An indoor gymnasium hall outside the pavilion building is existing. 11 umber tennis courts for trainees have been provided. An additional block below seating steps with facilities of indoor games is under the consideration of Chandigarh Administration.

Recommendation

The original concept of the earth sheltered structure has been gradually compromised by building facilities into the structure, however the same has helped avoid any new structure within the campus.

It is strongly recommended that future interventions should ensure that no other buildings are built in the campus and additional requirements if any should be addressed outside the campus .



- **LAKE SPORTS COMPLEX**

Lake Sports Complex is situated along Uttar Marg near Rock Garden/Smriti Upvan. It has indoor playing facilities i.e. billiard room, table tennis, gymnasium, squash courts etc. along with cafeteria, bar and other related infrastructure. A swimming pool, kiddies pool, 19 lawn tennis courts and other related infrastructure is also existing in the premises.

An additional block of multipurpose hall adjoining squash courts with facilities of additional squash courts, badminton courts, tennis courts, gym, yoga, aerobics, health club and related infrastructure is under the consideration of Chandigarh Administration. The campus falls under the heritage zone 1 and further development should be strictly as per heritage regulations.

In addition, the area towards North of the Lake falls within the catchment area and thus further development needs to be sensitively undertaken so as not to obstruct the flow of water into the lake.





9.4 SOCIAL INFRASTRUCTURE IN REHABILITATION COLONIES

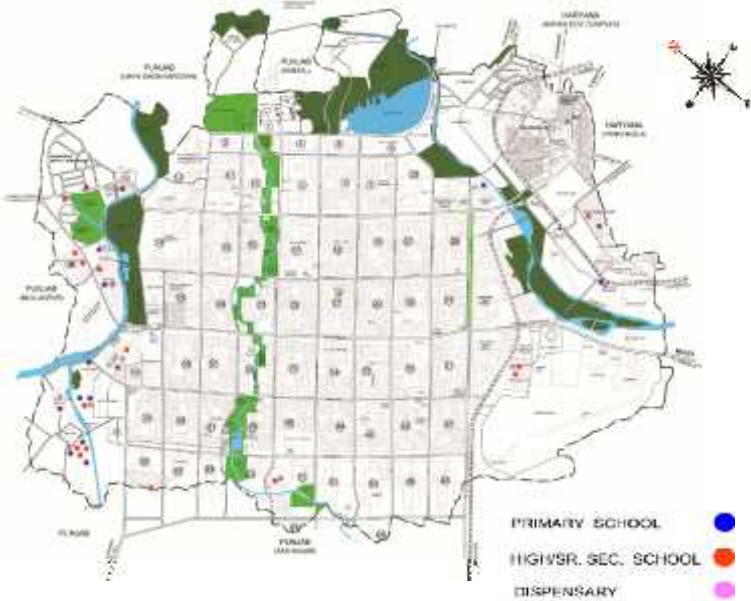
The rehabilitation colonies which have been planned in the peripheral areas have not been laid out in the standard sectoral module. These areas have however been developed along with the neighbourhood level facilities i.e. primary and higher secondary schools, community centres and religious buildings schools.

The accompanying plans indicate the status of the availability of social infrastructure in the planned colonies. For the high order facilities, the residents depend on the city level facilities.

RECOMMENDATIONS

All new residential pockets, including those being developed as rehabilitation colonies shall make provision of social infrastructure as per norms. In addition provision of vocational training centres is also recommended in the existing and the proposed rehabilitation colonies for the social and economic benefit of the residents especially women.

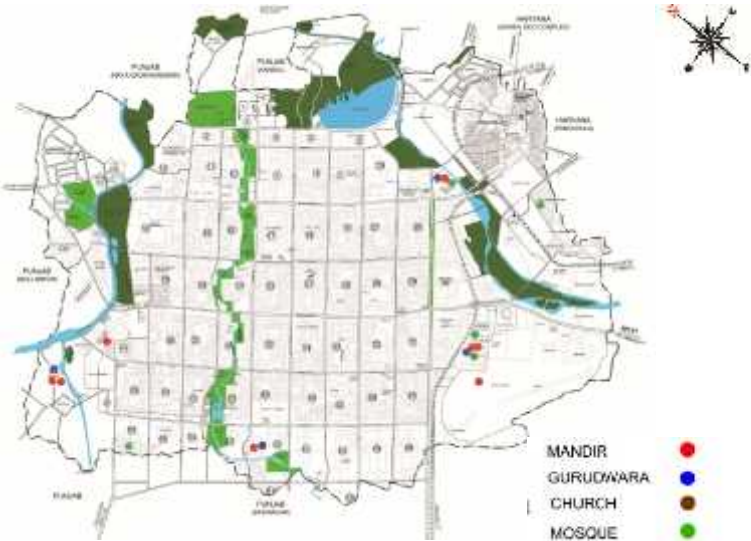
EDUCATIONAL & HEALTH FACILITIES IN THE REHABILITATION COLONIES



COMMUNITY CENTRES /POLICE STATIONS IN THE REHABILITATION COLONIES



PLACE OF WORSHIP IN REHABILITATION COLONIES





CITY LEVEL ANALYSIS OF SOCIAL INFRASTRUCTURE -2031

Categories	Education				Dispensaries		Religious		Community Centres	
	Primary		High School		Existing	Required	Existing	Required	Existing	Required
Existing	Required	Existing	Required							
Sectoral Grid	160 (33+127)	167	127	107	40	55	106	166	38	53
Reh. Colonies	8	40	6	28	9	13	37	40	18	14
Villages	-	-	15	12	17	2	38	18	24	2
Manimajra	-	-	10	18	1	7	-	-	4	9
Total	168	207	158	165	67	77	181	224	84	78

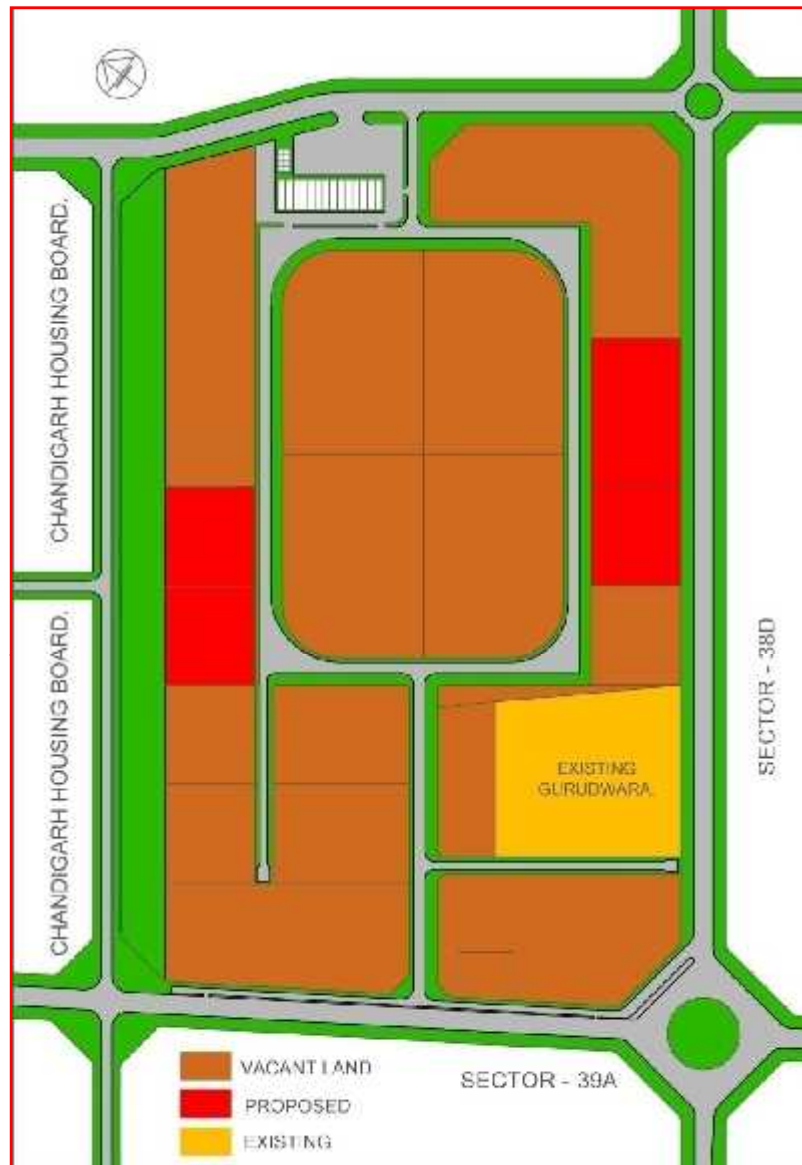


9.5 AN OVERVIEW OF THE STATUS AND REQUIREMENTS OF SOCIAL INFRASTRUCTURE IN THE CITY:

- The planned provision of social infrastructure is catering reasonably well for the present population.
- There is a deficit of primary schools, community centres, places of worship, dispensaries etc. in some of the existing sectors for the projected population as per holding capacity.
- As per UDPFI guidelines the shortage of high schools is in sectors 15, 16, 19, 20 west of 38, 41, 42 & 49 etc.
- Shortage of dispensaries is in sectors 7, 15-23, 29-32, 37, 39, 40, 41, 43, 44, 48, 49, 50 & 63. However, a number of charitable dispensaries running in religious buildings, bhawans are also catering to the requirements of public.
- Shortage of community centers is in sectors 7, 15, 19, 21, 28, 32, 34, west of 38, 40, 41, 43, 46, 51, 56 & 63.
- There is demand of a sports complex in the southern sectors, equestrian academy, velodrome etc.

CITY LEVEL ANALYSIS FOR PROJECTED POPULATION-2031

Type of facility	Area as per UDPFI norms (in acres)	Existing	Required number as per holding capacity	Additional Requirement	Additional area required (in acres)
Dispensaries (1 for 15000)	0.2	67	77	-10	2
Hospital (1 for 2.5 lakh)	10	6	7	-1	10
Community Centres (1 for 15000)	0.5	84	78	6	-
High School/Sr. sec. (1 for 7500)	5	158	165	-7	35
Colleges (1 for 1.25 lakh)	10	12	13	-1 (One college proposed in P.No.9)	10
Technical Institute (1 for 10 lakh)	10	2	2	Nil	-
Fire station (1 for 2 lakh)	2.5	7	8	-1	2.5
Religious (1 for 5000)	400 sq. mtrs.	181	224	-43	4
Petrol Pumps		40	36	4 (surplus)	-
Total					63.5



PLAN - SECTOR 38 WEST

AREAS AVAILABLE FOR DEVELOPMENT OF INSTITUTIONAL AREAS / PROVISION FOR CITY LEVEL SOCIAL INFRASTRUCTURE

Areas earmarked /planned but yet to be developed /partially developed which include the following :

1. The institutional area planned in Sector 38 West. Of the 60 acres of land 23.39 acres is still available for development.
2. 7.2 km long institutional Belt , has been proposed along Vikas Marg on which approximately. 110 acres is available for development.
3. Sub City centre, Sector 34 of approximately 54 acres is available.
4. Sub City Centre, Sector 43 of approximately 102 acres is available
5. Institutional area, Sarangpur 23 acres is available
6. **New Institutional areas** – adjoining Chandigarh Armed Police , Dhanas
7. **Redevelopment** /renovation of existing campus.



9.6

OFFICE BUILDINGS

The Administrative City of Chandigarh was provided with government buildings to meet the functional requirements of the capital of Punjab. The Capitol Complex was planned as the main office complex and other office buildings were planned along the institutional belts and institutional areas of the city. In addition, private office space was also planned as part of the shop cum offices in various shopping centres. Over the years additional areas have been carved out in various parts of the city to meet the growing needs of not only State of Punjab but also the State of Haryana and the Union territory. The details of the office buildings/ complexes is as under:

9.6.1 GOVERNMENT BUILDINGS

9.6.1.1 CAPITOL COMPLEX

The three major functions of the Administrative city of Chandigarh-Executive, Judiciary and Legislative were planned as part of the Capitol Complex. However, subsequent to re-organisation in 1966 and changed geo-political scenario, the buildings of the Capitol Complex which were designed to accommodate the functional requirement of one Administration have been sub divided amongst two Administrations – Punjab and Haryana which has put great pressure on these buildings. This has resulted in piecemeal, adhoc need based changes such as covering of verandas, additional glazing, additional sheds etc and has severely impacted the overall ambience of the prestigious Capitol Complex. The Expert Heritage Committee constituted by the Government of India has given an exhaustive report on the problems & potential pressures both within and in the peripheral areas around the Capitol Complex, highlighting the long-term as well as immediate measures required to be taken by the Chandigarh Administration and also by the neighboring states .

The maximum pressure is being felt in the **High Court Building** where a large number of court cases are being handled daily necessitating the need to increase the court rooms from the original 9 to 68 along with the construction of ancillary buildings. Over the years the area behind the main High Court has thus seen the increase in the built environment in the form of lawyer's chambers, extension block and additional floor for court rooms, record room, multi-utility lawyers chamber block, multi-storeyed parking block,, additional Bar facilities , auditorium and extension of Judges Library.



HIGH COURT BUILDING



CHAOS BEHIND HIGH COURT



The site is completely landlocked and has little scope for additional buildings. In the absence of adequate space within the campus, the additional requirements are being met outside the campus in the vacated Judicial Courts in Sector 17.A. Judicial Archive building is under construction in the Industrial Area Phase II where the decided cases shall be shifted.

In case of the **Secretariat Building**, the requirement of additional space is being reflected in covering of verandahs, additions and alterations in and around the building. Additional requirements have been met by constructing additional building for the State Governments and the Chandigarh Administration outside the Capitol Complex.

In the **Assembly Building** though there are no major external changes, however a number of internal changes have been made to accommodate the legislative functions of Punjab and Haryana, false ceiling in rooms and corridors, renovation of toilets with new materials, and the painting of concrete surfaces has been carried out. Glazing and wooden panelling in the main foyer vitiates the original concept of the undulatory glazing with precast concrete mullions and T-steel sections.



Though Le Corbusier's edifice is under constant threat of tinkering, as can be seen above, by its insensitive users who are altering its façade with couldn't-care-less impunity. Since they are the tenants of the Chandigarh Administration it should act fast and firm to stem the rot if this priceless world architectural Heritage is to be conserved for posterity!





9.6.2

RECOMMENDATIONS

9.6.2.1

The requirements of the Executive, Judiciary and the Legislature are essential to be met and on priority in view of the important administrative functions of the city. The same is to be done in consultation with the respective stakeholders - the Hon'ble High Court and the state Governments of Punjab and Haryana.

THE CAPITOL COMPLEX

The Government of India has approved Heritage Grade I status to the Capitol Complex on the recommendations of the Expert Heritage Committee and all interventions need to be done in consonance with the detailed recommendations for the Complex.

The Management Plan for the Capitol Complex is under preparation to ensure the preservation of the Outstanding Universal Value of the Complex as part of the nomination of the property for UNESCO World Heritage Status.

The additional requirements of the three functions which cannot be addressed within the campus need to be addressed in the institutional areas of the city.

HIGH COURT

Despite the additional constructions carried out behind the main High Court building there is still deficit of space to meet the growing requirements of the court rooms and ancillary functions resulting in overcrowding and poor working conditions.

The High Court had projected its **Long Term and Short Term requirements** for its infrastructure up gradation requiring approximately 2,90,000 sqft area and additional parking space of 5000 ECS.

Keeping in mind the Heritage status the requirements projected by High Court (as per their vision for next 20 years) are being addressed by preparing a sensitive holistic development plan for the High Court in consultation with the Chandigarh Heritage Conservation Committee.



EXTENSION OF HIGH COURT



MULTI LEVEL PARKING AT THE HIGH COURT



Functions of the High Court which can be performed outside the campus are planned to be accommodated in vacated Judicial Court building in **Sector 17 (which has been shifted to the new District Court Complex in Sector 43)** as well as in the new Judicial Archive building being constructed in the Industrial Area Phase II for safe storage of judicial records of decided case.

The Judicial Archive building under construction in the Industrial Area shall provide an additional space of 50,000 sqft with facilities for digitization, weeding and scanning of judicial record of High Court. and the Judicial Court Complex in sector 17 shall provide space of 90,000sq ft.

PREPATION OF MANAGMENT PLAN FOR THE CAPITOL COMPLEX

ADDITIONAL LAND FOR THE LEGISLATIVE, EXECUTIVE AND JUDICIARY

In view of the preserving the heritage of the Capitol Complex additional demand for the Legislative, Executive and Judiciary shall be provided in the intuitional areas earmarked in the city.

9.6.3 OTHER MAIN GOVERNMENT BUILDINGS

In addition to the buildings of the High Court, Secretariat and Assembly at the Capitol Complex, various office buildings have been planned within the institutional areas/belts of the city i.e Jan Marg, Madhya Marg Dakshin Marg, Himalayan Marg, Sector 26 , City Centre Sector 17, Sub City Centres Sector 34 and 43 and Sector 38-West.

The major Government Buildings are - UT Secretariat, Sector 9, Additional Deluxe Building, Sector 9, Estate Office Building, Sector 17, Town Hall Building Sector 17, 30 bays building Sector 17, 17 bays Building, Sector 17, MC Building, Sector 17, Punjab Mini Secretariat, Sector 9, Punjab Police Building Sector 9.

The requirement of government office buildings increased substantially after the reorganisation of the periphery in 1966, when besides the office buildings for the state of Punjab, offices of the Haryana government and the Chandigarh Administration were also to be accommodated. Many offices were then accommodated in the commercial buildings and continue to operate from there even till date. The need for additional space is being felt by an increased staff strength.



HIGH COURT BUILDING – MAIN BUILDING

With the construction of the new Haryana office building in Sector 33, many of the offices of the state government which were scattered across the city in commercial buildings, have now been relocated and operating from the complex.

RECOMMENDATIONS FOR THE FUTURE

Provision of adequate office accommodation for the states of Punjab, Haryana and the Chandigarh Administration, the Central and Regional Institutes, and for the defence personal is essential for the efficient functioning of the capital city.



PROVISIONS FOR THE STATE GOVERNMENTS OF PUNJAB AND HARYANA

An existing single storeyed office complex housing the offices of the states of Punjab and Haryana is also being replanned as an integrated project of the State Government of Punjab and Haryana and the Chandigarh Administration for Town Planning offices of three states as per the multi-storeyed architectural control along Madhya Marg.

Besides the offices of the two states and the UT Chandigarh, the city also houses national and regional level offices such as the National Laboratory of Government of India, Income Tax Office, Excise Office, BSNL, Narcotics Control Bureau, National Open School, Snow and Avalanche Study Establishment, Survey of India, Central Ground Water Board, Geological Survey of India.

Besides large number of office of the Indian Armed Forces various defense organizations such as DRDO, BSF, CRPF, ITBP and IRB also operate from the city of the Chandigarh.



NEWLY CONSTRUCTED HARYANA OFFICE BUILDING, SECTOR 33

RECOMMENDATIONS FOR THE FUTURE

Relocating the essential offices operating in commercial buildings / temporary accommodation to vacant institutional plots and dispersion of State Level offices to locations outside of Chandigarh.

SHIFTING OF DIRECTORATES TO OUTSIDE CHANDIGARH

In view of the shortage of land within Chandigarh, it is recommended that the essential offices of the state of Punjab and Haryana should be suitably accommodated within the city of Chandigarh, however the directorates of the states should be shifted to the adjoining towns of the respective states only if there is a deficit of land in Chandigarh for accommodating more important administrative functions. Both the state Governments are expanding the existing towns /building new towns in the 16 km periphery.



POOR CONDITION OF PUNJAB GOVERNMENT OFFICE RUN FROM A SHOW ROOM IN THE CITY CENTRE, SECTOR 17



9.6.4 PROVISIONS FOR THE OFFICES OF THE CHANDIGARH ADMINISTRATION

The offices of the Chandigarh Administration are presently functioning from the UT Secretariat Building in Sector 9 and from other offices

With the construction of the new office complex of the **Paryavaran Bhawan** many of the offices of the Chandigarh Administration –the Forest Department, Science and Environment, Pollution Control Board have been shifted from the makeshift accommodation.

Recommendation for the future

There is urgent need to make adequate provision for the offices of the Chandigarh Administration.

Some projects are at an advance stage of planning which need to be executed on priority.

- **Additional buildings of the Secretariat of the UT Administration**
- **Additional building for the Chandigarh Housing Board**
- **Completion of the office building of the Municipal Corporation** along the Jan Marg.

Prioritising the execution of the projects is recommended to ease out the pressure .

Relocating offices operating from commercial buildings to vacant institutional plots /areas .

Detailed stocktaking of the offices operating from the commercial centres needs to be undertaken and proper office space provided.

Requirements of each department of the Chandigarh Administration which is to be relocated needs to be analysed and commensurate provisions /buildings planned accordingly .

9.6.5 PRIVATE OFFICES

Large number of private offices operate from various institutional areas, Institutional belts and the shopping centres in the city.

Large office space has been generated in the IT Park (Refer Chapter on Industrial Area).

There is a growing demand for office space from corporate sector and private entrepreneurs.

The demand can be addressed in the new institutional areas being planned.



3D view of the new UT Secretariat Building, Sector 9



10 PHYSICAL INFRASTRUCTURE

10.1 INTRODUCTION

Chandigarh's sectoral grid has a well-designed system of piped water supply and sewerage disposal. Under the city's Water By-laws, every planned dwelling unit has to have water and sewerage connections. With the formation of U.T in 1966, all the works for the city's physical infrastructure were handled by the respective departments of the Chandigarh Administration. After creation of the Municipal Corporation of Chandigarh in 1994, the city's water supply, sewerage system, storm water drainage, solid waste management & sanitation, have been transferred to the Municipal Corporation. The Ministry of Urban Development (MOUD) has formulated benchmarks for service delivery in four areas as mentioned in Table at **ANNEXURE-P.1**. The purpose of formulating these benchmarks is to shift the focus from infrastructure creation to service delivery.

Water supply - sources of water

When Chandigarh was planned, the good availability of sub soil water was considered adequate for meeting the city's requirements as the yield of tubewells was sufficient. With increase in the city's population, many tubewells started drying up. It was decided to tap surface water of the Bhakra Main Line flowing at a distance of 27.5 Kms. from Chandigarh to meet the city's growing water requirements. The first phase of augmentation of water supply from the canal was commissioned in 1983. It was decided by the Government of India that this quantity of water will be shared by Punjab, Haryana, Chandigarh Administration and Chandimandir Cantonment in the following ratios:

- Union Territory Chandigarh : 29 cusecs. (14.5 mgd)
- Punjab (for Mohali) : 5 cusecs (2.5 mgd)
- Haryana (Panchkula) : 3 cusecs (1.5 mgd)
- Chandimandir Cantonment : 3 cusecs (1.5 mgd).

Present availability of water

At present the city has access to 87 MGD of water which includes 20 MGD from 200 tube wells and 6 MGD and 3 MGD water share of Haryana and Chandimandir respectively.

The city taps groundwater from the deep confined aquifers, which do not get naturally recharged. Hence recharging these aquifers is a must. At present Chandigarh is pumping out more water from its aquifers than is being recharged. However, the city not only has a declining deep water table but also has a rising water table in shallow aquifers in the southern sectors creating problems and water logging conditions as per **Plan for shallow aquifers at P2 and deep aquifers at P3**. (Source: Rainwater harvesting plan for Chandigarh, Centre for Science and Environment, New Delhi, 2011).

To meet the city's future requirements of water, under JNNURM, Government of India had approved Phases V & VI of water supply scheme from Kajauli. The Punjab Government had initially agreed to release 40 mgd raw water out of which U.T's share was to be 29 mgd. However, Government of Punjab now wants to use this water exclusively for Mohali area themselves and yet another phase of bringing more water to Kajauli is being negotiated.

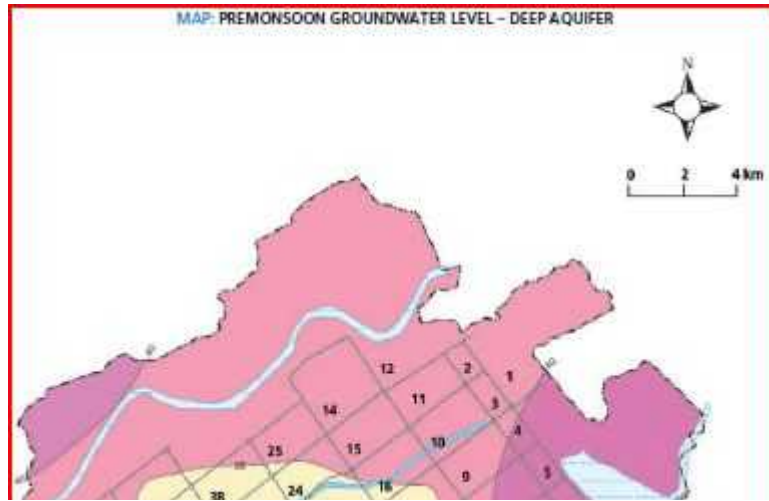
With continuously increasing demand for water and uncertainty and disputes plaguing augmentation of canal water supply, Chandigarh needs to develop a comprehensive rain water harvesting plan to ensure long term sustainability of water sources for the city.

Existing Transmission, Distribution and Storage Capacities

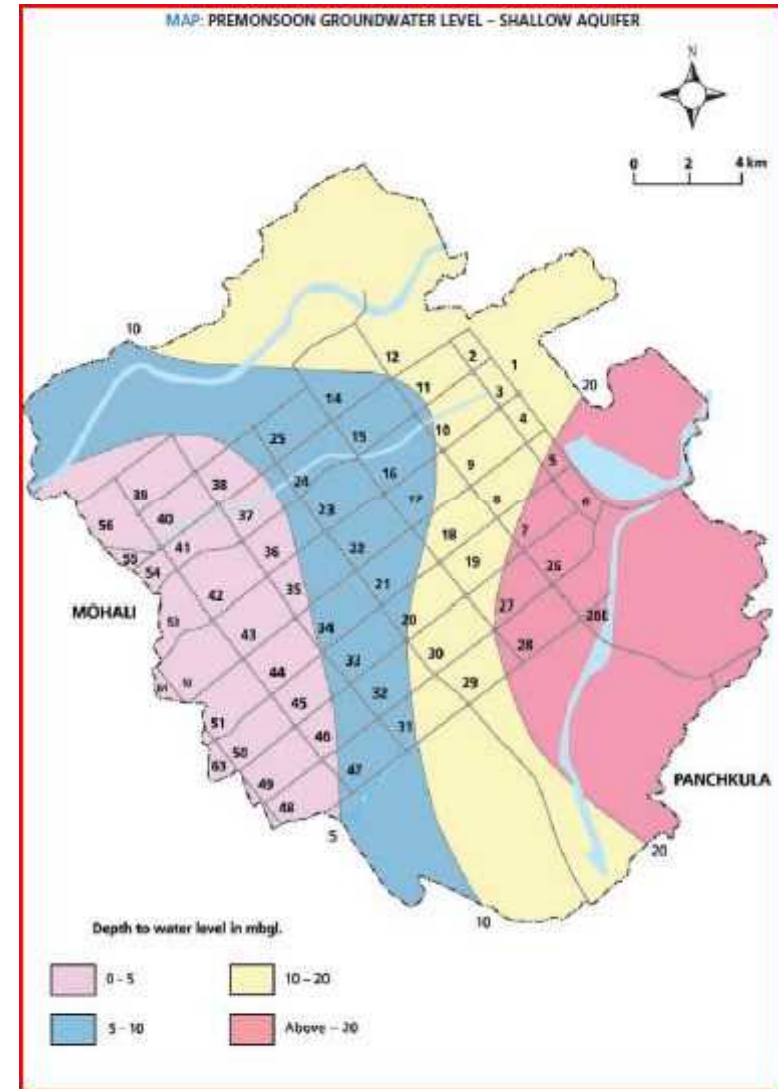
The transmission mains carry water from the raw water source Kajauli, Punjab to the Water Treatment Plant in Sector 39, Chandigarh. The water pumped to the treatment plant is treated, disinfected and stored. This is further pumped to five distribution water works which in turn pump the clear water to the city's distribution system for use by the consumers. The performance indicators for maintaining the water supply are mentioned at **ANNEXURE-P.2**.



MAP M1 – PREMONSOON GROUND WATER LEVEL DEEP ACQUIFERS

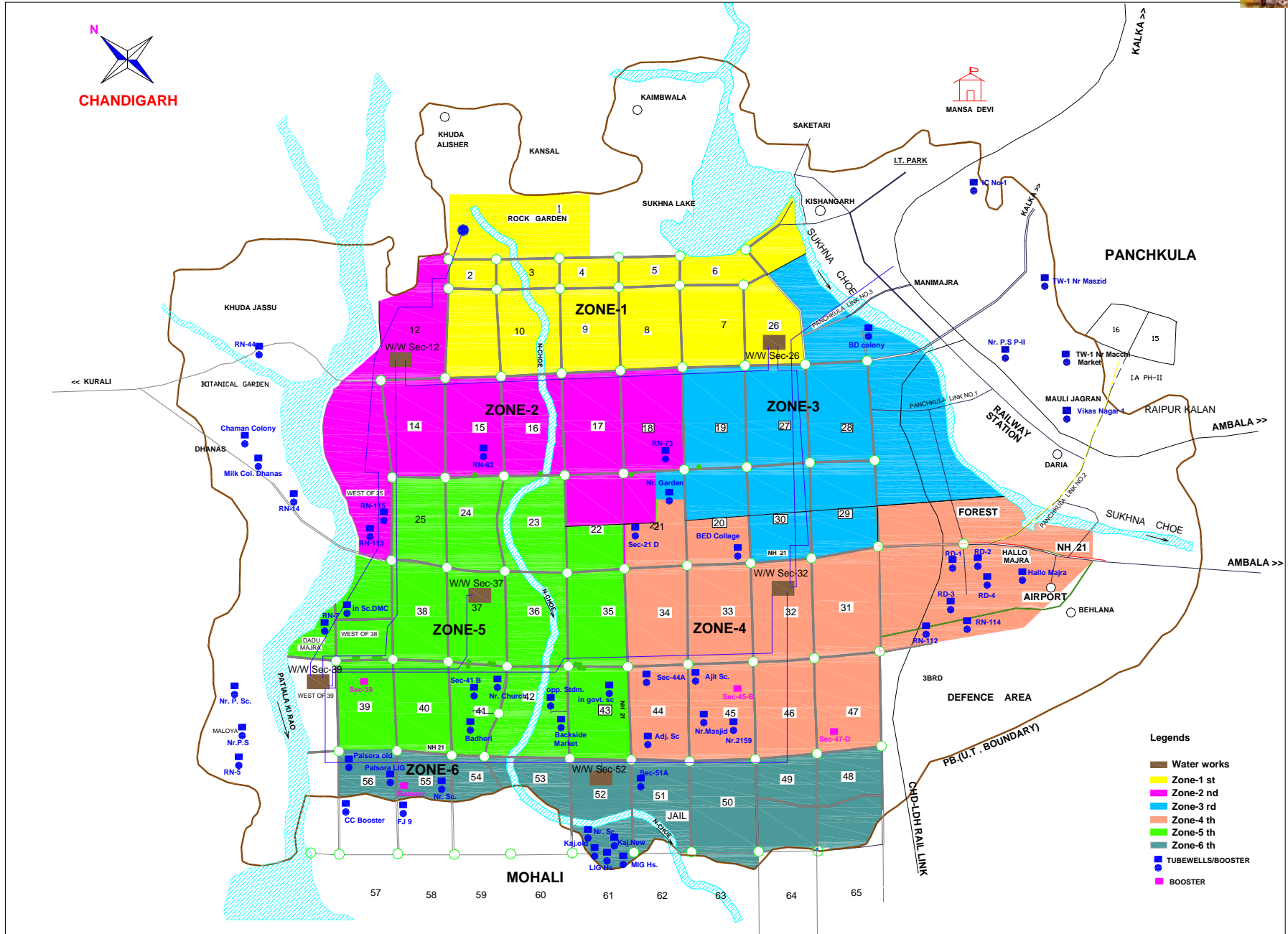


MAP M2 – PREMONSOON GROUND WATER LEVEL SHALLOW ACQUIFERS





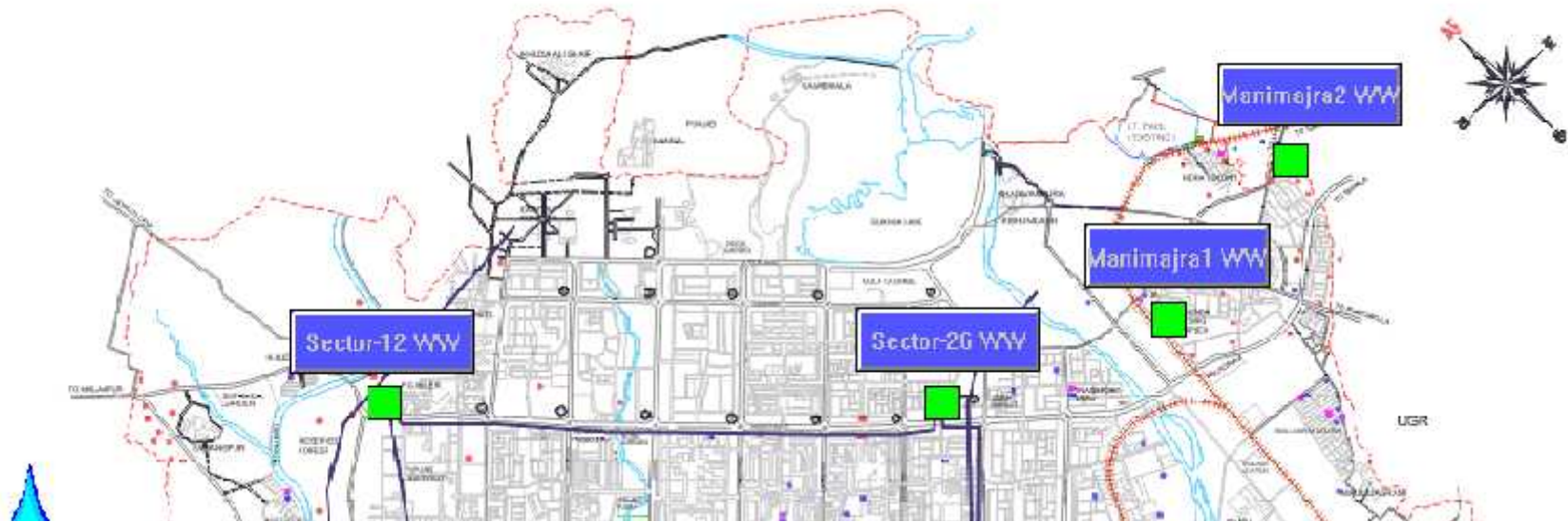
PLAN P1 - ZONING PLAN OF WATER SUPPLY DISTRIBUTION



- Legends**
- ▬ Water works
 - Zone-1 st
 - Zone-2 nd
 - Zone-3 rd
 - Zone-4 th
 - Zone-5 th
 - Zone-6 th
 - TUBEWELLS/BOOSTER
 - BOOSTER



PLAN P2 - WATER WORKS LOCATION PLAN





Distribution of water supply in Chandigarh and Manimajra

The city has been divided into 7 zones for the purpose of distribution including the town of Manimajra. The zoning of the city has been done keeping in view the north to south slope of the land. Each zone has a headwork named after its sector. A plan showing the location of tube wells and boosters in the city is at **Plan 3** and the plan showing the water supply network is at **Plan 4**.

Manimajra area

Manimajra is mainly dependent on tubewells for water supply. The two water works at Manimajra are fed by 25 tubewells and canal water from Sector 26 Waterworks, Chandigarh.

Recycling of waste water

The Government of India has agreed to the proposal of Chandigarh Administration for recycling of treated wastewater. Institutions like PGI, colleges, schools, technical institutions and Punjab University have been asked to disconnect the potable water supply from irrigation of lawns and obtain connection of tertiary treatment water to save precious potable water. The Municipal Corporation has received good response to the proposal. Accordingly, MC has executed a project under JNNURM for supply for treated tertiary water having biochemical oxygen demand (BOD) less than 10 mg/l. Further efforts are being made to utilize tertiary treated water in all green belts and houses having area of over one kanal (500 square yards).

10.2 STORM WATER DRAINAGE

The natural slope of Chandigarh's site facilitates easy disposal of storm water through Sukhna Choe, N-choe and Patiala ki Rao. Due to the provision of proper road gullies and good slope of pipes, the storm water drainage of Chandigarh is in good condition. The city however experiences the choking of drains due to plastic bags and other solid waste during heavy rains especially near roundabouts.

Reasons for Floods in Chandigarh

The key reasons for this situation are assessed as follows:-

- Some areas of city experience floods due to inadequate drainage system, which was designed for rainfall of 12 mm/hour excessive concentration of flood due to heavy down pour.

Disappearance of flood absorbing 'N'- choe because of urbanisation.

- Dumping of debris and garbage into the open nallahs / N-choe.
- Illegal encroachment of natural water courses.
- Indiscriminate laying of service lines all along and across natural courses.
- Filling of 'N'- choe in Chandigarh which decreases the drainage capacity.
- Diversion of natural water courses to accommodate habitations.
- Increased run off due to increase in impervious areas.

10.3 SEWERAGE SYSTEM

Sewerage Network

The first phase (sector 1-30) of Chandigarh's sewerage system was laid during 1952 to 1965, the second phase (sector 31 to 47) from 1965 to 1976 and the third phase from 1976 onwards. There are separate sewer and storm water drainage systems in Chandigarh. The sewerage and storm water is discharged by gravity flow due to good natural slope from north east to south west. The slope also helps the sewers to be naturally cleaned due to the good self cleansing velocities. There is a well organized network of main and branch sewerage drains. The egg shaped brick trunk sewers offshoot into 18 inches dia stoneware pipe branch sewers of each sector at major junctions of V3 roads. The main sewage runs from west to east with inter connection of sewer line from south to north. No pumping is involved because of the city's topography. The length of stoneware sewage pipe network is 742 km. The population catered to by the sewerage system is 95%.

Quantum of sewage generation

At present 65.25 million gallons of sewage is generated per day in Chandigarh. Out of this, 45 MGD is treated at sewage treatment plant (STP) at Diggian, Phase X1 Mohali and the remaining at Raipur Khurd (1.25 MGD), Raipur Kalan (5 MGD), 3 BRD (5MGD), Sector 47, Chandigarh. Another 10 MGD STP is under construction at 3 BRD. After commission of this STP, total sewerage generated will be treated upto required standards.



10.4 POWER SUPPLY POSITION

- Union Territory of Chandigarh came into existence with effect from 01.11.1966 after re-organization of erstwhile state of Punjab. The Local distribution of electricity in Chandigarh was taken over by the Chandigarh Administration, from the PSEB on 2nd May, 1967 and is responsible for distribution of power supply up to consumer's door-step for making quality and continuous power supply available to each and every resident.
- The UT of Chandigarh has no power generation of its own and the power requirement is met through firm share as well as unallocated quota from the Central Generating Stations. At present, UT Chandigarh has availability of power of approximately 200-270 MW of power from Central Generating Stations during different hours against the present summer demand of 275-350 MW. Accordingly, to meet with the demand gap, the Electricity Department is purchasing additional power from open market/ banking arrangement/ power exchanges.
- UT Chandigarh has been working towards expanding and strengthening its power infrastructure to meet the increasing consumer demand in various sectors of the economy and presently it has one 220 KV Sub Station, 13 -66 KV Sub Station, 5- 33 KV Sub Station, 1813- 11 KV indoor and pole mounted Sub Station, 54 Kms. of double ckt. 220 KV lines, 103 Km. of 66 KV line, 28 Km of 33 KV line, 860 Km of 11 KV lines and 1234 Km of LT lines.
- Per capita consumption of electricity in the UT Chandigarh has increased from 253 Kwh in 1967-68 to 1068 Kwh in 2009-10 against the national figure of 700 Kwh and accordingly electricity consumption has increased from 1.38 LU per day to 66 LU on a particular day.
- The total transformation capacity in 1967-68 was 15.6 MVA which has increased to 636 MVA.
- The number of consumers in 1967-68 was 27821 which have been increased to approximately 2 Lakhs.
- The present connected load is 1136 MW.
- The peak power demand in 1967-68 was approximately 14 MW which has been touched to 350 MW during this year i.e. on dated 21.06.2012. The T&D loss in 1967-68 was 25 % which has been reduced to approximately 17%.
- The number of employees in 1990-91 was 1540 which has been presently decreased to 1085 against the sectioned post of 1790 numbers. The units purchased in 1967-68 were 57 MUs which has been increased to approximately 1682 MU. The units billed in 1967-68 were 43 MUs which has been increased to approximately 1300 MU. The revenue realization in 1967-68 was Rs 0.84 Cr which has been increased to approximately Rs 530 Cr.
- To meet with the growing demand of power, the power purchase agreements have been tied up with future upcoming thermal/ hydro power plants. Load flow studies are being got conducted to strengthen the distribution infrastructure and two 220 kV sub-stations and six 66 kV sub stations are under planning.
- To reduce the T&D loss further, R-APDRP programme of Government of India/Ministry of Power is being implemented and the work will start shortly.
- Further, the working of the Electricity Department is being regulated by JERC. The first two ARR for the FY 2011-12 and
- FY 2012-13 have been filed and the same have been approved by the JERC and stands implemented.
- Gas based energy source to be tapped in view of land / space constraints
- SCADA based power monitoring of street lights .
- 11 KV and 66 KV lines to be laid underground in future and existing overhead lines to be made underground .



PLAN P3 - EXISTING POWER MAP OF CHANDIGARH

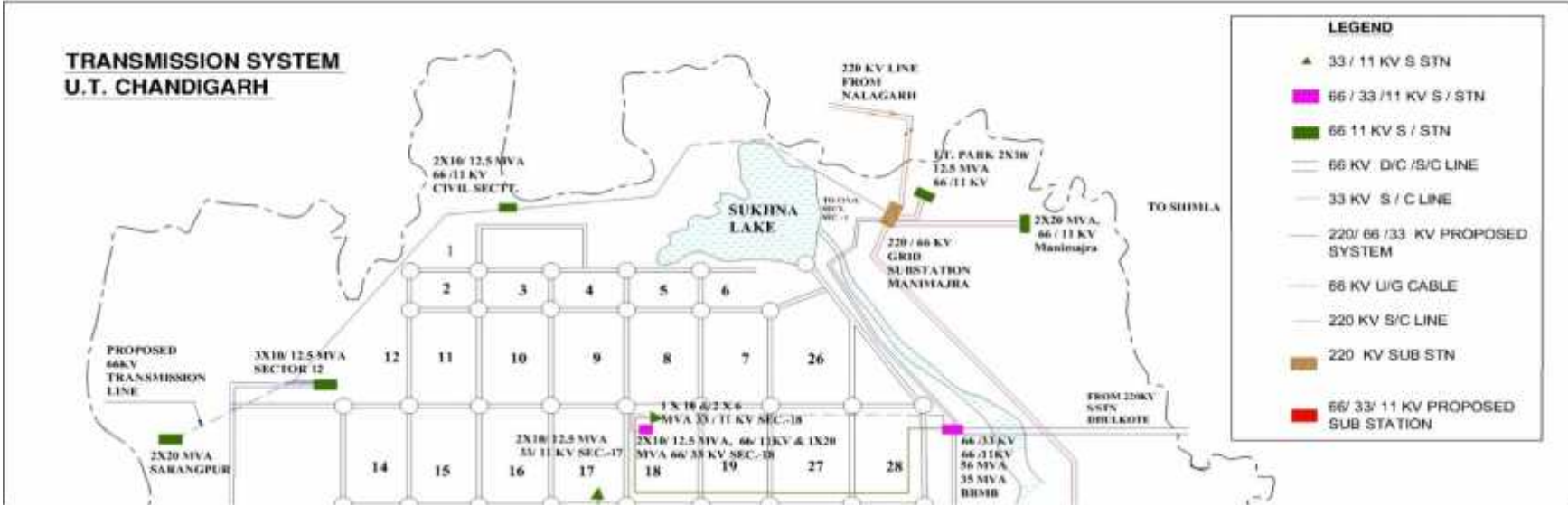




TABLE T1 - NETWORK SUMMARY

POWER SYSTEM INFRASTRUCTURE					
Sr. No.	Equipment Particulars	1990-91	2001-02	2011-12	Anticipated requirement 2029-30
1	220 KV S/Stn. (Nos.)	0	1	1	3
	Transformation capacity(MVA)	0	100	200	800
2	66 kV S/Stn. (Nos.)	5	8	13	20
	Transformation capacity(MVA)	218.5	318.5	616	916
3	33 kV S/Stns (Nos)	5	6	5	0
	Transformation capacity (MVA)	71	112	120	0

Chandigarh Electricity Department

TABLE T2 - 18th ELECTRIC POWER SURVEY FORECAST (as per CEA)

ENERGY CONSUMPTION, ENERGY REQUIREMENT AND PEAK LOAD

Consumption Categories	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
Domestic	472	506	539	571	606	643	682	723	767	813	862	914	970
Commercial & Misc	382	401	426	452	479	508	539	572	607	643	683	724	768
Public Lighting	15	15	15	15	16	16	16	17	17	17	18	18	18
Public Water Works	0	0	0	0	0	0	0	0	0	0	0	0	0
Irrigation	1	1	1	1	1	1	1	1	2	2	2	2	2
Industries LT	137	146	153	161	169	177	186	195	205	215	226	237	249
Industries HT	141	146	155	164	174	184	195	207	219	233	246	261	277
Bulk Supply	89	94	98	103	108	114	120	125	132	138	145	153	160
Total (Energy Consumption)	1238	1309	1387	1468	1553	1643	1739	1841	1948	2062	2182	2309	2444
Peak Load (MW)	308	321	336	353	370	388	406	426	450	475	501	529	559



10.5 SOLID WASTE MANAGEMENT

Existing solid waste management in Chandigarh

The garbage is collected in small cycle carts during road sweeping by the safaiwalas of the corporation and is collected from house to house in large cycle carts. The collected waste is deposited in community Sehaj Safai Kendras from where it is transported to the dumping ground regularly through hydraulic fitted vehicles. In response to protests against the smell and poor maintenance of Sehaj Safai kendras, the corporation recently attempted to change the system. This, however, got stalled by protests of the sweepers working on contract.

Treatment of garbage with solution and dumping of disposal

The city Corporation has earmarked 45 Acres of low lying land situated in the west of Sector 38 near Dadumajra rehabilitation colony where the garbage is disposed of through 'Land-Filling'. Government of Punjab has been requested to identify 100 acres for a new dumping ground.

Garbage processing unit

MC has set up a Garbage Processing Unit based on 'pelletisation' technology as a joint venture with M/s Jaiprakash Associates Limited on 10 acres of land for the processing of Municipal Solid Waste of the city on BOOT basis.

Central pollution control board's sponsored demonstration project

The Central Pollution Control Board has allotted one demonstration project to the Municipal Corporation of Chandigarh for the management of Municipal Solid Waste and to demonstrate implementation of Municipal Solid Waste (Management & Handling) Rules, 2000.

The following 3 important components are not covered under the Demonstration Project:

1. Disposal of domestic hazardous waste

- The practice of disposal of hazardous household waste like used batteries, pesticides etc. along with solid waste is contrary to the provisions of the rules which inter-alia state that separate arrangements should be made for the disposal of hazardous household waste in the prescribed scientific manner to protect the environment.
- E-waste facility by DOST.

2. Disposal of slaughter house waste

The Municipal Corporation Chandigarh is according top priority for the collection and transportation of waste from the slaughter house, meat market and fish market etc. due to its peculiar nature. At present the waste from these places is dumped along with other municipal solid waste leading to problems. Biomethanation plant also exists in slaughter house.

3. Disposal of carcasses

At present the disposal of dead animals is being done at 2-3 open spaces, which is creating unhygienic conditions and is also inviting public criticism.

It has been observed that undeveloped fringe areas of the city village hinterland, and areas along the choes are being used as dumping grounds.

A site measuring 1 acre has been finalized for carcasses near garbage processing unit in Dadumajra.





10.6 MASTER PLAN PROPOSALS

WATER SUPPLY

The following provisions shall be made for augmentation of water supply:

- Providing Supervisory Control and Data Acquisition (SCADA) System & upgradation of water supply structures.
- Conservation of drinking water by harvesting treated sewage upto tertiary level and using it for horticulture.
- Augmentation of Water Supply Scheme Phase-V & VI.
- Replacement of old distribution pipe lines of Phase-I sectors.
- Recharging Deep Aquifers.

1 & 2 have already been approved by Ministry of Urban Development after finalization of City Development Plan and are under execution.

Proposals for water conservation & increasing water security use of re-cycled water

The use of potable domestic water shall be restricted to kitchen uses including drinking, bathing and washing clothes. Recycled water, should be used for non-potable uses such as watering parks, gardens landscapes, golf courses, use for construction, industrial process, flushing, washing roads etc.

Use of recycled water will be compulsory for all non-potable uses for all large buildings with an area of more than 2000 sq. m. in all new developments. If such water is not supplied by the MC then the building should set up its own water treatment plant within its premises for reuse of waste water.

All apartments or group housing complexes with more than 20 tenements and commercial, institutional and industrial complexes with an area of more than 2000 sq.m should make plumbing and infrastructure provision for enabling localized sewage treatment, use of recycled water for flushing, washing and for watering gardens.

Implementation

All building plans and land development plans with an area of more than 2000 sq. m. now have to indicate the onsite wastewater treatment and disposal arrangements and water reuse infrastructure including the plumbing plans etc. Separate systems have to be provided for sewage and sludge treatment to facilitate reuse of sludge water for gardening and washing purposes. This may require suitable storage facilities that are to be indicated on the building plans.

Reduce consumption of water

Consumption of potable water in all new buildings can be reduced by **using water efficient fittings**. At least 25% reduction in water consumption can be achieved from all sources.

Implementation

Replacement of old flush toilets and faucets with new low-flush and water efficient taps, shall be phased in through rebates in water bills and then made mandatory. To start with public institutional buildings and large commercial buildings such as malls shall be targeted.



Recharging deep sub-soil aquifers

The storm water network receives more than 70% of the total rainfall falling in the city. Harvesting rainwater from the storm water drain network to recharge the confined aquifer, through structures all along the network is a simple solution to access the city's endowment of rainwater. This will be an effective way to augment the city's water resources.

Areas suitable for rainwater harvesting in the city are roads and roundabouts, all green areas, institutional areas such as Punjab University, Capitol Complex, commercial areas, schools, colleges, religious places, industrial areas and airport.

The Municipal Corporation has decided to undertake systematic rainwater harvesting in Sector 26 on a trial basis as per a comprehensive rain water harvesting plan prepared by the Centre for Science & Environment (CSE), New Delhi. This plan has proposed recharging of the deep aquifers by constructing recharge structures along the city's storm water drain network for tapping the rain water flowing through it. This should be combined with building surface or underground water storage structures for landscaping/ horticultural use. The city's building bye-laws now also require all new buildings above a I kanal to undertake rainwater harvesting.

However, due to the higher water table However in view of the higher water table and shallow aquifers in the Southern sectors (CSE REPORT). The mandatory rain water harvesting needs to be reviewed.

Mal functioning of water meters:

Unauthorized water connections and mal functioning of water meters should also be checked regularly to avoid illegal and excessive use of water.

Water audit for existing buildings

A comprehensive water use audit shall be undertaken to examine all of the major aspects of water use in buildings, including sanitation, maintenance, mechanical systems, building processes, landscaping etc. A culture of water conservation amongst the residents through rainwater harvesting, recycling and reusing water and reducing water use will be promoted.

STORM WATER MANAGEMENT

Developing a storm water drainage master plan

The Municipal Corporation has undertaken a study to prepare a storm water drainage master plan to alleviate the problems of flooding. The study recommended deepening and widening of the nallahs for the sections affected by encroachments, modification to cross drainage works, some soft measures such as prevention of dumping of waste into the nallahs to prevent clogging and the provision of retaining walls at critical sections.

Zero drainage of Storm Water for large development sites (>30 Acre)

All large developments, housing and institutional campuses etc. with a total site area of over 30 acres must adhere to zero storm water runoff from the site. The possibility of implementing this in existing campuses such as P.G.I., C.S.I.O., IMTECH, P.U., PEC, GMCH, Sector 17, Sector 34 also needs to be explored and if found feasible, steps taken to implement it as early as possible.

Ban on construction in the catchment areas except as applicable in the zoning plan.

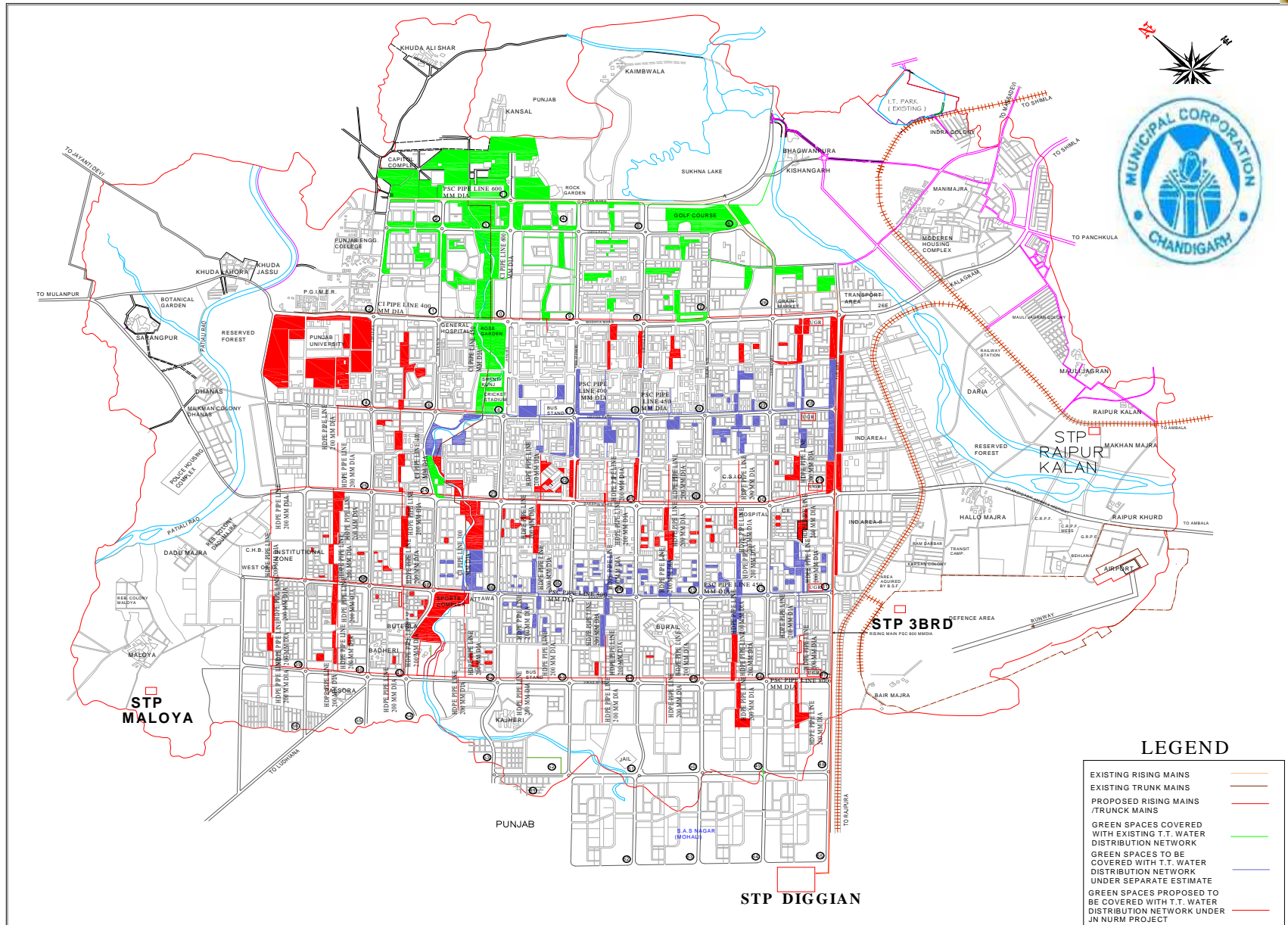


MAP M3 - LOCATION OF TUBEWELLS



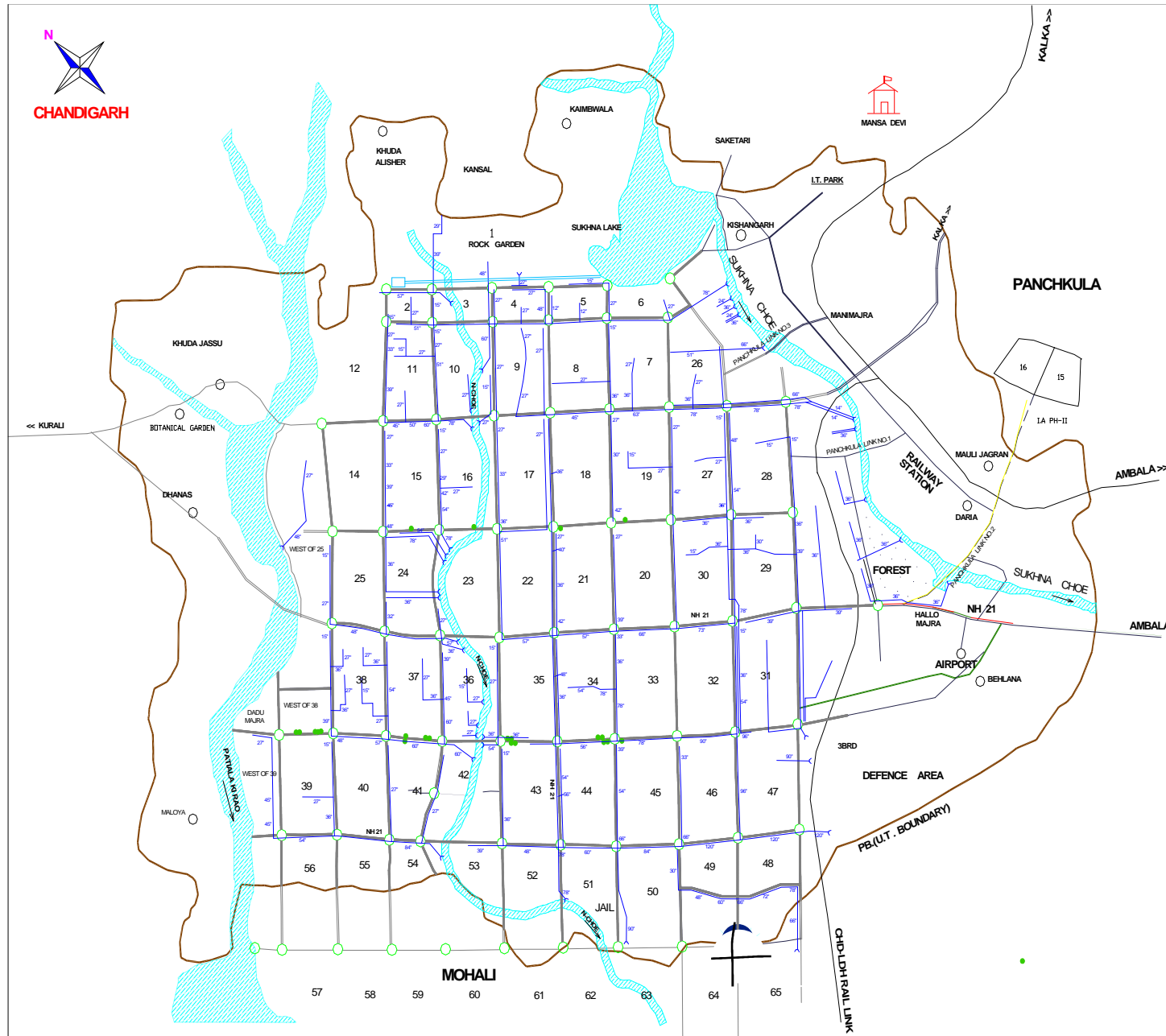


PLAN P4 – TT WATER SUPPLY PIPE NETWORK IN CHANDIGARH





PLAN P5 - STORM WATER DRAINAGE SYSTEM IN CHANDIGARH



PLAN SHOWING OF STORM WATER DRAINAGE SYSTEM FOR CHANDIGARH TOWN

LEGEND

1	EXISTING METALLED ROAD	
2	EXISTING CHOWK	
3	EXISTING RAILWAY LINE	
4	CHANDIGARH BOUNDARY	
5	CHOE	
6	EXISTING S.W. DRAINAGE LINE	
7	EXISTING TAIL ENDS	
8	PROPOSED CHANNEL LINE	
9		

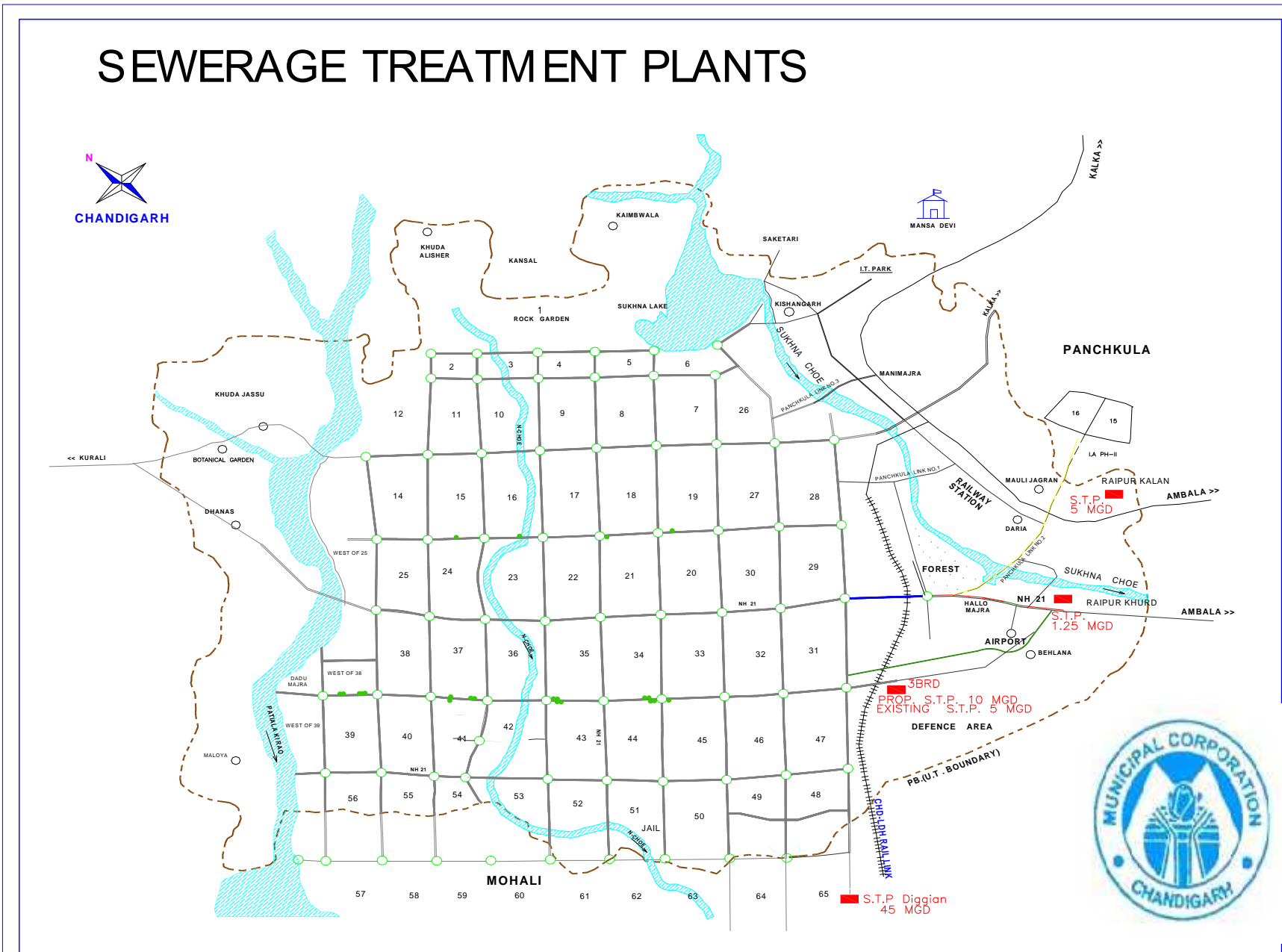
PLAN SHOWING OF STORM WATER DRAINAGE SYSTEM FOR CHANDIGARH TOWN

MUNICIPAL CORPORATION,
PUBLIC HEALTH DIVISION NO.4
CHANDIGARH





SEWERAGE TREATMENT PLANTS





Integrated implementation of sustainable urban drainage systems (SUDS)

Some of the components of the SUDS are pervious pavings, green roofs, filter drains, filter strips, swales, detention basins & retention ponds, infiltration devices, pipes and accessories, constructed wetlands.

Implementation

Sites with less than 10,000 sq.m. area shall implement rain water harvesting and SUDS Source control and infiltration instruments such as green roofs, permeable paving, infiltration trenches, infiltration basins, etc.

Larger sites (area greater than 10000 sq.m) shall implement integrated SUDS techniques as feasible that would effectively reduce runoff.

Still larger sites (with area greater than 20 acres) should go for soil infiltration rate testing before implementing SUDS infiltration devices & passive treatment techniques to enable successful implementation of “zero” storm water drainage from the site.

Sewerage system

There should be zero discharge into nallahs/choes/rivers. It is further recommended that:

- FAB Technology should be used.
- Large campuses should have decentralized sewerage treatment plants.
- Tertiary treated water should be used intensively.

GAS SUPPLY

Currently, there is neither an existing piped gas distribution network nor there is any nodal agency in the region catering to such a facility. However, the GAIL can be considered to be the nodal agency which shall be responsible to decide the planned implementation of gas pipe line to bring gas to Chandigarh.



SOLAR CITY – VISION FOR ACHIEVING SELF SUSTAINABILITY

Chandigarh to be developed as a Solar City

MNRE has identified Chandigarh as one of the 60 cities in the country to be developed as solar cities by 2012 as part of the National Mission of Solar Energy. The objective is that after cost effective efficiency and demand response, the city relies on renewable sources of energy, to the extent possible. The underlying philosophy of the concept of Solar City is to ensure that Chandigarh energy demand is met in affordable, technologically advances, and environmentally friendly manner. It means that after cost effective efficiency and demand response, the city relies on renewable sources of power and distributed generation, to the extent possible. It is proposed that Chandigarh will generate its own power by harnessing solar energy for which following has been proposed:

- The endeavour shall be to enable each house in the city to produce enough power for its domestic requirement.
- 10MW solar PV based roof top power generation 5 MW solar PV based power plant in landfill site of the city, this has of late been ruled out due to capping of the site.
- 25 MW large solar PV based power plant in Patiala ki Rao choe.

Utilizing Central Government schemes and CREST, the Municipal Corporation may initiate installation of solar-based LED traffic lights, solar street lights, building integrated solar PV, and other relevant solar products on a priority basis.

A renewable energy park could be set up to promote use of renewable energy.

Provision of solar powered lights and fountains in prominent public gardens and parks and battery operated vehicles for intra-complex transportation.

Creation of accredited certifiers who can be engaged by house owners/builders/developers for obtaining energy conservation compliance certificates.

Solar Park

Solar Park for setting up of solar power plant for generating 25 MW solar power has been proposed along a stretch of large open track of land along seasonal Patiali Ki Rao where water flows only during 2 to 3 months .



COVERING OF CHOES WITH SOLAR PANEL



SOLID WASTE MANAGEMENT

To overcome the problems observed in the existing set up for Municipal solid waste management an attempt shall be made to manage and treat the waste in a decentralized way as far as possible in the following manner:

WASTE SEGREGATION AND MANAGEMENT AT SECTOR LEVEL

All residential and commercial establishments shall be motivated to segregate biodegradable and non-biodegradable waste and, where possible, to compost biodegradable waste on site. Recyclable non-biodegradable waste shall be sold to waste pickers and only the remaining non-biodegradable waste sent for disposal.

Public-private alliances between local bodies, NGOs, RWA's and CBO's for developing innovative models for managing solid waste at the neighbourhood level and undeveloped areas including villages shall be encouraged. Some of the methods to be promoted include OSI, bio-sanitizer, composting, vermi-composting and composting with bio culture. As per Bio Medical Waste Rules (Management & Handling) in cities having population above 5 lakh, carcasses are to be disposed off by incineration.

WASTE MANAGEMENT IN APARTMENTS & SOCIETIES:

In order to reduce the waste that finally goes into the land fill sites, it is proposed that Group Housing Societies with more than 20 households and apartments with similar strength in each sub-sector shall provide segregated solid waste management facilities within the site in a sustainable manner.

- All waste going to land fill site should be processed before final disposal.
- **Treatment options for bio-degradable waste:**
Composting and bio-methanation are among the treatment options available for treating bio-degradable waste at a smaller scale.
- **All markets** shall be asked to have **arrangements for composting the organic waste** (coming from fish / slaughterhouses / vegetable/ fruit/ flower markets) they generate.
- A bio-gas plant of 3000 Kg. capacity is installed for scientific disposal of slaughter house waste.
- **All hotels and restaurants** should have **in-house arrangements for treating biodegradable waste.**
- **All offices and commercial buildings** should have arrangements for recycling of items such as **paper and cardboards, toner cartridges, batteries, mobile phones and e-waste.**

A carcasses incineration/utilization centre is proposed to be set up over an area of 1 acre of land identified in Dadumajra. An annual waste audit report should be made mandatory for all commercial establishments, offices, restaurants, hotels, educational institutions etc. to be submitted to the MOH/ Municipal Corporation as per details to be specified by the concerned Deptt.

E-WASTE SUPPORT SYSTEM TO BE PROVIDED BY CHANDIGARH ADMINISTRATION/MC

Electronic waste such as PCs, faxes, mobile phones, etc. better known as e-waste is being recycled by the informal sector and/or dumped with regular municipal solid waste causing serious environmental problems.

E-waste should be handled by registered e-waste handling agencies following the guidelines framed by the concerned department.

THE MANAGEMENT OF BIOMEDICAL WASTE

Biomedical waste forms about 0.4% of the total municipal waste generated in Chandigarh. If this waste gets mixed with the municipal waste without any segregation, disinfection and treatment, all the waste becomes infected and poses a serious threat to the health of workers, waste handlers, people in general and the environment. The Chandigarh Administration shall endeavour to take measures to follow Bio Medical Waste Management and Handling Rules 1998.

A mandatory **Waste Management and Recycling Plan for construction and demolition projects** for all new and existing buildings with the intent to minimize the generation of waste due to construction activity and manage the generated waste in a sustainable manner shall be made a compulsory requirement for plan approval.

- In case of demolition projects, if a minimum of 20% of the existing structure (walls, roofs and floors, windows, doors, etc. excluding the hazardous materials) is reused, incentive/rebate shall be given.
- A minimum of 4% of the total site area should be allocated for storage of the waste. This storage area should be covered and the pollutants from the waste should not affect the surrounding.



GARBAGE STREWN ALONG THE OUTER PERIMETER OF THE RAJINDRA PARK-TOWARDS NAYA GAON.

Recommendations – the edge of the park needs to be clearly defined by a boundary wall - matter needs to be taken up with the State Government of Punjab



GARBAGE TREATMENT PLANT ALONG PATIALI-KI-RAO, DADUMAJRA



11. OPEN SPACES AND LANDSCAPING OF CHANDIGARH

11.1 INTRODUCTION

Chandigarh is known all over the world as an outstanding example of architecture, planning and landscaping. The seeds of extensive landscaping and verdure were embedded in the city layout plan by its architect-planner Le Corbusier right at the beginning, with the provision of large number of open spaces, green belts, city parks and neighborhood parks. Today, after nearly 60 years of its inception, the city stands out for its high quality of life and clean, relatively pollution free environment, unlike other growing urban areas in the country. Its citizens enjoy a direct relationship of the built-form with nature, and have abundant access to green spaces all over the city. Thus Chandigarh has been endowed with a great legacy of landscaping and greenery. **The conservation of this green heritage in future is a major concern with regards to the rapid development of the city in the last few decades.**

- Chandigarh - the ‘Green City’**

It is important to view this aspect of the green city legacy of Chandigarh in the context of critical issues that need to be addressed and preserved as much as possible with the challenge of the rampant growth of the city and the resultant stress on its green component. Chandigarh, is perhaps one of the few cities of the world of the 20th century, whose original layout plan has a meticulously planned, hierarchy of open spaces, landscaped areas, recreational areas and tree-lined roads, avenues and gardens spread all over the city.

The intent of the founding fathers of the city was very clear-- that the new city would be a place where the buildings and the built form would nestle in close communion to the elements of nature, and the residents of the city would enjoy direct and immediate access to natural settings.

The city residents would be endowed with the joy of parks, gardens, neighborhood open spaces and tot-lots available in abundance and in close proximity to their door steps.

The Plan showing the open spaces in the city is placed below.

PLAN P1 - MAJOR CITY LEVEL OPEN SPACES IN CHANDIGARH



The conservation of the green heritage in future is a major concern with regards to the rapid development of the city in the last few decades.

OPEN SPACES TO BE DECLARED AS INVIOABLE LANDUSE



11.2 HIERARCHY OF OPEN SPACES

As mentioned above, there is a well structured and order in the hierarchy of open spaces in the city ranging from the neighbourhood level to the city level. As such, the city unlike traditional towns of India does not have any incidental or random left-over open spaces; but rather a well planned orderly structure. Over the last 60 years, **this pronounced green aspect of the city has become its hallmark and a proud heritage and also taken root as something very dear and precious for its inhabitants**, that not only needs to be protected carefully but also nurtured further.

The phenomenal growth and the population upsurge of the city far beyond its planned capacity, have been reasonably well absorbed, essentially because of the abundance of greenery and the rich tree foliage of the city.

The Urban Development (UDPF) norms for open spaces recommend that the overall quantum of town level /city level parks should range between 10 sq. meter to 12 sq. meter per person, which would include parks, play fields ,specified parks, amusement parks, maidans, multi-purpose open spaces, botanical garden, geological park and traffic park etc.

An analysis of such-like open spaces within the city brings out that in the first phase 1850.33 acre (19.69%) was planned as open spaces.

In the low density sectors developed in the first phase having large-sized plotted development with low ground coverage and FARs, the overall ambience is that of a lush green city interspersed with low rise buildings with generous presence of natural elements.

The building norms then also ensured that the boundary walls were very low which helped extend the city's horizons visually as one continuous green area.

Also the huge chunks of land and open spaces allotted to the institutional areas in the first phase (which are nearly more than double the present norms in many cases) also well planted and green, enhance the overall open space quantum in the first phase of Chandigarh. As such the green open spaces available either in the form of private housing, schools, colleges or other institutional large campuses such as Punjab Engineering College, Panjab University; over and above the planned green areas in the city layout, contribute as much as the overall city greenery and open spaces.



Another very precious legacy of the city's green identity is the establishment of long clear cut vistas available in the first phase of the city connecting the residents to the skyline of the hills through continuous green spaces such as sector greens, Leisure Valley, Sukhna Lake promenade etc. in conjunction with low-rise, built forms and low boundary walls - is now seemingly under threat in the second phase, where smaller and lesser plotted development took place. It is the least in the third phase essentially, because of housing blocks and apartments built more than plotted development.

The zoning plans of group housing mandates 15% of community open spaces within campuses to maintain closeness with nature and for outdoor activities.



CHILDREN PLAY EQUIPMENT WITHIN PARKS

—



MARTYRS' PILLAR IN TERRACE GARDEN SECTOR 33

WAR MEMORIAL WITHIN BOUGAINVILLE GARDEN SECTOR 3



MEMORY PARK

MEMORY PARK

In order to safeguard Le Corbusier's concept of green parkland on the north of the Uttar Marg, the area between the High Court and the Sukhna Lake, the Memory Park was created. It was felt that institutionalising the area was necessary to keep it green and free from encroachments. The area, however, needs to be properly maintained and citizens be made aware of its presence.

REVIVAL OF THIS PROJECT WOULD ADD TO THE REVITALISATION OF THE CAPITOL COMPLEX SURROUNDINGS.

Butterfly Park in Sector 26 is one of the most beautiful landmarks of the City Beautiful - a befitting example of biodiversity from which students and teachers alike could learn highly stimulating lessons to cultivate love for Mother Nature. **It should be conserved in its original form and maintained with care warranted by a Heritage site.**

BUTTERFLY PARK

BUTTERFLY PARK



11.3 MAJOR OPEN SPACES IN THE CITY

- **Rose Garden**

Named after India's former President Dr. Zakir Hussain, the Rose Garden is the largest of its kind in Asia and is spread over an area of 27 acres. Built as a part of the green belt, the garden has a large variety of roses and a fountain to relax the soul.

This park has been recommended for the heritage status and further interventions should be made strictly as per heritage regulations and approval of the Chandigarh Heritage Conservation Committee.

- **RAJENDRA PARK**

Spread over a sprawling area of 400 acres, the Rajendra Park adjacent to the Secretariat building is designed by Le Corbusier himself as part of the Capitol Parc. Trees with round canopies and evergreen foliage have been planted here. The plantation has not followed the original plan.

The park is presently being used as a helipad and is an out of bound area for the city residents. This park has been recommended for the heritage status and needs to be completed as per the original plan in consultation with the Chandigarh Heritage Conservation Committee.

The proposals should include:

- Shifting of the helipad to an appropriate site in consultation with airport and security officials
- Removal of security tents and barbed wire fencing along the Uttar Marg.
- Defining the edge of the park towards village Naya Gaon, Punjab side which is presently littered with garbage and presents a very shabby appearance .



ANNUAL CELEBRATION OF ROSES DR . ZAKIR HUSSAIN, ROSE GARDEN



PLAN P2 - LOCATION OF RAJENDRA PARK



• **Sukhna Lake – an inseparable part of city’s life**

Located on the North Eastern part of the city, the Sukhna Lake forms part of the Capitol Park designed by Le Corbusier and was a gift to Chandigarh citizens for peace and tranquility. The area was declared as a ‘Silence Zone’. It is a major recreation zone of the city and offers water sports, pedestrian promenades and various other sports activities.

It is fed by water from the catchment area of the seasonal rivulets on the foot hills of the Shivaliks. The lake is on the list of Heritage Precincts shortlisted for heritage status.

Chandigarh Sukhna Lake is an inseparable part of the city’s life. The lake promenade which is the longest vehicle free area is actively used by the residents for long walks during the day. There is attraction for all visitors, depending on the time and season of the year. Boating, rowing, sculling, sailing can be enjoyed throughout the year. The lake has the longest channel for rowing and yatching events in Asia.

The lake is also the venue for many festive celebrations including food festivals & cultural performances.



Entry from Uttar Marg

Recommendations :

- Shortlisted as heritage precinct.
- No intervention without the approval of the Chandigarh Heritage Conservation Committee .
- Sukhna Management Plan advocated.

The threats to the survival of the lake and recommendations have been dealt in detail in Chapter – Ecology and Environment

Sensitive use of materials, landscape elements, lights, detailing is required for any new intervention, in the sukhna lake area.



Entry Gate, Sukhna Lake from Uttar Marg side



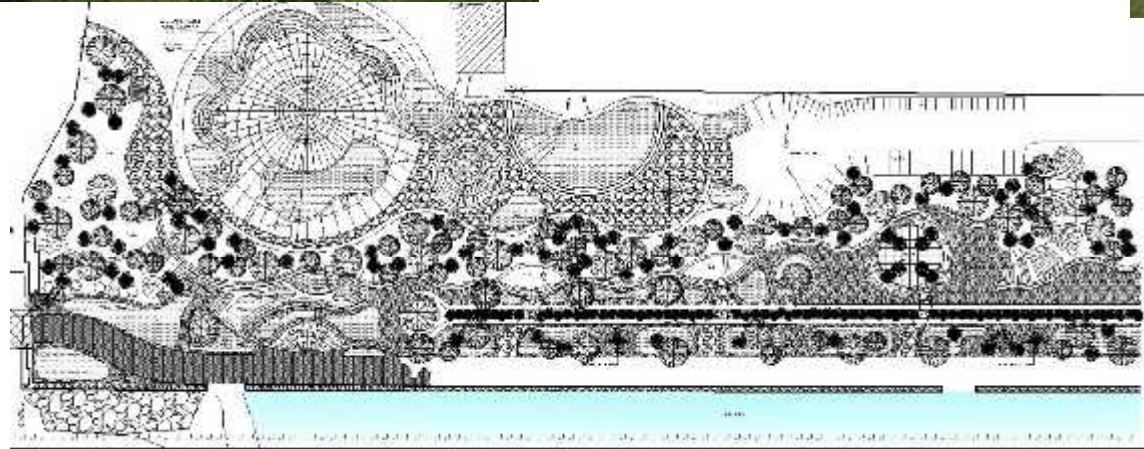
View of the lake with the Sukhna Forest in the background



Garden of Silence at Regulator End, Sukhna Lake



Earth sheltered structure of the Nature Interpretation Centre



Development of the regulator end of the Sukhna Lake



The regulator end has recently been landscaped. The area on the lower end of the bandh has been developed as the Garden of Silence.

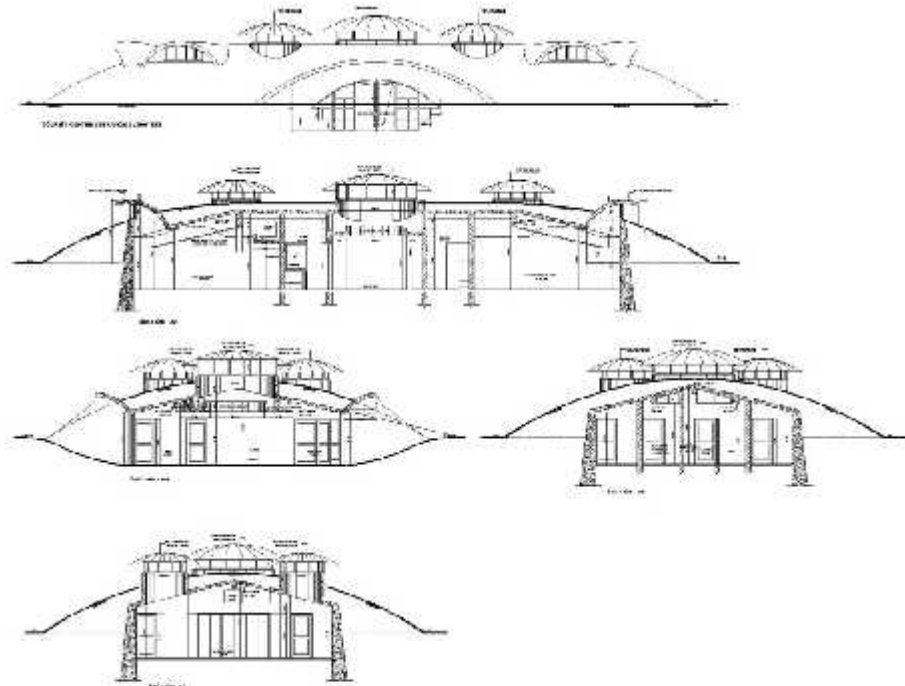
A Nature Interpretation Centre is also being developed in a beautiful earth sheltered structure.



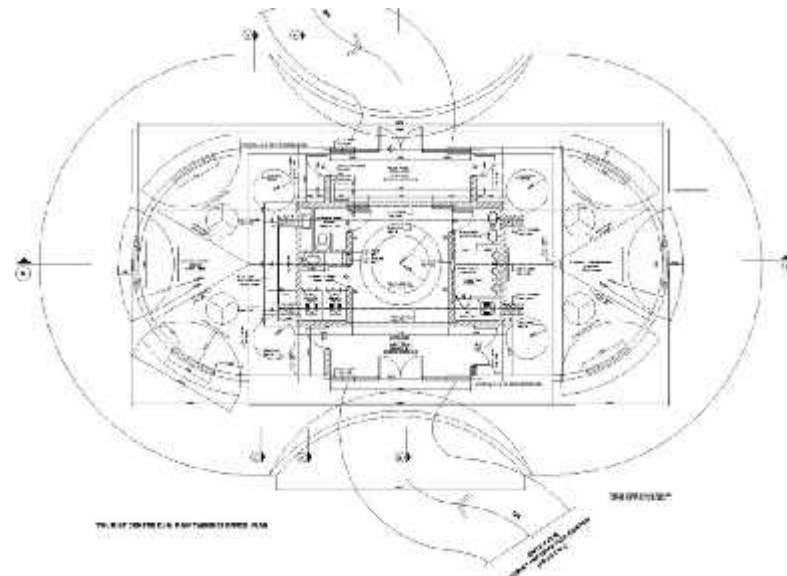
Source – Drawings & 3d views by the Department of Urban Planning, UI



Source – Drawings & 3d views by the Department of Urban Planning, UT
TOURIST INFORMATION CENTRE - SUKHNA LAKE



NATURE INTERPRETATION CENTRE AT THE REGULATOR END SUKHNA LAKE





- **THE OTHER MAJOR WATER BODIES IN CHANDIGARH**

- **LAKE SECTOR 42**

Spread over three acres, the Sector 42 lake falls within the green belt adjoining the Beant Singh Memorial. The lake is fed by two tubewells.

- The lake, which was inaugurated in October 2008, to provide a site to perform religious ceremonies like Chhat Puja and Ganesh Puja which were earlier performed in the Sukhna Lake.

It is one of the main attractions for the residents of the southern sectors too. The Chandigarh Administration is developing a Garden of Palms and a Tourists Reception Centre here.

- The area is thus developing into a major cultural hub of the city.

LAKE IN THE FOREST AREA OF DHANAS



LAKE IN SECTOR 42 GREEN BELT





- **THE LEISURE VALLEY**

The Leisure Valley is a continuous 8 km parkland with various theme gardens, extending from the north-eastern tip of the city to its south-western tip, and further extending to Mohali in the Punjab region. This parkland was developed as one of the original landscape features of the Plan by Le Corbusier converting an existing eroded valley along the seasonal rivulet of N-Choe.

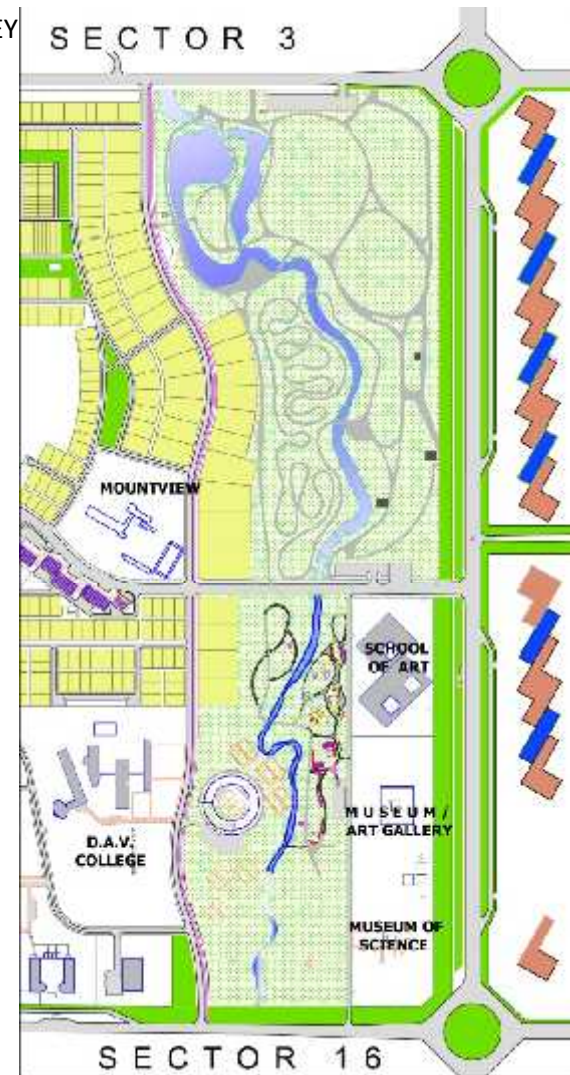
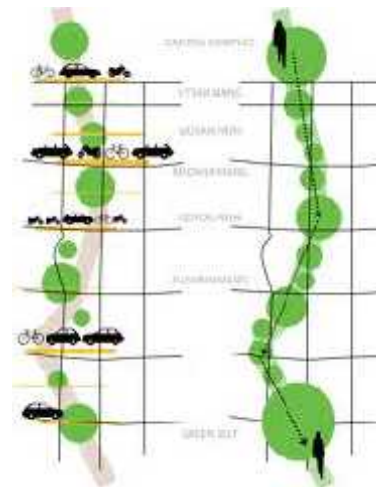
On one hand it ensured the preservation of an existing ecological feature of the site, and on the other provided an opportunity enabling the city residents to move through the heart of the city in a continuous band of various theme gardens. Also this provided an un-obstructed vista of the Shivalik foothills and Kasauli peaks to even the residents of the south-western end of the city.

As such, the significance of this parkland is not only of environmental and ecological values, but of enormous aesthetic value also. **It also provides a unique opportunity for a possible pedestrian link to the Capitol Complex of the city from its south-eastern end.**

However, this potential has not been fully fulfilled, in the absence of the pedestrian underpasses existing beneath the V4 and V3 road links of various sectors interrupting its continuity on surface level.

Similarly, in the original concept, a canal had been proposed to run along Uttar Marg-- extending from the Rajendra Park to the Sukhna Lake, however the same is not viable now, because of the vast changes and intrusions that have been already made there, and that cannot be undone now.

NETWORKING THE LEISURE VALLEY



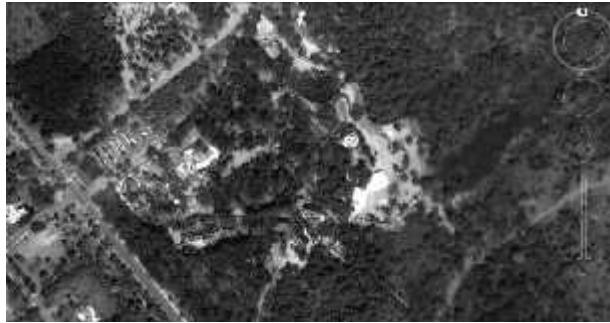
The 8 km long Leisure Valley provides unique opportunity for a possible pedestrian link to the Capitol Complex of the city from its south-eastern end as part of the Green Corridor 5 if the green stretches are interconnected through pedestrian cycle underpasses (see Chapter 10 on Traffic and Transportation)



- **THE ROCK GARDEN**

Spread over several acres, this fantasy land designed by Padam Shri Nek Chand is a vast open-air museum that showcases a vast array of natural rock forms and stones.

The layout of the garden is based on the fantasy of the lost kingdom. Rock Garden, by its organic forms and non-geometric layout, offers an apt counterpoint to Chandigarh's stylised architecture and has also been recommended for heritage status.



Source : Google map - Location of The Rock Garden



The Rock Garden was not a part of the original Plan as conceived by Le Corbusier and was considered as a violation to the same .

The Chandigarh Master Plan 2031 proposes to legalize the area in view of the creative excellence displayed which has earned the place and the creator world wide recognition .

Further interventions shall be strictly as per the recommendation of the Expert Heritage Committee which have been elaborated in detail in the Chapter on Chandigarh Heritage .

The broad recommendations are:

- According Heritage Status to the Rock Garden
- No further expansion of the area.





11.4 TREE PLANTATION HERITAGE AND RELATED ISSUES

It needs to be re-emphasized that Chandigarh has the unique distinction to be one of the few cities in the world with a thorough planned tree plantation system, along its varied hierarchy of roads and open spaces. A Landscape Advisory Committee headed by Dr. M S Randhawa, and with Le Corbusier as its member, was established at a very early stage of the city's development.

Accordingly, Le Corbusier had prepared **very detailed road sections for a systematic, functional and aesthetic tree plantation with environment value along various types of roads and in the different hierarchy of open spaces existing in the city.** These concepts were carried out in full earnest and sincerity at least upto the first phase. All decisions, pertaining to the nature and type of tree plantation **to be undertaken along all roads and open spaces were taken by the Landscape Advisory Committee in consonance with the concepts and visions of the planners of the city.** However, this wonderful practice has not been carried forward with the same sincerity and methodology in the phase II and phase III of the city.

Preserve the Tree Heritage of the City

In order to preserve and enhance the great tree heritage of the city, systematic plantation in the remaining open spaces roads and avenues or for undertaking substitute tree plantation of the old and dying species should be undertaken with the same analytical and systematic methodology, as followed earlier.

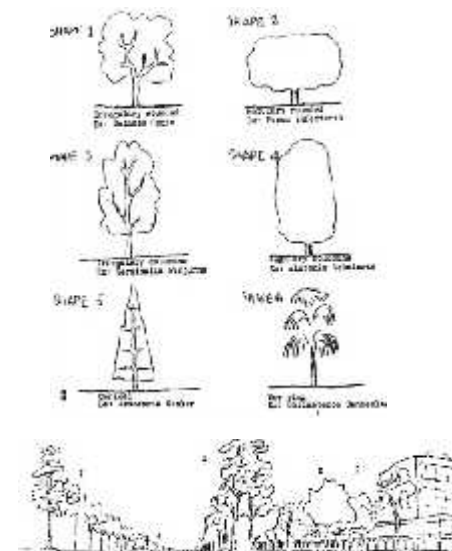
With the increase in built volumes and nature of residential accommodation changing from plotted development to group housing, especially in Phase-III; even greater significance for carefully planned tree plantation cover and foliage in the precious little remaining open spaces and roadsides available needs to be followed. All feature replacement tree plantation should be taken only through revived Landscape Advisory Committee.



A VISUAL TREAT: THE LABURNUM TREE



THE EVERGREENS ALONG THE V3 ROADS



CORBUSIAN SKETCHES FOR LANDSCAPING



CITY'S MAJESTIC TREESCAPE: JACARANDAS IN FULL BLOOM.



11.5 DIVERSE OPEN SPACES IN CHANDIGARH GREEN BELTS ALONG MAIN AVENUES

Besides the dedicated gardens and parks, green belts have been provided along the main avenues of the city like Mango Garden belt along the Purv Marg which also acts as a buffer between the Industrial Area and the residential area. Maintenance of the road side berms and green spaces shall be institutionalized, since the unkempt look presents a poor image of the city while travelling along the important avenues of the city. Street furniture, signage, light fixtures and fitting shall be comprehensively planned in keeping with the character of the city in view of the Heritage status being accorded to the V2/ V3 and V4 roads (See Chapter --- on Chandigarh Heritage)



MANGO GARDEN BELT ALONG THE PURV MARG

Roundabouts

City residents have a strong affinity with the city's beautifully landscaped roundabouts and have opposed removal of the same on occasions when replacing roundabouts with the ATC lights was considered to ease out traffic congestion at the intersections .

Roundabouts are not considered viable for traffic volumes beyond 3600 pcu on peak hours if the diameter is upto 90 m with four arm rotary as per Indian Road Congress guidelines. In order to continue to retain the roundabouts, the residents shall have to reduce use of personalised modes and adopt mass rapid public transport – Metro /BRTS as well as Non Motorised Transport (NMT) systems which is being introduced in a big way in the city. (See Chapter 10 on Traffic and Transportation).



BIRD'S EYE VIEW -- MATKA CHOWK

Matka Chowk – The roundabout beautifully landscaped shall be the major interchange node for the metro corridors .

The proposal needs to be modulated so as not to have an overpowering structure. The structure proposed by DMRC needs to be reviewed so as not to be overbearing.



11.6 RECOMMENDATIONS OF THE EXPERT HERITAGE COMMITTEE ON OPEN SPACES / GREEN AREAS

The Expert Heritage Committee on Preservation and Conservation of Chandigarh has recommended preserving certain green areas of the first phase, for declaration as 'Heritage Status'.

Open Spaces, in terms of the original concept of the **Green City**, are the Soul of Chandigarh, and must never be stifled by thoughtless additions of buildings in the future. The three planning postulates of Sun, Space, and Verdure should always remain our directive principle. Verdure or Greenery is where Space is and Space comes alive only when it is bathed in Sun!



BOUGANVILLEA GARDEN, SECTOR 3

Management plan for regular upkeep of the Leisure Valley, city greens and parks is absolutely necessary



LEISURE VALLEY, SECTOR 10

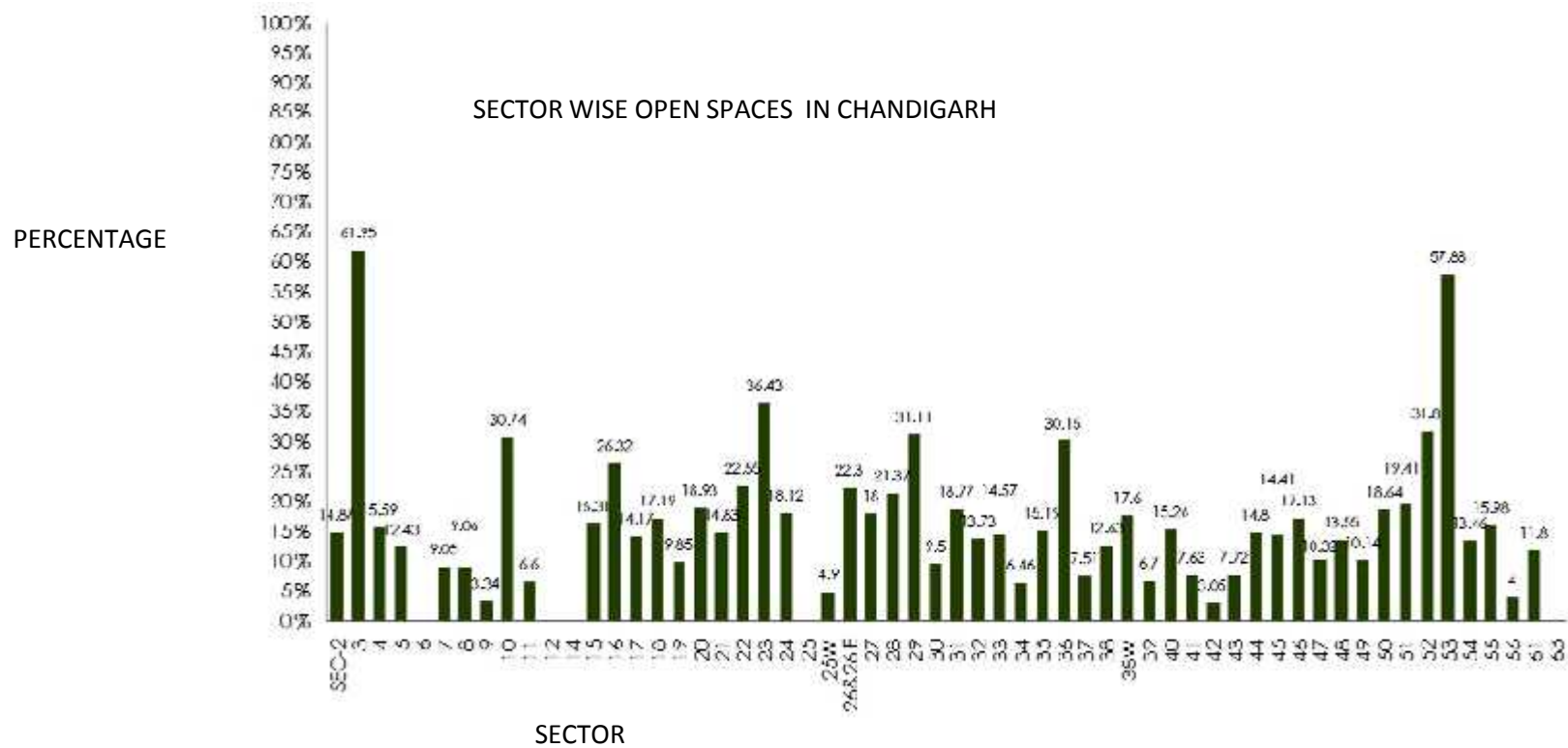


ANALYSIS - AVAILABILITY OF GREEN/OPEN SPACES

- Green area available within the sectoral grid = 2342 acres.
- Green area available in Manimajra = 71 acres.
- Botanical Garden = 180 acres.
- Total planned green area = 2593 acres.
- Required green area (2031) @ 12 sq.m/person = 2616.55 acres.
- Shortfall = 23.55 acres.
- Forest Area in U.T. Chandigarh=3436Ha.
- Total Green Area including Forest = 3828 Ha. (9455 acres).
- Green/Open Spaces (percentage) = 33.5% of the total area

ANALYSIS OF OPEN SPACES WITHIN THE SECTORAL GRID

- Average green available in 2001 (sqm/person)=17 sqm/person.
- Average green available in 2031 (sqm/person)=10.7(sqm/person).
- Sectorwise percentage of open spaces has been shown below.
- The availability of green/forest area in the city has been shown at **ANNEXURE-O-3**.





11.7 PRESSURES ON GREEN HERITAGE OF CHANDIGARH

Besides the city’s rapid natural growth over the years, the tremendous urbanization on its periphery falling in the states of Punjab and Haryana poses a huge pressure on its environment and even ecological sustainability in the coming years. Another very big environmental pressure is the **phenomenal growth of vehicles plying within the city**. Chandigarh is having the highest ratio of per capita ownership of cars in the country. Moreover, the city’s environment is also strained with conspicuous energy consumption, production of garbage and increased volume of built-forms using highly glossy, energy consuming materials like steel and glass.

A major response to these challenges and environmental pressures, strategies for mitigating the ill effects of these factors will be necessary in the coming years.

The city has not only to adopt the best environmental management practices but also continuously enhance its green cover and other natural elements on one hand, and on the other regulate stringently its unbridled consumption and growth.



PARKS MISUSED FOR PARKING



SCHOOLS/INSTITUTES HAVE COME UP IN THE OPEN SPACES



PARKS ENCROACHED BY PRIVATE HOUSE OWNERS



OPEN SPACE BEING MISUSED BY CAMPS

11.8 PROBLEMS FACED BY OPEN SPACES IN CHANDIGARH

The open spaces in Chandigarh face number of problems which interrupt proper functioning. These are broadly:

Building byelaws, zoning regulations and boundary walls stipulations should be synchronized and effectively implemented to ensure that encroachment by way of unauthorised projections, courtyards, opening of doors, putting up fencing etc. do not blemish the quality and nature of open spaces .

The catchment area of Sukhna Lake is under tremendous pressure due to which silt flows down and settles in the lake bed.

Due to tremendous rise in the ownership of cars and shift from plotted development to group housing, multiple families inhabiting per plot -- **large number of open spaces between clusters have been encroached upon for parking of cars.**



POOR MAINTENANCE OF OPEN SPACES



11.9 MASTER PLAN PROPOSALS FOR OPEN SPACES

- Open/Green spaces in the city should be recognized as inviolable open spaces to prevent them from being diverted to other land uses.
- **Develop an open space system of pedestrian greenways and nature walking systems** which link existing and future open spaces, parks and forest areas.
- **Twelve longitudinal Green Corridors** have been proposed connecting the greens of the city in the North South direction which will offer diverse experiences as one moves across them .
- While some will cut across the sectoral grid of the city connecting sector level greens eg Shanti Path with Rose Garden and Leisure Valley, others will move at the city fringe exposing unknown natural areas .



- The natural rivulets of the Sukhna Choe, Patiali ki Rao ,the three lakes in Dhanas ,the forest areas ,the hilly terrain of the lower Shivaliks will offer new opportunities for adventure and ecotourism. Sensitive and appropriate interventions will need to be made for enabling uninterrupted movement of the pedestrians and cyclists for which a detailed corridor wise survey /analysis will need to be carried out .
- Connecting with these corridors will help sensitise the residents towards the city's assets and generate better participation in the preservation and conservation of the city's greens. Refer Chapter 12 on Traffic and Transportation for details .

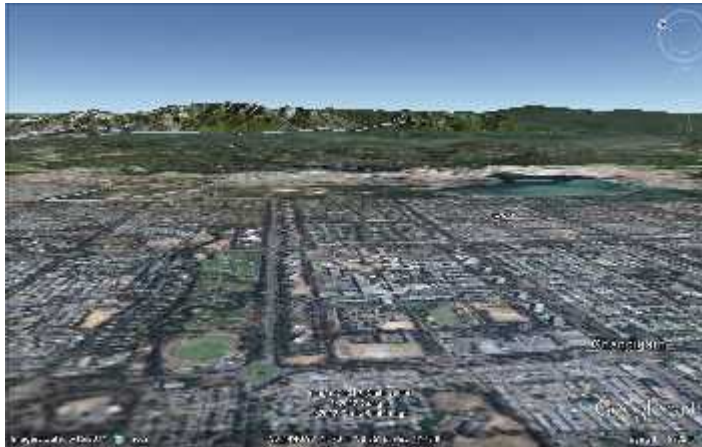
- Protect, manage and enhance areas of significant biodiversity and natural resources.
- **Designate eco-sensitive areas around the Sukhna Wildlife Sanctuary and the Patiala-ki-Rao, Sukhna Choe** and the Natural choe as per recommendations in Chapter 17 on Ecology and Environment.



- Ensure public participation in the development and maintenance of parks and open spaces/green belts and in organizing community events. This will give the citizens a sense of belongingness and pride of achievement and persuade them to look after such spaces.
- The zoning plans of sectors to be rectified so that no other land use except those associated with the parks come up in the open spaces.
- Area along both sides of the railway line wherever cutting across the city plan to have thick plantation on both sides.



11.10 MAINTAINING THE MAN-COSMOS RELATIONSHIP ENSURING UNINTERRUPTED VIEWS AND VISTAS



Conservation of natural areas

The site of the city of Chandigarh has many natural features which make them suitable for conservation on account of their environmentally significant nature and scenic beauty besides their geographical history.

The conservation of the natural areas is recommended which include:

Shivalik Hills, Sukhna Lake and its catchment area, Patiali-ki-Rao Choe, Sukhna Choe, Leisure Valley with its 8 km long monsoonal gorge and further extending into the state of Punjab, Sukhna Wildlife Sanctuary, N-Choe, Protected Forests, Forest Areas, Green belts, Neighbourhood/Sector greens, 'No Construction Zone' on the North of the Capitol Complex.

Enhancing the qualitative and quantitative green of the city

The pioneers of Chandigarh laid down a fine blue print not only for the layout of the city but also for a green Chandigarh. In the coming years, the city will not only have to conserve what it has but also to make up both in qualitative and quantitative manner its wealth of nature. The thrust in the coming years would be on increasing its green cover and also to enhance the density and hardness of the tree-canopies and their foliage content. This will ensure a greater ecological stability and sustainability amidst the sea of built-forms and building blocks all around.

The state governments of Punjab and Haryana shall be requested to actively participate in enhancing the qualitative and quantitative green of the city since many areas fall within their respective territories.

Sensitive handling of the open spaces are required to ensure that interventions blend with nature.

A few illustrations of projects where earth sheltered structures, organic forms have been used are placed as reference.



ENHANCING THE QUALITATIVE AND QUANTITATIVE GREEN OF THE CITY THROUGH SENSITIVE INTERVENTIONS

EARTH SHELTERED STRUCTURE OF THE TOURIST INFORMATION CENTER PALM GARDEN, SECTOR 42

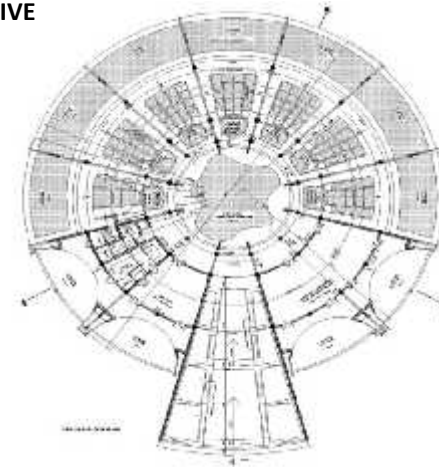


Tourist Information Center, Palm Garden, Sector 42



PALM GARDEN, LEISURE VALLEY , SECTOR 42

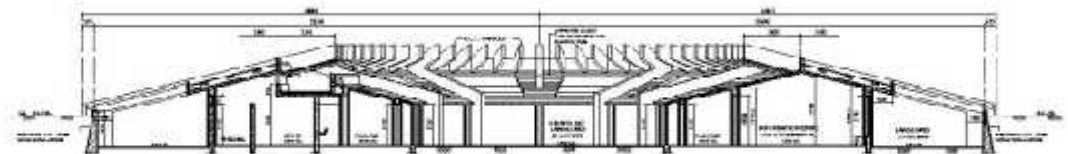
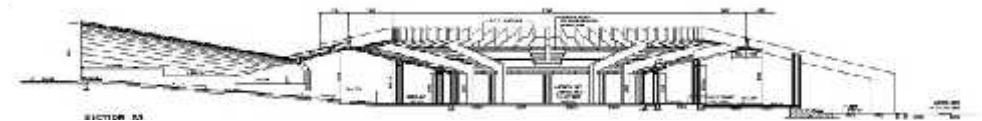
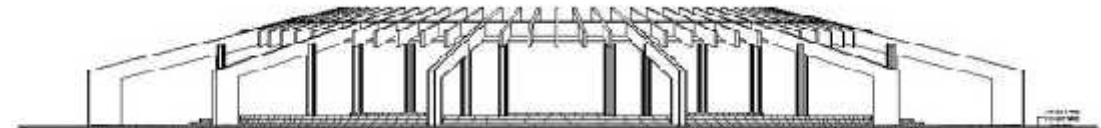
Design – Department of Urban Planning,, UT, Chandigarh



PLAN OF TOURIST INFORMATION CENTRE

LANDSCAPE PROJECT EXEMPLIFIES SENSITIVE INTERVENTIONS THROUGH USE OF EARTH SHELTERING

ELEVATIONS & SECTION

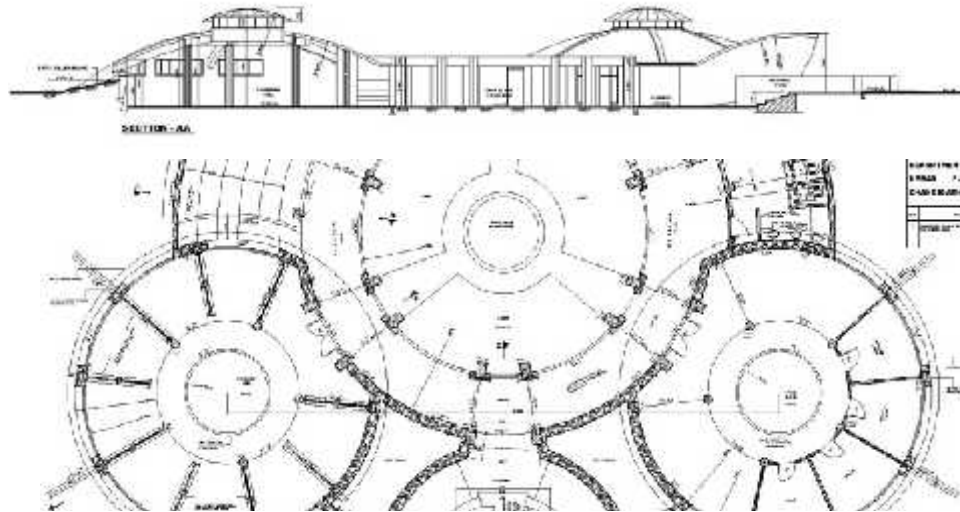


SECTION BB



ENHANCING THE QUALITATIVE AND QUANTITATIVE GREEN OF THE CITY THROUGH SENSITIVE INTERVENTIONS

TOURIST INFORMATION CENTRE BOTANICAL GARDEN, SARANGPUR



TREE HUT



MEDITATION HUT



Design – Department of Urban Planning,, UT, Chandigarh

TOURIST INFORMATION CENTRE



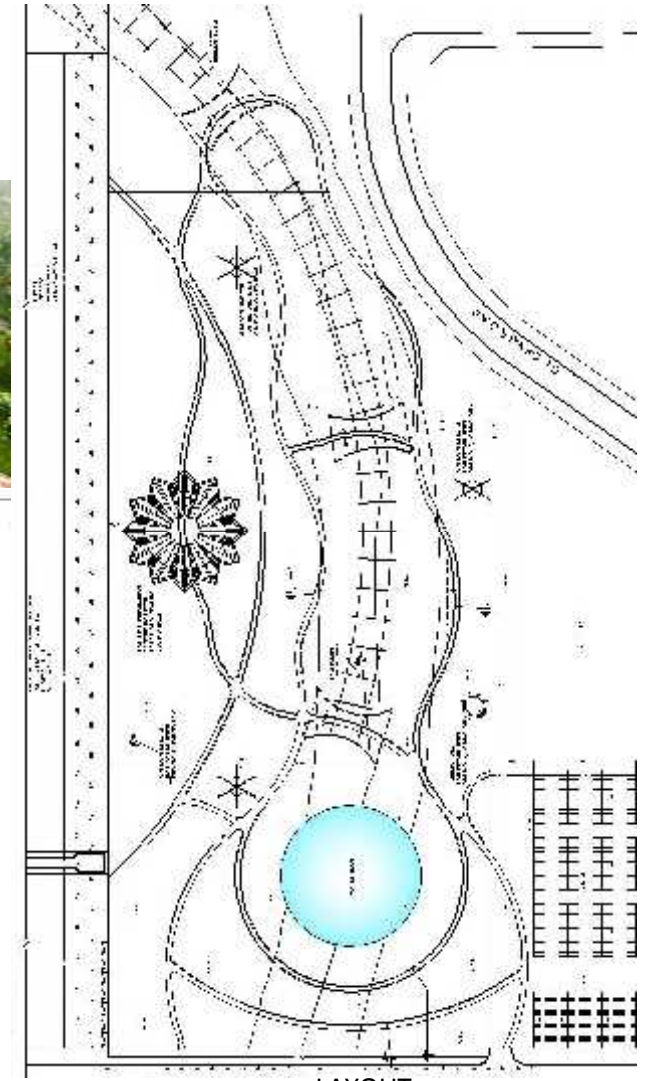
ENHANCING THE QUALITATIVE AND QUANTITATIVE GREEN OF THE CITY THROUGH SENSITIVE INTERVENTIONS



GARDEN OF SPRINGS, LEISURE VALLEY, SECTOR 53



WATER BODY



LAYOUT

Design – Department of Urban Planning, UT, Chandigarh



GARDEN OF CONIFERS, SECTOR 52



BUILT FORM SENSITIVELY BLENDED INTO THE LANDSCAPE SO AS NOT TO BE OVERBEARING



ENTRANCE GATE OF THE GARDEN





Ensuring that greens are not compromised for parking



- Community parking can be planned below green belts
- Using the continuous green for creating parking facilities underground

LANDSCAPE PROPOSALS AT SUB-SECTOR LEVEL

- **REVITALIZATION OF SMALL PARKS**
Similar to the idea of sector level garden, a string of small parks in the sub-sector level can work much better than small parks.
- A string of greens in the sector can be connected by paths to create longer tracks which can create a promenade for walks for sector residents. Intersecting paths and tracks can be provided within the greens.



NETWORKING SMALL OPEN SPACES - AN ILLUSTRATION

LANDSCAPE PROPOSALS FOR SECTOR-15 A





MANAGEMENT AND MAINTENANCE OF SCULPTURES TO ENSURE THAT THERE ARE NOT INSENSITIVE INTERVENTIONS



REGULAR MANAGEMENT AND MAINTENANCE OF PARKS

Many parks, gardens and green belts in the city have been approved by GoI for heritage status and further interventions to be strictly as per heritage regulations and with the approval of the **Chandigarh Heritage Conservation Committee**.



PLAN P3 LOCATIONS FOR TOURISTS INTEREST IN CHANDIGARH



- Rock Garden
- Sukhna Lake
- Capitol Complex
- Martyrs' Memorial
- Leisure Valley
- Commemoration Stone, Sector 9
- Botanical Garden
- Nature Interpretation Centre
- Panjab University
- Rose Garden
- City Centre, Sector 17
- Le Corbusier Centre
- Housing cluster Sector 22
- Sub City Centre, Sector 43
- Nehru Center for Performing Arts, Sector 34
- Beant Singh Memorial, Sector 42
- Palm Garden, Sector 42
- Tourist Information Centre
- Lake Sector 42
- Manimajra Fort, Manimajra,
- Kalagram, Manimajra



12 TRAFFIC AND TRANSPORTATION

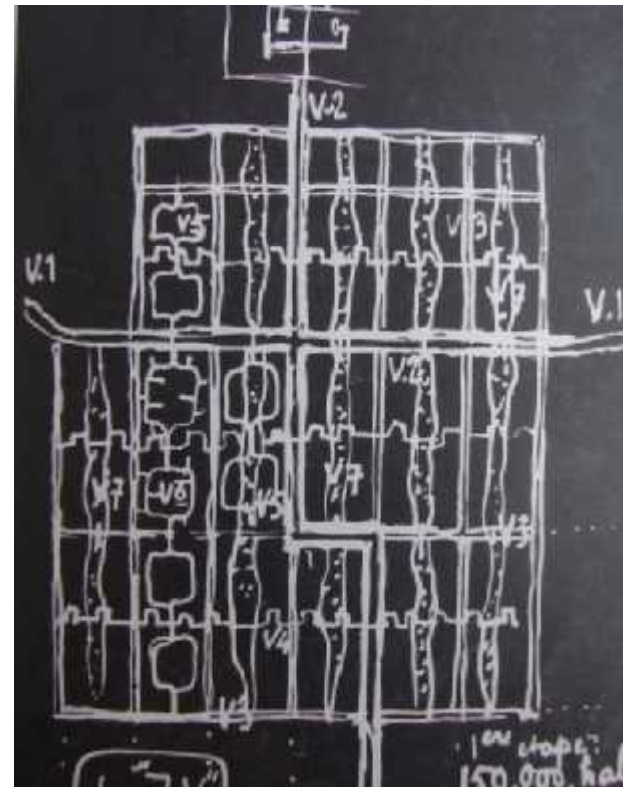
12.1 AN OVERVIEW

The original plan of the city was based on the gridiron defined by a system of seven types of roads, which was called the 7Vs. The system was designed to provide safe mobility to children and pedestrians within and between the sectors, while also permitting the benefits of fast movement for vehicular traffic. Based on the problems being faced by European cities after the industrial revolution, Le Corbusier intended to prevent the traffic congestion and pollution problems caused by the growth of the private motor car while simultaneously utilising the benefits the technology offered. Prevention of vehicular traffic jams on the roads designed for uninterrupted fast mobility was to be achieved by having an efficient system of public bus transport.

Sixty years later, although most elements of the original circulation system remain intact, it is the private car which rules the roost today. The pedestrian pathways for linking different sectors through open green spaces from north to south have largely remained on paper. Instead of cycle tracks going through the open spaces similarly connecting different sectors, some cycle tracks have been laid along the V3s dividing sectors but even these are poorly planned or incomplete, and in any case, do not provide safe continuity across the fast traffic roads.

With the city now having the highest per capita ownership of motorised vehicles in the country, and a dramatic increase in daily floating traffic from the extensive urbanisation which has taken place around the city, Chandigarh today faces the very problems that the carefully designed original Plan was meant to avoid. Pedestrians and cyclists can no longer move around the city safely as the motor car has become the prime determinant for traffic regulations and barriers across roads. Road widening has been encroaching on pedestrian pathways and many open spaces are getting encroached for car parking.

Travel in the city has become more risky with accident rates having gone up. The number of persons killed in road accidents has also gone up. This has tended to impact the poor more severely as many of those killed or injured are cyclists'/pedestrians. Increased use of personal vehicles has also led to air pollution.



SKETCH BY LE CORBUSIER SHOWING 7V CONCEPT



12.2 REGIONAL CONNECTIVITY OF THE CITY

The city has good connectivity with the other surrounding region by road, rail and air.

Road connectivity

Chandigarh is well connected with the national capital by NH-21 which passes through the city. The four laning of the highway and the construction of a number of flyovers and bypasses has made it a fast travel corridor reducing travel time considerably. The city is also well connected to the major towns in Punjab, Haryana and Himachal Pradesh by road.



MAP SHOWING REGIONAL CONNECTIVITY



BUS STAND, SECTOR-17



INTER STATE BUS TERMINUS, SECTOR-43

The recent upgradation of the National Highway – leading to Shimla and the construction of a bypass around the towns of Pinjore and Kalka have removed the major traffic bottleneck in the road to Shimla .

The Inter State Bus Terminus (ISBT) in Sector 17 was the main ISBT for a number of decades till the recent construction of the ISBT in Sector 43. The new ISBT provides Interstate bus connectivity on all routes except for a few long route buses plying from ISBT Sector-17. The ISBT in Sector 17 will eventually be used as a local bus terminus.



RAILWAY CONNECTIVITY

The rail connectivity to the city is through twin track railway lines from Delhi and Mumbai upto Ambala , a single track broad gauge thereafter upto Kalka and a narrow-gauge single track between Kalka and Shimla having heritage value. The recently built single track Chandigarh to Morinda railway line provides rail connectivity to Punjab.

Besides serving the city, Chandigarh's railway station located in the north-eastern periphery of the city near the Industrial Area also serves the goods and the passenger traffic of the neighbouring region including the towns of Panchkula and Mohali. Direct access to the railway station from the Panchkula side has been facilitated.

With the increase in the frequency and number of trains together with faster speed and greater comfort, rail has become an important mode of transport.

AIR CONNECTIVITY

Located on the south eastern corner of the city and built in the fifties, Chandigarh's airport remains under the Ministry of Defence but also serves as a domestic airport. Over the years, direct flights to Delhi, Mumbai, Jammu, Srinagar, Jaipur, Leh and Bengaluru have been introduced with a daily footfall of around 2,000 passengers at the local airport. The proposal to start international flights has been under active consideration for some time.

A new, fully air-conditioned terminal building, equipped with modern facilities, has been built recently with a capacity to accommodate 500 passengers at a time. Chandigarh's airport today is among the best airports in the country in the category of B class cities.

The airport is in the process of being further upgraded as an international airport as a joint venture of Punjab, Haryana and the Airport Authority of India on 300 acres of land in Punjab.



CHANDIGARH RAILWAY STATION



OLD TERMINAL OF
CHANDIGARH AIRPORT



NEW TERMINAL OF
CHANDIGARH AIRPORT





12.3 ROAD NETWORK OF 7VS WITHIN THE CITY

TABLE 1: THE HIERARCHICAL NETWORK OF 7VS (WHICH HAS INCREASED TO 8) HAD THE FOLLOWING FUNCTIONS IN CHANDIGARH'S ORIGINAL PLAN :

TYPE	FUNCTION
V1	Roads connecting Chandigarh with other cities in the region . The Madhya Marg and Dakshin Marg merge with the V1s leading to Kalka and Ambala respectively.
V2	The major avenues of Chandigarh, with important institutional and commercial buildings located on them. Madhya Marg, Dakshin Marg, Jan Marg, Himalaya Marg, Uttar Marg and Purv Marg are important examples of these.
V3	Roads between sectors for fast moving vehicular traffic. Each sector is surrounded either by a V2 or V3.
V4	Shopping streets cutting through sectors with shops on their southern side.
V5	Circulation roads within sectors .
V6	Roads providing access to houses .
V7	Foot paths through green belts enabling pedestrians to cross sectors without having to cross vehicular traffic and cycle tracks.
V8	Cycle tracks through green spaces Buses were to ply only along V2,V3 and V4 roads. Each sector was to have only four entry points from V3s no direct entry to houses was permitted from these roads.



PLAN P1 : ORIGINAL CIRCULATION NETWORK AND TRANSPORTATION NODES





PRESENT STATUS OF ROAD NETWORK

The 7V Circulation System has served the city well for decades. However the same is now under extreme pressure, both internal and external, which has begun to affect its efficiency.

The concept of the self contained neighbourhood intended to meet all the daily needs of the residents within walking distance without having to go outside the sector has not been fully successful ; freedom of choice for schools, shopping centres etc. outside the sectors results in inter sector movement of fast and slow vehicles across the city.

Further, Le Corbusier’s concept of the 7Vs has not been fully implemented.

Detailed planning of the road network/road sections of each category of road was done in great detail by the original team including road carriageways, pedestrian and cycle tracks, tree plantation, and street lighting. Phased development of the system was planned to enable the infrastructure to keep pace with the growth of the town. Refer **Figure 4** and **Figure 5**.

Pedestrian pathways and cycle tracks not fully built

The V7s and V8s intended exclusively for the pedestrians and the cyclists respectively crossing road intersections by underpasses have not been implemented so far.

Figure 4 : Road sections 1st phase development

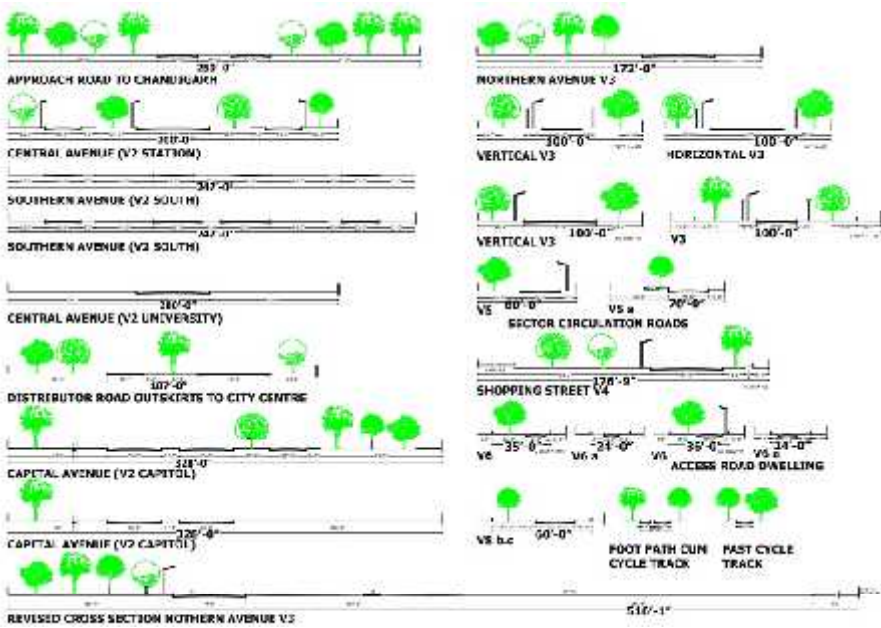
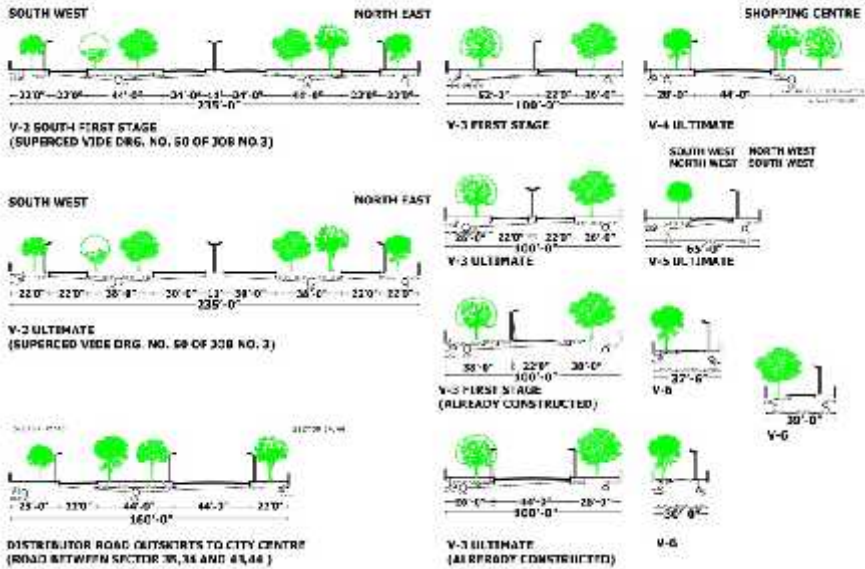
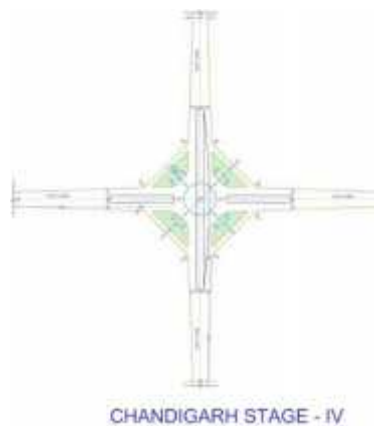
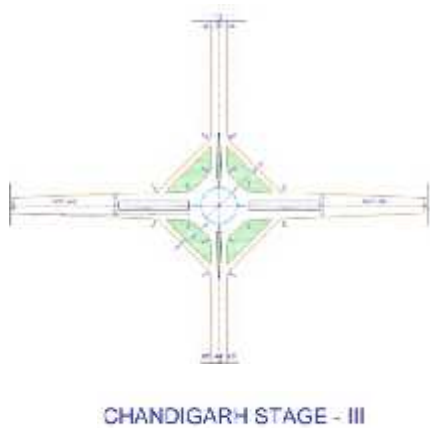
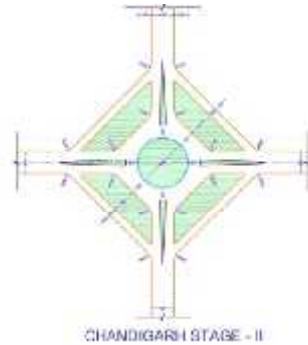
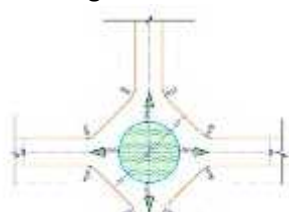


Figure 5 : Road sections 2nd phase development





- The pathways that have been laid are poorly maintained and have trees, storm water drainage and other obstructions which compel pedestrians /cyclists to move on roads thereby defeating the very concept of dedicated space for them.
- Underpasses to connect V4 shopping streets across V3s/V2s have also not been implemented. The built environment and the road junctions also do not permit such interconnectivity at this stage .
- Four phased development of roundabouts has been carried out only upto the second phase. In most cases slip roads were built only recently. In some cases no space has been left for slip roads making them non feasible now.



DRAWING OF FOUR PHASED DEVELOPMENT OF ROUNDABOUTS



PEDESTRIAN SPACE ENCROACHED BY TREES, UTILITIES WHICH DEFEATS THE PURPOSE OF DEDICATED FOOTPATHS



POOR CONDITION OF ROADS AND CYCLE TRACKS



LANDSCAPED ROUNDABOUTS OF CHANDIGARH



12.4 PRESENT TRAFFIC CHARACTERISTICS AND PROBLEMS

Chandigarh's road network is under intense pressure today due to increase in population, explosive growth in the number of private vehicles which has increased the number of personalised vehicles, partly due to the absence of an efficient and reliable public transport system. There are limitations on the road space that can be provided within the existing built up environment.

Expansion of the city to the periphery of UT and permitted land use changes have resulted in new travel corridors. (Refer chapter - 13 on Land Use)

New roads to provide / improve connectivity of the developments in the peripheral areas generating criss-cross movement across the city and increased inter sector commuting.

- The 7V and the sectoral concepts have not been followed while urbanising the rural areas .
- Urban development across the Patiali ki Rao and Sukhna Choe has been piecemeal, with some areas having poor accessibility.
- No provision has been made for pedestrians /cyclists in trans choe developments or on the high level bridges constructed over the choes despite many commuters using these modes .

Large volumes of inter-city traffic

There is now a lot of intercity vehicular traffic from the neighbouring states which have strong daily interaction with the city. The emergence of the new towns of Mullanpur and Naya Gaon adjoining the city, and the planned expansion of existing towns in the neighbouring states are also likely to generate new travel corridors exerting further pressure on the city's arteries. Consequently, the well defined planned hierarchy of roads has been disturbed both due to intercity traffic and increased traffic within the city, including that from the wholesale markets .

High volumes of through traffic across the city:

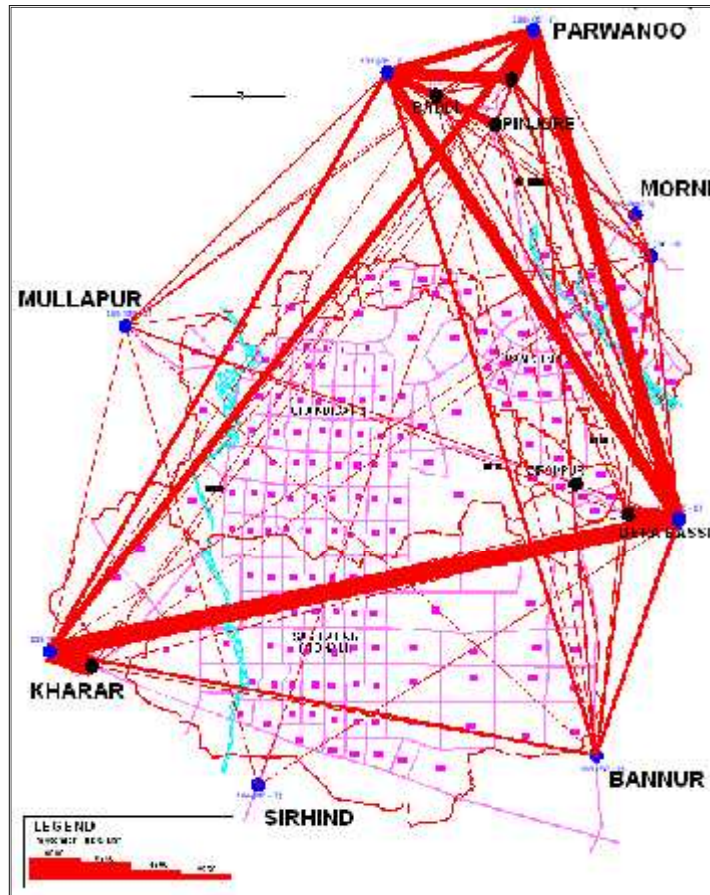
The total daily (24 hour) traffic studies at outer cordon points indicate that about 1,52,650 vehicles enter or leave Chandigarh Urban Complex on a typical working day. There is also high through passenger and freight traffic across the city. Madhya Marg is envisaged to be the worst affected of the roads since it provides the shortest and the direct connection between the towns of Punjab Mullanpur /Kharar /Anandpur Sahib and Baddi in Himachal on the West and the eastern towns of Manimajra, and towns of Panchkula, Panchkula Extension, Pinjore Kalka, Chandimandir Cantonment in Haryana and further to the towns of Parwanoo, Shimla etc. in the state of Himachal Pardesh. The through traffic across the city had added to the congestion on the road.

As per the surveys conducted by M/s Rites in 2008, the daily total inter city passenger traffic with the Chandigarh Urban Complex is 4.93 lakh trips (cars, 2 wheelers, auto rickshaws and buses) about 1.41 lakh of which comprise through trips which is 28.7% of the total traffic. The demand for through traffic is shown in **Figure 10**.

Of the total traffic of 26934 vehicles (LCV, Trucks and MAV) about 11062 vehicles are through which is about 41% of total traffic. Traffic desire for through movement is shown in **Figure 11**. This also indicates the need a bypass road to around Chandigarh Urban Complex. With business as usual scenario, the Volume /Capacity (V/C) ratios on all major corridors are expected to be well above '1' by year 2021. The situation is likely to worsen considering the high growth anticipated in CUC and nearby towns.

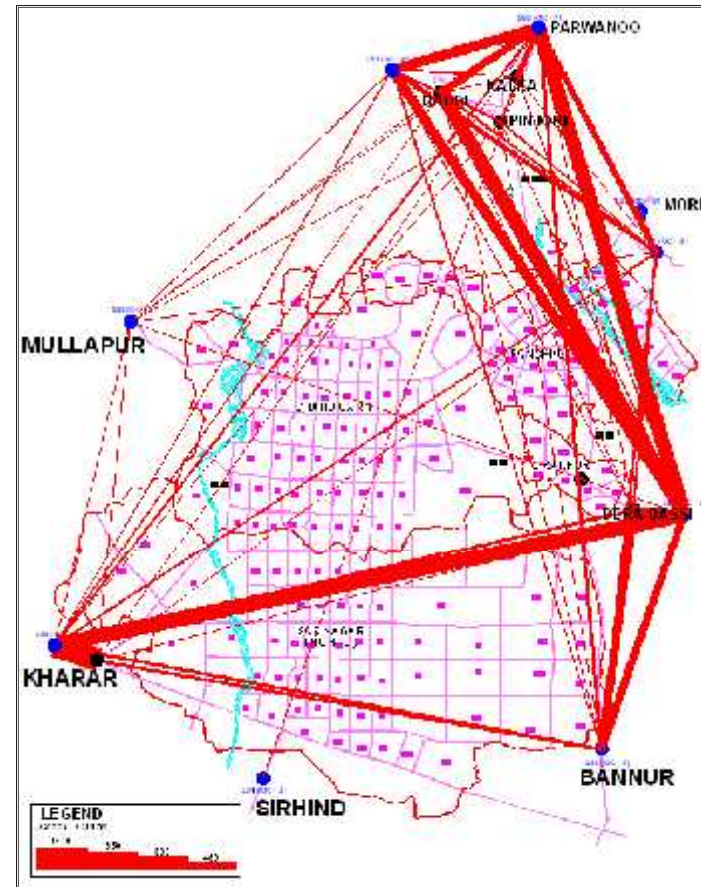


Figure 10



DESIRE PATTERNS OF INTER-CITY PASSENGERS
IN THE STUDY AREA (2008)

Figure 11



DESIRE PATTERN OF INTER-CITY GOODS TRAFFIC
IN THE STUDY AREA (2008)



- **Traffic composition** on roads indicates a very high share of two wheelers on most roads. The share of cars is also growing. On some of the roads, the share of two wheelers and cars in total traffic is more than 80% indicating inadequacy of the public transport system.
- The household travel surveys indicate **high ownership of cars** and two wheelers.
- 86% of households own at least one car or two-wheeler.
- At present, **modal split** in favour of public transport is only 16% of total motorised person trips which is much lower than that recommended in the National Urban Transport Policy. This is due to the high growth rate in personalized motor vehicles, This low modal share is likely to fall further unless an effective public transport system is put in place at the earliest.
- The city has the **highest car per capita** of motorised vehicles in the country. There were more than 6 lakh motor vehicles registered in Chandigarh in 2005. Two wheelers account for around 71.5% and cars/jeeps around 27% of the total vehicles registered.



HEAVY TRAFFIC JAMS ON THE CITY ROADS



7V CONCEPT NOT ADOPTED IN RURAL AREAS



CATTLE OBSTRUCTING TRAFFIC IN PERI URBAN AREAS



Railway line an obstruction to the smooth flow of traffic:

The railway line passing through the city is a hindrance to seamless connectivity in the absence of ROB's /RUB's Manimajra, Mauli Jagran, Panchkula Town located across the railway line and daily commuters are put to great inconvenience at railway crossings.



Railway line an obstruction to the smooth flow of traffic:



Pressure on Madhya Marg

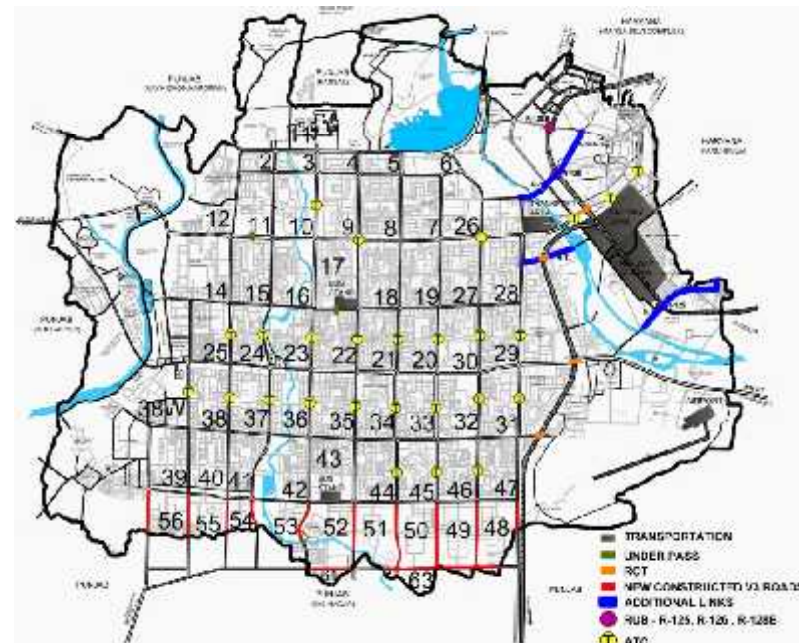
Madhya Marg with the high level bridge across the railway line and Sukhna Choe is at present the only encumbrance free direct approach to trans Sukhna Choe areas and as such attracts high traffic volumes which lead to high traffic congestion especially during working hours .

12.5 INTERVENTIONS / ADDITIONS MADE TO THE ROAD NETWORK OF THE ORIGINAL PLAN

Additions made to the road infrastructure

The following new roads have been planned /built to improve the connectivity of the areas mentioned above.

The Vertical V3s have been extended up to the interstate boundary to carve out additional sectors and connect with the V3's of Mohali which have replicated and synchronised the 7V network of Chandigarh .



PLAN P2 EXTENSION OF VERTICAL V3S TO THE INTER STATE BORDERS



Traffic surveys conducted by RITES for preparing the Comprehensive Mobility Plan indicate that

- Road network capacity in CUC is adequate for now but major travel corridors Madhya Marg, Udyog Path, Dakshin Marg are beginning to become congested.
- Many junctions particularly on Madhya Marg, Himalaya Marg, Dakshin Marg, Jan Marg, Purv Marg, Udyog Path etc have very high approach traffic volumes and most of the junctions with rotaries have exceeded their capacity. With expected growth of traffic, the situation at these junctions is likely to deteriorate fast.
- **Table 1** shows Vehicular Capacity ratios of various major roads in the study area. It can be seen from the table that in 2009 most of the roads had V/C ratios less than 1.0 except Madhya Marg and Udyog Path.
- Although Volume/capacity (VC) ratio on most of the roads are less than 1, these are fast approaching their full capacity. Some roads are already serving traffic volumes more than the capacity. The situation is likely to worsen considerably.
- Under these circumstances corridors like Vidya Path, Himalaya Marg, Madhya Marg, Udyog Path, Purv Marg, Vikas Marg and Dakshin Marg will get choked by personalized modes such as cars and two wheelers by 2021 and beyond. With most of the roads having already been widened to their full capacity, this indicates the need of augmenting road capacity by planning high capacity mass transport systems.

TABLE T1: TRAFFIC SURVEYS CONDUCTED BY RITES

Refer "Plan 1" on Page 5

Sr.No	Name of Road	Vehicle Capacity Ratio 2009
1	Vidya Path	0.8
2	Udyan Path	0.7
3	Jan Marg	0.8
4	Himalaya Marg	0.7
5	Sarovar Path	0.8
6	Sukhna Path	0.8
7	Chandi Marg	0.6
8	Purv Marg	0.8
9	Madhya Marg	1.2
10	Udyog Path	1.1
11	Dakshin Marg	0.8
12	Between Sec 10 and 15 (Panchkula)	0.8
13	Between Sec 6 and city center (Panchkula)	0.3
14	Near Sec 1 Shimla Road (Panchkula)	0.8
15	NH-21 (Near Tribune Chowk)	0.7



Route No. 1 (alternative route to Panchkula) - A 30.48.(100 ft.) wide road from Purv Marg to Sector 17/18 junction of Panchkula via Industrial Area Phase-I/CTU workshop/cremation ground has been constructed . The road width varies from 21.34 to 30.48 m within the Industrial Area Phase-I due to constraints of adjoining buildings. At present there is obstruction of railway level crossing.

Route No. 2 -A 60.96 m wide road (with 10.5 m wide metalled road and 5 meters wide slow carriageway on either side) from Hallomajra Chowk to Industrial Area in Panchkula via forest area/Industrial Area, Phase-III (Raipur Kalan), has been planned. At present 7m wide metalled road on either side of central verge has been constructed, however, the commuters are inconvenienced by a surface rail crossing (at Jn. 125) and the absence of pedestrian/cycle tracks.

Route No.3 – A 30.48 m wide road (with dual carriageway on either side) from Saint Kabir crossing (Chandi Path) to Fun Republic (Manimajra) via behind the Police Lines /railway crossing N126/Police Station (Manimajra)/Fun Republic has been planned/constructed. However, the RUB pedestrian paths/cycle tracks are yet to be constructed. The width of the road varies from 30.48m to 15.84m due to constraints posed by existing buildings in Manimajra along the road.

Widening of road carriageways beyond the ultimate prescribed in the road section to accommodate more cars. This has however been at the expense of the pedestrians and the cyclists and needs to be avoided in future .

Roundabouts replaced by ATC lights

The total replacement of roundabouts with ATC lights in a few cases such as the Press Chowk and the Transport Chowk along Madhya Marg has not been appreciated by the city residents who have a strong affinity with the city's beautifully landscaped roundabouts.

ATC lights have been installed at various junctions (Refer Plan 2)



ROUNDABOUTS WITH TRAFFIC LIGHTS



ROUNDABOUTS REPLACED BY TRAFFIC LIGHTS

Central verge constructed along V4 roads to segregate movement in opposite directions and to improve flow of traffic. This has however defeated the intended function of the V4 roads planned as slow carriageways.



CENTRAL VERGE ON V4

Closure of the central verge along V2/V3 roads between intersections to prevent crisis cross movement and accidents. This again has given priority to cars at the cost of the pedestrians, cyclists and other non motorised modes of mobility (such as cycle rickshaws and horse carts)



12.6 PLANNING FOR THE FUTURE TRAFFIC AND TRANSPORT PLANNING

Vision

“One day people will come to Chandigarh to see the park wherein one does not see the automobile, where one sees the nature (a very impressive nature).”

Le Corbusier

The Chandigarh Master Plan 2031 vision for the traffic and transportation in Chandigarh is in sync with above quotation. The GOI's National Urban Transport Policy advocates people centric well contained city with efficient people-friendly transport system with minimum travel time & maximum safety and comfort that aims at reducing dependence on cars, with widespread use of non-motorised modes and mass rapid transit system.



MASTER PLAN'S VISION TO PROVIDE BETTER TRANSPORT FACILITIES

GOALS

- To improve connectivity and travel throughout the city and its region.
- To improve mobility within neighborhoods, wards, zones and satellite towns to address inner- and inter-city transportation needs to offer viable and reliable transportation options. At the same time the facility provided should be optimally used.
- Maintaining Chandigarh's outstanding universal appeal of a green, clean and spacious town which does not buckle under pressure.
- Adopting best practices -Use of green and energy efficient transportation modes which cause least damage to the environment.
- Sixty to seventy percent of total trips should be made by public transport, with one (or two) modal changes.
- Maximum population should be served by public transport.
- Trip origins and destination to be within 500m of public transport terminal and stops.
- Safe and convenient pedestrian/NMV facilities throughout the urban area.
- Safe bicycle lanes shall be provided to reach the public transport system, with secure bicycle parking provided for those who do not have access to public transport within walking distance.
- Integrated urban land use and transport system resulting in efficient and sustainable mobility for everyone and provide greater accessibility to opportunities (e.g. employment, education, health, goods, and other services).



REGIONAL CONTEXT

Need for Chandigarh Interstate Metropolitan Regional Plan to guide the traffic and transportation of the region and the city

High Inter City traffic expected within Chandigarh

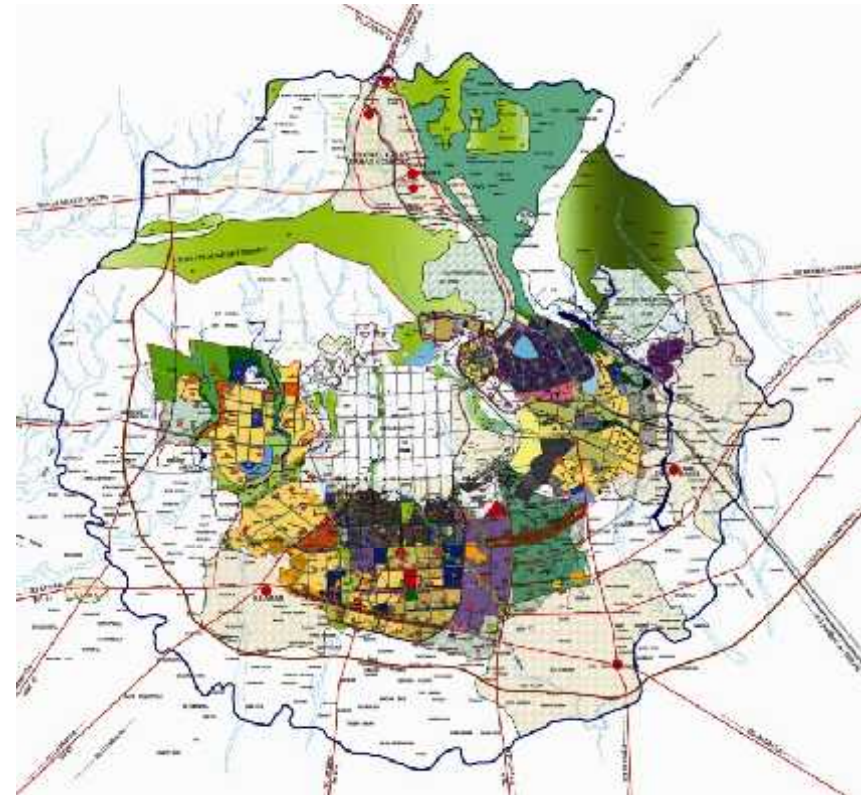
In view of the developments proposed by the neighbouring states the adjoining region around is targeted for high growth in the coming decades. The projected population for Chandigarh and other towns as per their development plans is expected to grow from 21 lakh in 2009 to 59 lakh in 2041. Many new work centres, industries, sports, recreational and cultural facilities are being planned across the region which will result in new travel corridors.

An Interstate Regional Traffic and Transportation Plan needs to be prepared in the over-all context of an Inter-State Metropolitan Region which spells out the augmentation and strengthening of the existing infrastructure, ensuring proper connectivity to the landlocked city .

Observations on traffic and transportation proposals by the neighbouring states in the region :

Independent transportation planning has been undertaken by the neighbouring states under the respective regional plans (Refer Chapter 2 on Regional Context). Chandigarh Administration engaged RITES to prepare the Comprehensive Mobility Plan for the Chandigarh Urban Complex. All the three need to be urgently synchronized under the ambit of an Interstate Regional Transportation Plan to provide seamless connectivity and prevent traffic congestion and bottlenecks.

PLAN P3 – Development on the periphery of Chandigarh



Punjab's GMADA Regional Plan provides for the following:

- GMADA Expressway connecting the agglomeration of SAS Nagar and the townships of Landran, Banur, Kharar, in Punjab and Baddi in Himachal Pradesh.
- Ring road between Sector 72 and 76 along Aero City road.
- New linkages i.e. MDRB, PR4, PR5 connecting Mullanpur township with Chandigarh's Madhya Marg, Dakshin Marg and Vikas Marg



RECOMMENDATION

Creation of by-pass around Chandigarh to prevent unwanted through traffic

There is need for creating a ring road /by-pass around Chandigarh to prevent unwanted through traffic within the Chandigarh. Traffic which is destined beyond Chandigarh on either side should be allowed to bypass without entering the city. In order to achieve the aforesaid, it is necessary that suitable bypasses are constructed. However in view of the non availability of land within Chandigarh to make provision for the same, the matter needs to be addressed at the interstate level.

The State Government of Panjab has stated that the GMADA Expressway and ring roads proposed in the GMADA Regional plan will serve the purpose due to the ROW's and the number of lanes proposed. Both the roads however are at a considerable distance from Chandigarh and these will also pass through busy areas of existing towns with continuous local and goods movement obstructing traffic flow which will act as a deterrent rather than facilitate diversion of unwanted through traffic from Chandigarh.

To enable the GMADA Expressway to effectively divert traffic away from Chandigarh, the possibility of enabling seamless movement through grade separation from the the local traffic needs to be considered.

Grade separation of the road between Sector 72 and 75 of Mohali christened Aero City Road to fulfil the functional requirements of a by-pass is also recommended to ensure uninterrupted connection to the International Airport.

Similar bye pass/Ring Road should also be planned by the neighbouring town of Panchkula on priority. The responsibility of constructing the ring road shall be that of the respective state through which it passes.

In the absence of ring roads, the Chandigarh city roads, which provide the shortest travel distance between towns, are likely to be put under extreme pressure to the detriment of the city's environment, and quality of life.

Additional road connectivity with the neighbouring towns of Punjab and Haryana

Additional road connectivity with Panchkula

While the city of Chandigarh is well connected with the town of SAS Nagar through the sectoral grid roads, the township of Panchkula is only connected through the Madhya Marg. **Additional road connectivity has been proposed along Route No. 2.**

Additional road connectivity with Mullanpur Township

With the upcoming Mullanpur Township in Punjab adjoining the interstate boundary of Chandigarh, there is need to provide inter city connectivity to facilitate the residents of both the towns. Accordingly, the MDRB, PR4, PR5 roads of the Mullanpur Township are being connected with the roads of the Chandigarh, subject to feasibility on ground, and will provide new linkages facilitating residents of both the towns.

The Chandigarh Administration is already widening the PGI to Mullanpur Road as an extension of the Madhya Marg with a three lane dual carriageway together with a slow carriageway. High level bridge is also being planned across the Patilai ki Rao. The alignment of the overhead metro along the road is also being factored in. The proposal needs to be synchronized with the MDRB of the GMADA Regional Plan, Punjab. There is also a need to improve the intersection of the two roads which meet at the interstate boundary. Within the Chandigarh jurisdiction a stretch of 600 meters from the high level bridge at Khudda Jassu upto the Jayanti Devi Temple has constraints of widening beyond two lane dual carriageway due to developments of the villages on either side of the road. It is therefore proposed that to enable proper development, essential land required for the purpose be acquired in Khuda Lahora.

However for access from the north east near the Capitol Complex, housing the highest offices of the Legislative, Executive and the Judiciary, and the lake, the heritage, environment, security and practical issues of traffic must be taken into consideration .



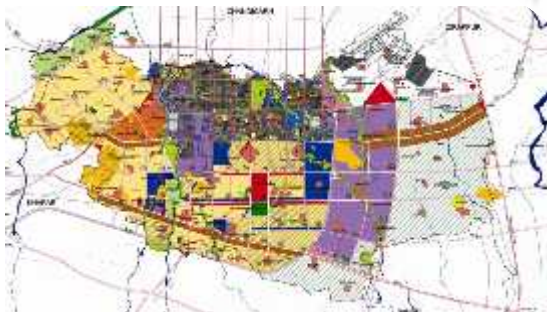
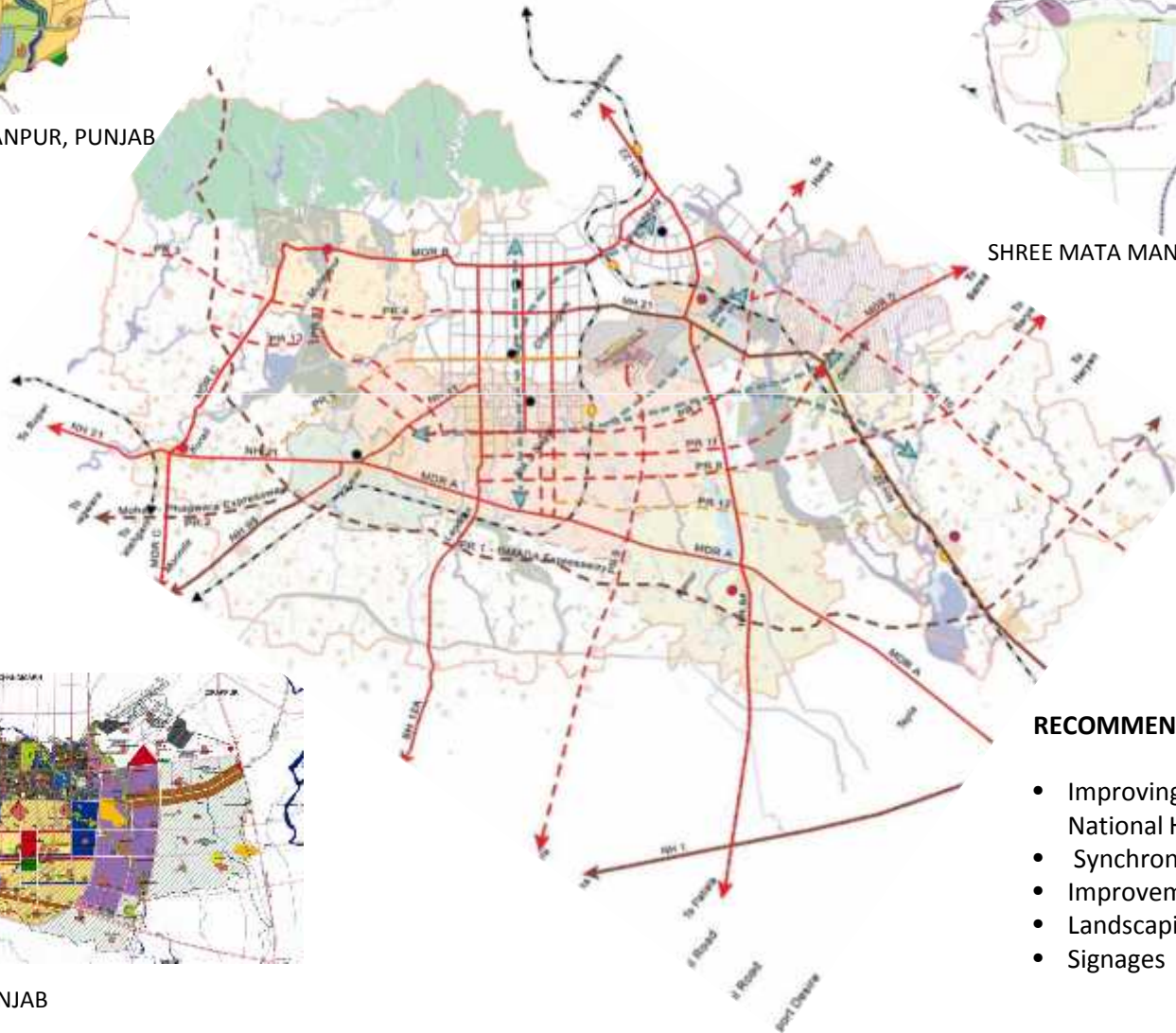
PLAN P4- DEVELOPMENTS BY THE STATE OF PUNJAB AND HARYANA AROUND CHANDIGARH



TOWNSHIP OF MULLANPUR, PUNJAB



SHREE MATA MANSI DEVI COMPLEX, HARYANA



SAS NAGAR, PUNJAB

RECOMMENDATION

- Improving entry to the City along National Highway 21
- Synchronizing road junctions
- Improvement of road junctions
- Landscaping
- Signages



Proposals of CMP 2031 - Improving entry to the city along National Highway 21 and Chandigarh-Mullanpur Road and Chandigarh- Kharar Road through interstate coordination



IMPROVEMENT OF ZIRAKPUR JUNCTION



MATTER TO BE TAKEN UP WITH THE STATE GOVERNMENT OF PUNJAB



IMPROVEMENT AND SYNCRONISATION AT MULLANPUR JUNCTION

RECOMMENDATION

- Organised pedestrian and cycle movement
- Space for feeder transport services – auto rikshaws, bicycle rikshaws,
- Landscaping
- Signages



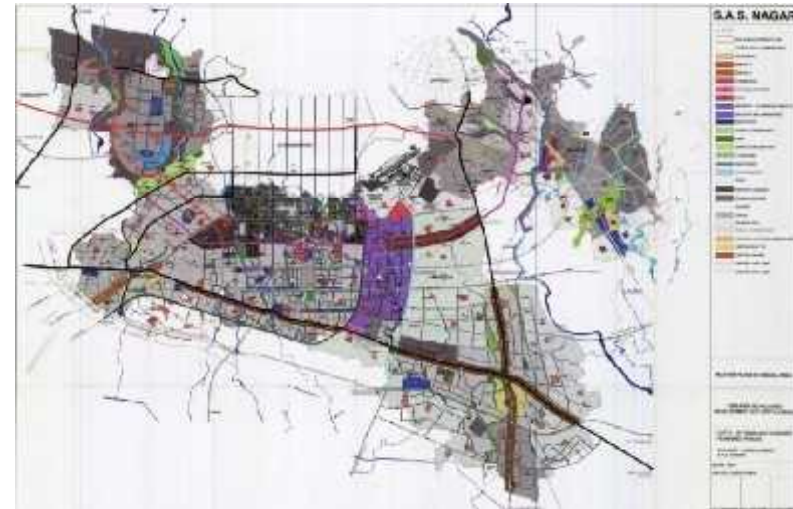
P5-ROAD NETWORK PROPOSED IN GMADA REGIONAL PLAN AND ITS CONNECTIVITY WITH CHANDIGARH



PLAN P5 - GMADA REGIONAL PLAN

Ribbon Development

The entry to Chandigarh is through National /State Highways that cut across the towns of the neighboring states. Smooth and unhindered entry into the city is required. The master plans of different townships notified by the State government indicate mixed use ribbon development along major travel corridors. In the absence of service lanes, the heavy traffic generating commercial activities will hinder the smooth flow of traffic into Chandigarh. To enable unhindered and comfortable entry into the city, direct opening of buildings along highways not recommended.



MIXED USED DEVELOPMENT

Recommendations - grade separations, Intersection improvements. Direct opening of buildings on highways not recommended.



ENVIRONMENTAL CONCERNS W.R.T TRAFFIC IN THE ECO SENSITIVE AREAS

The township of Shree Mata Mansa Devi Complex is being developed in Haryana on the north eastern side of the city abutting the Sukhna Lake, Sukhna Forest and in close proximity to the Sukhna Wild Life Sanctuary.

The Naya Gaon Township is being developed on the north of the Capitol Complex at the foot of the Shivalik Hills. The township abuts the Sukhna Wild Life Sanctuary.

Both the townships have been connected to Chandigarh through existing / proposed roads. The 60m. wide road of Shree Mata Mansa Devi Complex connects the 30 m wide road of Chandigarh at the regulator end which further along the Sukhna Choe skirting Kishangarh to enter Chandigarh via the Golf Course.

The Naya Gaon Township is accessed through the 16 ft. wide link road to village Naya Gaon abutting Rajindra Park leading to Khuda Ali Sher and Sukhna Wild Life Sanctuary.

Though both the towns are being projected as low density residential towns, the work centers and social infrastructure being proposed will generate considerable traffic movement in the highly eco sensitive area.

As per directions of the Ministry of Environment & Forests, GOI, the area needs to be notified as Eco Sensitive Zone. The traffic volumes and movements need to be carefully regulated so as not to cause air and noise pollution which would disturb the flora and fauna of the Sukhna Wild Life Sanctuary. It is desirable that only limited traffic be allowed on these connecting roads as per guidelines of the Eco Sensitive Zone. (also see Chapter 17 on Ecology and Environment).

However for access from north east near the Capitol Complex, housing the highest offices of the Legislative, Executive and the Judiciary, and the lake, Sukhna Wildlife Sanctuary, the heritage, environment, security and practical issues of traffic must be taken into consideration.



LOCATION OF SHREE MATA MANSA DEVI COMPLEX (GOOGLE MAP)



LOCATION OF NAYA GAON TOWNSHIP (GOOGLE MAP)



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LOCATION OF SHREE MATA MANSA DEVI COMPLEX (GOOGLE MAP)



LOCATION OF NAYA GAON TOWNSHIP (GOOGLE MAP)



IMPROVING CONNECTIVITY WITH CHANDIGARH AIRPORT UPGRADED TO AN INTERNATIONAL AIRPORT

At present, Chandigarh Airport has direct access from National Highway-21 which passes through the city. Land identified for expansion of the airport as an international airport falls within the State of Punjab.

The expansion plan envisages retention of the existing runway (in Chandigarh) and development of a new terminal in the additional land provided in Mohali by Government of Punjab (approximately 300 acres). The use to which the existing terminal would be put is not clear.

None of the access options for Chandigarh being considered for the expanded airport compares with the access currently enjoyed by Chandigarh's residents. The new terminal should be made accessible from Chandigarh by an underground tunnel if feasible, connecting the existing road to the airport with the new terminal building to the Chandigarh City. This is the most suited option for Chandigarh.

The other two options i.e. connectivity from Purv Marg near Sector 48, and connectivity from the Zirakpur side should also be implemented to enable easy accessibility from all directions, since the airport will also serve the larger northern region including the State of Himachal Pradesh.

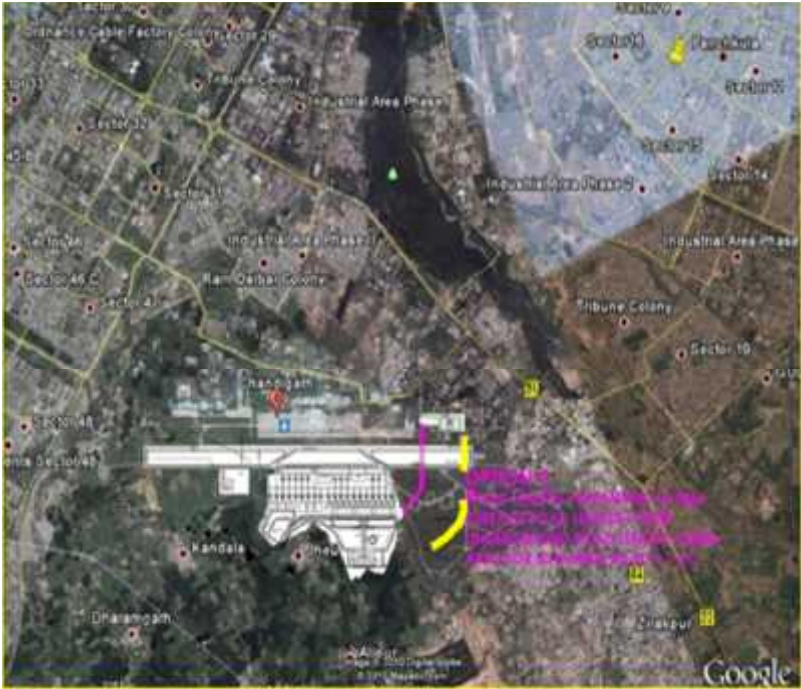
Chandigarh Administration has taken up the matter with the High Powered Inter-State Coordination Committee constituted by the GOI.



PLAN P6: UPGRADATION OF CHANDIGARH AIRPORT TO INTERNATIONAL AIRPORT.



PLAN P7 : PROPOSALS TO IMPROVE THE CONNECTIVITY TO THE AIRPORT



PLAN 1 - UNDERPASS ACROSS THE RUNWAY (GOOGLE MAP)



PLAN 2 - APPROACH FROM ZIRAKPUR SIDE (GOOGLE MAP)



PLAN 3 – APPROACH FROM PURAV MARG SECTOR 48 SIDE (GOOGLE MAP)



COMPREHENSIVE MOBILITY PLAN FOR CHANDIGARH URBAN COMPLEX (CUC)

In the absence of an Inter-State Regional Plan and with a view to holistically address the traffic and transportation problems the Chandigarh Administration took the initiative of getting a Comprehensive Mobility Plan for the Chandigarh Urban Complex prepared by engaging M/s. RITES. Chandigarh, Panchkula, Mohali and Zirakpur formed the study area with transport linkages with the towns of Kharar, Derabassi, Pinjore, Kalka, Alipur Kot Behlana, Parwanu and Baddi.

Integrated Multimodal Mass Transport

RITES has proposed an integrated multi-modal mass transport system consisting of metro rail, BRT, commuter rail system and normal city bus system for the Chandigarh Urban Complex and its linkages to nearby towns to meet the anticipated commuter travel needs.

Within Chandigarh Urban Complex

- Mass Transport System
- Metro System
- Bus Rapid Transport (BRT) System
- City Bus System
- Augmentation of Bus Fleet
- Bus Terminals
- Bus Shelters
- Additional Depots
- Inter-city Bus Terminal
- Road Infrastructure
- Parking Facilities
- Inter-modal Interchanges
- Integrated Freight Complexes

Outside Chandigarh Urban Complex

- Road Infrastructure
- Bypasses
- Road widening
- Commuter Rail System
- Bus Rapid Transit System

Heritage considerations in traffic and transportation planning

With a view to preserve Chandigarh's heritage, a conscious decision Chandigarh Administration has decided that the metro within the sectoral grid will be underground despite the substantially higher cost.

The basic objective of the Comprehensive Mobility Plan is to create an efficient, cost effective and extensive network of public transport providing comfortable, convenient and affordable means of transport to the maximum number of commuters.

The key components of this mass transport system are detailed below:

MASS RAPID TRANSPORT SYSTEM

METRO

M/s RITES has proposed a multimodal mass rapid transport system covering the cities of Chandigarh, Panchkula and Mohali with 144.2 kms of BRTS and 64.3 kms of Metro to be implemented in two phases. Out of the total length of 64.38 kms of the metro, 44.8 kms. fell in the Chandigarh area, 6.5 kms in Haryana (Panchkula) and 13 kms in Punjab (Mohali).

Subsequently it was decided to implement 25 kms. of the metro in the first phase. Out of the two corridors proposed one of 19 km connected the Sarangpur to Sector 15 Panchkula via Chandigarh Railway Station and the second connected the Capitol Complex to Sector 75 Mohali spanning 14 kms.

On the request of the Punjab and Haryana Government, it was decided to extend the east- west corridor upto Mullanpur (Punjab) at the western end and upto Sector 20 in Panchkula (Haryana) on the eastern end.

The Delhi Metro Rail Corporation was hired as consultant to prepare the detailed project report for the first phase of the Chandigarh Metro Rail Project network.



PLAN P8 : Comprehensive Mobility Plan by RITES – MRTS and BRTS corridors



MRTS CORRIDORS BY RITES



BRTS CORRIDORS BY RITES



PLAN P9 : PLAN SHOWING MRTS, BRTS CORRIDORS & ADDITIONAL LINKS PROPOSED BY RITES





Detailed project report for the first phase of the Chandigarh metro rail network by DMRC :

The DPR prepared by DMRC for the Phase -1 of the Chandigarh Metro Rail Project Network provide for :

- North South Corridor - Capitol Complex to Gurudwara Singh Shaheeda, Mohali.
- East West Corridor - Transport Terminus Mullanpur to Grain Market, Panchkula.

TABLE 2 - Route length (end to end of station)

Description	Elevated (km)	Underground (km)	Total (km)
Line 1 – Capitol to Gurudwara Singh Shaheeda	4.427	8.070	12.497
Line – 2 Transport Terminus to Grain Market	19.041	6.035	25.076
Total	23.468	14.105	37.573

TABLE 3 - Number of stations

Description	Elevated	Underground
Line 1 – Capitol to Gurudwara Singh Shaheeda	4	6
Line 2 – Transport Terminus to Grain Market	15	5
Total	19	11

North South Corridor - Capitol Complex to Gurudwara Singh Shaheeda, Mohali (Corridor 1)

The projected number of passengers to be carried by this line are 1.43 lakh, 2.05 lakh, 3.20 lakh and 4.67 lakh in the years 2016, 2021, 2031 and 2041 respectively.

- This corridor will provide metro connectivity to the High Court, Secretariat, institutional buildings along Jan Marg including the Chandigarh UT Secretariat , Punjab Mini Secretariat, etc along Jan Marg ,tourism places such as Rock Garden and Rose Garden, City Centre Sector 17, Interstate Bus Terminus of Sector 17 and Sector 43, Sectors 9, 21, 22, 34, 35, 43, 44, 51, 52 of Chandigarh and Sectors 61, 62, 68, 69 & 70 of Mohali.
- The corridor will intersect with the EW Corridor at Matka Chowk Sector 9 enabling connectivity with Mullanpur in Punjab and Panchkula in Haryana.
- Integration of the corridor with the bus system will be through the bus terminus at sectors 17 and 43.
- Total 10 stations have been proposed on this corridor; out of these stations 6 stations are underground and remaining 4 are elevated. The entire length of this corridor in the Mohali area is proposed to be elevated.
- Future extension of the corridor to Aero City in Mohali is also being examined .



East West Corridor - Transport Terminus Mullanpur to Grain Market, Panchkula (Corridor 2)

This will extend from Transport Terminal –Mullanpur I & II – Sarangpur – Khuda Lahora – PGI – General Hospital – Sector 9 – Sector 7 – Sector 26 – Timber Market – Chandigarh Railway station – Housing Board Chowk – MDC Panchkula – HUDA Office Complex – City Center – Bus Station (Panchkula) – District Center – Village Raili – Grain Market. The number of passengers to be carried by this line are 1.48 lakh, 2.10 lakh, 3.90 lakh and 6.58 lakh in the years 2016, 2021, 2031, 2041 respectively.

This corridor will provide metro connectivity to the proposed new residential cum commercial development in Mullanpur and Sarangpur Area Chandigarh.

The corridor integrates with other transport modes such as Panchkula Bus Terminus and Chandigarh Railway station to the sectors 14, 11, 12, 10, 16, 9, 18, 8, 7, 19, 26, 27, 28, Manimajra, Rajeev Vihar and Mauli Jagran Complex, Chandigarh.

This corridor provides metro connectivity to the Panjab University, Punjab Engineering College, PGI Hospital, City Museum, market complexes, Wholesale Fruit and Grain market and Timber Market, Sector 26.

This corridor is proposed as elevated in the area of Mullanpur, Sarangpur and Panchkula.

There are a total of 20 stations on this corridor out of which 5 are underground and the remaining 15 are elevated.

Construction of Metro will meet the requirements of Metro Act

TABLE T4 : Forecast of METRO ridership by DMRC

Year	Name of Corridor	Chandigarh	Punjab	Haryana	Total	PHPDT
2018	Corridor I	114876	53309		168185	7007
	Corridor II	118267	14645	40804	173716	6711
2021	Corridor I	134200	71000		205200	8128
	Corridor II	143000	19500	48300	210800	8597
2031	Corridor I	210300	110100		320400	12280
	Corridor II	268600	28900	92800	390300	22349
2041	Corridor I	3030000	164800		467800	17383
	Corridor II	462400	34900	161000	658300	35637



PLAN 10 - FIRST PHASE OF METRO PROPOSED BY DMRC FOR METRO AND BRTS CORRIDORS PROPOSED BY RITES WITHIN CHANDIGARH





Major interchange node – Matka Chowk

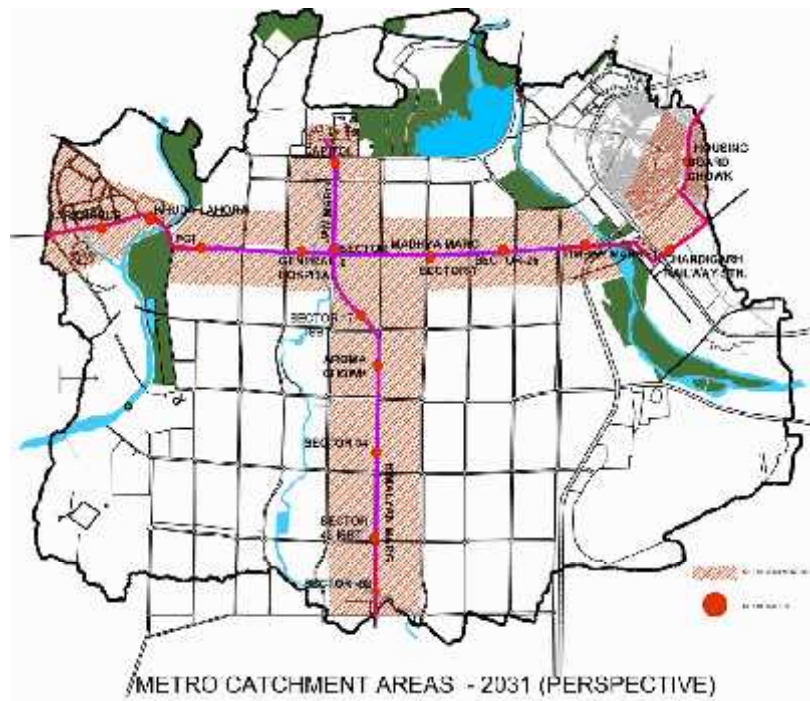
Chainage	9017.628m
Inter-station Distance	789.516m
Rail Level	334.600m
Platform Depth from Ground	15.875m
Location	Located under the intersection called Matka Chowk of Jan Marg & Madhya Marg, the center of the station is directly beneath Matka Chowk.
Entry / Exit Stairs	There are five entry structures and all are located on green belts flanking both the roads
Catchment Area	Rose Garden, Taj Hotel, City Museum, Sectors 9, 10, 16 & 17.



Typical underground station

Chainage	8228.112m
Inter-station Distance	985.421m
Rail Level	335.000m
Platform Depth from Ground	14.660m
Location	Located under Madhya Marg to the South East of Junction 18 (intersection of Madhya Marg & Udyan Path)
Entry / Exit Stairs	On south eastern end of the station the entry structures shall be placed on the green belt as per the proposed road section. On the other end the structures are aligned with the intersection to facilitate easy access.
Catchment Area	General Hospital, Home Science College, Govt. College for Girls, Ramakrishna Ashram





Catchment area shows the area that will be most conveniently served by the Metro



CAPITOL (UG & SIDE)



SECTOR 17 ISBT (U/G & ISLAND)



AROMA CHOWK(U/G & ISLAND)



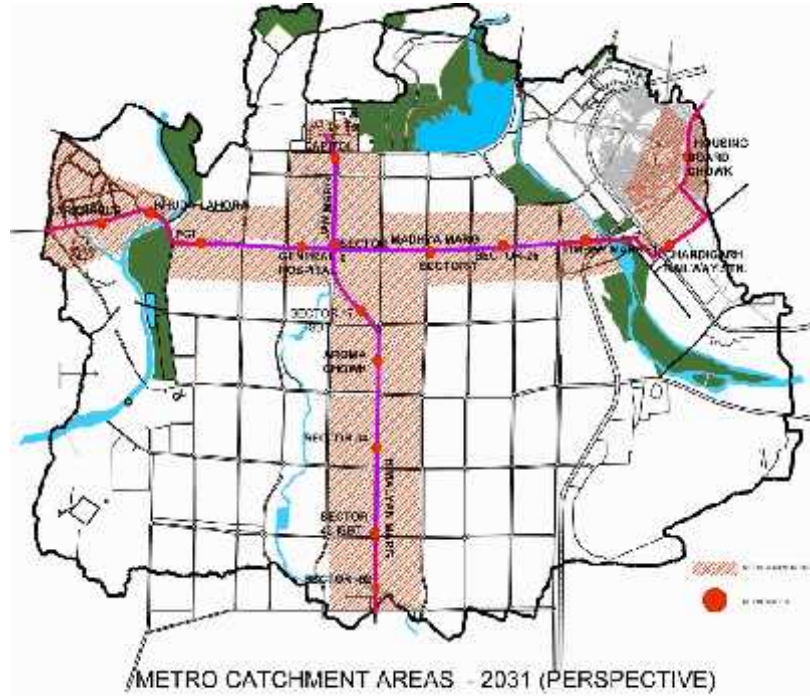
Sector 34 (U/G & ISLAND)



SECTOR 43 (U/G & SIDE)



SECTOR 52(ELEVATED)



Catchment area shows the area that will be most conveniently served by the Metro



SARANGPUR (ELEVATED)



KHUDA LAHORA (ELEVATED)



PGI (UG & ISLAND)



GENERAL HOSPITAL (UG & SIDE)



SECTOR 7 (U/G & ISLAND)



SECTOR 26 (U/G & ISLAND)



TIMBER MARKET (ELEVATED)



RAILWAY STATION (ELEVATED)



HOUSING BOARD STAFF (ELEVATED)



JUSTIFICATION OF METRO SYSTEM BY DMRC

According to DMRC, since the Peak Hour Peak Direction Traffic in the case of Chandigarh metro is more than 15,000 in 2031 and it will be in the range of 50,000 in 2041, a light capacity metro system is recommended to keep down the capital and operating costs.

THE OBSERVATIONS OF THE MASTER PLAN COMMITTEE ON THE MULTI MODAL MASS TRANSPORT SYSTEM ARE AS UNDER:

- Public transport system is wanting in all the three towns: While Chandigarh is gradually improving its local bus transport system by increasing its fleet and services, the other towns have no public transport system. The residents of the cities depend heavily on private vehicles or on para transports- auto rickshaws, and taxis for inter city movement or on the limited service of the CTU. Cycle rickshaws are extensively used for short distance intra city travel in the cities.
- While the detailed planning of the first phase of the metro corridors is underway, no further planning has been done for the BRTS. Since the metro is to ply only on two corridors, it will not serve much purpose for the city, unless the BRTS and local feeder buses expected to handle the major share of public transport are put in place. There is thus a need to expedite implementation of the BRTS and improve the local bus services.
- With the present population of 10.5 lakhs for the entire UT, Chandigarh does not independently qualify for a metro for which a minimum population of 20 Lakhs has been recently mandated by the Government of India. (Earlier the minimum requirement was a population of 40 lakhs). The sharp decline in the UT's growth rate from 40 % to 17% also does not make the proposition viable even by 2031 as the

projected population for the Chandigarh Master Plan by that year is only 16 lakhs.

- Viewed from the regional perspective, however, and the requirements of not only the tricity but also of the metropolitan region, the proposition seems viable as it will take care of large volumes of intercity traffic. The present population of the CUC makes the proposition viable right away.

THE CONCERNS

Expecting Chandigarh's residents which is so heavily dependent on private vehicles to switch over to public transport together with the short distances of travel within the city will be a challenge. Due to high percentage of short intra-city trips the metro is unlikely to wean people away from the private vehicles and largely cater to inter-city commuters. For intra-city mobility the mobility plan needs to give greater attention to incentivizing pedestrians and cycle use combined with integration of para statal transport like cycle and auto rickshaws .

APPROVAL OF CHANDIGARH HERITAGE CONSERVATION COMMITTEE

Keeping the metro underground within the sectoral grid is based on heritage considerations. However since both the proposed corridors are along Jan Marg and Madhya Marg have been approved for heritage status all interventions along the corridors, including the ancillary infrastructure for the metro shall comply with heritage consideration and approved by the Chandigarh Heritage Conservation Committee.

Redensification of the landuse along MRTS /metro corridors is generally recommended in sites, however in view of the heritage status the same is not recommended along these corridors. Moreover these corridors already have intense commercial /institutional development with high FAR along them and as such are the most appropriate areas for the corridors.



Strengthening the Public Transport System

Rites has proposed a modal share of 70% for public transport by 2041 from the present 16 %. This time line should be reduced to ensure that major load of the traffic should be taken by public transport / public transport system should be developed in such a way that major portion of the traffic use them. Expediting the implementation of the MRTS, BRTS and improvement of local bus system is recommended.

This is necessary for reducing the volume of traffic on the roads and maintaining the quality of life for the city residents and giving priority to pedestrians and cyclists .

Metro Stations

In segments where the metro is to be elevated, the elevated stations and elevated concourse have been proposed over the roads in most of locations to minimize land acquisition. To keep the rail level low, it is proposed not to take the via duct through the station, thus a separate structure configuration has been planned.

Planning and design criteria for stations

- Average inter station distance of 1.2 km has been tried to be maintained, however the same varies from 0.692 km to 2.18 km depending upon the site, operational and traffic constraints.
- Switch Over Ramps (SOR) have been planned at the junction of the elevated and the underground metro station.
- Provision for adequate parking of feeder services, public private and para transport and proper access by the pedestrians and cyclists will be required.
- The underground stations (island platform) applicable to Sector 17 ISBT, Aroma Chowk and Sector 34 of the NS corridor and PGI, Sector 7 & 26 stations on EW corridor, the underground stations follow a typical design, of a three level station with entrances and ventilation shafts at the ground level, a concourse with ticketing and AFCs at the mezzanine level and platforms at the lowest level. Platforms are 12 meter wide with 2 sets of stair/escalator banks leading to either end of the station. A lift is planned in the center.

- **Typical Elevated Section** - applicable to Sector 52, 60, 72 and Gurudwara Singh Shaheeda on NS corridor and the first 5 & last 10 stations of EW corridor: the station is generally located on the road median, and a 140~m long three level structure. Passenger area on concourse is spread throughout the length of the station, with staircases leading from either side of the road.
- **Underground Station (side platform)** – applicable to Capitol Complex & Sector 43 stations on the NS corridor & General Hospital Station on EW corridor: these underground stations follow a typical design, for a three level station with entrances and ventilation shafts at the ground level, a concourse with ticketing and AFCs at the mezzanine level and finally platforms at the lowest level.
- **Sector 9/17 station** - Sector 9/17 is an underground interchange station. The NS corridor travels under the Jan Marg and the EW corridor passes under the NS corridor and travels along Madhya Marg. The station has four levels with ground, mezzanine (concourse) and two platform levels.
- The station is located at Matka Chowk which is the intersection between Jan Marg and Madhya Marg. Four entrances have been planned to provide easy access to the station for all passengers, from each side of the intersection, without having to cross vehicular traffic on these busy roads.

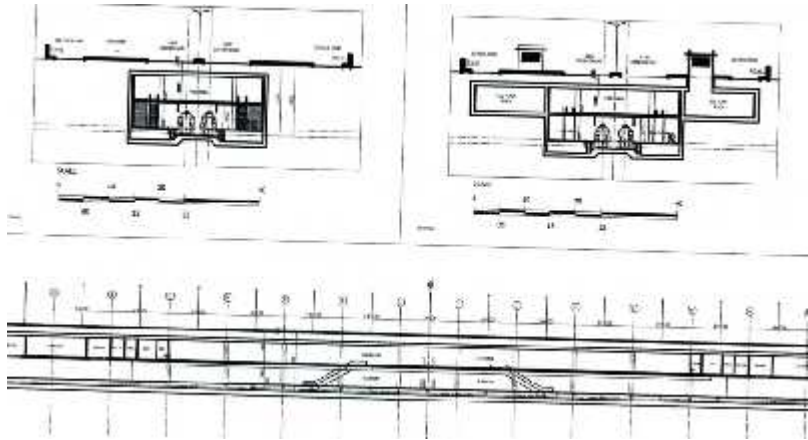
Sensitive detailing of stations and Metro nodes

Based on the sections proposed by DMRC, the Department of Urban Planning has prepared 3d views of the metro station. A perusal of the same indicates that the detailing of the same would need to be improved so that the structure is not too heavy on the road. (Refer View 1)

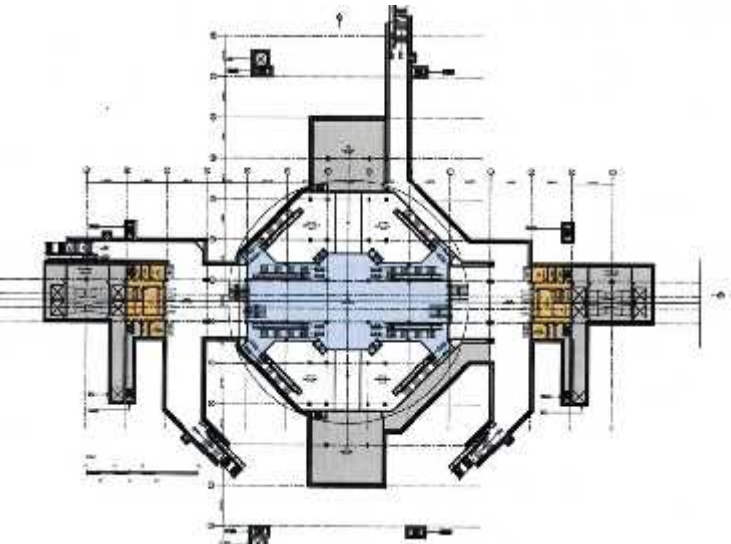
An alternative view has also been prepared ,wherein a green edge has been planned rather than a heavy structural wall (Refer View 2). This is suggestive and further detailing for the same is recommended due to the important location of the station to be approved by Chandigarh Heritage Conservation Committee. Similarly all over head structures will be need to be sensitively detailed out .



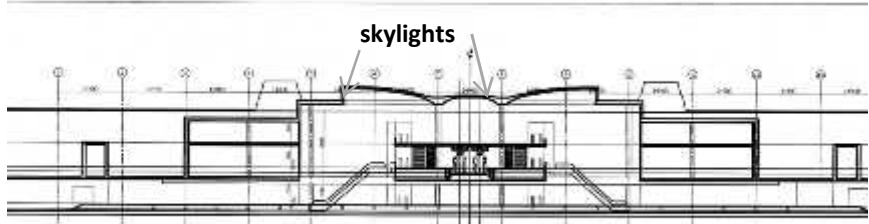
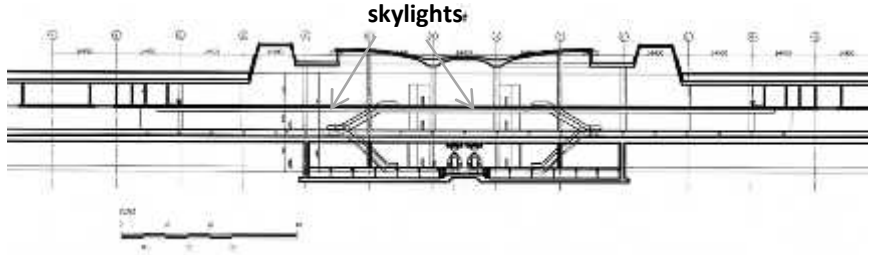
Plan P11- Typical Metro Station and Interchange Station at Matka Chowk



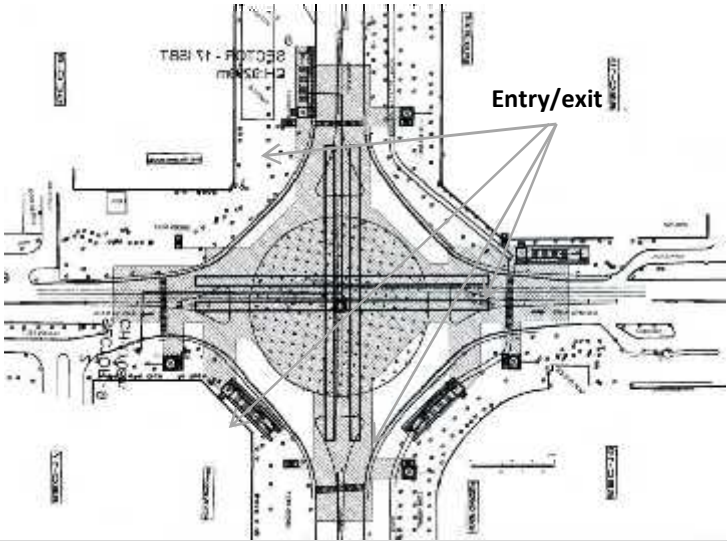
TYPICAL METRO STATION MATKA CHOWK



INTERCHANGE STATION MATKA CHOWK



MATKA CHOWK



MATKA CHOWK

Concerns and Recommendations
Matka Chowk will be redeveloped as an interchange station between the North South and East West corridors of the metro. Four entries have been proposed to the three level structure. The skylights for the central vestibule/concourse and entrance canopies to be sensitively designed to blend with Chandigarh’s architectural style.



3D View 1 Overhead Metro and Metro Station along East West corridor



Sketch prepared by Department of Urban Planning, UT, Chandigarh based on DMRC report and details (architectural expression)

Concerns and Recommendations --- The detailing of the elevated corridor - size and design of columns, structure, escalators and the station needs to be thoroughly examined and detailed out. There is need for orderly development along the elevated corridor - architectural controls recommended at the entry to the city. Detailed landscaping proposal to avoid encroachment and misuse of the area under the corridors.



3D VIEW 1 METRO STATION AND INTERCHANGE STATION AT MATKA CHOWK AS PER PROPOSAL SUBMITTED BY DMRC



Sketch prepared by the Department of Urban Planning, UT, Chandigarh based on DMRC report and details

Concerns and Recommendations - There is need to carefully detail out the Matka Chowk which shall have a strong impact on the urban design along Jan Marg – the ceremonial boulevard. Approval of the Chandigarh Heritage Conservation Committee in view of the heritage status of the major artery .



**3D VIEW OF MATKA CHOWK AFTER DEVELOPMENT
SUGGESTIVE IMPROVEMENT TO THE PROPOSAL SUBMITTED BY DMRC**



Conceptual Sketch prepared by the Department of Urban Planning, UT, Chandigarh based on DMRC report and details

Suggestive improvements - Introducing green edge to the structure to avoid wall like effect



DESIGN AND ENTRY AND EXIT TO UNDERGROUND METRO STATIONS AND ELEVATED METRO STATIONS



ENTRANCE CANOPIES AT METRO STATIONS WILL IMPACT THE STREETScape/DESIGN AND DETAILING SUBJECT TO APPROVAL OF CHANDIGARH HERITAGE CONSERVATION COMMITTEE IN HERITAGE AREAS



UNDERGROUND METRO STATIONS



ELEVATED METRO OUTSIDE THE SECTORAL GRID



PUBLIC FACILITIES-CONCOURSE AREA WITH TICKETING FACILITIES

Recommendations

New interventions in the cityscape. Canopies will need to be carefully designed which with minimal interventions.



BRTS Corridors

- To supplement the metro a BRT system has been recommended on the following corridors.
- **CORRIDOR 1:-** Starting from Chandigarh Armed Police Complex, Dhanas this route via Dakshin Marg upto Punjab U.T. boundary on NH21 will terminate at Zirakpur Chowk in Punjab.
- **CORRIDOR 2:-** Starting from Sukhna Lake via Sukhna Path upto Sector-49 Chandigarh on North South axis and then west wards via V3 road between Chandigarh and Punjab boundary terminating at Kharar Punjab.
- **CORRIDOR 3:-** Starting from PGIMER (Madhya Marg) via Paschim Marg upto Vikas Marg and then moving west wards upto Maloya, Chandigarh and terminating in Pocket F Mohali Punjab.
 RITES has supplied two separate cross sections and BRTS planning for roads having 30 m and 60 m ROW respectively .

Intercity BRTS

- In addition to the above routes, RITES has also recommended BRTS corridor for intercity connectivity to Mohali and Panchkula to be taken up in Phase-II.
- BRTS corridors of Chandigarh extend towards Mohali and Zirakpur/Derabassi along NH 21 integrated with the BRTS corridors of the state of Punjab.
- The BRTS corridor in Mohali are along the sectoral grid at the interstate boundary of UT & Punjab and extended upto City Center, Sector 62.
- BRTS has also been proposed along the GMADA Expressway.

BRTS Corridor In Panchkula

- A network of BRTS corridors have been proposed in Panchkula which will connect with BRTS of Chandigarh along Dakshin Marg (See Plan 12).

Two types of BRTS have been proposed by RITES

Observation of the Master Plan Committee:-

- Two types of BRTS corridors have been proposed, one for 60m right of way and the other for 30m right of way.
- Within Chandigarh, the 60m right of way will be applicable to Dakshin Marg and 30m right of way will be applicable to Sukhna Path and Vidya Path.
- The bus lanes have been proposed on both sides of the main carriageway along with footpaths and bus queue shelters.
- Adapting the existing roads to BRTS corridor would entail re-proportioning the carriageways and require shifting of services like electricity poles and would also involve tree cutting.
- The bus queue shelters would also need to be relocated .
- In the 30 m corridor the existing road section has been maintained, the bus lane would be demarcated through lane marking and would ply on the extreme left of the carriageway.
- **Dedicating a lane for BRTS to enable uninterrupted flow of buses would involve shifting the entire load of two wheelers, three wheelers and four traffic onto the other lanes. In case of roads with two lanes only, given the current traffic volumes, this could lead to congestion. The system would be practical and viable only if the corridor is optimally utilised for which the frequency of buses would need to be increased substantially for which modal shift to mass rapid transport is to be encouraged.**
- As per national mandate, provision for dedicated BRTS corridors is to be made along major regional roads and highways.



PLAN 12 : BRTS CORRIDORS PROPOSED BY RITES





BRTS CORRIDOR – RITES PROPOSAL

(a)



(b)



Conceptual Sketch prepared by the Department of Urban Planning, UT, Chandigarh based on RITES report



Augmentation and improvement in city bus system

A good public transport system is a modern day necessity. The development and quality of public transport system has not kept pace with this explosion in the economic activity during last two decades. The expectation of the public in terms of quality and comfort available in means of transport have risen sharply. This has led to increasing number of people using personal transport for all types of activities be it economic, professional or leisure. The increasing traffic and traffic density has started putting even greater pressure on the infrastructure in terms of roads and other infrastructure associated with it.

Chandigarh has confined geographical area whereas Mohali and Panchkula do not have a public transport system. Chandigarh Transport Undertaking has been providing public bus transport to the tricity since its inception. In addition, point to point local bus service is also provided to Kharar, Kurali and Zirakpur in Punjab, Kalka in Haryana and Baddi in Himachal Pradesh. This is because a large number of office goers and other traffic between the tricity and satellite towns.

While the metro and the high capacity BRT will be operational on selected routes, large areas will continue to be served by the local bus system which will also act as the most important feeder system to the Metro and BRT together with other modes of transport. Therefore, a good public transport system can be extremely successful if modernized so as to be aesthetically appealing, punctual in operation, modern and comfortable in use. Any transport plan for Chandigarh would be incomplete unless it takes the tricity of Chandigarh, Panchkula and Mohali into consideration by keeping in view, the vision and objectives of the National Urban Transport Policy, the Comprehensive Mobility Plan for Chandigarh Urban Complex, Master Plan Chandigarh projections upto 2031.

Augmentation of schedule and fleet

Irrespective of when the Metro and BRT become operational, local bus services will remain the mainstay of the public transport for large parts of the city. It is expected that 12.55 lakh trips per day by 2021 and 26.7 lakh trips per day by 2041 on BRT and the other bus system will be performed in Chandigarh Urban Complex. For this volume of traffic at least 1250 buses will be required by 2021 and 2570 buses by 2041.

However, this number may have to be increased substantially in case any of the MRTS components lag behind planned implementation.

Just increasing the bus fleet will not be enough, its quality will also have to be of much higher standard for achieving the National Urban Transport Policy objective of changing the passenger preference from personalized vehicles to public transport. Consequently, range of new buses should be added to fleet which should be low floor and of good quality. Air conditioned buses for improving the commuter comfort are also recommended.

Chandigarh's recent introduction of 100 JNNURM buses being operated by the Chandigarh Transport Undertaking are a great success enjoying an occupancy ratio of 110% against occupancy ratio of 70% of the old fleet. This is an indicator that modernizing the Chandigarh Transport Undertaking would lead to greater acceptability of the Public Transport System as an alternative to personal vehicles by the public for local travel in Chandigarh.

The State Governments of Punjab and Haryana also need to augment and integrate their intercity public bus systems within Chandigarh and the neighbouring towns.



The following is proposed to further motivate people to adopt public transport:

- Improve the quality and outlook of the buses so that they are comfortable, aesthetic, attractive as would be befitting a modern vibrant city.

To achieve this objective there is a need to qualitatively change the fleet of buses from the present to latest technologically advanced and ergonomically designed buses, which are also aesthetically attractive. This shall be achieved by gradually replacing the present fleet as it reaches the end of its age with the latest available in the market in terms of technology, ergonomics, aesthetics and fuel efficiency.

- To introduce user friendly service in term of route plan, efficiency and punctuality. Modernize the infrastructure to one which is user friendly and convenient.
- To use latest available IT services for public information, user friendly ticketing, monitoring, management and control of the fleet.
- To provide quality road transport over larger distances for work and leisure.

To achieve this objective, the existing fleet of long distance buses shall be gradually replaced with modern buses as it reaches the end of its life and becomes due for replacement.

- To achieve the objectives laid down in and National Action Plan on climate change and Chandigarh Master Plan.
- A gradual achievement of the objectives one to five shall lead to achieving this objective.

- To provide seamless travel in the tricity and its adjoining areas:

To achieve this objective in addition to traffic pattern study, coordinated effort shall be made with adjoining cities of Mohali and Panchkula to mesh their public bus service (as and when introduced) with Chandigarh Transport Undertaking so that the entire tricity public transports system functions as a single coordinate unit.



Integrated intercity and intracity bus terminals/ bus

Inter-City Bus Terminals

At present all the buses whether inter-city, inter-state or intra-city originate and terminate at the Sector 17 & Sector 43 ISBT in Chandigarh, Sector 5 City Center in Panchkula, and Sector 62 in Mohali. To meet future demands three intercity bus terminals are proposed by RITES at Mani Majra, Sector 31 Chandigarh near Tribune Chowk and Sector 102 Mohali, to cater to inter-state buses coming from different directions to Chandigarh Urban Complex.

It is also suggested that 4 intercity terminals to be revived with all terminal facilities immediately and three new put in place by 2021 at locations shown in Table 5. Later Sector 17 Inter State Bus Terminus may be converted into a city bus terminal.

For the proposed bus terminals in Mohali and Panchkula, the matter needs to be taken up with respective states of Punjab and Haryana.

Table T5. Existing and Intercity Bus Terminals proposed by RITES

Table – Bus Terminal
Existing
Sector 17
Sector 43
Sector 62 Mohali
Sector 5 Panchkula
Proposed (by 2021)
Sector 102 Mohali
Sector 31
Mani Majra

Intra-City Bus Terminals

- In addition to the above terminals, BRT terminals are also proposed for Intracity movement at the origin and destination of the BRT corridors and will also act as inter modal interchanges between regional and local traffic.
- All the Intercity and Intra-city bus terminals would also provide for tourist buses, with adequate parking facilities and tourist bureaus / offices etc and other tourist infrastructure for operation of private tour operators.

Bus depots

- At present all the buses whether inter-city, inter-state or intra-city use depots in Industrial Area Phase I workshop and Sector 25 CTU workshop.
- To meet the future demands of buses, five more bus depots have been proposed by RITES at the Police Housing Complex, Pocket E Mohali in Phase I, Sector 48 Chandigarh, Sector 1A Panchkula and Sector 104 Mohali. **The existing 3 bus depots need to be improved with all depot facilities immediately, and two new depots to be put in place by 2014 and three after 2021. Locations given in Table 6.**

Table T6. Existing and Bus Depot proposed by RITES

Bus Depots	Implementation by Year
Existing	
Industrial Area Ph 1 (CTU)	
Industrial Area Ph 1 (Haryana Roadways)	
West of Sector 25 (CTU Workshop)	
Proposed	
Police Housing Complex	2014
Sector 48	2021
Sector 1A Panchkula	2021
Sector 104 Mohali	2021



COMMUTER RAIL SYSTEM (CRS)

A large number of people commute between Chandigarh Urban Complex and nearby towns of Pinjore, Kalka, Baddi, Ambala, Kharar and beyond. Most of these commuters travel by road i.e. by buses, para transit modes and their own vehicles. Although Chandigarh is connected with Kalka, Ambala and Ludhiana by regional rail system, there are no commuter rail services. All these railway lines are with single track. Railway line to Baddi in Himachal Pradesh is not available right now. Considering that the nearby towns are expected to grow very fast in coming decades, their traffic interaction with Chandigarh Urban Complex is expected to grow. Therefore, it is important that these commuters are weaned away from the road based system to rail by providing a frequent commuter rail system from Chandigarh to Pinjore-Kalka, Ambala, Ludhiana and Baddi – Nalagarh. Rail to Baddi - Nalagarh will also serve the freight traffic. Refer Rites proposal at Plan P13.

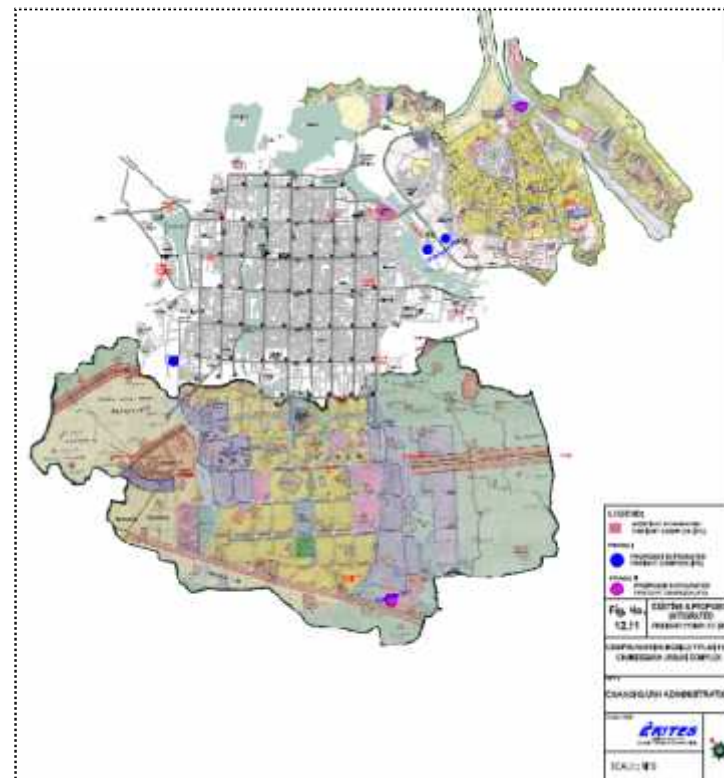
PLAN P13- REGIONAL PROPOSAL BY RITES



INTEGRATED FREIGHT COMPLEXES (IFC)

The freight movement through the city particularly on some of the arteries is already restricted within the city. At present all the goods traffic concentrates at Sector 26 Transport Nagar. There is inadequacy of space within the transport area as a result of which ideal truck parking, and loading unloading activity is also observed in its adjoining areas and at the entry to the city along the NH-21 near the Industrial Area and Village Daria close to the railway station.

PLAN P14 : FREIGHT COMPLEXES



To decongest the existing Transport Nagar, Rites has proposed five new IFCs at the periphery of the tricity complex, with all facilities of wholesale markets, loading /unloading facilities, parking, workshops etc. Heavy goods traffic entering the tricity complex would be stopped there itself and light/small goods carrier vehicles will be used to transfer goods within the complex. The provision of GMADA Expressway will also help diversion of through freight traffic.

The Integrated Freight Complexes proposed in the tricity complex are shown in the adjoining map (Refer Plan P14)



FREIGHT COMPLEX WITHIN UT CHANDIGARH

Chandigarh Administration has already identified 45 acre of land in Industrial Area Phase III for Warehousing and 105 acres in Village Daria is also proposed for acquisition for shifting of Transport Nagar from Sector 26 and expansion of warehousing.

An area has been proposed as Transport Area on the south eastern end of the city and in close proximity to the Second Grain Market and the Bulk Material Market. For rationalization of freight stations the matter needs to be addressed at the regional level with the neighbouring states.

It would be desirable to ensure that heavy vehicles are restricted to the fringe of the urban area. This needs to be examined holistically while preparing the Chandigarh Interstate Metropolitan Regional Plan which is to be prepared as decided in the High Powered Coordination Committee and is to cover an area of 50 km including areas of the states of Punjab ,Haryana and portions of Himachal as well.

FEEDER SERVICES

Feeder services to the proposed multi modal network will also be important to provide convenient and quick transfer of passengers from one mode of transport to another. As all commuters will not be living within walking distance of the proposed network, proper planning for feeder services will be necessary based on analysis of passenger demand on the system.

For catchment area of about 0.5-1 km from the proposed network, commuter can easily access it by walk. People residing in the next 1 km can reach the station by cycles, scooters, auto-rickshaws and mini-buses. Areas beyond the 2-km catchment area will require regular feeder bus services to important terminals/stations. Feeder services can also be provided by para transit modes.



Traffic Integration

- Traffic integration facilities would be provided at the metro stations to enable commuters to come and depart from the stations with ease.
- Linkages with public , private transport as well as walk links will need to be established with all existing rail services and road based systems .

Parking facilities at stations

- The Detailed Project Report prepared by DMRC has given details of facilities needed at each station for peak-hour station load at each of the 30 stations till 2041. The number of bays for buses, cars, two wheelers, autorickshaws and cycles have been increased. Provision of a large number of cycle bays has been made at every station, much more than those for cars, signaling therefore that cycle is to be introduced as one of the major mode of transport.
- Within Chandigarh along the North South Corridor the highest peak – hour traffic of 6283 passengers is expected at Aroma Chowk and provision of 6 bus bays, 503 car bays, 941 two wheelers, 8 auto rickshaws, 706 cycles has been projected which would require 13,614 sq m. The facilities required at the other stations have also been projected.
- A requirement of 11960 sqm at the metro station 9/17, 12089 sq m at ISBT Sector 17, 7644sqm at Sector 34, 6006 sqm at 43 Bus Stand, 4173, sq m at Sector 52,5304 sq m at the Capitol Complex has been projected. The areas to be designated for parking need to be identified.

- On the East West Corridor the highest peak – hour traffic is expected at the Railways Station - 6,570 passengers. At this station, seven bus bays, 526 car bays, 1752 two – wheelers, 15 autos and 1,314 cycles have been proposed which would require 14,235 sq m of area.
- Similarly for the other metro stations the details of provisions have been provided which would require 3801 sqm at Sarangpur, 1765 sq m at Khudda Lahora, 5715 sqm at PGI, 8354 sqm at General Hospital, 6297 sqm at 9/17 station, 8892 sqm at Sector 7 and 13130 sqm at Sector 26, 8931sqm. At the Timber Market and 9880 sq m at Housing Board Chowk (**Refer Table 7**).

- **Pedestrian access to the stations to be planned.**
- **The other integration facilities** are approach roads to the stations, circulation areas for various modes including feeder bus or mini bus. Parking for private vehicles has however not been proposed.
- **A major switch over to public transportation, adoption of cycle as a mode of transport and improved pedestrian infrastructure is to be ensured while on the other hand dependence on private vehicles has to be discouraged.**



TRANSPORT INTEGRATION AND ENSURING LAST MILE CONNECTIVITY



PUBLIC SHARING BICYCLE SYSTEM PARK AND RIDE CONCEPTS AT BUS QUEUE SHELTER WITH GIS ALL TRANSPORT NODES, BUS QUEUE SHELTERS



MAKING ADEQUATE PROVISION FOR PARK AND RIDE CONCEPT AT THE METRO/BRTS STATIONS TO FACILITATE INTEGRATION OF BICYCLES WITH THE MASS TRANSPORT SYSTEM AND PROVIDING LAST MILE CONNECTIVITY TO THE COMMUTERS.



TABLE T7 : FEEDER FACILITIES TO BE PROVIDED AT METRO NODES AS PER DMRC REPORT

No.	Name of the station	Peak Hour station Load	Number of Bays					Area Required (sq.m)			
			Bus	Car	Two Wheeler	Auto	Cycle	Car	Two wheeler	Cycle	Total
Capitol Complex – Gurudwara Singh Shaheeda											
1	Capitol Complex	2448	3	196	653	6	490	2938	1632	734	5304
2	Sector 9/17 ISBT	5520	6	442	1472	13	1104	6624	3680	1656	11960
3	Sector 17 TSBT	5579	6	446	1488	13	1116	6695	3720	1674	12089
4	Aroma Chowk	6283	6	503	1676	14	1257	7540	4189	1885	13614
5	Sector 34	3528	4	282	941	8	706	4234	2352	1058	7644
6.	Sec.43 Bus Terminus	2772	3	222	739	7	554	3326	1848	832	6006
7.	Sector 52	1926	2	154	514	5	385	2311	1284	578	4173
8.	Sec.62 City Centre	4022	4	322	1073	9	804	4826	2681	1207	8714
9.	Sector 70	7646	8	612	2039	17	1529	9175	5097	2294	16566
10	Gurudwara Singh Shaheeda	6252	6	500	1667	14	1250	7502	4168	1876	13546

Traffic Integration requirement for Stations (Projections for Year 2041)



Transport Terminal – Grain Market											
1.	Transport Terminal	1500	2	120	400	4	300	1800	1000	450	3250
2	Air force Station	720	1	58	192	2	144	864	480	212	1560
3.	Mullanpur	1673	2	134	446	4	335	2007	1115	502	3624
4.	Sarangpur	1754	2	140	468	4	351	2105	1170	526	3801
5.	Khuda Lahora	815	1	65	217	2	163	978	543	244	1765
6.	PGI	2638	3	211	703	6	528	3165	1758	791	5715
7.	General Hospital	3856	4	308	1028	9	771	4627	2570	1157	8354
8.	Sec.9/17 ISBT	2906	3	233	775	7	581	3488	1938	872	6297
9.	Sector 7	4104	4	328	1094	10	821	4925	2736	1231	8892
10.	Sector 26	6060	6	485	1616	14	1212	7272	4040	1818	13130
11.	Timber Market	4122	4	330	1099	10	824	4946	2748	1237	8931
12.	Chd. Railway Station	6570	7	526	1752	15	1314	7884	4380	1971	14235
13.	Housing Board Chowk	3960	5	365	1216	11	912	5472	3040	1368	9880
14.	MDC Panchkula	2010	2	161	536	5	402	2412	1340	603	4355
15.	HUDA Office Complex	1685	2	135	449	4	337	2022	1123	506	3651
16.	City Centre	1930	2	154	515	5	386	2316	1287	579	4182
17.	Bus Stand Panchkula	2304	3	184	614	6	461	2765	1536	691	4992
18.	Sector 14 Distt. Centre	1594	2	128	425	4	319	1913	1063	478	3454
19.	Raili Village	2148	2	172	573	5	430	2578	1432	644	4654
20.	Grain Market	2256	3	180	602	6	451	2707	1504	677	4888



STRENGTHENING OF ROAD NETWORK

PGI to Punjab/UT Boundary

Present Status:

- Road between Khuda Lahora/Khuda Jassu is narrow with construction abutting main road.

Proposal

- A 60.96 m. wide road with 10.5 m wide main carriageway, 2.44 cycle track, 4.87 m wide slow carriageway and provision of pedestrian path from PGI to Punjab/UT Boundary via Khuda Jassu/Khuda Lahora/Botanical Garden/Sarangpur.
- An elevated Metro will also run on this stretch.
- A pedestrian underpass across the road to connect Khuda Lahora and Khuda Jassu located on either side of the main road which have strong interaction and share community facilities.

Junction No.30 to UT/Punjab boundary via Dhanas:

Present Status:

- The width of the road varies due to the area falling between boundary wall of existing dumping ground and garbage processing plant.

Proposal

- 60.96 m. wide road with 10.5 m. wide main carriageway along with 4.87m wide slow carriageway and provision of pedestrian path from Junction No.30 to U.T./P.B. Boundary via Chandigarh Armed Police Complex (CAP), Dhanas.

Railway Light Point to Route No.2

Present Status:-

- The width of the road varies due to site constraints i.e. area between boundary wall of existing Dumping Ground and Garbage Processing Plant.

Proposal

- 60.96 m wide road with 10.5 m wide main carriageway along with 4.87 m wide slow carriageway and provision of pedestrian path from Junction No.30 to UT/Punjab Boundary via CAP Complex/Dhanas.

Railway Light point to Route No.2

Present Status:

- Dual Carriageway on either side has been constructed from Railway Light Point to Railway Station.

Proposal

- 60.96 m. wide road has been proposed between Railway Light Point to Route No.2 as road leading to I.T. Park and Route No.2 is 60.96 m.

Problems to be resolved

- Land required for 60.96 m. – Matter is to be taken with the Railway Authorities/Forest Department.
- Proposed alignment passes through the unauthorized construction existing at site.
- Alignment of road also falls in private lands. Hence, land is to be acquired for its execution.

Road along Patiali-ki-Rao Choe

Proposal

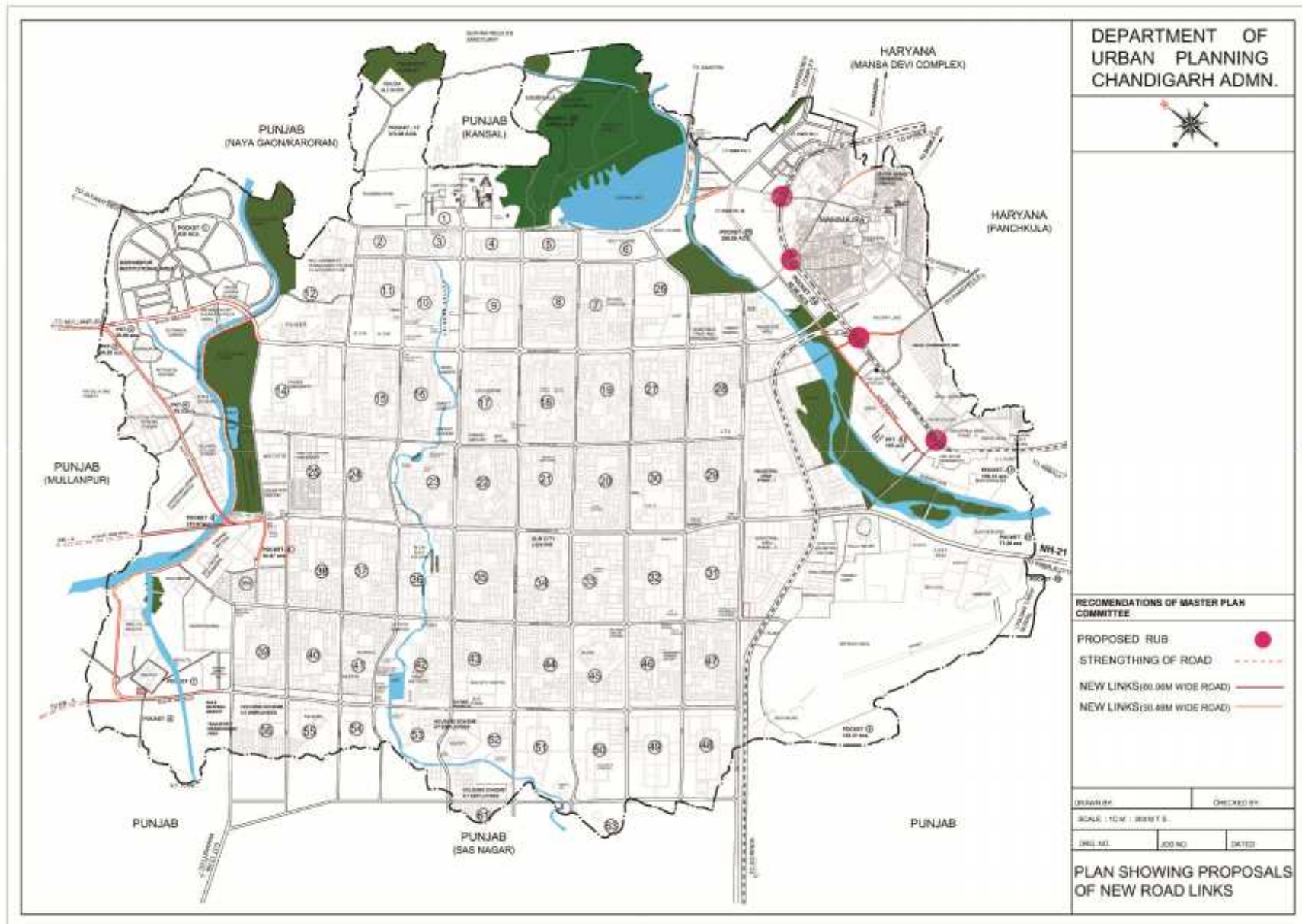
- The width of the existing road along Patiali-ki-Rao Choe is being proposed to be increased to 30.48 m which will serve as a bypass from PR5 to Dakshin Marg via Rehabilitation Colony, Maloya-I/Dadu Majra Colony/Dhanas.

Completion of the sectoral grid of Chandigarh

- The construction of incomplete portion of V3 road between sectors 51 & 62 to complete the Chandigarh sectoral grid by constructing high level bridge across N-choe, south of Model Jail, Burail.

Improvement of T Junction between Vidya Path and Chandi Marg near Golf Course, Chandigarh:-

- The geometry of this junction needs improvement to provide safe manoeuvrability of vehicles. The matter should be pursued with Sacred Heart School, Sector-26 or Golf Course Authorities for sparing some land.





NEW ROAD LINKS

Extension of Vikas Marg upto Punjab/U.T. Boundary

Proposal

60.96 m wide direct access to Punjab via Maloya which will merge into PR5 of GMADA Region. The same will ultimately merge with NH-21 at Kharar.

Extension of Dakshin Marg upto Punjab/U.T. Boundary

Proposal

60.96 m wide direct access to Punjab after extending Dakshin Marg which will merge into PR4 of GMADA Region.

Link behind Rehabilitation Colony, Maloya to Madhya Marg Via existing road along Patiali ki Rao choe.

Proposal

30.48 m wide road proposed behind Rehabilitation Colony , Maloya and existing road along Patiali Ki Rao Choe proposed to be widened upto 30.48m and will merge ultimately in Madhya Marg, which will act as a Bye- Pass.

Proposal

30.48 m wide additional access has been proposed behind Rehabilitation Colony which will merge into Dakshin Marg.

High Level Bridge

Proposal

- HLB over Patiali-Ki-Rao near Dadumajra
- HLB over Patiali-Ki-Rao near Khuda Jassu
- HLB over Sukhna Choe on Route No. 3
- HLB over Sukhna Choe near Kishangarh.

Link Behind Village, Kishangarh

Proposal

30.48 m wide road with 7 m wide dual carriageway, 3.3 m wide cycle track/slow carriageway and pedestrian path between Sukhna Choe Bridge and I.T. Park/Kishangarh crossing for the smooth flow of traffic.

30.48 m wide road along Sector-56(W)

Proposal

30.48 m. wide road has been proposed along Sector-56(W) which will merge in the existing road of Sector-56 near U.T. boundary.

Police Station Junction of Manimajra to road leading to Mansa Devi

Proposal

30.48 m wide road with 7 m. wide dual carriageway, 3.3 m wide cycle track/slow carriageway and pedestrian path between Manimajra Police Station crossing to road leading to Mansa Devi via Pocket 8 Manimajra for direct access to Mansa Devi Complex.



To improve connectivity with trans - Sukhna Choe areas

To improve connectivity of Chandigarh with Manimajra, the towns of Panchkula which are located across the Sukhna Choe /Railway line, grade separation has been proposed as under:

Proposed Rail Under Bridge (RUB)

Route No.1 (connect Panchkula at Junction between Sector 17/18 Panchkula via Industrial Area Phase-I/CTU Workshop/existing cremation ground)

- A underpass has been proposed on the existing Railway track to link between existing roads for the direct access of the vehicles.

Proposed Rail Under Bridge (RUBS)

- * Route No.2 (from Hallomajra Chowk to Industrial Area, Panchkula)
- * Route No.3 (from St. Kabir crossing to Fun Republic)
- RUB at Railway level crossing No.127 across Chandigarh Ambala Railway line near Raipur Kalan/Baltana.
- RUB at railway level crossing No.128 across Kalka-Chandigarh Railway Line near IT Park.



RUB with NMV facilities – first of its kind provided in Chandigarh along Route No. 2

The RUBs shall be designed with adequate provisions for the pedestrians and cyclists.

It shall be ensured that the construction will not adversely impact the adjoining properties accessibility and where required appropriate service roads/approach roads will be provided. Proper measures for rainwater disposal will be made to ensure there is no water logging or flooding.

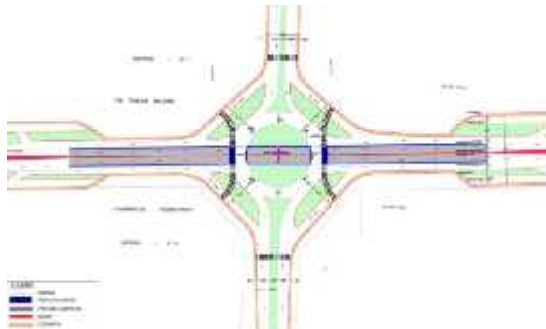
Landscaping, lighting, rhythmic shuttering patterns and Chandigarh style murals on the retaining walls shall be integrated into the design of the RUBs to make the overall ambience aesthetically appealing.



Underpasses proposed by Rites in Chandigarh

RITES has proposed following underpasses across the city in view of the large traffic volumes:

- Along Madhya Marg near PGI Chowk, Press Chowk, intersection of Sarovar Path and Madhya Marg and Transport Chowk
- Chandigarh-Kalka Road at Housing Board Chowk, Manimajra
- Dakshin Marg on Kissan Bhawan Chowk, Piccadilly Chowk and Tribune Chowk
- Across Dakshin Marg connecting V5 of Sector 22 and 35
- Across Himalaya Marg Connecting V4 of Sector 34 & 35
- Across Shanti Path connecting V5 of Sector 38 & 40, Sector 33 & 45 and Sector 35 & 43.



Proposal of underpass at Tribune Chowk



Proposal of underpass at Press Chowk

Observations on proposed underpasses

RITES recommendations are based on the projected traffic volumes for 2041 assuming a much higher growth rate of population than has been witnessed in the recent 2011 census. Since construction of underpasses is an irreversible process it needs to be seriously reconsidered .

The primary focus must remain on retrieving the city for the pedestrian and cyclists and ensuring that concerns over increasing vehicular traffic and congestion do not end up cutting the city into bits making life far more difficult for the majority of citizens. The other factors which need to be addressed while planning underpasses are :

- They will require re-routing of existing underground services like sewerage, storm water drains, telecommunications, and OFC cables running east west and north south along the grid loops around the ramp .Besides technical implications and cost, digging up large areas, will cause inconvenience to the public during implementation. The pedestrian movement will be adversely affected across the underpasses.
- The extra lanes required for the underpasses would almost eliminate berms/pedestrian pathways and full grown trees. In most cases underpasses have been proposed at alternate junctions of Madhya Marg and Dakshin Marg i.e. at a distance of 1600m out of which 400m would be consumed in the grades/ramps of the underpasses leaving 1200m as a straight stretch in between some of the underpasses have been proposed even at consecutive junctions i.e. 800 m, which leaves only 400m as a straight stretch in between . The up and down roller coaster movement is not desirable.



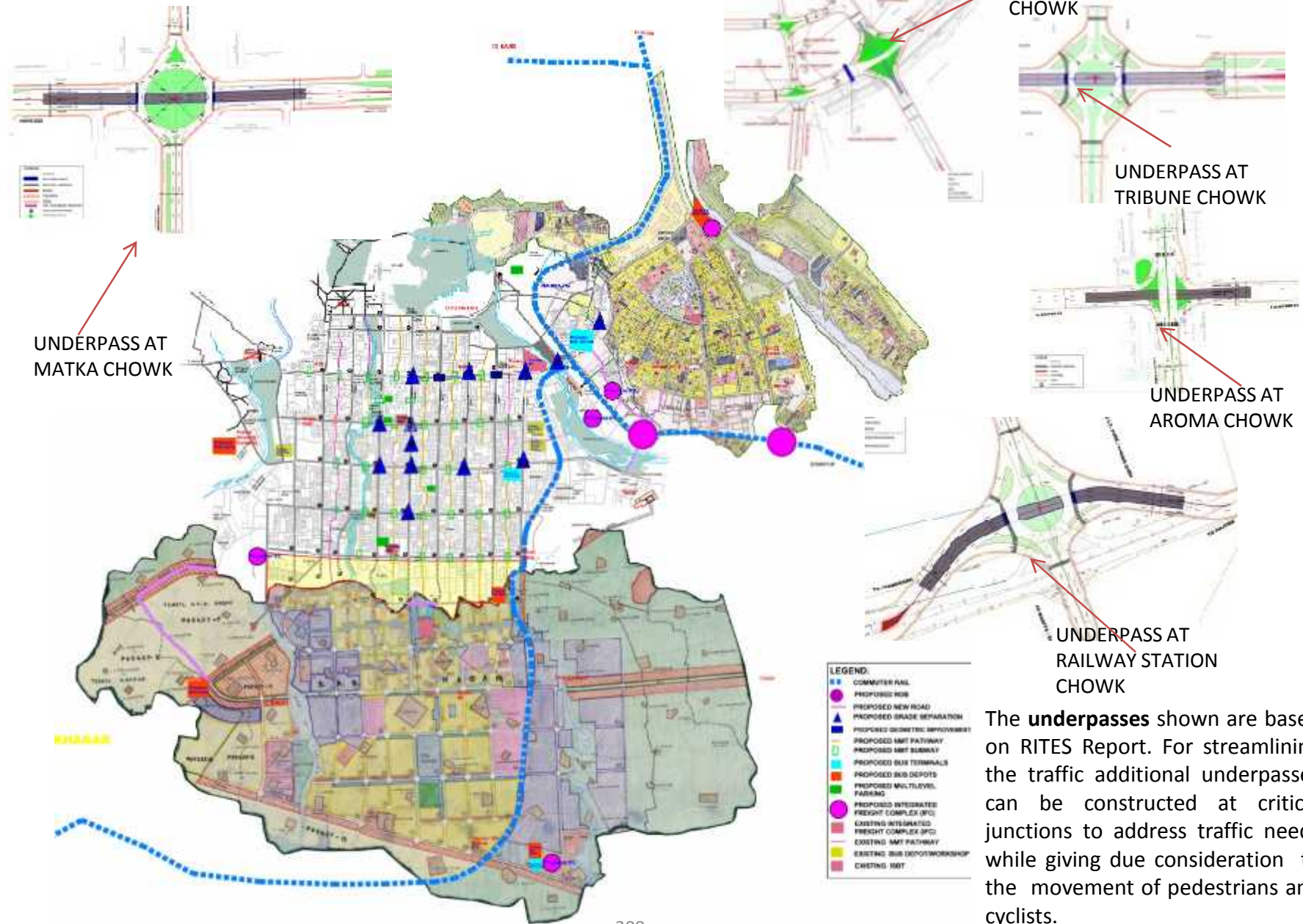
- Experience across the globe indicates that continuing upgradation of road infrastructure for ever increasing traffic takes place at the cost of other road users, negatively impacts the quality of the urban environment and is particularly damaging for the pedestrians and cyclists. The car oriented intervention would disturb the short routes and at grade access for public transport users, walkers and non motorized traffic users.
- The world wide trend is to promote pedestrian friendly cities based on new urbanism, eco city concepts where emphasis is on an efficient, green, and reliable public transport system rather than car dominated cities. In fact, instead of accommodating ever increasing private vehicles, the focus has thus shifted to controlling /discouraging their growth by introducing disincentives such as congestion charges, high parking fees and demarcating pedestrian only zones .
- In light of the above, it is strongly recommended that vehicular underpasses along the sectoral grids should be constructed only across very critical junctions after giving due consideration to the movement of pedestrians and cyclists. Unidirectional underpasses at consecutive intersections should be avoided.
- **Over bridges/ flyovers are not recommended** to be constructed in entire city of Chandigarh due to heritage considerations, since they impact the visual city scape, and cause inconvenience to the pedestrians.



CYCLE AND PEDESTRIAN FRIENDLY CITY



PLAN P17- IMPROVEMENT OF ROAD INFRASTRUCTURE PROPOSED BY M/S RITES



The **underpasses** shown are based on RITES Report. For streamlining the traffic additional underpasses can be constructed at critical junctions to address traffic needs while giving due consideration to the movement of pedestrians and cyclists.



CYCLING SHALL BE PROMOTED IN A BIG WAY THROUGHOUT THE CITY FOR ENJOYMENT AND EXERCISE, AND TRANSPORTATION ALONG PROPOSED GREEN CORRIDORS CONNECTING THE CITY

NON- MOTORISED TRANSPORT

Cycle Facilities

Their use in Chandigarh is not significant but still this needs to be encouraged on environmental considerations. Provision for safer and better section of road or cycle track is the best way to keep them on roads. Therefore, it is proposed to revive V7 and V8 roads as intended for bicycles. About 60 Km of cycle network has been identified with proposed cycle underpasses across V-2 or V-3 roads. In addition the existing cycle tracks along V3 roads will be improved and provided with proper integration along with the zebra crossing near intersection.



CHANDIGARH TO BE PROMOTED AS A PEDESTRIAN AND CYCLE FRIENDLY CITY

Special provisions are being made for pedestrians and cyclists in the city as per the original plan wherein the 7V road network was designed for safe movement of pedestrians and V8s were subsequently added as cycle tracks along major roads. The pedestrians and cycles were to move along city greens and interconnected through underpasses across intercepting vehicular roads.

Revival of this concept is strongly recommended however would entail a close look at the existing development wherein the central greens have been developed to a large extent as city level parks/gardens. Visits to sites indicate that revival of the concept is practically possible. In this context, 11 longitudinal green belts, as under, have been delineated which are to be developed as green corridors both for the pedestrians and cyclists.

Green Corridor along Patiali Ki Rao- 1

- Extending beyond Patiali Ki Rao Forest Area- Dhanas Lake-Shooting Range–Botanical Garden –Milk Colony Dhanas

Green Corridor 2

- Patiali Ki Rao Forest between Sarangpur Institutional Area and PEC-Sector 56
The Patiali Ki Rao Forest-Dhanas Lake-Shooting Range-Pocket 6-Sector 38 West-Sector 39 and Sector 56.

Green Corridor 3

- Areas connecting between Sector 25 to Sector 55
- Panjab University Sector 25-Sector 38-Sector 40-Sector 55-Palora-Old Ropar Road.

The Green Corridor 3 has been shown to be initiated from Sector 25 Panjab University. The same can be extended towards the north by taking up the matter with the Panjab University, PGI, PEC which are gated communities.

Green Corridor 4

- * Khudda Ali Sher – Rajindra Park –Sector 2 –Sector II –Sector 15 –Sector 24 –Sector 34 –Sector 37 –Sector 41 – Sector 54 Model Village Khudda Ali Sher hilly terrain, green pocket, Rajindra Park –Heritage houses in Sector 2 – villages Butrela – Badheri

Green Corridor 5

- Khudda Ali Sher to Sector 53
Khudda Ali Sher, green pocket, Rajindra Park Sector 3, War Memorial and Bougainvillea Garden, Sector 10, Leisure Valley, Sector 16, Heritage houses, Rose Garden / Shanti Kunj, Sector 23, Bamboo Garden, Traffic Park, Bal Bhawan, Sector 36 Fragrance Garden –Sector 42 Palm Garden, Beant Singh Memorial, Chatt Lake, Sector 53 Garden of Spring.

Green Corridor 6

- Capitol Complex – Sector 4 – Sector 9 Commemorative Park – Sector 17 City Centre – Sector 22 Heritage Sector – Sector 35 – Sector 43 Sub City Centre – Sector 52 – Garden of Conifers – Sector 61.

Green Corridor 7

- Kaimbwala – Sukhna Forest /Sukhna Lake /Rock Garden, Sector 5 –Sector 8 – Sector 18 – Sector 21 – Parrot Garden /Old Ropar Road –Sector 34, Sub City Centre /Nehru Centre for Performing Arts/State Library – Sector 34 Gurudwara – Sector 44 - Sector 51

Green Corridor 8

- Kaimbwala –Sukhna Forest /Sukhna Lake /Golf Course / Sector 7 Heritage Sector – Sector 19 –Sector 20 – Sector 33 – Sector 45 - Sector 50 - Sector 63

Green Corridor 9

- From Sukhna Lake - Golf Course - Sector 26 – Sector 30 – Sector 32 – Sector 46 – Sector 49

Green Corridor 10

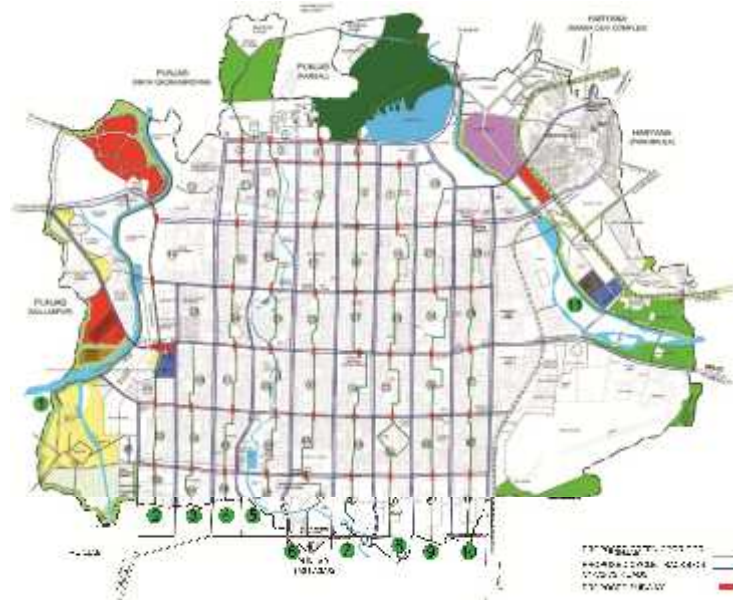
- Sector 28-Sector 29-Sector 31-Sector 47-Sector 48 B

Green Corridor Along Sukhna Choe 11

- Kaimbwala - Sukhna Wildlife Sanctuary – Sukhna forest - Lake – Regulator End /Golf Range /IT Park /26E/Pocket No 11 and 12 of Manimajra which are to be connected with pedestrian bridges.



Development plans for each corridor shall be worked out after detailed analysis of existing site conditions. Signages, public amenities to be carefully dovetailed into the route.



PLAN P18: PLAN SHOWING PROPOSED GREEN CORRIDOR

Pedestrian and cyclist movements is also to be facilitated both within the neighbourhood sector as well as along the main circulation arteries wherein will ply public transport including metro, BRTS, local bus service. The success of MRTS is directly linked to enabling last mile connectivity. Walking to an initial bus stop, an interchange between bus and metro, within a metro station and end of the trip is important. While underpasses are being proposed across major vehicular V2, V3 roads along the green corridors to enable constant contact with nature without having to merge with vehicular movement for the rest of the pedestrian / cycle movement at grade movement for the pedestrian is being preferred.

Experience has shown that grade separated pedestrian pathways / underpasses / flyovers are not popular despite being equipped with escalators/ramps.



Foot over bridge existing at Panchkula Kalka road – not popular



To facilitate the movement of patients and their attendants across the Chandigarh-Kalka Road passing adjoining Chandimandir Command Hospital, a foot over bridge has been constructed with a ramp and staircase connecting Sector 6 of Panchkula to the Command Hospital West Command, which is however not been used much.



Foot over bridges existing in Mohali Phase III, V & VII are also not in much use





In most advanced countries, the pedestrian is given due respect on the roads. Zebra crossings and ATC lights enable pedestrians to maneuver even heavy traffic roads with ease. Senior citizens, children & wheelchair users are able to move around safely and independently. The Chandigarh Master Plan 2031 strives to motivate the citizens of Chandigarh to develop similar values so that all people can move around the city comfortably and safely.

All new roads bridges /RUBs/ROBs shall make provisions for dedicated pedestrian and cycle paths. the existing road network shall also be suitably rectified to enable the same. This has been strongly advocated in the NUTP of the GoI.

The zebra crossings combined with ATC lights/pelican lights will be augmented on all city roads and preference and priority shall be accorded to the pedestrians and cyclists rather than to vehicles. The city will thus be a **pedestrian friendly city**. The **walkability index** shall thus increase manifold.

Cycling shall be a major mode of transport with cyclists feeling safe as they connect to work and shopping centres doing their daily chores.

Completion of cycle tracks and park and ride facilities at metro/BRTS nodes

- For promoting use of the bicycle as an energy conserving and healthier mode of transport for shorter distances and for reducing car use in the city.
- Cycle tracks planned as V8s; should be executed on priority.
- Use of traffic signals for the existing cycle tracks along with illumination for safety. To deter use of cycle traffic by vehicles, motorists shall be penalized.
- Pedestrian and cycle tracks shall be provided to connect to Metro Stations /BRTS Stations to ensure comfortable last mile connectivity.
- Sufficient space to be provided for Bicycle Sharing /Park and Ride concept at Metro nodes, bus stops.



IMPROVING WALKABILITY AND CYCLING WITHIN NEIGHBOURHOOD

The following principles are recommended for construction of new and improving the existing footpaths:

- Construction of footpaths recommended along V4s and V-5s for safety of pedestrians subject to approval from CHCC in identified heritage areas.
- Construction of footpaths not recommended along internal V6 roads due to less volume of traffic and to avoid excessive hard surfaces in the city to maintain green character of neighbourhoods. Footpaths along existing roads should be widened to a minimum width of 2.0 meters as per standardised specifications. (Refer Figure 26)
- **Continuity of footpaths** – bottlenecks in the form of electrical boxes and poles /dustbins /signages need to be removed..This is to be ensured through coordination of various implementation agencies .
- In addition it should be ensured that the covers for the underground services, if any, located below the footpaths or pedestrian crossings are at the same level as the surface of the footpath.
- Adequate ramp facilities for physically challenged people at junctions and crossovers.
- Proper merger of footpaths with underpasses/zebra crossings and junctions be provided with pedestrian priority signalling.
- Pedestrian / cycle tracks that have been compromised during previous road widening need to be reintroduced.
- For cycle tracks, a uniform cast with concrete pavement for underground ducts / sleeves at regular intervals for crossing of services across the cycle track to be adopted.

Comprehensive proposals will need to be prepared for the pedestrian movement across the city /at sector level /cluster level and campus level examining ground realities.

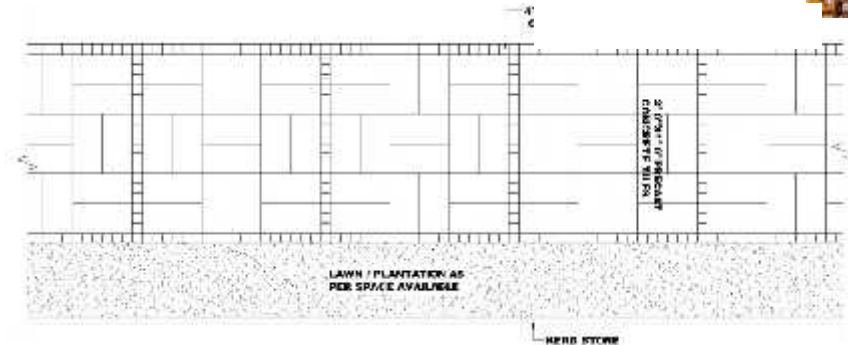


FIGURE 26. TYPICAL DETAIL OF FOOTPATH SHOWING GREEN EDGE ALONG ROAD

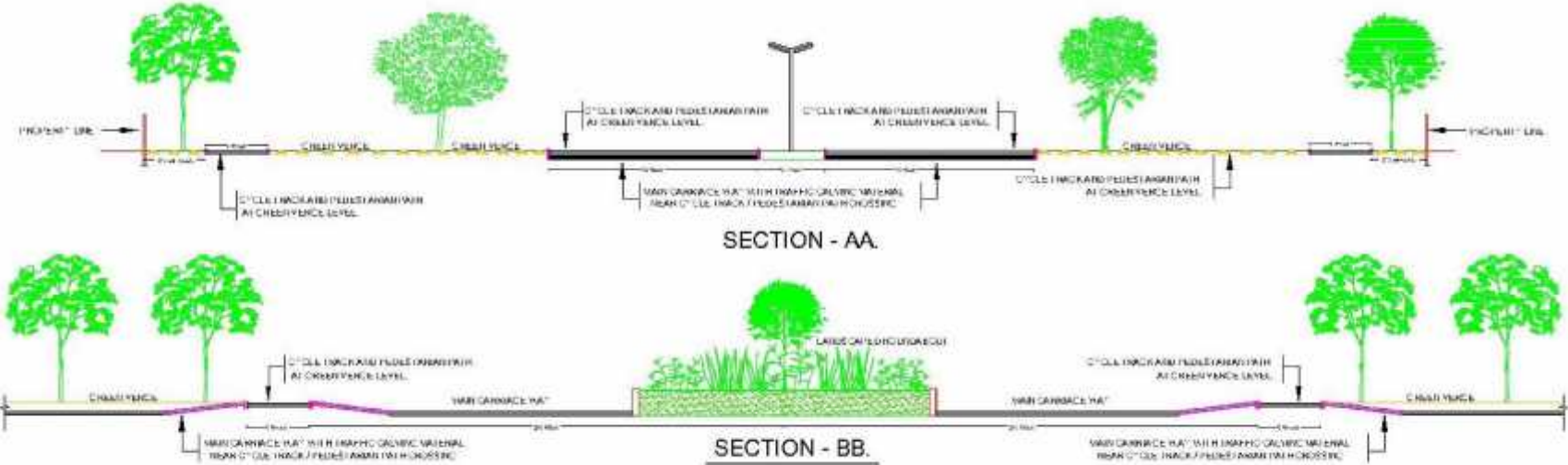
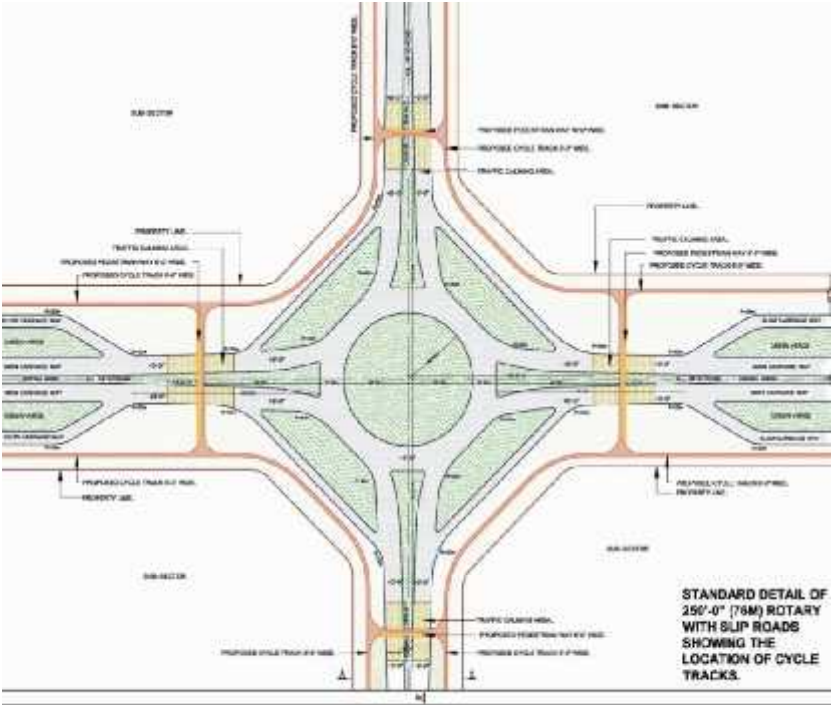
- Footpaths are to be laid at a set back from the road edge to maintain the green edge along the roads. In this area, low shrubs, greens, lawns, are to be planned. The underground services and street lights shall run along this stretch.
- Footpaths can be made to meander around existing trees to enable continuity in pedestrian movement and also prevent endangering trees.
- Ensuring proper execution and maintenance of footpaths. A minimum of 6'-0" wide pedestrian path with precast 2'-0" x 1'-0" precast tile and cobble stone paver block 4"x 4" is to be provided to maintain uniformity of design across the city is recommended. The precast concrete tiles are to be laid over sand bed which can be removed for maintenance of underground services if any and put back in place without any breakage. The tiles will be laid without any cement pointing to facilitate percolation of rain water. This detail is recommended for adoption for all pedestrian paths in the city.
- Advance cautionary signs, blinkers for safety of pedestrians at Zebra Crossings with high volume of pedestrian traffic.



PEDESTRIAN AND CYCLE CONNECTIVITY AT ROAD INTERSECTIONS

- The proposal is aimed at providing direct connectivity between footpaths / cycle tracks around road intersections. The table top is being proposed as a traffic calming measure.
- Ideally at grade zebra crossing supported with and ATC lights should meet the requirements, however since due respect and regard for pedestrians is presently not observed in the city, the calming measures are proposed.

PLAN P19 PEDESTRIAN AND CYCLE CONNECTIVITY AT ROAD INTERSECTIONS





PLANNING FOR EASY FLOW OF CYCLISTS AND PEDESTRIANS



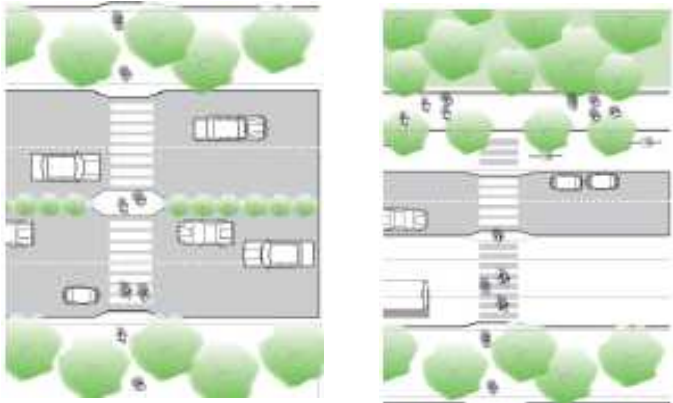
AT GRADE ZEBRA CROSSINGS FOR PEDESTRIAN AND CYCLISTS



TABLETOP CROSSING - TRAFFIC CALMING MEASURE



LANE MARKING FOR CYCLISTS





PARKING ASSUMING CRITICAL DIMENSIONS IN CHANDIGARH

Chandigarh is facing acute parking problems due to the manifold and unanticipated increase in vehicles in the city. The design of existing buildings and campuses undertaken by the original team only provides for surface parking which is totally insufficient for present demand. Only a few standalone underground community parking lots were planned in the city centre and in Sector 8 along 17 and 26 Madhya Marg.

Parking norms have been put in place only recently vide notification dated 16.10.2008.

The parking problems vary across different land uses as discussed below :

RESIDENTIAL AREAS

The problem of parking is acute in the residential areas specially in the Marla row housing, cheap housing/EWS which were designed for single family units but is now housing a minimum of three families each often possessing a car and/or a two wheeler. Construction of temporary car porches within the front setback has been permitted however the same does not meet the full requirements. Nursing homes, coaching schools, Guest houses, operating from residential plots. Further aggravate the shortage of parking.



SPILLOVER OF TRAFFIC ONTO WALKWAYS AND PARKS OF RESIDENTIAL AREAS



COMMERCIAL AREAS

The neighbourhood commercial centres along V4 had large pavements and limited parking areas. With the increase of private cars, the parking lots have been extended at the expense of the pedestrian footpaths. Despite this, they suffer from parking shortage with cars intruding into vehicle free zones provided for emergency vehicles and parking spills on to the V4 roads to the extent of obstructing vehicular access to the adjoining residential areas. Increased air and noise pollution is an added problem.

The City Centre, Sector 17, Sub City Centre, Sector 34 and commercial belts along major arteries are also facing acute shortage of parking spaces despite provisions made in the original plan. The underground parking lots constructed in Sector 17 and Sector 8 are also not being utilised due to poor maintenance and management.



Institutional Buildings and Places of Worship

The planning of the institutional campuses has also not made provision for sufficient parking resulting in a spill over on to roads and green areas.



TRAFFIC PROBLEMS IN PARKING LOTS

INDUSTRIAL AREAS

The ‘Chandigarh Conversion of Landuse of Industrial sites into commercial activity / services in the Industrial Area Phase - I & II, Chandigarh Scheme 2005’ has caused manifold increase in parking requirement due to commercial activities generating large visitor footfalls. The requirements of organized loading and unloading of freight from goods vehicles cannot be met properly.



TRAFFIC SPILL OVER ONTO FOOTPATHS



PROPOSALS FOR PARKING

RESIDENTIAL AREAS

- Construction of underground community parking /beneath parks to accommodate cars /vehicles
- Permitting underground parking within courtyard plots
- Utilising services lanes of first phase sectors for parking
- Linking registration of cars with certification /availability of parking space
- Enabling use of neighbourhood level educational campuses for parking during off working hours



EXISTING SITUATION



REMOVAL OF FRONT BOUNDARY WALL TO ACCOMMODATE CARS



UNDERGROUND COMMUNITY PARKING /BELOW PARKS



UNDERGROUND COMMUNITY PARKING WITHIN INDIVIDUAL PLOTS



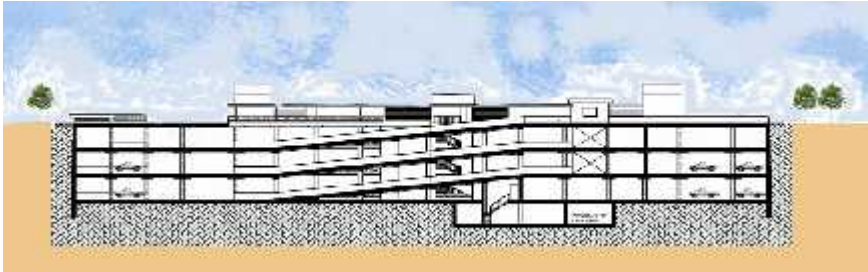
Commercial areas

City Centre Sector 17

The City Centre, Sector 17 is facing acute shortage of parking . RITES has projected deficit of 3000 car spaces in Sector 17. The deficit is to be addressed through underground parking lots for which sites have been identified at the four corners along the internal loop road of the centre. Proposal of underground parking near Gurdev Studio is at an advance stage of planning. The other parking lots are also to be taken up subsequently.

Optimum utilisation of existing underground parking lots. The parking lots which are not being used at present are to be utilised by renovation and proper management. For long term parking the use of underground parking should be mandated. The lots need to be upgraded to make them attractive and safe. State of the art signages, intelligent display systems, lane marking, proper light and ventilation, proper maintenance, safety, security, valet parking will go a long way in ensuring the same. The shop owners /stakeholders to be taken on board for the same.

Similar proposals are recommended for other existing underutilised underground parking lots at the rear of the shopping centres in sector 8, 9, 7, 26.



GURDEV MULTI-LEVEL PARKING PROPOSAL FOR SECTOR-17

SUB CITY CENTRE SECTOR 34

The partially built, Sub City Centre Sector 34 is also facing acute parking problems. The congestion of parking along the approach roads to buildings and parking lots leave no place for pedestrian movement. Revised proposal of the Sub City Centre includes construction of multilevel parking under the landscaped pedestrian plaza . The proposal needs to be executed .



ENTRY / EXIT TO BASEMENT PARKING



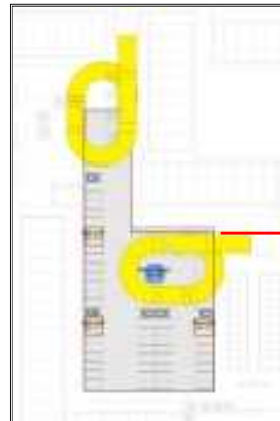
UNDERGROUND BASEMENT PARKING



NEIGHBOURHOOD SHOPPING CENTRES

- Comprehensive Urban Renewal proposal for neighbourhood shopping centres shall address the problem of parking on a case to case basis (Refer Chapter 7 on Commercial Areas) .
- **Creation of car free areas** in the neighbourhood shopping centres to be delineated based on detailed study/analysis. The car free concept for neighbourhood shopping centres revolves around transforming shopping centres from chaotic car dominating place to a **vibrant pedestrian core/vehicle free zone** to be accessed comfortably and enjoyed by the residents.
- As a pilot project Neighbourhood Shopping Centre, Sector 11 shall be taken up, where proposal of taking the V4 and parking subgrade can be explored while leaving free access to residential houses along V4. The feasibility of the concept and the view point of the stakeholders to be taken to finalise the proposal .
- In case of Sector 23 / Sector 8 for example, the underground parking can be created beneath the internal central court which will release land for open space /pedestrian plaza above.

SECTOR 23



Constructing vehicle free zone in neighbourhood shopping centre



EXISTING SITUATION



PROPOSAL OF SECTOR 11

TAKING THE V4 UNDERGROUND TO RELIEVE SPACE FOR PEDESTRIAN MOVEMENT AND COMMUNITY INTERACTIONS .



CASE STUDY SECTOR 23 – URBAN RENEWAL WITH UNDERGROUND PARKING



PARKING SOLUTIONS FOR INSTITUTIONAL BUILDINGS

- Parking within campus. - additional FAR is being allowed for making provisions
- Multi-level parking blocks
- For already constructed campuses which are architecturally controlled - underground parking beyond the footprint of buildings / along institutional belts Jan Marg and Madhya Marg.
- Parking demands can be controlled by implementing transport management measures such as
 - use of car pools for schools and offices.
 - odd and even number vehicles permitted on fixed days
 - car free days
 - segregated timing of office hours
 - use of power driven vehicles within car free zones.



OVERHEAD MULTILEVEL PARKING AT PGI



MULTILEVEL UNDERGROUND PARKING AT THE HIGH COURT



Parking lots at Metro Stations / Metro Nodes as per proposal of DMRC indicated at Table 7 and 8.

Park and Ride concept shall be facilitated at Metro/BRTS/Bus Stands.

Augmentation of parking facilities with latest State of the Art technology.

Whilst the ongoing proposals for multilevel parking are adopting traditional practices, in view of cost considerations, it is recommended that in future semi automated / fully automated / latest technology is adopted which will optimise space within city. The selection of the type of parking system shall take into consideration the ground realities/ feasibility / urban design aspects.

To maintain the green open spaces within city, underground parking lots are recommended as a general solution, however, in the Industrial Area, where high rise buildings are being constructed, over ground parking lots can be considered as community parking in vacant parking lots.

Mandating full occupancy of cars entering commercial centres and other designated areas.

OPENING OF BUILDINGS ON V2/V3 ROADS

The V2/V3 roads were planned as fast vehicular corridors to ensure uninterrupted movement of traffic with no buildings opening on to the roads .

A large number of private residential properties abutting the roads have however provided illegal openings on these roads and not only park vehicles but also carry out outdoor activity on the roadsides. The to and fro /criss- cross movement impedes the smooth flow of traffic while unauthorised construction of courtyard walls /drying of clothes/squatting on *charpoy*s lends a poor urban image.



HOUSES WITH DOORS OPENING ON V2/V3 ROADS





BUSES CHARGED WITH SOLAR POWER IN TUNE WITH CONCEPT OF SOLAR CITY

Bus queue shelters be planned to enable charging of buses with solar power.



UNDERPASS FOR SLOW VEHICLES CONNECTING V5S ACROSS V3.

An underpass meant for slow vehicles and pedestrian has been constructed to connect V5 of Sector 15 with the V5 of Sector 11 across the busy Madhya Marg. The same is also extensively used by cars due to convenience and short travel distance.

The concept is worth emulating subject to feasibility on case to case basis in other sectors as well



OTHER PROPOSALS OF CMP 2031

- Concrete roads with different textures for pedestrians/cyclists wherever required.
- Best practices for road infrastructure shall be adopted.
- Incorporation of recycled plastic blended with bitumen to improve durability of roads .
- Use of advanced pavers, geo grid membrane, for pavements.
- Use of recycled aggregate to build roads as is being practiced in developed countries.
- Ensure proper drainage or roads, failure of roads occurs due to improper road drainage
- Synchronization of Signals.
- Identification of Black Spots and taking appropriate counter measures.
- Regular cutting of grass along road berms.
- Further widening of roads at the expense of pedestrian pathways / reduced green berms not recommended.
- Installation of speed governors on all buses plying in & through the city.
- **Buses with cycles** - To facilitate the cyclists while travelling by bus.



Designated lanes for cyclists/pedestrians



Traffic signals to regulate pedestrian/cycle movement



13. LAND USE

13.1 INTRODUCTION

The original Plan of Chandigarh was prepared six decades ago to meet the **requirements of the Administrative City** for a **population of five lakhs**. The 70 sq.km area acquired for the development of the first two phases (Sectors 1 to 47) of Chandigarh had clearly defined land use zones based on the CIAM principles of **Living, Working , Care of Body and Spirit and Circulation** planned within the modular sectoral grid.

The residential sectors are based on the concept of self sufficient neighbourhoods each having schools, shops for daily needs, community centres and neighbourhood parks .

City and the Periphery

Chandigarh was planned as a stand alone city surrounded by a controlled rural belt around it to nourish it. Although, the city has largely developed as per the original plan and its clearly defined land uses, the controlled periphery even within the UT of Chandigarh has been completely transformed due to re-organisation, majority of the area of the periphery has gone to the state of Punjab (73%), State of Haryana has 24% of the area of the periphery whereas remaining 3% is with the Chandigarh. Accordingly, the area available under periphery with the Chandigarh has been reduced considerably in the post 1966 re-organisation. Over a period of time, large number of developments have been taken up in the periphery, these developments are both of planned and unplanned nature. With these developments, the city has been extended towards the East, South and West to accommodate new requirements without any comprehensive plan. New residential, institutional and other uses have been added both within and outside the sectoral grid. The establishment of the IT park, rehabilitation colonies for unauthorized settlements, Sarangpur Institutional area, Botanical Garden, Milkmen Colony-Dhanas, Dumping Ground for solid waste etc towards the east and west has entailed overstepping of the natural boundaries of the Patiali Ki Rao and the Sukhna Choe.

Considering the development already taken up within the area comprising of the periphery, the same is now proposed to be included as part of the Chandigarh Master Plan 2031 with the exception of the unauthorized constructions raised in violation of Periphery Act. Thus the present landuse plan will define the area covered under Phase I (Sector 1 to 30), Phase-II (Sector 31 to 47) and Phase-III (Sector 48 to 56) besides the area of the periphery.

Expansion of the City beyond the original plan to accommodate additional landuses

Detailed stocktaking of the existing situation within UT's periphery indicates that developments beyond the planned sectoral grid have been irregular dictated more by the availability of land for acquisition and the existing link roads rather than any planning framework. The neighbourhood concept of the city's sectoral grid is conspicuous by its absence in the periphery area .

Chandigarh Villages

The site selected for setting up capital city of Chandigarh included number of villages and their settlements. Different strategies were adopted with regard to villages while evolving the Plan of Chandigarh. For the first phase sectors I to 30, it was decided that all the villages falling within the sectoral grid shall be acquired including the *abadi* area and the villages will be rehabilitated at an appropriate location. Accordingly all the villages were removed and the villagers were rehabilitated in the Pipliwala and Mariwala rehabilitation colonies which were developed adjacent to Manimajra and within the periphery control area. With regard to four villages falling within the sectoral grid of Phase-II, the agricultural land was acquired but the *abadi* area were left intact. Accordingly, the *abadi* of 4 villages Attawa, Butrela and Badheri were adjusted within Sector 42 and Burail in Sector 45 as part of the sector planning.



Two villages namely Kajheri and Palsora which form part of the Phase-III sectors are also proposed to be made integral part of sector planning without acquiring the area under *abadi/ Lal Dora* except the area under unauthorized/ unregulated constructions raised in violation of the Periphery Act.

The *Abadi areas* of villages which were adjusted within the sectoral grid of the second and third phase and those in the periphery, have undergone tremendous change from pure residential areas to serving as backend centers for the city's commercial areas lacking in warehousing facilities, providing dormitory accommodation to migrants and the lower income strata unable to afford the high rentals within the main city. Guest houses and *godowns* are other land uses which have come up within and around the villages.

Existing Development Pattern

Despite Chandigarh being a planned city, it has not been able to avoid un-planned developments. Due to non provision of low cost housing and services for labour in the original plan, unauthorized settlements have surfaced which are being rehabilitated partly within the sectoral grid but mostly in the peripheral areas. Similarly, informal commercial sector has emerged in a big way since even the booths which are the smallest category of commercial establishments were unaffordable by the migrants/service sector. The Chandigarh Administration planned day care markets and *rehri* markets adjoining the neighbourhood commercial centres to meet the needs of informal commercial sector. Over a period of time, different areas of the city have also been allotted on temporary basis to meet exigencies /or address the new requirements till such time proper arrangements for the same are made .

13.2 EXISTING LANDUSE PLAN

Landuse for the city of Chandigarh was defined by the Plan prepared by Le Corbusier . Based on the **CIAM** (Congress International de Architecture Modern) principles of the Functional City which focused on **segregation of four major functions** i.e. Living (the residential sectors), Working (the Capitol Complex, commercial /institutional buildings along Madhya Marg, Jan Marg, City Centre), Care of Body and Spirit (the Leisure Valley, open spaces and sector greens) and Circulation (the network of roads, the 7Vs).

The total area proposed to be covered in the Master Plan is the entire area of 28169.61 acres comprising of Chandigarh Union Territory .The area includes both the area falling under the Phase I ,Phase II and Phase III sectors besides the area under the periphery. Considering the pattern of development followed in Chandigarh, the **Existing Landuse Plan** is being detailed out in two parts. Part I comprises of planned development included in the original plan (Phase I & II) and the subsequent developments made as part of the extended sectoral grid (Phase III). The remaining landuse of the area falling in the periphery is being detailed out separately keeping in view the nature and context of development.

In Phase I and II, out of the 46 sectors in the sectoral grid falling within the first and the second phase of the original plan, 39 sectors are Residential whereas the remaining seven sectors namely sectors I, 12, 14, 17, 26(part), 34(Part), 43(part) are predominantly Institutional and Commercial housing the Capitol Complex, PGI/PEC, Panjab University, City Centre and Sub City Centres respectively . The Industrial Area, the Sukhna Lake, and Golf Range/Club have also been considered as part of the sectoral grid of Phase I and II. Phase III sectors (remaining parts of sectors 48 to 56, 61 and 63) falling in Chandigarh UT have been earmarked as Residential sectors. These sectors also include the belts reserved as Commercial/ Institutional along the Vikas Marg now proposed for mix landuse.



The details of areas falling under different phases and periphery are as under:

CATEGORY	SECTORS	AREA in (acres)	PERCENTAGE
Phase I	1 TO 30 *	9398.83	33.37
Phase II	31 TO 47**	5158.76	18.31
Phase III	48 TO 56 (PART)	1870.54	6.64
	TOTAL	16427.73	58.32
Remaining area of periphery		11741.88	41.68
	Grand total	28170.00	

- Includes the area of Industrial Area Phase I, Sukhna Lake, Golf Range.
- Includes the area under Industrial Phase II .

Out of the total area covered by the Master Plan, 58.32 % (16428.13 acres) falls under the area covered by the planned development whereas remaining area of 41.68% (11741.88 acre) falls in the periphery. Within the area falling under the planned sectors, Phase I has largest area comprising of 1/3rd of the area of the Master Plan whereas Phase II and Phase III has 1/4th of the total area of the Master Plan and remaining area falls in the periphery.

The area in the periphery comprising village *abadis*, agricultural land and the area where planned and unplanned development has taken place works out to be 11741.87 acres. As explained above, the existing landuse analysis has been carried out in two parts i.e. **Area falling within the Sectoral Grid** (Phase i, II & III) and **Area outside the Sectoral Grid (Periphery)**.

13.3 EXISTING LANDUSE

Area falling within the Sectoral Grid (Phase I, II and III)

The existing landuse has been analysed in terms of different components i.e. Residential, Commercial, Traffic & Transportation, Industries, Public / Semi Public etc. **Refer Table I, II & III.** Looking at the above tables in Phase I, largest proportion of land has been allocated to the Residential component (42.69%) whereas Public and Semi Public have approximately same kind of area. The area under the Commercial component is placed at 4.73% whereas Traffic and Transportation occupies around 8% of the Total Area of Phase I. The above proportions of the areas have been worked out based on taking the entire area of residential sectors as the residential component. If the residential component is further detailed out, the proportions under residential will go down, whereas area under commercial, traffic, public and semi public, recreational shall accordingly go up. The detailed **Landuse of Sectors falling in Phase I** has been given in **Annexure I**. Each sector has a different pattern of Landuse as detailed out in the Table.

In case of Phase II, the proportion of Residential component is much higher i.e. 67.08 %, similarly , Commercial component is also higher than Phase I. The variation in landuse in this phase is due to the fact that Phase I was planned as low density sectors whereas the Phase II sectors were proposed to house larger population and were planned as high density neighbourhoods with smaller sized plots and ground coverage. As stated above, if the analysis of the sectors is carried out for different landuses, the proportion of Residential component will go down whereas the remaining component will go higher. The details of **Landuse of Individual Sectors falling in Phase II** is given in **Annexure II**. Considering the fact that Phase III development is largely guided by group housing ,excluding the planning of individual plots, the proportion of Residential component has been found to be much higher. Residential area occupies ¾ of the total area of Phase III. however, the area calculations is again based on taking the sectors as residential landuse without going into the details of various components included in the sector planning. Accordingly, the area under different uses will get rationalised once that analysis is included in different land uses. The detail **Landuse of individual sectors falling in Phase III** is given in **Annexure III**.



Landuse Within Remaining Area of UT Periphery

A perusal of the periphery area in the UT indicates that large chunks of land in the periphery have already been acquired for accommodating new land uses.

While developing area in the periphery, the existing road network with few upgradations has been used as the basis for providing accessibility to the pockets and developing these areas without a comprehensive road network. The **landuse analysis of the existing development** has been carried out for the area falling in the periphery and is detailed in **Table IV & V**

Out of the Total Area of 11741.88 acres, Residential component covers approx. 1/6th of the total areas. Commercial component accounts for 2.736%, Traffic and Transportation 5%, Industries 4.5%. In addition, area under Defense Use is placed at 13.4% which is close to the Residential component. Other Uses in the periphery area include Public /Semi Public, Recreational and Public Utilities. 19% of the Total Periphery Area is under Forest whereas the Agricultural component accounts for 21.67%.

13.4 PROPOSED LANDUSE PLAN

Based on detailed studies, in depth analysis and looking at the future growth and development of the Chandigarh, Proposed Landuse Plan for the Chandigarh Union Territory has been evolved. While evolving this landuse plan, care has been taken to preserve the sectors which have already been planned and the landuses which have already been defined in the planning of the sectors.

Accordingly, no change is proposed in the landuse already defined in the sectors falling in Phase I, Phase II and Phase III with the exception of change of landuse from 'Residential' to 'Institutional/Residential for institutions' in sectors 50, 51, 52 and 53 in the land vacated from relocating slums. This change is proposed to meet the requirement of additional institutional area within the city.

The changes already made in the area falling in Phase I, II and III including the setting up of Rock Garden, Memory Park, Sports Complex in Sector I etc. have been made an integral part of the Landuse Plan.



13.5 PROPOSED LANDUSE WITHIN REMAINING AREA OF PERIPHERY

As already explained above, the landuse already defined in the sectors falling within the sectoral grid is proposed to be kept within the existing defined frame work of planning and development. However, considering the decisions already taken by the Administration and in order to meet the future requirements of the city in terms of Rehabilitation of Slums, Amenities, Institutions, Para Military Forces, Defense, Warehousing, Transportation, Bulk Material Market etc. the area available in the Periphery is proposed to be planned and developed to meet these requirements. While defining the future growth and development, care has been taken to integrate these areas with the existing frame work of urban development in order to ensure that the total development falls within well defined framework based on the principle of integration. Accordingly, the Road Network within the periphery has been redefined and integrated with the existing system of traffic and transportation of the city in order to ensure smooth flow and rationalise the traffic within the entire area falling under the Union Territory. Further in order to improve the environs and safeguard the identity of the city, a Green Belt is proposed to be created wherever feasible and desirable. Forest Cover is further proposed to be increased by bringing more area under afforestation in the shape of developing a Wild Life Corridor for linking the Sukhna Wild Life Sanctuary with the Sukhna Lake Forest besides promoting afforestation/green along the Sukhna Choe and Patiali Ki Rao which are proposed as Eco Sensitive Areas.

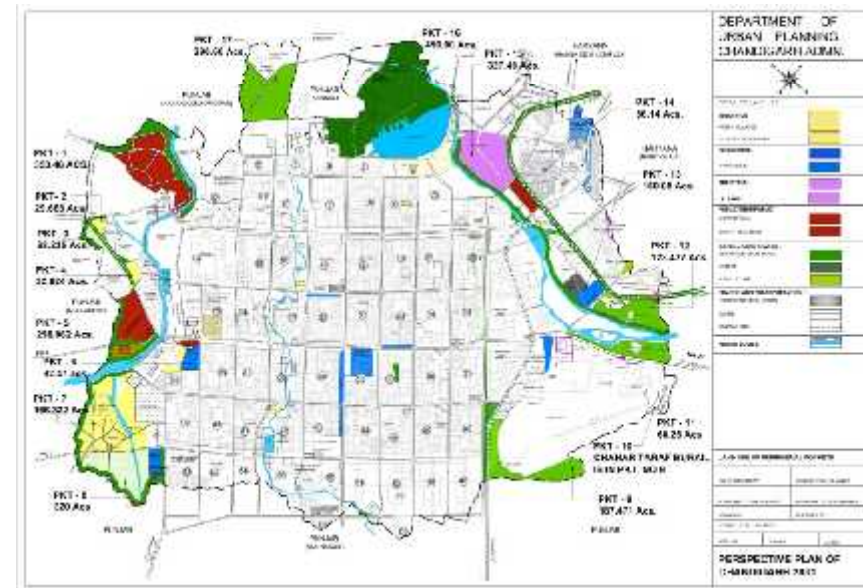
The proposed development in the periphery has been defined in 17 distinct pockets having a total area of 2987.92 acres and the broad landuse for each pocket has been defined. However, each pocket would require to be planned after detailed studies and analysis with appropriate development controls defined to regulate the development within these pockets. Each pocket has been detailed separately in terms of its landuse, traffic and transportation etc. keeping in view its location, environs and its context with the city and development in the neighbouring towns.

An area to the tune of 673.86 acres has been kept for Agriculture in order to make sure that entire periphery is not subjected to urbanisation and to ensure that no urbanisation is permitted on the North of the Capitol Complex based on the Edict of Chandigarh.

The proposed landuse plan for the area falling in the periphery is given in Plan 6.

As already explained that area falling outside Phase I, II and III have been divided into 17 distinct pockets as shown in the Proposed Landuse Plan. Detailed planning and Development Proposals including their Landuse have been worked out and are detailed below:

PLAN 6 PERSPECTIVE PLAN OF CHANDIGARH





Pocket 1 (Refer Table VII)

This pocket measuring approximately 353.46 acres is located on the North West of the city along the Chandigarh-Mullanpur Road near the Interstate Boundary with Punjab. This forms the un-acquired part of the Sarangpur Institutional Area. Only 434 acres of this site has been acquired so far of which some has been allotted/developed for setting up of the Indian Reserve Battalion and the Chandigarh Armed Police and some for Educational Sites and Service Stations etc.

From the perspective of the Chandigarh Master Plan 2031 as a whole, given the fait accompli of land acquisition, infrastructure development and allotment of land to some educational institutions in the Sarangpur Area, the area must be maintained as an **Institutional Area**. The sites which have already been allotted shall be used for the approved purposes.

The remaining acquired land or to be acquired land in the Sarangpur Institutional Area will be primarily used for the Panjab University and the PGI (in addition to the land designated as institutional/residential for institutions in southern sectors) (Sector 50, 51, 52 and 53 etc. that is land vacated from relocating slums) being the institutes of eminence. Some land may be used for other institutional purposes as may be decided by the Administration.

For development of the Film City, land can be provided in the unacquired portion of Sarangpur Institutional Area (Pocket 1).

- **Development parameters for Pocket 1**

The area shall be developed as **Institutional Area with low density and low rise buildings** in view of the natural scenic beauty of the area with the backdrop of the Shivalik Hills. Along the U.T./Punjab boundary **30 mtrs. wide plantation** shall be undertaken within the U.T. to segregate the area from the land uses on the Punjab side .



POCKET I

- **Road network**

In view of the circular configuration of the road network and sewerage system in the acquired part of the Sarangpur Institutional Area, the same configuration is planned for the un-acquired part of Pocket I. Since this is a stand alone pocket and only accessible from defined entries, traffic other than that destined for the area shall not enter it. **The width of internal roads** in the area should thus be reduced to 35 meters.

The **existing road to Mata Jayanti Devi Temple** through this pocket should be retained since this is used by large number of followers from this region.

- Land near the UT/Punjab border shall be reserved for an elevated **metro station along the metro route**.
- Area of land immediately adjoining Khuda Lahora and Jassu villages shall be reserved for **developing social and physical infrastructure and to meet the residential requirements** of the villages in accordance with the **Development Plans** proposed to be prepared after examining ground realities. Development of the villages shall be regulated by the **Village Byelaws**.



POCKET 2

POCKET 2 (Refer Table VII)

29.663 acres of agricultural land to the north of the Sarangpur Village has direct access from Chandigarh Mullanpur Road via PGI and via Dakshin Marg. **This pocket is reserved for future expansion of the village and for essential community facilities for residents.**

Unauthorized marble trade which has sprung in the area shall be **relocated** in the area proposed for Warehousing in village Daria and in the New Bulk Material Area proposed adjoining Pocket 8 south of the Wholesale Grain, Fruit and Vegetable Market, Sector 39 . This would facilitate the construction activity of proposed projects concentrated in Maloya and the third phase sectors.

A **Green Belt** of 30 mts. width along the Chandigarh-Mullanpur Road extending towards the Botanical Garden shall be developed to enhance the entry to the city from the Punjab side.

No building shall be permitted to have direct access from the Chandigarh –Mullanpur Road.

POCKET 3 (Refer Table VII)

This pocket of 68.235 acres is located next to the entry to the UT from Mullanpur, abutting the interstate boundary with Punjab. The **Landuse** of this pocket shall be **reserved for future unforeseen requirements of the UT**. A **green belt** 30 mts. wide shall be developed/provided along the Dhanas road and the interstate boundary.



POCKET 4 (Refer Table VII)

This pocket of 32.824 acres falls along the extension of Dakshin Marg and adjoins Village Dhanas. It is reserved for **low density residential use and the future requirements of Dhanas village**. A **Comprehensive Development Plan** integrating existing development of the village with the proposed extension shall be prepared which shall **address the gaps in social and physical infrastructure** and open spaces etc .



POCKET 4



POCKET 5 (Refer Table VII)

This pocket of 258.062 acres has the Chandigarh Armed Police Housing Complex in its centre. The **Landuse** of this area shall be **institutional** with **low density and low rise buildings** to maintain a green ambience in the periphery. A **site for dumping ground** has also been proposed in this area.

To protect the Patiali-ki-Rao and the neighbouring area from pollution, the dumping site shall be surrounded by a **green buffer** on all sides. . A **60 ft. wide road** branching off from the existing road running along Patiali-ki-Rao is proposed to provide direct access to the dumping ground.



POCKET 5

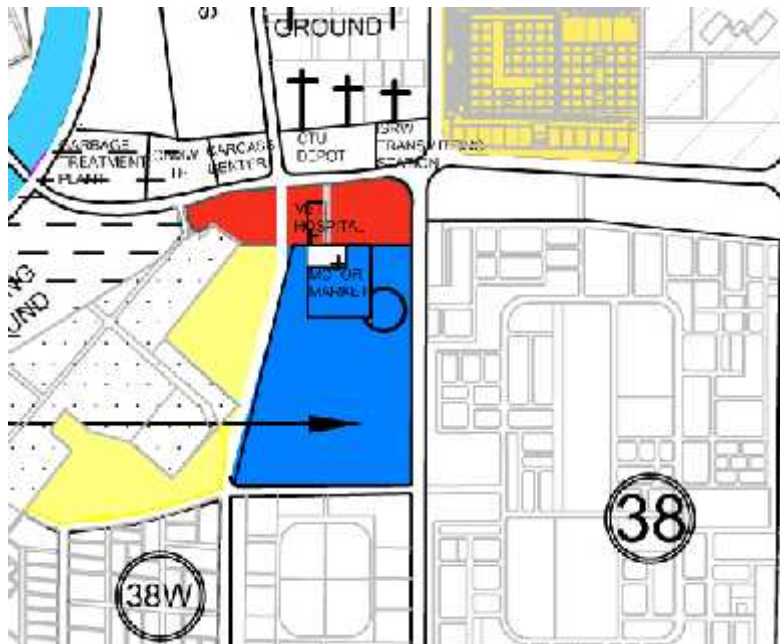


POCKET 5

Since the site proposed for the dumping ground is not an ideal site in view of its nearness to developed areas and closeness to the Patiali-ki-Rao, and in the absence of an appropriate alternative, the Chandigarh Administrative has requested the Punjab Government to provide alternative land within the state



POCKET NO.6



POCKET 6 (Refer Table VII)

This pocket measures 92.47 acres and falls in Sector-38(W) opposite CTU Workshop and adjoins the Veterinary Hospital.

Landuse –

- In view of the existing rehabilitation colony, this pocket is proposed to be developed for **middle income, high density group housing**.
- The area across the proposed road (from extension of Dakshin Marg upto sector dividing road of 38 West) is proposed to be utilized for **commercial activities including a marriage palace**.
- To provide better accessibility and to segregate the residential area it is proposed to **extend the road dividing Pocket A & B of 38-West** to meet extension of Dakshin Marg. A pocket along extension of Dakshin Marg has been proposed as **Institutional** in continuity with the existing Institutional Area on Dakshin Marg.

Note: The ancillary social infrastructure including community centers recreational & educational health institutions and local level shopping facilities shall be provided as per Neighbourhood Concept and sites for social and physical infrastructure of the town.



Pocket 7 (Refer Table VII)

Measuring 166.322 acres, this pocket surrounds Village Maloya and the Rehabilitation Colony Maloya and abuts the Interstate Boundary with Punjab. The site for a **Second Grain Market** adjoins this pocket.

The proposed **Landuse** for the rest of the land is **Residential**. Besides augmenting the housing stock for rehabilitation, the **physical and social infrastructure** of Dadu Majra and Maloya villages will also be augmented.

A **Comprehensive Plan** for the area around the villages needs to be prepared after conducting detailed surveys and analysis. Chandigarh Administration has already acquired 162 acres for the **Rehabilitation Scheme Maloya-I** adjoining the inter-state boundary and another 66 acre for the **Rehabilitation Scheme Maloya-II**. The planning of the two schemes is at an advanced stage and its execution is to be undertaken by the Chandigarh Housing Board. Since most of this pocket is already committed for the above rehabilitation schemes, **Residential Use** is proposed as the landuse for the remaining scattered patches.

With a view to provide better connectivity to the proposed large high density residential development it is proposed to extend the Vikas Marg and road cutting across Maloya-I to complete the loop. The matter will need to be taken up with the Municipal Corporation for proper alignment.

Allied infrastructure such as bus stands need to be integrated. While the new areas to be developed will have commensurate **social infrastructure**, the deficit in facilities in the existing villages and colonies needs to be made up.

In keeping with the concept of a continuous green belt defining the UT's boundary, this pocket shall have a **30m wide Green Belt** along the Interstate Boundary. That will also deal with the objection of the Punjab Government towards the Economically Weaker Sections (EWS) housing and rehabilitation colonies being located next to the Interstate Boundary.



POCKET 7

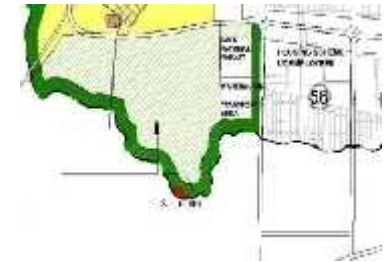


POCKET 8 (Refer Table VII)

Measuring 320 acres, this pocket lies to the west of Sector-56 and abuts the Interstate Boundary with Punjab.

Land use –

- **45 acres** for a **Transport Area** to be developed by Chandigarh Administration or its undertakings.
- The Municipal Corporation's proposal for a **Sewerage Treatment Plant** for the developments in the western periphery, across Patiali-ki-Rao has also been incorporated in the planned land use. While carrying out detailed planning of the area it shall be ensured that a sufficient green buffer shall be provided along the boundaries of the site.
- **Gawala/Kumhars Colony** is already existing near the interstate boundary which shall be retained.
- With a view to provide better connectivity to the proposed large high density residential development, a **100 feet wide road** has been proposed between Vikas Marg via Maloya Rehabilitation Colony and **existing road along Patiali ki Rao Choe, which is also to be strengthened upto Madhya Marg** to serve as an **alternative link/bypass** for the traffic coming from the western periphery.
- The remaining area of the **320 acres** has been proposed as **reserved for future requirements**.
- Apart from the above, the **Bulk Material Market, Warehousing and Transport Area** has been proposed abutting the V3 road leading to Mohali.
- The site measuring 74.55 acres for the **Second Grain, Fruit And Vegetable Market** is also earmarked across the road adjoining the Water Works. The infrastructure of roads, sewerage, water supply, electricity along with an auction platform has already been developed at site.



POCKET 8

13.5.9 POCKET 9 & 10

Measuring 187.471 acres this pocket lies opposite Sector 48 adjoining the railway line and the airport. Since this area has no linkage with the main city combined with the restrictions on landuse due to proximity to the Defense Land, it is proposed to retain this area as a **Green/Open**. **Embankment of the railway track** on the east of Sector 47 and Sector 48 shall be suitably landscaped to protect it from erosion.



POCKET NO.9



POCKET NO.11

POCKET 10 (Refer Table VII)

This pocket also abuts the Airport Area and the interstate boundary with the state of Punjab. The pocket has no independent approach.

The land use for this pocket has also been proposed as green/open space and shall be developed subject to air funnel/ defence restrictions and confirmation of the interstate boundary and area by revenue authorities. However, on reconfirmation of boundaries, it has been confirmed by the **revenue authorities that this is not a separate pocket and its area is part of Pocket 9.**

POCKET 11 (Refer Table VII)

Measuring 66.25 acres this pocket lies along the Chandigarh-Ambala stretch of NH-21, surrounding Raipur Khurd village.

Since this pocket falls at the **entry to the city, the permitted land use is green/open space** with uses like agriculture, natural farming with promotion of local agro bio-diversity/indigenous crops, horticulture, orchards, plant nursery, green houses, floriculture, dairy farm, fishery, poultry, etc. subject to obtaining prior approval from the competent authority of Chandigarh Administration.

Large scale unauthorized and hazardous development which have taken place in the pocket needs to be strictly controlled /and checked. **A comprehensive development plan for Raipur Khurd village** and the developments outside it shall be prepared after conducting and analyzing ground surveys. The development regulations of the villages shall also be strictly enforced .

The extended *Abadi* should remain away from the main road as well as the Sukhna Choe.

No effluent discharge/pollution of the Sukhna Choe is to be permitted and the area notified as an Eco-Sensitive Zone.



POCKET 12 (Refer Table VII)



- This pocket of 123.477 acres abuts the Chandigarh-Ambala Road on one side and the interstate boundary with Punjab on another. The railway line and Route No.2 also pass by its side. A small village Makhan Majra, a housing colony of one room tenements and a sewerage treatment plant fall within the pocket.
- **A Green buffer of 100 ft. width** is proposed along the railway line.
- **Land use** - the permitted landuse for this pocket shall be **green/open spaces** with uses like agriculture, natural farming with promotion of local agro bio-diversity/indigenous crops, horticulture, orchards, plant nursery, green houses, floriculture, dairy farm, fishery, poultry, etc. subject to obtaining prior approval from the competent authority of Chandigarh Administration.

POCKET NO.12





POCKET 13 (Refer Table VII)

- Measuring 160.06 acres this pocket lies in the close vicinity of the railway station and Village Daria
- **Landuse** -Due to its proximity to the railway station the land use of this pocket shall be **Commercial and Warehousing**. **Having a warehousing zone adjacent to the railway station is desirable from economic and functional point of view which is evident from the large number of warehouses already existing in the area.** Many residential buildings within the *abadi deh* of Village Daria have been converted into warehouses/godowns. A large number of un-authorized godowns have also come up around the village.

Approximately 97.06 acres of land has been allocated for **Warehousing** and another 45 acres are proposed for the **Transport Area**. About 18 acres is proposed for **Green**.



POCKET 13

At present about 300 companies are operating their transport business from different part of Chandigarh i.e. Transport Area, Timber Market, Industrial Area, Manimajra, Motor Market and Daria. The present Transport area has only 28 plots where other transport companies have rented space for operating their business. No plots have been carved out since 1966 when the transport area was set up.

The Chandigarh Transport Association has demanded that an ultra modern transport complex catering for 2000 trucks on 75 acres of land with facilities for workers and labour is required for loading and unloading of goods etc.

Therefore, another pocket of 45 acres are being proposed for **Transport Nagar** and as brought out earlier another Transport Area is also being planned close to the Grain Market and the Bulk Market in the new Sector-56 West carved out on the western end of the city.

The matter was further deliberated in 75th Master Plan Committee meeting held on 22.08.2012 wherein it was felt that the facilities like transport etc. are the basic requirements for the Bulk Material Market, Grain Market or other markets which are serving the region. It was also discussed that the present site of transport area should not be shifted as the same is required due to its proximity to Railway Station, Timber Market, Second Grain Fruit and Vegetable Market. However, additional sites can be proposed which should be preferably near the Industrial Area/Bulk Material Markets.



POCKET NO.14

POCKET NO.15



POCKET NO.15

POCKET 14 (Refer Table VII)

This pocket of 56.14 acres abuts the Chandigarh-Kalka Road and lies along the 200 ft. wide road leading to the Rajiv Gandhi Chandigarh Technology Park.

Landuse --The landuse of the said pocket has been proposed as **Public/Semi Public/Institutional**. The pocket can be used for **augmenting the health infrastructure** for the area in and around the area of Manimajra, village Mauli Jagran and rehabilitation colonies etc. which presently lack in adequate city level health facilities.

POCKET 15 (Refer Table IV)

The Chandigarh Administration had initiated the process of acquiring land for Phase-III of the Rajiv Gandhi Chandigarh Technology Park. The land adjoins Phase I & II of the IT Park and is close to Manimajra, railway line and the Sukhna Choe. The 200 ft. wide road connecting the IT Park to the railway crossing cuts through the land.

Land use - The landuse of the pocket is proposed as **IT for expansion/continuity of existing IT complex under Phase I & II with provision of ancillary and other related uses**. In view of the eco sensitive nature of the area and extensive tree covered, the same needs detailed planning to ensure their preservation.

The Development Plan for the area needs to be comprehensively worked out to ensure its proper integration with the already developed IT Park Phase-I and Phase-II.

A Green belt 30 mts. Wide has been proposed along the railway line and 100 mts. wide along the Sukhna Choe.



POCKET 16 (Refer Table VII)

- Measuring 450 acres this pocket lies in Kaimbwala Village in the north-eastern part of the city adjoining the inter-state boundary with Punjab and on the upper end of the Sukhna Lake. This area is important from the urban design perspective and the Edict of Chandigarh which recommends a no construction zone north of the Capitol Complex. It is also close to the Sukhna Wildlife Sanctuary and falls within the proposed eco-sensitive zone. The area has a mild hilly terrain below the Shivalik Hills forming the natural backdrop of Chandigarh.
- The area is also a part of the catchment area of Sukhna Lake.
- Chandigarh Forest Department plans to acquire this land to create a **Wildlife Corridor** linking the Sukhna Wildlife Sanctuary with the Lake Reserve Forest.
- To ensure that the development activities are in sync with the environmental considerations of the Sukhna Wildlife Sanctuary, and the urban design of the city, the **Kaimbwala Village** is proposed as an **eco-sensitive village** with specific regulations which will be more stringent than the rules applicable to other villages of Chandigarh plan of which has been prepared by the Chandigarh Administration. The basic aim and objective of establishment of Wildlife Corridor is as follows:-
- To **provide connectivity of Sukhna Wild Life Sanctuary and Lake Reserve Forest** so that animals from Lake Reserve Forest can move freely to Sukhna Wild Life Sanctuary and vice – versa. At present, the Lake Reserve Forest is separated by Sukhna Wild Life Sanctuary by roads and agricultural lands.
- The Lake Reserve Forest area is prone to fire hazards especially in summer, due to which wild animals like Sambhar stray into the city area and also onto the roads. In case the Wildlife Corridor is established, the wild animals can in case of such fire hazards and other such emergencies. move into Sukhna Wild Life Sanctuary area



POCKET 16



POCKET . 17 (Refer Table VII)

- This **Pocket of 296.66 acres** is located at the foothills of the Shivalik Hills to the north of the city and is bound by the interstate boundary with Punjab. The site has a semi-hilly terrain. Village Khuda Alisher falls in the Pocket.
- Like Pocket 16, this pocket is also close to the Sukhna Wild Life Sanctuary and a small part of it falls within the catchment area of the Sukhna Lake.
- The area is also very important from the urban design perspective for preserving the Shivalik Hills as the natural backdrop of the city. Moreover, the Hon'ble High Court of the Punjab and Haryana has **ordered a complete ban on construction activity in the area.**
- **The landuse** of the pocket has been proposed as **Green/Open Spaces** with uses like agriculture, natural farming with promotion of local agro bio-diversity/indigenous crops, horticulture, orchards, plant nursery, green houses, floriculture, dairy farm, fishery, poultry, etc. subject to obtaining prior approval from the competent authority of Chandigarh Administration and fulfillment of stipulations for the proposed Eco-Sensitive Zone around the Wild Life Sanctuary .

To ensure that the development activities are in sync with the environmental considerations of the Sukhna Wildlife Sanctuary, and the urban design of the city, the **Kaimbwala Village** is proposed as an **eco-sensitive village** with specific regulations which will be more stringent than the rules applicable to other villages of Chandigarh plan of which has been prepared by the Chandigarh Administration.

No construction activity can however be permitted due to the ban on the construction activity in the area.

- **Areas on the North of the Capitol Complex falling in the States of Punjab and Haryana**
- The North of the Capitol Complex is highly sensitive area from the environmental and urban design considerations of the city of Chandigarh. Though the area does not fall within the jurisdiction of Chandigarh and as such the Chandigarh Administration has no statutory mechanism by way of which it can restrict any development in the neighbouring states. However in view of the importance of safeguarding the interest of the city, the matter has been taken up with the coordination committee and in the inter-state meetings to ensure that the developments being carried out/proposed as













POCKET 17

per the Development Plan, Nayagaon. Shree Mata Mansa Devi Complex adjoining the Sukhna Lake do not in any way mar the inherent characteristic of the town and its original concepts. The state Governments have appreciated the concerns of the Chandigarh Administration and have assured to make necessary amendments in the development controls so that no high rise construction comes up in the area. The Government of India has also taken serious note of the same and while approving the report of the Expert Heritage Committee has recommended that the matter should be addressed through an interstate regional plan.

The detailed recommendations have been highlighted in Chapter-20 on Chandigarh's Heritage.

**TABLE VI-SHOWING LAND USE IN PROPOSED PROCKETS**

Sr. No.	Pockets	Proposed zones	Location	Area (in Acres)	Land use	Remarks
1.	1.		Sarangpur	353.46	Institutional	Phase-ii of Sarnagpur institutional Area
2.	2.		Near Sarangpur Villages	29.663	Residential	Expansion of Sarangpur Village
3.	3.		Across Sarangpur Village	68.235	Reserved	Land for future use.
4.	4.		Near Dhanas Village	32.824	Residential	Expansion of Dhanas Village
5.	5.		Opposite Milkman Colony Dhanas	258.062	Institutional	-
5. (I)	5. (a)		Opposite milkmen colony Dhanas	-	Public utilities	Dumping Ground.
6.	6.		Above West of Sector 38	92.47	Commercial	Marriage Palaces and other commercial activities
7.	7.		Maloya	166.322	Residential	Rehabilitation of slum-dwellers and general housing.
8.	8.		Maloya	320	Reserved	Land for future use
9.	9.		Behind Defence area	187.47	Green	Green Buffer
10.	10.		-	0	-	The area of this site is part of pocket 9 as per latest confirmation by revenue department.




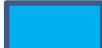



Sr. No.	Pockets	Proposed zones	Location	Area (in Acres)	Land use	Remarks
11.	11.		Along Chandigarh Ambala Road	66.25	Green/ Open Spaces	Agriculture, natural farming with promotion of local agro bio-diversity/indigenous crops, garden centres, horticulture, orchards, plant nursery, green house related to nursery, floriculture, livestock rearing/diary form, sericulture, fishery, poultry, bee keeping.
12.	12.		Between route No.2 & U.T. Boundary	123.477	Green/ Open Spaces	Agriculture, natural farming with promotion of local agro bio-diversity/indigenous crops, garden centres, horticulture, orchards, plant nursery, green house related to nursery, floriculture, livestock rearing/diary form, sericulture, fishery, poultry, bee keeping.
13.	13.		Abutting route No.2	160.06	Commercial	Ware housing.
14.	14.		Abutting Chd.- Kalka road	56.14	Institutional	Low density and low rise building.
15.	15.		Area between I.T. park Ph-II & route No.III leading to Manimajra	327.48	Industrial (I.T. & I.T.E.S.)	Low density and low rise building.
16.	16.		Behing lake, surrounding area of Village Kaimbwala.	450	Forest	To acquire for wildlife corridor
17.	17.		Behind Rajindra Park surrounding area of Village Khuda Ali Sher	296.66	Green/Open spaces	Agriculture, natural farming with promotion of local agro bio-diversity/indigenous crops, garden centres, horticulture, orchards, plant nursery, green house related to nursery, floriculture, livestock rearing/diary form, sericulture, fishery, poultry, bee keeping.
			Total	2987.92		



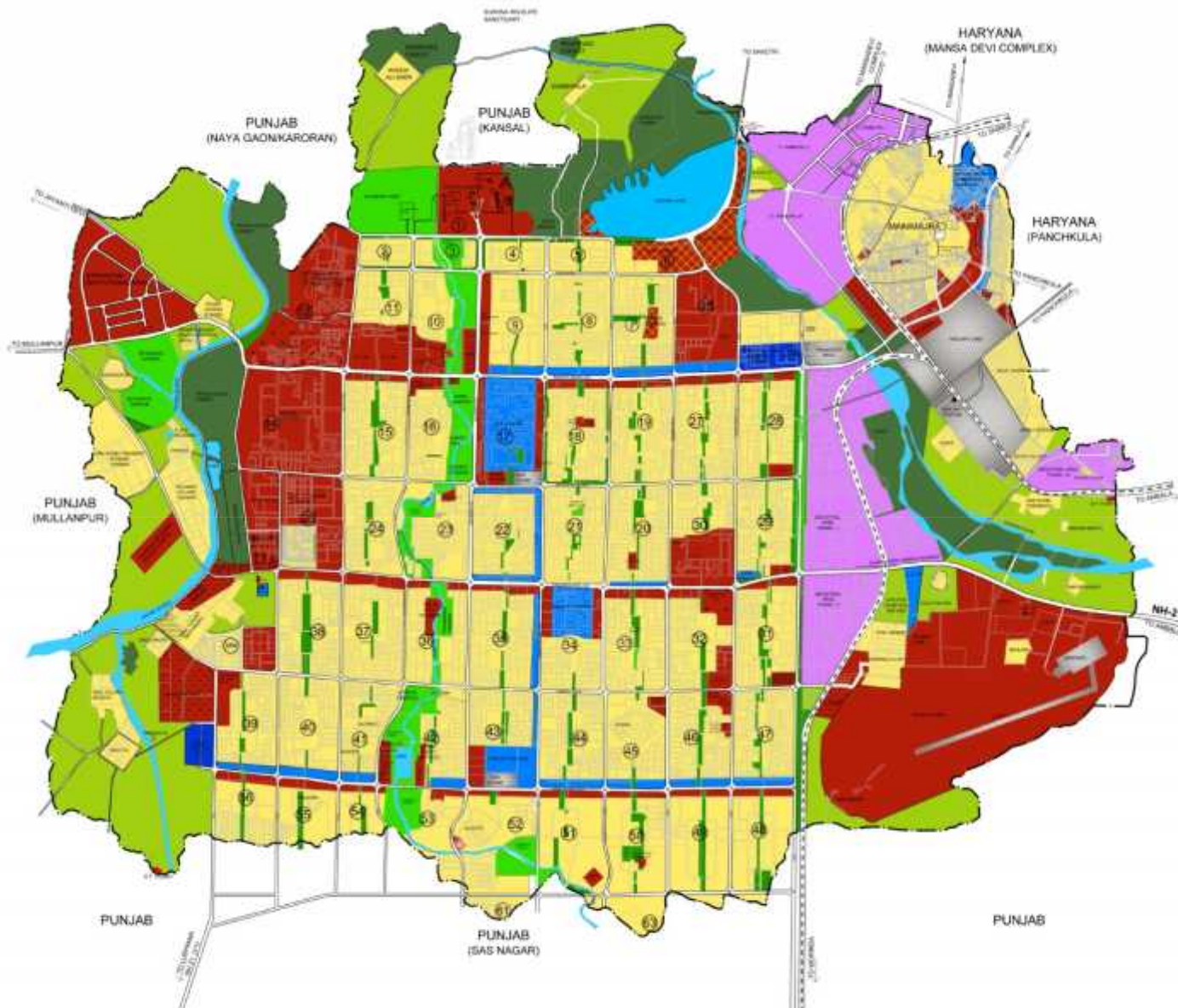
Table VII -LAND USE OF 17 POCKETS IN MASTER PLAN												
S.No.	Pocket No.	Area of Pocket (in acres)	Residential	Commercial	Traffic & Transportation	Industrial / IT Park	Public/ Semi Public	recreational	Agriculture	Public Utilities	Forest	Reserved
1	1	353.46					251.72	101.74				
2	2	29.663	20.893					8.74				
3	3	68.235						21.96				46.275
4	4	32.824	26.2					6				
5	5	258.062					132.122	86.86		39.08		
6	6	92.47	26.5	44.4	6.57		15					
7	7	166.322	121.102					45.22				
8	8	320						57.44				262.56
9	9	187.471							187.471			
10	10	0							0			
11	11	66.25							66.25			
12	12	123.477							123.477			
13	13	160.06		97.06	45			18				
14	14	56.14					56.14					
15	15	327.48				283.56		43.92				
16	16	450									450	
17	17	296.66							296.66			
	Total	2987.92	194.695	141.46	51.57	283.56	454.982	389.88	673.858	39.08	450	308.835



DISTRIBUTION OF LANDUSES IN CHANDIGARH															
EXISTING (Area in acres)															
S. No.	Sector	Total Area (in acres)	Residential	Comm.	Transport	Indl./IT Park	Pub/Semi Pub	Recreational	agriculture	Public Utilities	Railway land	Defence	Forest	Reserved	Vacant land
1	Phase-I, Sector 1 to 30, Sec 26E, Indl. Area-I, Sukhna Lake, Golf Range/Club.	9398.83	4012.7	444.49	747.95	516.74	1812.92	1850.33	-	13.7	-	-	-	-	-
2	Phase-II, Sector 31 to 47, West of Sec 38, Indl. Area-II	5158.76	3460.26	433.52	514.23	272.08	372.18	72.19	-	34.3	-	-	-	-	-
3	Phase-III, Sector 48 to 56 and part of 61 and 63	1870.54	1371.31	140.51	161.66	-	92.41	81.28	-	23.37	-	-	-	-	-
4	Periphery	11741.87	1827.89	321.21	622.26	537.68	691.28	424.67	-	230.96	316.29	1573.00	**2113.97	-	*3082.67
5	Total	28170	10672.16	1339.73	2046.10	1326.50	2968.79	2428.47	-	302.33	316.29	1573.00	2113.97	-	3082.67
6	Percentage	100	37.88	4.76	7.26	4.71	10.54	8.62	-	1.07	1.12	4.52	7.50	-	10.94
* 3082.67 acres of vacant land includes 40.10 acres acquired land in shahpur, 56.14 acres in manimajra. ** Out of 2113.97 acres of forest land, 1888.24 acres has been intimated by forest deptt. and rest of the 225.73 acres of land has been scaled out from the guide map of Chandigarh which is the part of the Sukhna Wildlife Sanctuary within the boundary of Chandigarh. The area of forest in pocket no 16 has been revised from 430.088 acres to 450 acres as per information given by Deptt. of forest and Wild life, U.T., Chandigarh Vide memo o FOR/14/639, dated 06-06-2014. The area of 113.98 acres of land in 7 pockets which are unacquired & supplied by the office of Deputy Commissioner, UT., Chandigarh at latter stage. The total area of the 17 pockets area 2987.92 acres.															
DISTRIBUTION OF LANDUSES IN CHANDIGARH (PROPOSED) Area in acres															
7	Proposed in Master Plan 17 pockets	3101.9	194.695	141.46	51.57	283.56	454.982	389.88	673.858	39.08	-	-	450	308.835	113.979
8	Percentage	11.25	0.76	0.31	0.18	1	2.52	1.38	1.52	-	-	-	1.39	1.05	-
9	Grand Total(5+7)	28170	10866.85	1481.19	2097.67	1610.06	3423.77	2818.35	672.89	341.41	316.29	1573	2563.97	308.83	113.98
10	Percentage(6+8)	100	38.64	5.07	7.44	5.72	13.82	10.00	2.95	1.21	1.12	4.52	8.89	1.05	-
11	Total area in Sq.Km.	114.00	44.00	6.00	8.49	6.52	13.86	11.41	3.37	1.38	1.28	1.20	10.38	1.19	-

PLAN 3 EXISTING LAND USE

Chandigarh Master Plan – 2031



DETAIL OF LAND USE

RESIDENTIAL
 URBAN VILLAGES
 VILLAGES IN PERIPHERY



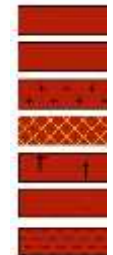
COMMERCIAL
 WHOLESALE



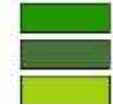
INDUSTRIAL
 I.T. PARK



PUBLIC/ SEMI PUBLIC
 INSTITUTIONAL
 EDUCATIONAL
 HEALTH FACILITIES
 SPORTS FACILITIES
 CREMATION GROUND
 CULTURAL FACILITIES
 PUBLIC UTILITES



GREEN / OPEN SPACES
 ORGANISED OPEN SPA
 FOREST
 AGRICULTURE



TRAFFIC AND TRANSPORTATION
 TRANSPORTATION NODES
 ROADS
 RAILWAY LINE



WATER BODIES



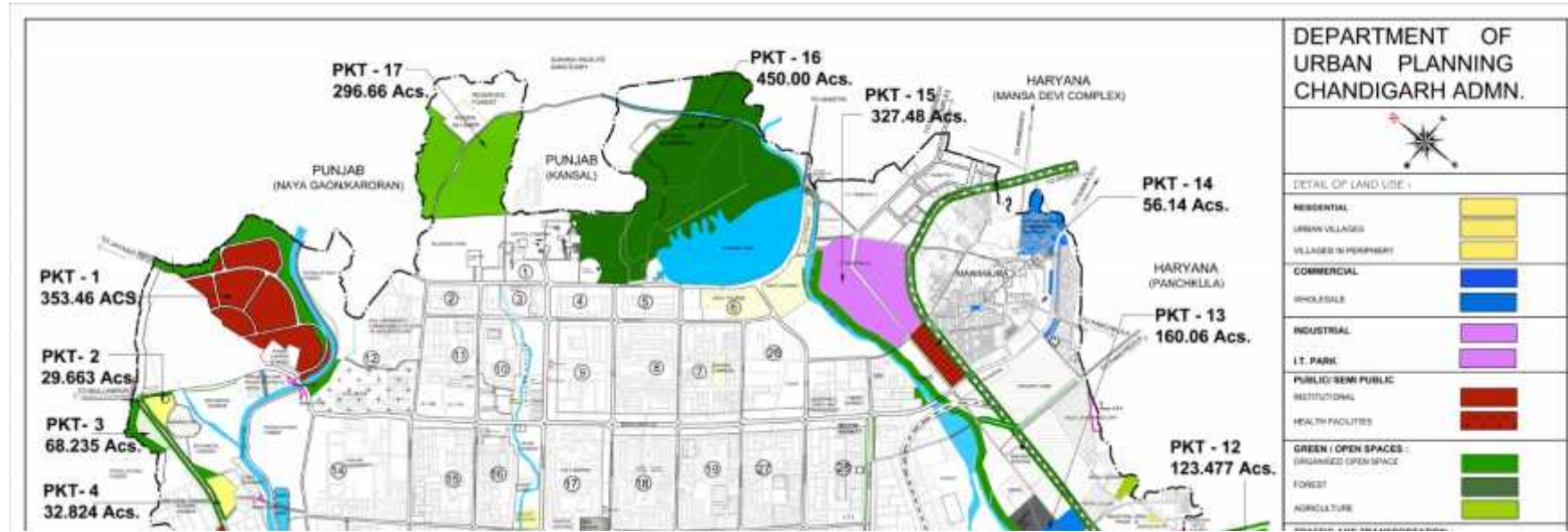


PLAN 5 ACQUISITION PLAN OF CHANDIGARH





PLAN 6 PERSPECTIVE PLAN OF CHANDIGARH





14 CHANDIGARH VILLAGES

14.1 AN OVERVIEW

The Development Plan for the 16 kms belt around the Master Plan brought under the Punjab New Capital (Periphery) Control Act, 1952, prohibited all building activities for non-agricultural purposes to maintain a green belt around the city. However 'Abadi Deh' areas of the villages falling in the Periphery Control Area were exempted from the provisions of the Act subject to certain restrictions.

Following reorganization of the State of Punjab in 1966, the Periphery Control Area got divided between the States of Punjab, Haryana and U.T Chandigarh with majority of share going to state of Punjab .

Haryana modified the Act marginally to provide a maximum height of 11 meters for construction of residential buildings in the *abadi deh* of villages, prohibiting their use for commercial purposes. Punjab, on the other hand, permitted change of land use of various pockets for setting up residential colonies and institutions. Starting with Mohali and Panchkula, over the years, both states have also permitted large scale urbanization in the periphery.

In the case of Chandigarh, Phase-I of the city was built on a clean state. Not only the agricultural land but also the area falling under the *abadi deh* was also acquired and taken up for development as part of the sector planning. However, in the second phase *abadi deh* of four villages, namely Burail, Attawa, Buterla and Badheri, whose agricultural land was acquired, was excluded from the acquisition and were integrated as part of the sectoral plan.

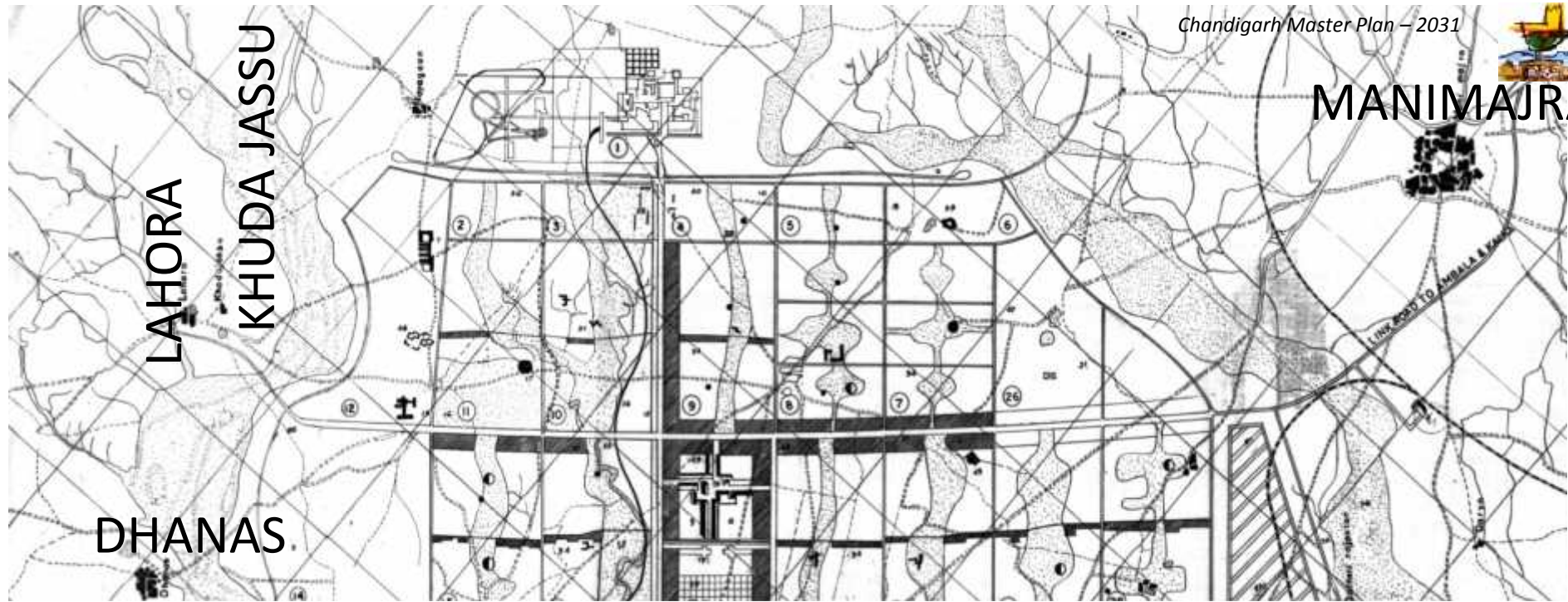


The *abadi deh* areas of Kajheri and Palsora villages falling in Sectors 52 and 56 respectively, whose land was later acquired for Phase III sectors, were also left unacquired

To check haphazard development, the *abadi deh* areas were declared as 'Site of the Capital' under Section 1(2) of the Capital of Punjab (Development and Regulation) Act, 1952, and brought under the purview of that Act. However, these villages were excluded from the purview of the Punjab Capital (Development and Regulation) Building Rules 1952, and building byelaws were not made applicable in these old built up areas.



MANIMAJRA

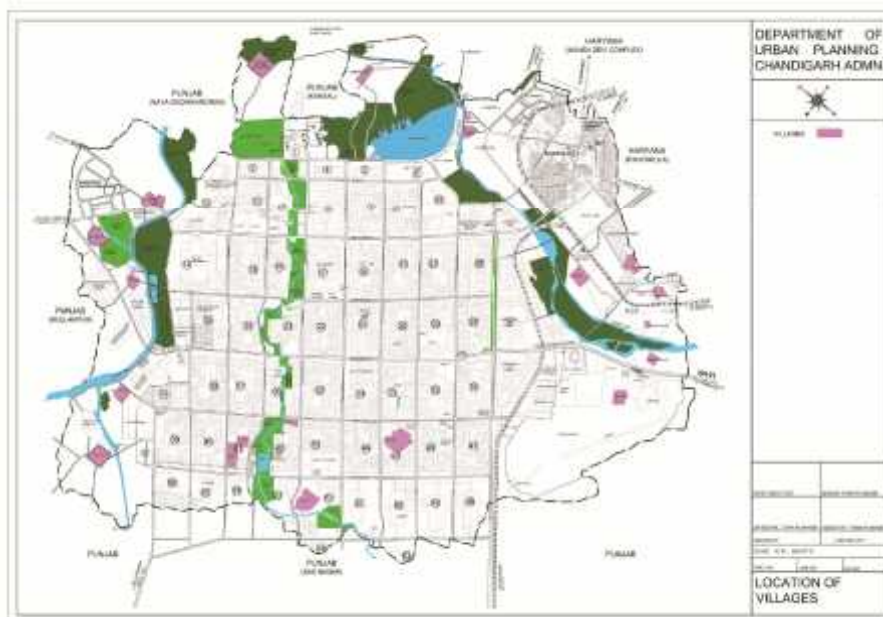




14.2 THE PRESENT STATUS OF VILLAGES IN THE UT OF CHANDIGARH

At present, the Union Territory of Chandigarh has 23 villages. **Manimajra on the eastern edge of the city**, which was a small village at the time of preparing the original plan has developed as a Census town. The town has been made an integral part of the Chandigarh Master Plan.

MAP M1: VILLAGES WITHIN THE MASTER PLAN AREA



Villages in UT Chandigarh

The villages falling in UT have broadly been categorized as

- Sectoral Villages and
- Non Sectoral Villages.

• Sectoral Villages

Villages in the Second Phase - Burail (Sector 45), Badheri (Sector 42) Buterla (Sector 42), Attawa (Sector 42)

Villages in the Third Phase - Kajheri (Sector 52), Palsora (Sector 55)

Non Sectoral Villages

Northern Periphery

- Kaimbala near the foothills of the Shivaliks near the North Eastern boundary
- Khuda Ali Sher near the foothills of the Shivaliks -North Western edge abutting the Sukhna Wild Life Sanctuary.

Western Periphery

- Khuda Lahora - Mullanpur - Chandigarh Road
- Khuda Jassu – Mullanpur - Chandigarh Road
- Sarangpur on the Mullanpur – Chandigarh Road
- Dhanas across the Patiali Ki Rao
- Dadumajra on the extension of the Shanti Path at its western end and in close proximity to the Patiali Ki Rao
- Maloya near Water Works, Sector 39 .

Eastern Periphery

- Kishangarh across the Sukhna Choe near the Regulator End of the Sukhna Lake is prominent from the Sukhna Boulevard
- Hallomajra on National Highway 21
- Behlana near the Chandigarh Airport
- Daria near the Chandigarh Railway Station
- Mauli Jagran near the Interstate Boundary with Haryana
- Makhan Majra between Sukhna Choe and Railway Line
- Raipur Kalan within Industrial Area Phase-III
- Raipur Khurd near NH-21



VILLAGES WITHIN THE SECTORAL GRID OF CHANDIGARH



VILLAGES WITHIN THE SECTORAL GRID-BURAIL AND KAJHERI



BURAIL VILLAGE

While acquiring the agricultural land of the villages falling within the sectoral grid, it was thought prudent that the basic infrastructure and amenities lacking in these villages shall be made available as integral part of the sector planning. In addition the residents of the villages would share the social and physical infrastructure including education and health care etc. In order to regulate building construction in these villages, from time to time, Chandigarh Administration issued directions under Section 4 of the Act relating to the height and land use of buildings.

The running of dairies and keeping milch cattle was also prohibited for creating appropriate living environment in the villages.



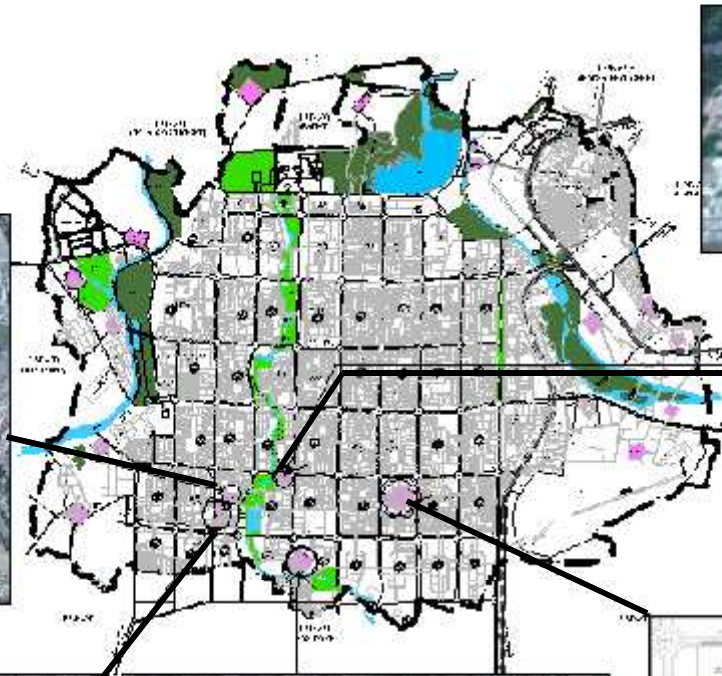
VILLAGE KAJHERI



VILLAGES WITHIN THE SECTORAL GRID OF CHANDIGARH –LOCATION



BUTERLA



ATTAWA



BADHERI



KAJHERI



BURAIL VILLAGE



NON SECTORAL VILLAGES FALLING IN THE WESTERN PERIPHERY VILLAGES OF CHANDIGARH

SARANGPUR



DHANAS

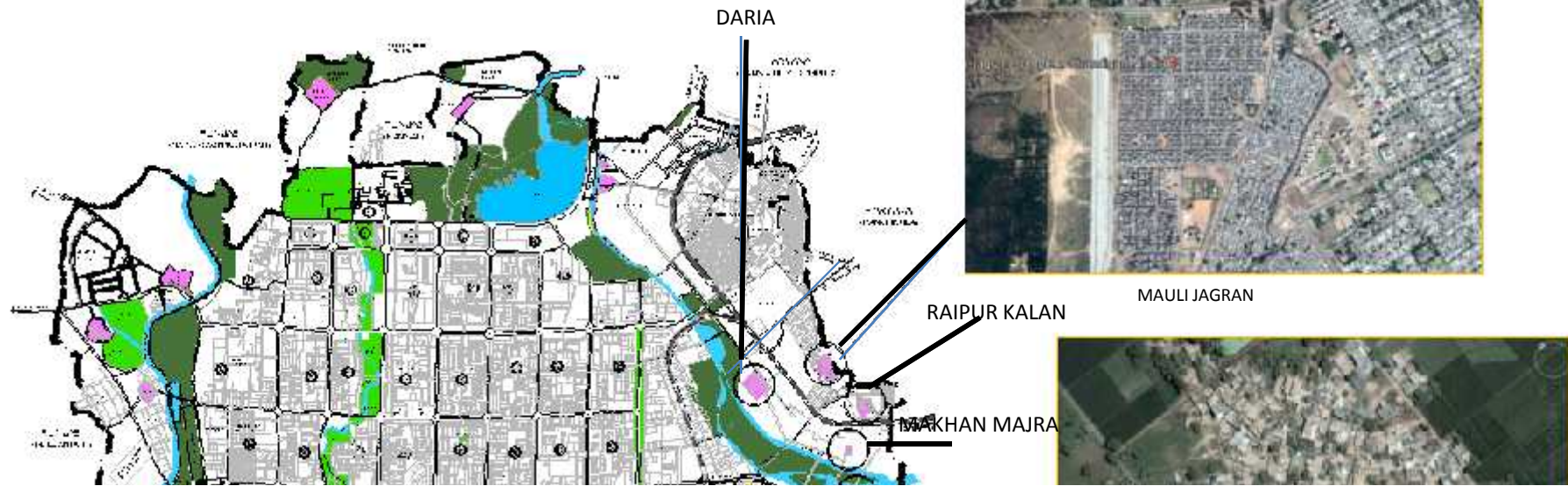


KHUDA LAHORA
AND KHUDA JASSU





NON SECTORAL-EASTERN PERIPHERAL VILLAGES OF CHANDIGARH





14.3 DEVELOPMENT OF VILLAGES UNDER MC CHANDIGARH

With the creation of the Municipal Corporation of Chandigarh (MCC) in July 1994, nine villages have been brought under the MCC while the rest are still rural and governed by elected Gram Panchayats.

The villages under the MCC are Burail, Badheri, Attawa, Hallomajra, Palsora, Dadumajra, Maloya, Kajheri and Buterla.

The unacquired non-*abadi* deh land which some of these villages still have, continues to come under purview of the Periphery Control Act., 1952.

In 2006, “The Chandigarh Administration (Erection & Re-erection of building) Rules, 2006, for the villages in the Municipal area of Municipal Corporation of Chandigarh” were notified under Sub-Section 2 of Section 5 (2) read with Section-22 of the Capital of Punjab (Development & Regulation) Act, 1952 vide Notification No.26/6/39-UTFI(3)-2006/7869 dated 27.12.2006.

These Rules initially extended to the entire unacquired area of the revenue estates of villages comprised/included in the Municipal area of Municipal Corporation of Chandigarh, including the area under the *abadi deh*.

However, the rules have been amended from time to time. At present the "Act" is applicable to *abadi area* of villages Maloya, Palsora, Kajheri, Dadumajra and Hallo Majra, but the "Building Rules" are not applicable to these villages including the area under *abadi deh* in terms of the Rules notified on 16.11.2006.

These rules restrict the maximum building height to 34 feet but permit a height upto 45 feet as an incentive if owners along a whole street are willing to surrender 4 feet 6 inches on both sides for street widening.

Private developers undertaking redevelopment of a part of an existing village are permitted a maximum height of 72 feet (upto 7 storeys) for residential buildings and 58 feet for commercial buildings.

However these rules have created anomalous situations leading to high degree of densification of the congested *abadi* area besides creating non conforming uses .Further these rules have been violated with impunity and have emerged as the major road block and source of nuisance for the adjoining planned area. The *abadi deh* area has also been subjected to a lot of speculation leading to commercialization of the area. In the process, as evident from confusing picture of the laws and rules, these centres have become centers of the informal urban economy and a perennial source of environmental pollution.



14.4 VILLAGES OUTSIDE SECTORAL GRID

The rural villages are Khuda Ali Sher, Khuda Jassu, Khuda Lahora, Sarangpur, Dhanas, Behlana, Raipur Khurd, Makhan Majra, Dariya, Mauli Jagran, Kishangarh, Kaimbwala and Raipur Kalan.

- **Development outside the Abadi Area**

All villages have varying extents of unauthorized construction even outside the extended *abadi* area. As per the information made available by the Department of Rural Development and Panchayats, the area under unauthorised development beyond the *abadi* areas is nearly three times the *abadi* area in some of the villages as detailed in Table 1. Plans showing development outside *abadi* of villages within the sectoral grid and outside the sectoral grid are shown as Plan 1 to 6 and 7 to 19 respectively on next pages. Of the total area of 6334 acres of villages - Khuda Ali Sher, Khuda Jassu, Khuda Lahora, Sarangpur, Dhanas, Behlana, Raipur Khurd, Daria, Mauli Jagran, Kaimbwala and Raipur Kalan, 125 acres falls under the *abadi deh* and 104 acres under extended *abadi*. Unauthorized construction beyond Lal Dora is to the tune of 254 acres.

The Table and the Plans indicate that Village Daria which has 4 acres under *adadi deh* has 102 acres of unauthorized construction around it. Due to proximity to the railway station, large number of godowns /commercial establishments have come up in and around the village in violation of the Periphery Control Act,1952 . See Table 14.8 .

Villages have recorded high rate of growth in the last decade During the 1991 -2001 decade, the rate of population growth of Chandigarh's rural areas was almost four times that of the city as these villages are meeting some of the unmet demand for cheaper housing.

TABLE 1 DEVELOPMENT OUTSIDE THE ABADI AREA

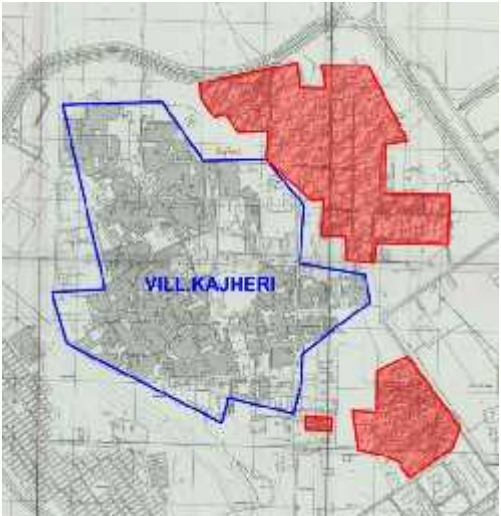
Sr. No.	Name of Village	Total Area (in acres)	Area under Red line (in acs.)	Area under extended Abadi (in acs.)	Unauthorized construction beyond Lal Dora (in acres)
1.	Kaimbwala	899	8	8	36
2.	Khuda Ali Sher	564	25	19	17
3	Khuda Jassu	482	03	04	25
4.	Lahora	776	07	17	5
5	Sarangpur	673	17	16	5
6	Dhanas	723	13	12	3
7	Behlana	499	06	05	17
8	Raipur Khurd	225	04	05	30
9	Raipur Kalan	225	12	08	5
10	Mauli Jagran	583	26	05	9
11	Daria	185	04	05	102
	Total	5834	125	104	254

Source : Department of Rural Development Panchayat

Considering the large population pressure these rural areas are likely to be subjected to further pressure due to lack of space within the sectoral grid, external pressures of development around the neighboring towns falling in close vicinity. The construction/extension of major roads, along which these villages fall, will further add to pressure.



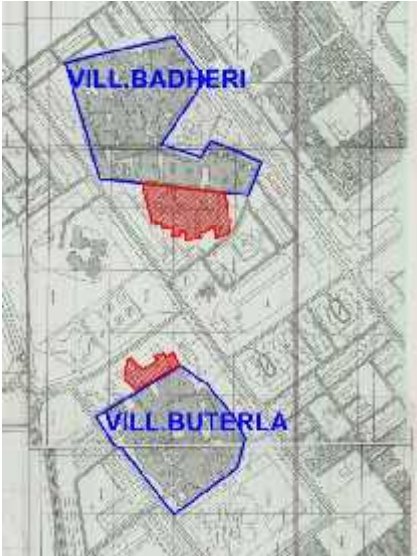
Plan 1 to 6 - Development outside the Abadi area of villages falling within the Sectoral grid



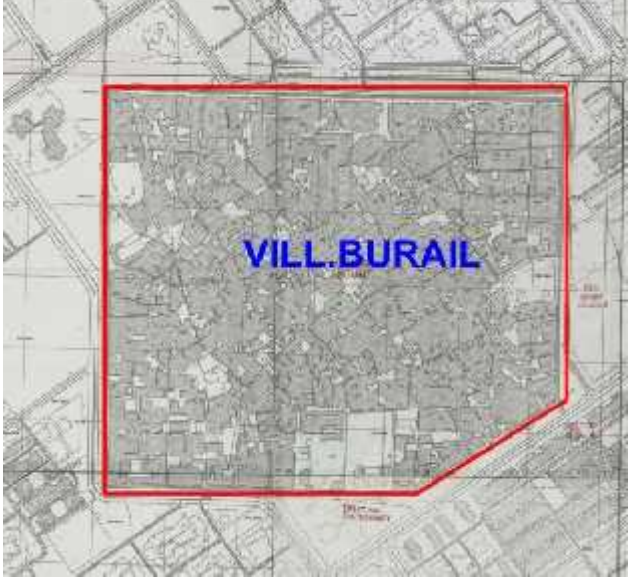
Villages Palsora and Kajheri which fall within the third phase sectors and are partially developed have unauthorized construction in adjoining areas.



Villages within the Sectoral grid



Village Attawa and Burail within fully developed sectors and have no scope for horizontal expansion and are expanding vertically.





Plan 7 to 13 Development outside the Abadi of villages outside the Sectoral grid



Abuts the sukhna wildlife sanctuary



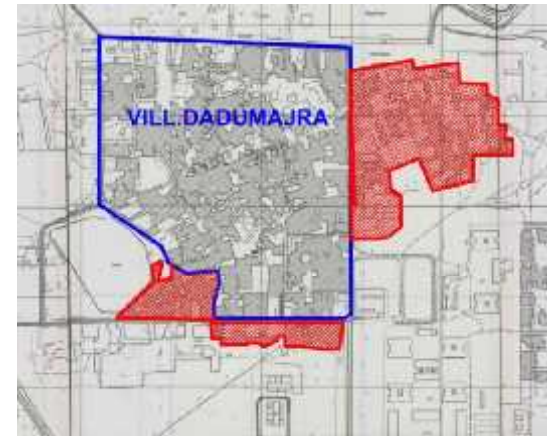
On the north of the Capitol Complex



On Chandigarh-Mullanpur road



On PGI- Mullanpur road



On Western Periphery



Adjoins Airport



Near Sukhna Choe



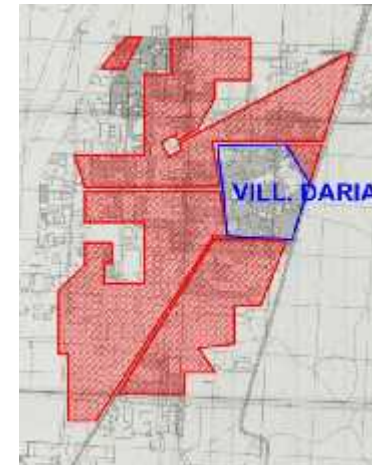
Plans 14 to 19 - Development outside the Abadi of villages outside the Sectoral grid



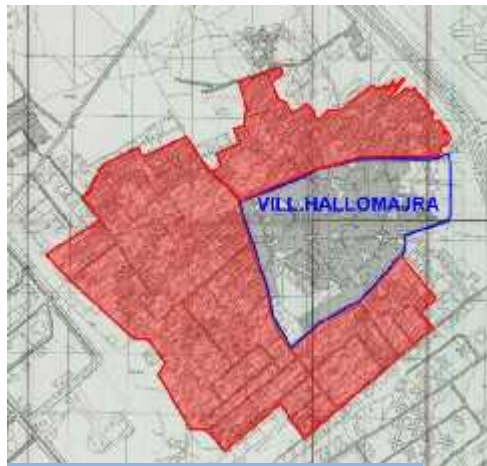
Close to National highway-21



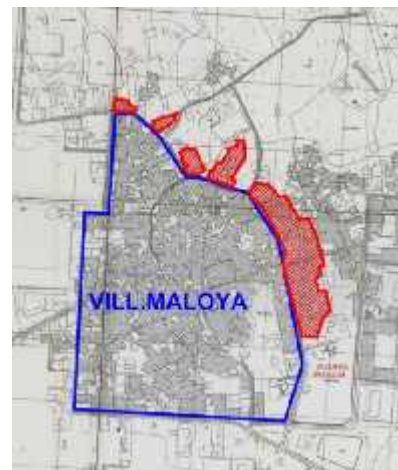
Near Sukhna Choe



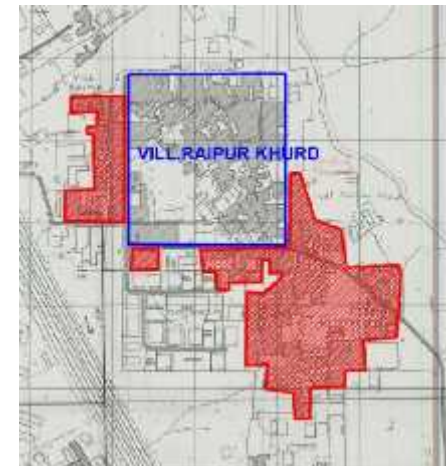
Near Railway Station



Close to National highway-21



On Western Periphery



Within Industrail Area

Source : Department of Rural Development Panchayat, UT, Chandigarh



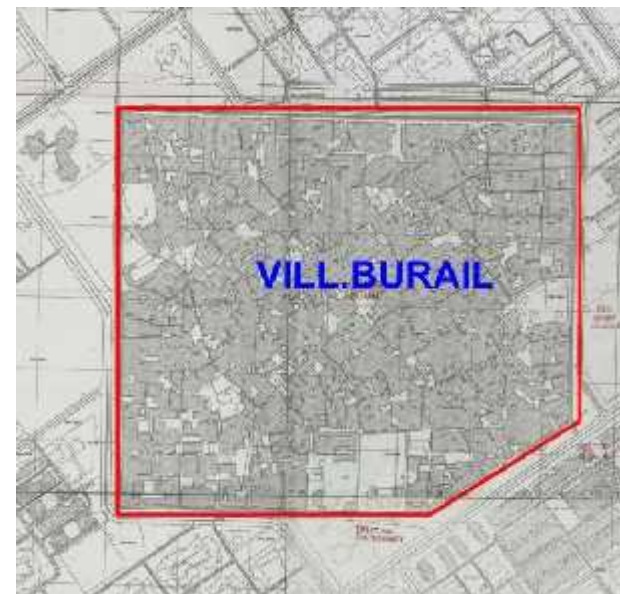
14.5 GROUND SITUATION OF THE VILLAGES

Villages under Sectoral grid

Deprived of their cultivable land and even barred from keeping livestock, the inhabitants of villages particularly within the sectoral grid have switched to a wide diversity of occupations and activities based on the opportunities offered by Chandigarh. In fact, these are not villages any longer but have become urban bastis/mohallas/colonies within the city with transformed socio-economic fabrics reshaped through interaction with the city. Although the cores of these villages still retain their organic physical character, in the absence of effective development controls and lack of enforcement of rules, they have transformed drastically from largely residential to mixed land use in a haphazard manner. Most villages have shops catering to the basic needs of the inhabitants and specific needs of the City. Some are carrying out small scale manufacturing including making of eatables/sweets and snacks which are sold in the City.

Burail, Badheri and Buterla within the sectoral grid have extensive commercial activity ranging from tyre retreading, car repair, welding, furniture making, selling TVs, upholstery, etc along wider peripheral roads with incidental shops and godowns for city shops on narrow internal streets.

The commercial activity in Burail is spilling onto the residential areas of the adjoining sector and has become a source of nuisance .





14.6 VILLAGES LACK ADEQUATE PROVISION FOR FIRE SAFETY

Illegal go downs/commercial establishments on narrow streets

Commercial activity on upper floors having improper access

Narrow lanes inaccessible by fire tenders /emergency materials

Absence of designated space for parking of fire tender /fire tender movement around the village

Congestion on approach roads due to haphazard parking , mix of vehicles and NMT

Results in delay in rescue operations

Shops storing inflammable material

No provision of water for emergency vehicles

Fire safety measures not taken within commercial establishments

Narrow passages between stored material



RECENT FIRE INCIDENT IN VILLAGE BURIAL

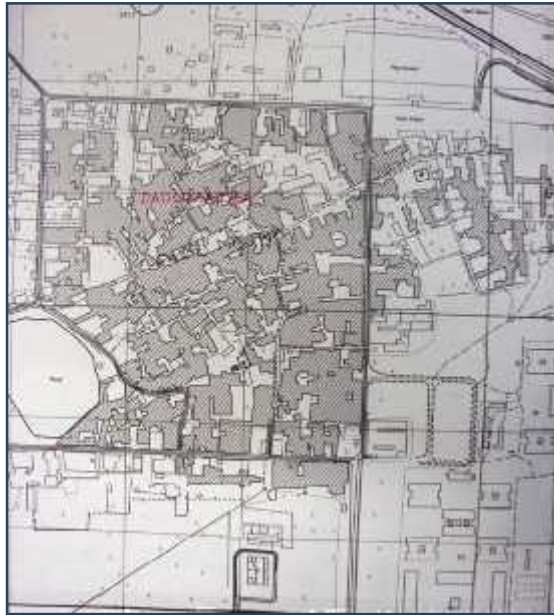


HEAVY TRAFFIC GENERATING



TRAFFIC CONGESTION ON V4 OF SECTOR 45
DUE TO COMMERCIAL ACTIVITIES





DADUMAJRA VILLAGE



VILLAGE POND NECESSITY
REVITALIZED



Dumping ground -garbage treatment plant along Patiali-ki-Rao, Dadumajra. The city's garbage disposal sites are located towards the, western periphery of the city. The residents resent the air pollution and smell generated .



SARANGPUR VILLAGE



NEW CONSTRUCTION ACTIVITY BEYOND THE MAXIMUM PERMISSIBLE HEIGHT VILLAGE SARANGPUR



SHEER NEGLECT OF VILLAGE POND SARANGPUR



DHANAS VILLAGE



CATTLE REARING WITHIN RESIDENTIAL PLOTS



EXPANSE OF GREEN



VILLAGE POND - A RARE SIGHT
THERE ARE ONLY EIGHT VILLAGES WITH PONDS
REST HAVE BEEN CONVERTED INTO PARKING
LOTS / PARKS



DHANAS - COMMUNITY SPACE AROUND
TREE – VILLAGE ENVIRONMENT



LAND UNDER CULTIVATION –DHANAS
PRONE TO PRESSURE OF DEVELOPMENT



14.7 UNSAFE AND UNREGULATED CONSTRUCTION ACTIVITY IN THE VILLAGES

Cheap Dormitories / Single Room Tenements -Residential houses have been converted into cheap dormitories/single room tenements - in some cases as many as 27 families have been accommodated in a 12 marla house with provision of only one kitchen/toilet per floor. The rooms lack proper light and ventilation .

High-rise Guest Houses/Hotels have come up in large number in villages across the city. These are being used regularly by institutions for boarding and lodging. Working class people who cannot afford housing in the city have found cheap accommodation in these localities, adding to the congestion.

There is a concentration of guest houses in Burail, Kajheri, Daria, Attawa and Manimajra which are being used due to the proximity to bus and rail terminals .Enjoying good clientele guest houses are more profitable as compared to renting out the premises.

Substandard and unsafe buildings

Structural safety is low priority .The construction of the buildings is going unchecked and substandard and unsafe buildings are coming up which are without adequate light and ventilation, have inadequate access to upper floors. While constructing basements, the requisite safety measures /setbacks from neighbouring properties is not being maintained which can endanger life and property.

These buildings constructed on both sides of narrow roads also make no provision for parking resulting in parking on roadside and thus causing traffic congestion and bottlenecks .

Make shift arrangements for drawing electricity through loose hanging wires are an open invitation to disasters.

Illegal mobile towers on residential buildings, dairies and manufacturing units including non-conforming uses



COMMERCIAL ACTIVITY SPREAD ACROSS FLOORS



HANGING WIRES-TRANSFORMERS ON MAIN STREETS



NARROW STREETS WITH OPEN DRAINS



ILLEGAL CHANGE OF LANDUSE FROM RESIDENTIAL TO HOTEL



HEAVY TRAFFIC GENERATING ACTIVITIES IN VILLAGE BURAIL



TRAFFIC CONGESTION ON V4 OF SECTOR 45 DUE TO COMMERCIAL ACTIVITIES OF VILLAGE BURAIL



The Hygiene and sanitation particularly in the narrow lanes in the core of the villages is very poor and open storm water drains, which are mostly blocked, add to the stench and filth.

Manufacturing of sweets on unhygienic conditions a health hazard for the residents.

Tardy Garbage Disposal is another factor adding to unhygienic conditions.

There is acute shortage of any play grounds and open spaces.

Balconies overhang on to the narrow lanes thereby adversely impacting light and ventilation.

As one proceeds outwards from the core, generally the streets are wider and houses are bigger. These are relatively newly built areas and conditions are better as compared to the core of the village. A circular road to mark the phirni has been constructed in most villages.

Over the years the administration has done considerable development work to improve the quality of life. There is running water and sewerage for each house, the narrow lanes have been brick lined/ black topped and electricity provided.

Villages outside the sectoral grid

The nature of problems of the *abadi deh* of these villages are similar to those of the villages under the MCC although these are less acute, especially in villages away from the major roads /highways /railway station .

Absence of Building Byelaws

Till now, there are no building byelaws applicable in the area within the Lal Dora and the extended abadi of the villages controlled by the Panchayats. Many of the inhabitants are still engaged in agriculture as not all the agricultural land of these villages has yet been acquired .

Commercial establishments /Godowns

Many villages have large number of commercial establishments both within and outside the abadi area. Table 14.1 to 14.8 (refer annexure) indicate the number of commercial establishments in the villages outside the sectoral grid. Village Daria has the maximum number followed by Village Dhanas and Village Mauli Jagran .



RESIDENTIAL PLOTS CONVERTED INTO DORMITORY ACCOMODATION



MIXED LAND USE WITH HIGH COMMERCIAL COMPONENT



NARROW APPROACH AND INDEQUATE SOURCE OF LIGHT



NARROW PASSAGES



Other issues

All villages are under great pressure of development. The extent of the pressure is related to the location of the village with respect to traffic major arteries, proximity to commercial centers transport nodes, work centers, Industrial Area.

Due to the Capital of Punjab (Development & Regulation) Act 1952 not being applicable to the *abadi deh* of villages, they have also developed mixed land use; high densities leading to insanitary conditions; un-regulated development in terms of height and coverage.

Most of the buildings within the village phirni are still single, double or three storied, however in the absence of any regulations, multi storied buildings have started coming up which needs to be checked urgently.

Some villages such as Kaimbwala, Maloya and Khuda Ali Sher still retain their rural character and carry out agricultural activities.

Some villages are facing flooding problems and untreated sewerage is thrown into the choes. Construction activity within the discharge area of the choes is further aggravating the flood problem.

Villages close to Sukhna Wild Life Sanctuary are being subjected to extensive development activity which is detrimental to the flora and fauna of the sanctuary.

Villages located on the proposed East West Metro Corridor are likely to undergo intensive development if left unchecked.

Haphazard and unplanned development of villages along the major interstate arteries / roads important from the urban design point of view.

Absence of adequate land to meet the growing needs of the villages .



NON COMMERCIALISED AREAS IN VILLAGE DHANAS



NEW CONSTRUCTION ACTIVITY BEYOND MAXIMUM PERMISSIBLE HEIGHT IN VILLAGE SARANGPUR



Village ponds

Ponds have been an integral part of villages. Over the years, however, ponds of a number of villages including Daria, Raipur Khurd, Mauli Jagran, Kajheri, Hallomajra, Behlana have been converted into parks, in a few cases eg Khudda Lahora the same are used for parking. As per feedback provided by the Rural Department village ponds still exist in the following villages:

- Dhanas 01 no.
- Sarangpur 01 no.
- Khuda Jassu 01no.
- Khuda Alisher 01 no.
- Kaimbwala 02 no.
- Behlana 01 no.
- Khuda Lahora 01 no

Some of the villages with the Municipal Corporation including Dadumajra, Kajheri, have also retained their ponds.

The pond in Village Dadumajra has been recently revitalized and the area now serves as a major recreational area for the villagers.



PONDS IN KAIMBWALA

Overview of problems of villages

- Illegal changes of land use
- Encroachments on public land
- Inadequate infrastructure
- Open drains, poor garbage disposal and sanitation
- Discharge of sewerage into choes
- Filling up of existing ponds/poor maintenance of surviving ponds
- High degree of traffic congestion,
- Large scale non-conforming industrial activities ,
- Lack of structural safety measures in construction,
- Disposal of cow dung into open drains,
- Flooding and poor availability of air, light and ventilation for healthy living
- High fire prone areas.



Construction of School and village Kaimbwala



14.8 PROPOSALS OF CMP 2031

A Perspective for the development of UT's Villages

The following guidelines are proposed for regulating the development of villages falling within the sectoral grid.

All villages should be planned and developed within the identified framework of development. Accordingly it will be desirable that detailed planning of the villages should be undertaken based on detailed studies .

Each village needs to be surveyed in detail, including the help of satellite imagery, so as to record the extent and nature of construction and existing uses. The survey would include the following - existing landuse, building character/height of buildings, ownership - Government /Community land, Community Facilities / Places of Worship, Open Spaces, Sewerage, Drainage, Electricity, Road Network, Encroachments etc..

A pattern followed earlier in the planning of villages including Badheri, Hallomajra, Maloya, Dadumajra, could be taken as a model for preparing detailed plans of the villages.

Based on this detailed survey, a **Development Plan should be prepared for each village** considering the specific location, character, problems and pressures. Improvements in the street widths or provision of open spaces in the older areas in consultation with existing owners.

While planning care shall be taken to ensure that commercial establishments if any should be allowed basically to serve the needs of those living in the lal dora and are to be developed in a manner that they do not open onto main roads and have adequate parking.



The detailed Development Plan should be evolved based on :

- **Respect the history, unique character of the old *abadi deh* of each village and try to preserve and maintain its best features.**
- Most villages have old temples, other religious buildings as well as community spaces which need to be preserved. Similarly, some have old mango groves and water tanks needing protection and preservation.
- **Retain the rural character**
Few villages in periphery such as Kaimbwala, Khuda Ali Sher, etc. have still retained their village character and carry out agricultural activities. It is proposed that land of these villages should continue to retain their rural character as per the original concept of the periphery and stipulated in the Punjab New Capital (Periphery) Control Act, 1952.
- **Insuring energy efficiency in Villages**
The objective would be to make all the villages a role model of rural development by making them energy efficient by introducing measures such as use of solar energy, Bio Gas Plants, Rain Water Harvesting, adopting green building concepts, augmenting green spaces, provision of proper storm water drainage etc. in order to address the problem of energy, flooding, open spaces etc.



LAND UNDER CULTIVATION



Providing basic infrastructure in the villages

- The objective of this is to strengthen the basic infrastructure in villages.
- Concretization of the village streets with a view to provide durability of streets and better drainage system.
- Sanitation and cleanliness needs to be institutionalized. Substantial proportion of population and localities in villages are bereft of the basic amenities like piped drinking water supply, sewerage system, storm water drainage etc
- Installation of solar street lighting as a measure to conserve renewable energy resources.

Promoting rural tourism

With a view to attract tourists, it is intended to develop villages as Tourist Destinations, where the infrastructure and amenities for rendering services to the tourists will be created.





Framing model building bye-laws for the villages

The growth and development of the villages and the buildings to be constructed therein shall be governed by well defined building byelaws addressing the specific need of these villages and retaining their basic character.

The bye laws shall be framed after wide consultation with the rural population and experts having knowledge and experience of rural development. The model building byelaws framed by the Government of India shall also be considered while framing the rules. The byelaws would address the issues related to landuse, air light and ventilation, urban design, structural design, ethnicity, water conservation sustainability etc and integration with the surrounding development.

Growth and development of villages falling outside sectoral grid

The growth and development of the villages falling outside the sectoral grid shall be guided by detailed plan of the village evolved based on detailed study and mapping as in the case village falling within the sectoral grid. These plans shall not only meet the existing requirement of the population in terms of infrastructure and services but will also accommodate the future needs of living and employment. The development shall focus on making the village self contained and self sustaining in terms of all human needs. The basic character of the villages shall be promoted and retained while detailing out the planning and development strategies. In addition to creating basic infrastructure, quality of life shall be the guiding feature of the development.

Area around the abadi deh shall be identified for future growth and development. Planning parameters shall also form integral part of rural development. Landuses leading to increased employment opportunities shall be made integral part of the planning strategy. The planning shall also look at the possibility of integrating the existing development outside the abadi area as part of the development plan.

Some of this land around the villages could be added to the abadi deh to cater to bridge the gap in community facilities, open spaces and agro/village industry based economic activities.

The Chandigarh Administration has been constantly upgrading the social and physical infrastructure of the villages. Number of Dispensaries have been constructed in various villages and proposal for upgradation of dispensaries at Maloya, Hallomajra and Kaimbwala to the level of primary health centre as per Indian standard (iphs) have been initiated & dispensaries in and the process for construction of dispensaries in Khuda Ali Sher, Rehabilitation colony, sec. 52, Janta and Kumar Colony, Sector 25, Behlana. Government high schools are under construction in Burail, Raipur Khurd, Kishangarh and primary school is under construction in village Behlana.

All these developments should be integrated as part of the development plans to be prepared for the villages in order to ensure their optimisation in terms of location and utilisation.

Construction surrounding villages beyond lal dora

Large scale residential / commercial construction has taken place in the agricultural area regulated under the Punjab New Capital (Periphery) Control Act 1952 without obtaining permissions. It can be treated as unauthorized constructions. Appropriately, this matter should be dealt by the Administration taking into consideration legal provisions to see that the development of this area takes place as per the principles adopted for the drafting of this Master Plan.

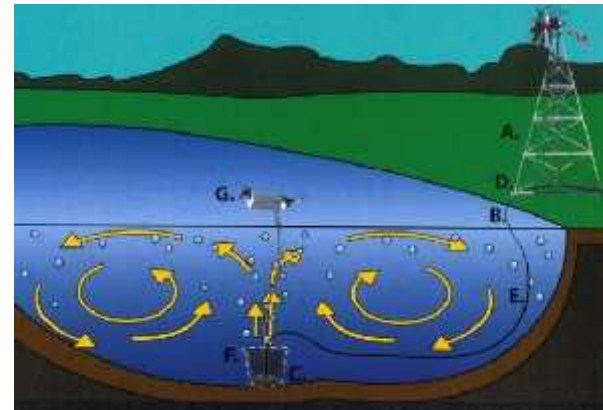
Since the detailed development plan of the villages would take sometime for preparation and it is essential to provide more amenities to the inhabitants of the areas surrounding the villages which have come up in an unauthorised manner. It is recommended that in the interim period, basic amenities like water supply, sewerage etc. should be provided to the residents on purely temporary/provisional basis. It should be emphasized that this does not mean the recognition of the ownership of that land by the person using the same and shall not be construed as regularization of the area.



Revitalizing village water bodies through the following methods

A. Aeration

1. Aeration of water bodies for natural removal of weeds and algae on water surfaces
2. Aerated lagoons systems use aerators to mix the contents of the pond and add oxygen to the wastewater .
3. Wind driven aerators do not need external energy source for operating but other aerators do.
4. Still the energy production is far more economical than other mechanical methods
5. Aerated lagoons require less land area and shorter detention time for waste water



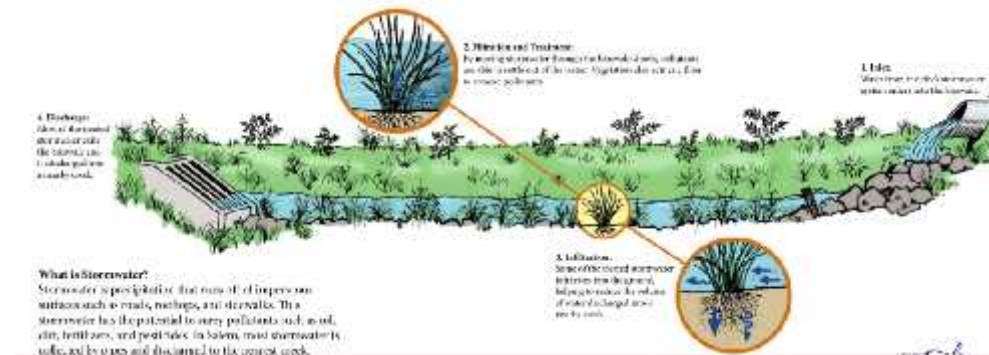
B. Reedbeds

1. Reedbeds an ecofriendly way to treat water which can be easily fitted into existing reservoirs or ponds .
2. What to do: A wide variety of native wetland flora can be planted on a mesh type structure. Plants can be planted either bare root or contract cell grown in 2 sizes of root trainer
3. Benefits:
 - 3.1 Easy to install
 - 3.2 Suspended solids removal



C. Bioswales

1. To treat water and cleanse it partially before releasing it in the pond / watershed
2. Bioswales are landscape elements designed to remove silt and pollution from surface runoff water.
3. The water's flow path, along with the wide and shallow ditch, is designed to maximize the time water spends in the swale, which aids the trapping of pollutants and silt.
4. Treats the runoff before releasing it to the watershed or storm sewer .





15. MANIMAJRA

15.1 INTRODUCTION

The town of Manimajra has been taken up as a separate chapter in view of its stature as a census town and due to its unique characteristics, historicity and prime location amidst the large urban agglomeration. Located on the interstate border with Haryana, the towns of Panchkula, Shree Mata Mansa Devi Complex, Pinjore Kalka Complex and the Chandimandir Cantonment adjoin/are in close proximity to it. While the residents of the town now also enjoy some of the social infrastructure of the neighbouring towns in terms of education, health, recreation etc. Manimajra provides a range of formal and informal services found wanting in neighbouring towns and this role it has performed all along while the urban towns took shape. Having grown from a small village, at the time of the inception of the original plan, it has transformed from a pure rural to a peri urban to an urban town. Major portion of its revenue area has been acquired by the Chandigarh Administration for setting up various pockets such as the IT park etc. Of the total area of 855 acres of the town which include the fort, the old abadi area of Manimajra, various planned and non planned townships / settlements and the eleven planned pockets around it, most of the area has already been developed as various housing, commercial and cultural schemes. Bereft of land, the town has only 222 acres (Refer Table no. M5) of land remaining to be developed and has no scope for horizontal expansion.

Though various plans have been prepared to regulate the development in the area, a holistic integration and synergy between Manimajra and the main town of Chandigarh has not been attempted earlier. The Chandigarh Master Plan -2031, recognises the towns position as an important entity of the UT of Chandigarh, amidst the growing region. The endeavor of the Master Plan is to recognize the strengths of the town, addresses the gaps, and forsee the challenges to prepare the town towards a sustainable future while it preserves , conserves and maintains its historical legacy.

HISTORY

Manimajra located on the Old Ropar Road has a rich cultural background with a historic fort and Gurudwara Manji Sahib in the hub of the town. This fort is presently under the management of a trust and is being used as a residence of a trustee and is out of bounds for the visitors while the Gurudwara once a residence of Mata Raj Kaur is now known as Gurudwara Manji Sahib and has been taken up by the Shiromini Prabandhak Committee .

According to a legend Raj Kaur who was obliged to abandon her temple retaliated by pronouncing a curse on all who should erect a building higher than the present height of the temple. According to the legend it was this curse which caused the extinction of the Raja's family, as Gopal Singh's fortress was made higher than the Gurudwara.

The curse is believed to be still effective, and instrument in the recent increase in height of the Gurudwara that the people of Manimajra recently collected for the purpose of increasing the height of the Gurudwara, and so making it safe to build higher houses. (Refer background note as Annexure M7)

THE OLD HISTORIC FORT



GURUDWARA MANJI SAHIB AS PER LEGEND, THE GURUDWARA'S HEIGHT GOVERNS THE MAXIMUM HEIGHT OF BUILDINGS IN MANIMAJRA



Location

Manimajra is situated on the old Ropar-Shimla road at a distance of approximately 8 Km on the North East of Chandigarh across Sukhna Choe. The town is connected with Chandigarh by the 200' wide Chandigarh Kalka road leading upto NH 22 to Shimla. Two additional links, one along Kishangarh and other Route No. 3 also connect the town. However, these two roads are cut across by the railway line which acts as an impediment in the smooth connectivity.

The town is bound by the natural nallah emanating from the Shivalik Hills on the north eastern side, the Chandigarh Kalka railway track on the south-west and north-west sides and the interstate boundary on its south-eastern side.

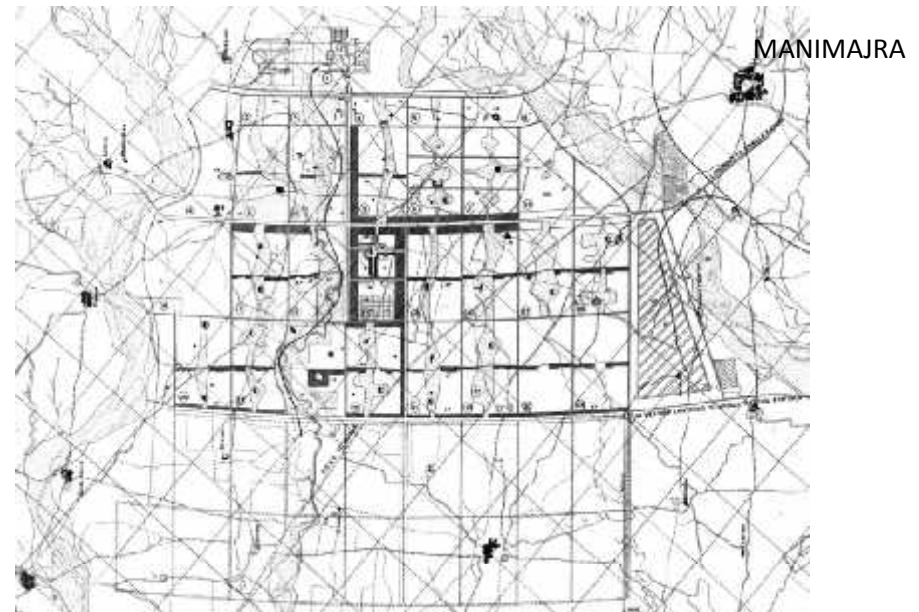
The township is surrounded by new developments of Rajiv Gandhi Information & Technology Park and Mansa Devi Housing Complex (Haryana) towards the north and the Panchkula Township on the east.

Growth pattern

1952 – at the time of the preparation of the original plan in 1952, Manimajra was a small village and fell outside the sectoral grid of Chandigarh within the Periphery Controlled Area. While the revenue area of Manimajra came under the purview of the Punjab New Capital (Periphery) Control Act, 1952 the *abadi deh* of the village was exempted from the Act.

1961 – Manimajra was classified as a '**Census Town**' in the Census Report of 1961

PLAN M1 – LOCATION OF MANIMAJRA



1966 - Number of new urban settlements/establishments of the Central Government viz. Hindustan Machine Tools (HMT), Chandimandir Cantonment, Air Force Station, and the township of Panchkula by the Government of Haryana were set up in the vicinity of Manimajra.

The town of Manimajra which witnessed inorganic and unplanned growth around the old fort transformed from a rural to an urban area while it also served as a commercial /service centre for the upcoming developments.

1976 – in April 1976, 840 acres of land comprising of Manimajra Town and the adjoining areas was declared as a **Notified Area** and a **Notified Area Committee** was set up for its planned development.



Growth of Manimajra Town

MANIMAJRA TOWN AND THE OLD FORT



1961 – 2001 - the population of Manimajra was 9941 in 1961 which rose to 44710 in 1991 and to 117046 in 2001. The town witnessed a decadal growth of as high as 50% during 1971 -1981 and 55% during 1981 to 2001.

Table M1 - Growth of population

Years	Population	Percentage Growth
1961	9941	-
1971	14197	30%
1981	28001	50%
1991	44710	38%
2001	117046	55%

SOURCE : GOOGLE EARTH



1977 – Manimajra alongwith **Chandigarh, Panchkula, Mohali and HMT** were included in the urban area of the Chandigarh Urban Complex Plan (CUC) (Refer Plan M) prepared on the directions of the High Powered Interstate Coordination Committee constituted by the Government of India to regulate the developments around Chandigarh. A Draft Landuse Plan for Manimajra was prepared by the Department of Urban Planning, Chandigarh Administration same was not finalized.

1982-1985 – Large scale unauthorised construction activity was witnessed in the Manimajra Town many of which were regularised by NAC. Regularisation of the construction however led to further unauthorised construction mainly concentrated around Pipliwala Town and Bangala Basti.

1990 - In order to check unauthorized and unplanned development, NAC Manimajra decided to acquire the vacant land outside the old abadi area. A Landuse Plan was prepared for 855 acres which included 840 acres of area within NAC limits and 15 acres outside the NAC limits . This plan was approved by Chandigarh Administration on 15/8/1991 (Refer Plan M2)

1994 - Vide notification dated 27th July, 1994, the area of NAC Manimajra was included within the limits of the Municipal Corporation, Chandigarh.

As the provisions of the Capital of Punjab (Development & Regulation) Act, 1952 had been extended to Manimajra, the building rules of Chandigarh became applicable to the area .

1998 - Since the construction in the old abadi of Manimajra could not conform to the Capital of Punjab (Development & Regulation) Act, 1952, the Chandigarh Administration vide notification dated 7th January, 1998 exempted the unacquired area of the old abadi area of Manimajra from the operation of the said Act .

2007 – Vide order dated 21/8/2007, the Chandigarh Administration constituted a committee under the Chairmanship of the Finance Secretary-cum-Secretary, Urban Planning, Chandigarh Administration with Commissioner, Municipal Corporation, Chief Architect, UT, Chief Engineer, UT, Deputy Commissioner, UT, Director Higher Education UT, S.S.P UT, Director Transport UT, DPI (schools), Director Health Services UT as members to formulate an integrated development plan for the Manimajra Town after taking a holistic view of education, health, transport, housing and social infrastructure etc.

2009 - The Municipal Corporation submitted the revised Development Plan for Manimajra based on the recommendations of the committee .The recommendations included readjustments of certain landuses from the approved Development Plan 1990, widening of roads, creation of green belts and setting up of town level infrastructure etc.

The broad landuse of various pockets except for pocket 2, 3, 4 & 5 were approved by the Chief Administrator, UT vide order dated 29.12.2009. The Municipal Corporation was directed to submit detailed planning of Manimajra vide letter dated 20.10.2009. The same was however since the same was not sent, the plan was not finalized.



15.2 DEVELOPMENT PLANS OF MANIMAJRA

To address the mounting pressure on land around Manimajra and ensure the planned development of the area especially between Chandigarh and the Manimajra, the Chandigarh Administration and the Municipal Corporation have over the years prepared a number of development plans for Manimajra. The details are as under:

1977 – The Chandigarh Urban Complex Plan was prepared on the directions of the High Powered Coordination committee constituted by the Government of India to regulate developments around Chandigarh which provided integrated **developments of Chandigarh Panchkula, Mohali, HMT and Manimajra.**

The same year, the Draft Land Use Plan of Manimajra was prepared by the Department of Urban Planning in 1977. However, no action to finalize the Master Plan was taken.



CHANDIGARH URBAN COMPLEX PLAN



Development plan of Manimajra - 1990

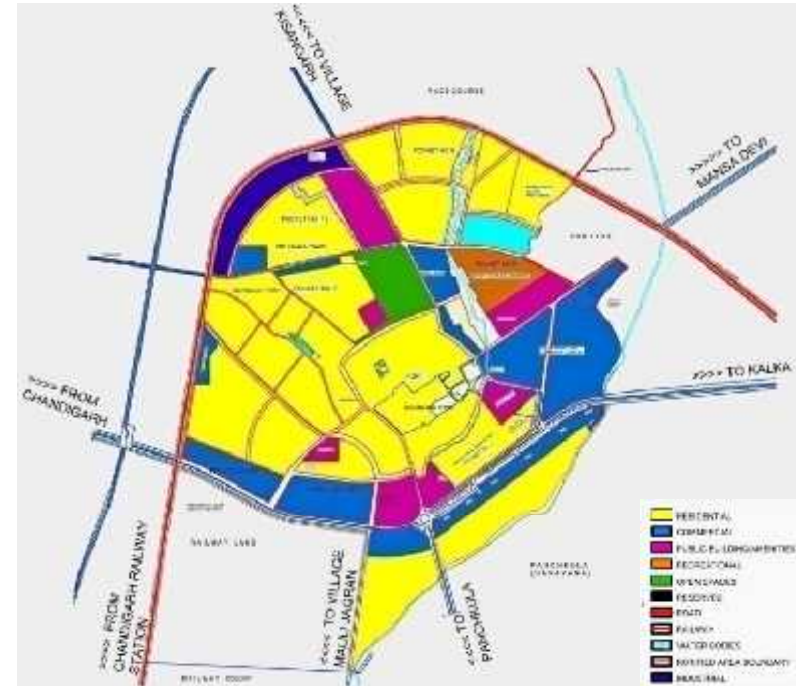
The Revised Development Plan of Manimajra was prepared in the year 1990 by the Department of Urban Planning, UT to guide and channelise further development of Manimajra in a planned manner in consonance with the Chandigarh Urban Complex Plan. The landuse plan provided for planned utilisation of land, provision of suitable roads, circulation, public amenities and allied facilities in a rational manner. The salient features of the plan are as under: The old Manimajra Town was retained as such and proposed to be encircled by a wide road for easy movement of traffic.

The old existing abadis outside Manimajra, comprising of Pipliwala town, Mariwala Town and some area where NAC Manimajra had regularised unauthorised construction viz. portions of Gobindpura, Darshani Bagh, Bangla Basti were accommodated.

Following schemes were also accommodated:

1. Motor Market and Commercial Complex measuring 56 acres.
2. Shivalik Enclave measuring 61.21 acre residential-cum-Commercial Scheme lying between Chandigarh-Kalka Road and the Panchkula boundary.
3. Modern Housing Complex Phase I, II & III comprising of 100 acres of land was developed.
4. Land measuring 9.63 acres in Pocket 4 and 5 allotted to Army Welfare Housing Organization (AWHO) for construction of dwelling units of various categories.
5. Land measuring 17 acres abutting Chandigarh-Kalka road for setting up of an Artisan at Village, Kalagram.
6. Indira Colony and Rehabilitation Colonies and single room tenements.
7. About 20 acres of land adjoining the existing pottery kilns on Kishangarh Road was earmarked for industrial use for service industries.
8. 15 acres of land was earmarked for cremation/burial grounds on Kishangarh road outside town limits. The cremation ground existing within the town limits area was proposed to be shifted.

PLAN M2 DEVELOPMENT PLAN OF MANIMAJRA-1990



(Plan approved by the Chandigarh Administration on 15/8/1991)



Various development schemes of NAC Manimajra and the status of development

Motor Market and Commercial Complex

N.A.C. Manimajra framed a schemes of the Motor Market and Commercial Complex in the year 1976. Approximately 56 acres was acquired by NAC Manimajra in the year 1976.

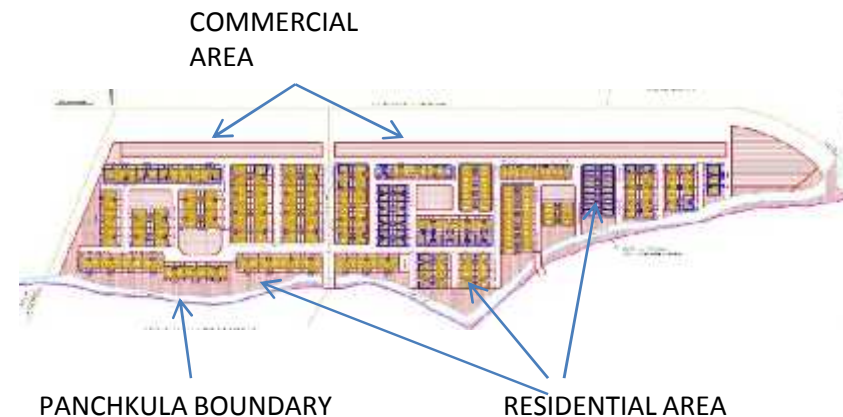
A scheme for allotment of plots to the motor mechanics and repair workers etc. operating on the Old Ropar Road in Manimajra was framed . Approximately half of the land was utilized for planning commercial sites viz. Shop Cum Flats (SCFs) and booths. The schemes has since been executed.

The Motor Market which has the distinction of being one of the biggest of its kind in the region has been serving not only the residents of the city, neighbouring towns but also the region. From repairs and selling of spare parts to denting and painting, all jobs related to vehicles are done here. The market has around 846 shops with a huge number of mechanics and their helpers working there.



61.21 acres Residential-cum--Commercial scheme (Shivalik Enclave)

Land measuring 61.21 acres falling between Chandigarh Kalka Road and the interstate boundary with Panchkula was planned for construction of residential cum commercial scheme Showrooms sites were planned along the main road and 270 residential sites towards the rear. This scheme has been executed. Further as per order dated 16/10/2008, the enhancement of FAR and ground coverage was extended to the residential scheme along with other residential areas of the city .





Modern Housing Complex, Phase-I and II

About 60 acres of land was acquired by the Chandigarh Administration in 1989 and was allotted to Chandigarh Housing Board. 2200 dwelling units of various categories have been constructed in the scheme area in the form of four storeyed flats:-

a) Category –I	480	c) Category –III	456
b) Category –II	384	d) Category –IV	960



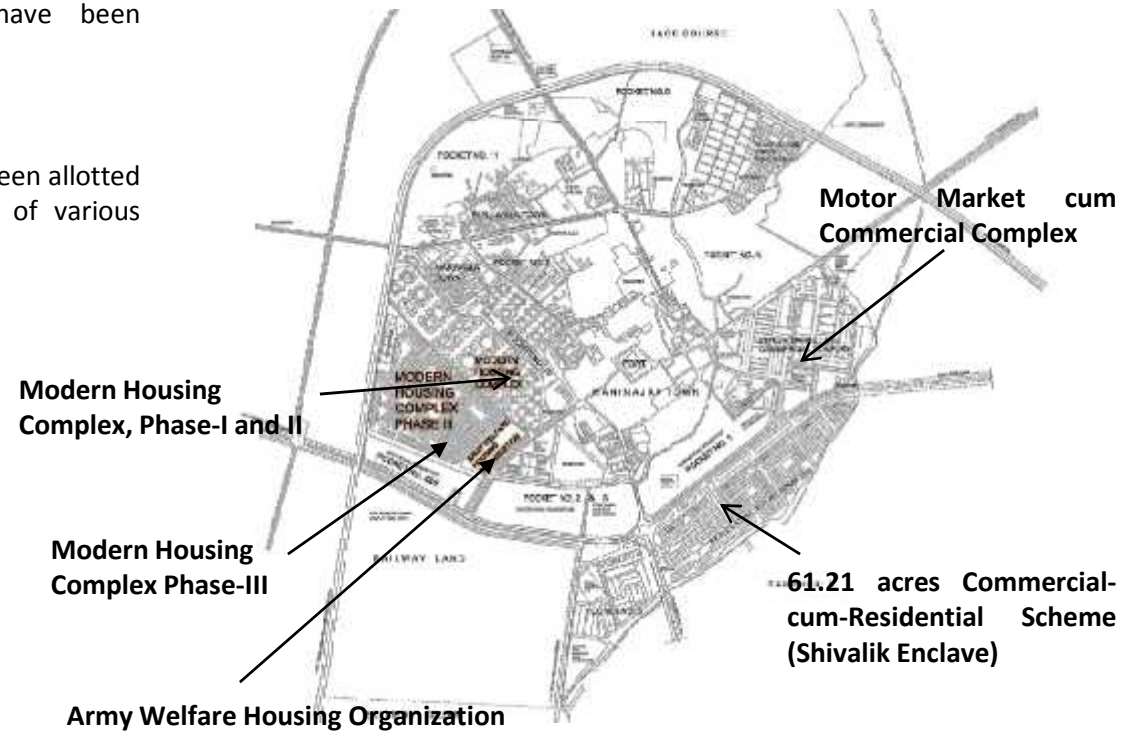
MODERN HOUSING COMPLEX

Modern Housing Complex Phase-III

Land measuring 9.63 acres falling in Pocket No. 4 and 5 acquired by the NAC Manimajra has been allotted to Chandigarh Housing Board. 600 HIG independent dwelling units have been constructed.

Housing by Army Welfare Housing Organization

Land measuring 9.63 acres in Pocket No. 4 and 5 has been allotted to A.W.H.O. in the year 1994. 305 dwelling units of various categories in 3 storeyed blocs have been constructed





Rehabilitation Colonies.

- i. 140 landless families were allotted plots under Prime Minister's 20 point Programme in the year 1976 .The area is now called 'The Old Indira Colony'.
- ii. 710 sites were planned in a Rehabilitation Colony in 1986 by the Chandigarh Administration on 16.56 acres of acquired land
- iii. About 1420 dwelling units were constructed by the Chandigarh Housing Board under Rehabilitation Colony Scheme in the year 1989 on 20 acres of acquired land.
- iv. 168 tenements in four storeyed blocks were constructed by the CHB in the year 1990. These were later covered under retired/retiring employees' scheme.

Kalagram

A site measuring about 14 acres, abutting Chandigarh – Kalka Road and bound by Chandigarh Kalka Railway Line and railway land on other two sides acquired by NAC, Manimajra has been allotted to Government of India, Department of Culture, New Delhi for setting up an artisan village (now named Kala Gram).

The first phase of the project has been completed by the North Zone Cultural Center and the planning of second phase has been taken up .The National Crafts Mela is organized here annually. (See Chapter on Social Infrastructure)



Rehabilitation Colonies in Manimajra



Kalagram



Recent addition to the housing stock in Manimajra



Plan M3 - Revised Development Plan submitted by Municipal Corporation-2009



Revised Development Plan submitted by Municipal Corporation-2009

The plan was prepared by the Municipal Corporation on the basis of the recommendation of the committee constituted under the chairmanship of the Chief Administrator, UT in 2007 for preparing an integrated plan .

The broad landuse of various pockets except for pocket 2, 3, 4 & 5 were approved by the Chief Administrator, UT vide order dated 29.12.2009. The Municipal Corporation was directed to submit detailed planning of Manimajra vide letter dated 20.10.2009. Pocket wise plans have not been submitted.



15.3 MAJOR PROBLEMS/ISSUES

Traffic and Transportation

Limited connectivity with the main city

The Chandigarh Kalka road which is the main link connecting Manimajra with the main city of Chandigarh and with the towns of Panchkula, the Chandimandir Army Cantonment, Pinjore Complex is experiencing traffic congestion along its length. The problem is acute near Railway Station junction, the Housing Board Chowk, the Fun Republic and also at the entry point of Panchkula.

The other links via Kishangarh /IT park are intercepted by the railway line near the Modern Housing Chowk Junction 126 and near the Handicraft Centre at Junction 128. Due to the absence of grade separators the residents / commuters are put to great inconvenience.

Defective circulation system within Manimajra

- The town has developed around the old fort and the V7 road hierarchy has not been adopted
- Poor road geometrics with acute turnings lead to fatal accidents
- Streets are quite narrow. There is an absence of organised parking lots near the old town which leads to traffic chaos
- The condition of roads is pitiable due to poor maintenance
- There is no segregation of the fast and the slow, the motorised and the non motorised traffic in the town
- There is a mix of the freight traffic with the general traffic.

Absence of facilities and infrastructure for the pedestrians and the non motorised traffic

There is a total absence of pedestrian paths, zebra crossings which make the conditions very unsafe for the pedestrians. The Chandigarh Kalka Road cutting across the town witnesses large volume of traffic and is difficult for the pedestrians to maneuver.

Absence of bus stand at Manimajra

A site for the Bus Stand at Manimajra stands earmarked in the Pocket no 2& 3. However the same has not been executed and residents have to make do with the temporary bus stand.



LACK OF ADEQUATE SOCIAL INFRASTRUCTURE

Manimajra has poor social infrastructure and is dependent on Chandigarh for facilities like education, health, sports and commercial etc.

The detailed stocktaking of the existing social infrastructure carried out to assess the adequacy and inadequacy as per the UDPFI guidelines (Refer Table 1). indicate that the existing infrastructure of the town viz educational and health is inadequate even for the population of 1.1. Lacs as per the 2001 Census.



Unregulated growth in the old abadi area around the fort and the area around it resulting in unsafe and congested built environment

In the absence of strict enforcement of the Periphery Control Act and the building byelaws, the old abadi around the Fort and the areas around have been continually expanding in the form of unplanned growth accommodating more people and non residential landuses. In the absence of proper land record and enforcement, encroachment upon the Shamlat/ Government land is a common sight.

But for a few new planned gated residential colonies and new commercial areas a large proportion of the built environment of Manimajra is witnessing the following :

1. **Unchecked reconstruction** of buildings, addition of upper floors and sub-division of plots
2. **Unsafe and non engineered construction** - adequate safety measures are not being adhered to in the highly vulnerable Seismic Zone IV
3. **Inadequate air, light and ventilation within buildings**
4. **High occupancy** of dwelling units as rental accommodation, without adequate facilities-toilets, kitchens
5. **Encroachment on government land** The narrow streets have been encroached upon by steps, cantilever balconies and projections making access difficult.
6. **The fire safety** considerations have been totally disregarded.
7. **Illegal electricity connections** through open and loose hanging wires across streets pegged to buildings which is life and property endangering .
8. Large number of private institutions - schools etc attracting large public footfall operate from **unsafe buildings** .

- 9 **Non conforming use - conversion of** residential buildings into commercial use /industrial use /godowns resulting in the mixed landuses some of which are non compatible within the residential area.
- 10 The conversion has aggravated **air, noise, pollution and caused traffic congestion** and parking problems on the narrow meandering roads .
- 11 **Absence of open space /children play area.**





Lack of enforcement in the planned development

The new residential developments planned as gated communities are also witnessing large scale violations such as additional coverage, covering of balconies etc.

Absence coherence between the old and the new

Manimajra has two faces which are in coexistence – the old, organic abadi area around the fort and its extensions and the new planned development. There is however no synergy between the two in terms of urban design, traffic and transportation, physical and social infrastructure.

Disregard to heritage - the historic fort situated within the town which has great heritage significance has not been given due importance in the development plans, nor has any attempt been made to safeguard the precious heritage.

Environmental Pollution

The town has witnessed environmental degradation due to the following:

- **Location of cremation ground** - The existing cremation ground located on Chandigarh-Kalka Road was once on the outskirts of the village, however due to large scale urbanisation around the area, the site is inapt for the cremation ground.
- **Poorly maintained utilities.**
- **Poor solid waste management**
 - Littering of cow dung in the old abadi and rehabilitation colonies of Manimajra due to dairies/cattle.
 - Dumping of cow dung in drains resulting in choking of the sewerage system.
 - Use of cow dung as fuel generates smoke resulting in environmental pollution.
 - Storage of material by kabaries in open plots resulting in unhygienic conditions
 - Smoke generating from the furnaces of the potters operating from the Handicraft Centre adjoining the railway track.



LACK OF ENFORCEMENT IN THE PLANNED DEVELOPMENT



CREMATION GROUND LOCATED ON THE CHANDIGARH KALKA ROAD



POORLY MAINTAINED UTILITIES.



POOR SOLID WASTE MANAGEMENT



Poor management of the Motor Market & Commercial Complex

The market presents an untidy look with damaged roads, lack of public toilets and amenities. The problems generated by the activity are listed as follows:

- Encroachment on Government/Public land.
- Noise as well as carbon pollution.
- Conversion of surrounding area into auto shops due to market forces.
- Parking of unauthorized vehicles on the road berms.
- Traffic congestion due to heavy vehicles.
- Creation of pollution by dumping of auto waste/garbage by the shopkeepers into the existing nallahs.

Lack of organised space for the street vendors

There is absence of organised space for street vendors who therefore occupy the incidental spaces, footpaths often at the expense of the causing inconvenience to the pedestrians and traffic movement.

Proper management of the Handloom Estate

The Common Facility Centre, Handicrafts is functioning from the premises of existing Handloom Estate, Manimajra. This centre is providing dyeing facilities at economical rates to the weavers working in the Handloom Estate at Manimajra. Apart from this, in the pottery, potters mould earthenware pots which are baked in the kiln provided by the Department. The building in which the centre has been set up is the property of the Chandigarh Administration, Industries Department. It needs renovation/major repairs as the roof of the building and plaster have been damaged.

Recommendation

Centre needs to be upgraded to a state of the art centre by adopting modern practices.

The Motor Market has earned the regional level stature has poor infrastructure and lacks maintenance and a cleanliness regime.





15.4 PROPOSALS OF CMP 2031

Through the Chandigarh Master Plan 2031 an effort has been made to ensure the sustainable development of Manimajra, its proper integration, upgradation of facilities at par with the main city of Chandigarh while safeguarding its assets and heritage. A detailed analysis of the existing ground realities has been carried out as under:

- Projected population for 2031
- Holding capacity
- Status of development of various areas / pockets
- Status of existing social infrastructure – educational, health, community - community hall and library, sports, recreational - open spaces, green spaces, institutional including police stations/fire stations and
- Adequacy / inadequacy of social infrastructure as per UDPFI guidelines for the projected population
- Status of physical infrastructure including electricity, water supply, sewage, storm water drainage
- Circulation system and connectivity with the surrounding towns of Chandigarh, Panchkula and Mansa Devi Complex
- Heritage status viz-a-viz the historic fort.

Projected population for 2031

The Table M2 indicates that the town of Manimajra had a population of 1.1 lac persons as per the census 2001. The Census figures of 2011 for the town have not yet been released. However assuming the decadal growth rate of 17.1 % of the Census 2011, the town is expected to have a population of 1.87 by 2031

Table M2 - Projected population for 2031

Name of Settlement	Population 2001	Population 2011	Projected Population (Growth Rate 17.1%)	
			2021	2031
Manimajra	111525	130484	152666	178619
Manimajra Rural	5521	6459	7557	8841
Total	117046	136943	160223	187460

Holding capacity of the town

The town has already overstepped the planned target of 80,000 set in the Development Plan of 1990 while the Development Plan 2009 submitted by MC had indicated a population of 2.1 lakhs, however no clear proposal was indicated for adjustment of the population.

The total area under Manimajra Urban & Rural is 855 acres and the adjustment of projected population of 1.87 would mean overall density of 219.25 ppa and net density of 395.79 ppa which are not desirable.



The population figures for 2011 of the town have not been released so far in the Census 2011, however assuming a decadal growth rate of 17.1 % of the last decade as projected by Census 2011, the population of 136943 would be the current estimated population of the town .

Total area (in acres)	Population 2001	Density (persons per acre)	Population 2011 (@ 17%)	Density (persons per acre)
855	117046	136.90	136943	160.17

The total area under residential use in the approved landuse plan is 346 acres thus the overall density would work out to 395.79 ppa which would be an extremely high density and not desirable. Due to limited availability of vacant land in the town which can be put to residential use and the already high population density of the town, further densification of the town is not desirable.

It is recommended that additional housing stock should not be provided for attracting new population /migrants to the town, rather an urban renewal exercise of the congested pockets needs to be carried out to decongest the pockets and for augmentation of the social and physical infrastructure facilities for which area should be kept reserved .

Of the 346 acres assigned for residential use in the approved landuse plan ,most of the area is already developed but for three pockets enlisted below :

Pocket No. 6	19 acres
Pocket 9	49 acres
Pocket 11	36 acres
Total	104 acres

Since Pocket 6, measuring 17.79 acres has already been taken up for development and a school is already under construction, it is recommended that development of the pocket should be completed. However in place of plotted development however group housing should be planned. At a density of 175 ppa, a total population of approximately 3325 persons can thus be accommodated along with essential supporting infrastructure.

The Pocket 9 and 11 which are contiguous to the old fort area shall be reserve a for accommodating the spill over effect of the congested pockets of the old Manimajra areas around the fort .

The Manimajra Town does not have the holding capacity to support the projected population of 1.87 lakh and therefore, the town requires strong measures enabling dispersal of existing as well as future growth of population in the adjoining States /towns or in other pockets of Chandigarh .



Ensuring adequate Social Infrastructure

The detailed stocktaking of the existing social infrastructure carried out to assess the adequacy and inadequacy as per the UDPI guidelines (Refer Table M4) indicates that the existing infrastructure of the town viz educational and health is inadequate even for the population figure of 1.1. Lacs in 2011. The need to augment educational, health, community infrastructure for the population of 1.37 lac (holding capacity). The recommendations area as under:

Proposals of CMP 2031

Educational Facilities

Provision of Higher education facilities:

A site for college as earmarked in the approved Land Use Plan of Manimajra in Pocket No 9 which is centrally located /in the close vicinity of residential areas. Another site for college to be reserved in Pocket No. 4 & 5.

Provision of Technical Institute

It has been analyzed that there is no **Technical Institute like Polytechnic, ITI or Engineering Institute** available in Manimajra. Hence, a site for technical institute is to be reserved in Pocket No.4-5 to facilitate the youth.

Relocating of undeveloped school sites away from main roads

Sites for schools earmarked in the Development Plan of 1990 in close vicinity of main roads have been proposed to be shifted to pocket no.7, 8,9 and 11 so that school children are kept away from the main roads.

Setting up of Play Ground/sports stadium

- The population in the area has increased manifold but the children of the area have no play ground, the area being surrounded by high way roads.
- A sports stadium, multipurpose hall, with provisions of banquet hall, indoor sports facilities and other community facilities shall be planned in Pocket 8.

Health Facilities

Setting up of a Multispecialty Hospitals

- A Multispecialty Hospital over an area of 6.10 acres is proposed in Pocket 8. A super specialty hospital can be built here so that the load on GMSH-16 and GMCH-32 is reduced.
- Another site for a multi specialty hospital has been earmarked in Pocket 1.

Up gradation of Primary Health Centre to Hospital

- The Primary Health Centre in Manimajra is presently being upgraded to a 100 bedded hospital .

Cultural

Setting up of Banquet Hall/Marriage Palace:

There is only one community centre opposite the Shivalik Garden, which caters to approximately 200-250 persons, which is not sufficient for marriage function. In the absence of any banquet hall /marriage palace, the people of Manimajra have to go to either Zirakpur Chandigarh or Panchkula to solemnize marriages etc. A site of 4 acres has been earmarked in Pocket 11 for setting up a state of the art Banquet Hall /Marriage Palace in the area.



Table M4 Existing Social infrastructure Manimajra and adequacy /inadequacy to meet the requirements of 2001 Census Population

The Table indicates that the social infrastructure is inadequate for the 2001 census population of 1.1 lac
The inadequacies are in schools , colleges and Health Infrastructure .

Existing facilities			Required for 1.1.Lac population	Remarks	Adequacy/ Inadequacy
School	Existing	10	High schools required. 14.6 say 15	1. High school falls in Pocket 1, 2 & 3, 7, 8, 9, 11. 2. Primary school falls in pocket 2&3, 6 & 10. 3. Two schools fall in old Manimajra. 4. Schools are well distributed.	Inadequate
College	Existing	-	1		Inadequate
Dispensary	Existing	1	7	Falls in MHC	Inadequate
Hospital	Existing	1	1	Hospital falls in pocket 1	Adequate
Fire station	Existing	1		Fire station falls in pocket 2 &3	Adequate
Police station	Existing	1		Falls in pocket 11	Adequate
Sampark centre	Existing	1		Falls in pocket 1	Adequate
Miscellaneous	Town park-1			Falls in pocket 7 1 more park/recreational facility will be provided in pocket 8	
	Night shelter-1			Falls in pocket 1	
	Bus queue shelter-3			Fall in different locations	
	Dushara ground- 1			Falls in pocket 7	
	Banquet hall-1			Falls in pocket 1	
	Kalagram-1			Falls on Chandigarh- Kalka Road	
	Sports/play ground-1			Site reserved in pocket 8	
	Petrol pump-2			Falls in Pocket 4 & 5 and motor market	



Social Infrastructure - Manimajra



PRIVATE EDUCATIONAL INSTITUTIONS



GOVERNMENT EDUCATIONAL INSTITUTIONS



NEIGHBOURHOOD PARKS INSTITUTIONS



RECREATIONAL –MULTIPLEX –
THE FIRST TO HAVE COME UP IN THE CITY

COMMUNITY CENTRES

TOWN PARK



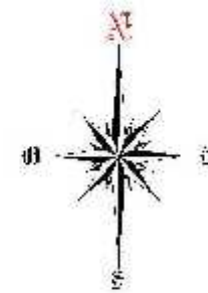
DEVELOPMENT OF THE COMMERCIAL BELT IS BEING UNDERTAKEN BY THE MUNICIPAL CORPORATION ALONG THE CHANDIGARH KALKA ROAD



UP GRADATION OF THE DISPENSARY TO A CIVIL HOSPITAL IS IN PROGRESS



Plan M4 Proposals in Manimajra



UNDERPASS ON RAILWAY CROSSING

DUAL CARRIAGEWAY WITH PARKING ON



Augmentation of cultural facilities



Plan M5 – Second Phase of Kalagram - permanent space for exhibition of different cultural zones



An area of 14.18 acres was allotted to the Department of Culture, Government of India for setting up of an Artisan Village at Manimajra on the Chandigarh Kalka Highway. The first phase of the project which include, the restaurant complex, open air theatre, NZCC Office, restaurant complex, open air theatre, accommodation for artists have been constructed. Since 2008, theme based National Crafts Mela has been held every year showcasing the rich cultural heritage and traditional handicrafts of the country. The melas have been a great success.

Recommendation

- **Setting up of additional infrastructure in Kalagram, Manimajra (2nd Phase Development)**

Completion of the 2nd Phase of Kalagram which would include permanent pavilions of the zonal cultural centres, art and craft shops, multipurpose hall, exhibition space, work shops, food court, open air theatre, offices, multilevel parking etc. Centre draws large footfalls during mela days. **There is a need for a pedestrian underpass to enable pedestrians to safely cross the busy Chandigarh Kalka road.** Plot adjoining the Kalagram which has also been allotted to the NZCC to be developed as a multistoreyed hostel campus for the visiting craftspersons with provision of underground parking.





Enhancing the green component of Manimajra town - development of green belts and Leisure Valley in Manimajra .

Enhancing entry to the city



The Chandigarh Kalka Road provides the main approach road to the town as well as to Chandigarh and developments on either side along the road are important from the imageability point of view.

Detailed landscaping proposal is recommended along the road. The area under the **elevated metro** along the stretch to be landscaped and maintained.

Similarly the **entry to Panchkula across the Housing Board Junction** to be developed with enriched landscaping to signal a green ambience on the arrival of the town.

Longitudinal Green belt is proposed on the rear of the commercial /institutional belt running along the entire length of Pockets Number 2,3,4 and 5 which will facilitate the residents of the area and also create a buffer between the commercial / institutional area and the residential area and the much need for green lung in the area.

Development of Leisure Valley along the two creeks passing through Pocket 8, 2-3, & 6 on the edge of Mauli Jagran and another flowing in-between Panchkula and 61.21 acre scheme of Manimajra is proposed with sensitive landscaping to be developed to enrich the overall environs of the area

Green belts along the railway track -30 m green belt along the railway track circumventing the town to be developed in pocket 8,9 , and 11 on priority to provide a buffer against air and noise pollution.



City level green at site vacated by cremation ground

- The site vacated by the cremation ground located along the Chandigarh Kalka Road in Pocket 1 to be developed as a city level park which will enhance the entry to the city.
- The area is expected to have large visitor footfall due to the proposed metro node .
- **Serial wise house numbering and naming of streets is recommended:**



Present status of Physical Infrastructure in Manimajra

Sewerage system

Existing status and issues

The township of Manimajra which was a small village falling in the Periphery Controlled area at the time of the inception of the original plan was not provided with Sewerage, Water Supply and Storm Water Systems. Subsequently also when the area was taken up for urbanisation, the town was provided with its own independent sewerage, water supply and storm water system due to the distance from the main town, the intercepting Sukhna Choe and the Railway line not connected with the main city.

The entire township of Manimajra has now been provided with an underground sewerage system. While the new colonies have been developed with the facility, the sewerage system in the old areas of the town consisting of Gobindpura, Thakur Dwara, Shanti Nagar, Mariwala Town, Pipliwala Town, Subhash Nagar and Bank Colony was laid after the Notified area Committee came into being. The discharge of the sewerage system is at the STP at Raipur Kalan.

Problems

There is **regular problem of blockage** of the sewer line due to the following

- Throwing of garbage /polythene into open manholes
- Open manhole covers due to pilferage by rag pickers
- Sticking of grease matter in the sewer lines specially in the Motor market area .
- Damage of sewer lines during monsoons due to erosion of soil around it .

Water supply system Manimajra

Existing status and Issues

The water supply of Manimajra is mainly based on tubewells and supplemented with surface water from BML Canal. Since Manimajra has developed at a rapid pace and a number of new colonies have come up around the town like Indira Colony, besides commercial and modern housing complexes there has been an increase in population and thus increase in water supply requirements. Therefore the tubewell supply proved inadequate to meet the increasing demand of water.

Lowering of the water table of Manimajra

The water table of Manimajra has gone down from 75 meters to 90 meters within a span of 15 years and has affected the supply of the tubewell. In case the water is continuously pumped from the tubewells, it will further lower the water table will be further lowered and it is feared that the existing tubewells may not remain useful in the times to come .

Restructuring of the water supply system initiated

In order to overcome the problem, restructuring the water supply system by introducing canal water supply was taken up in 2010. The MS rising main from Sector 26 to Water Works –11 and further upto Water Works-1 was laid to carry 5 MGD canal water to Manimajra. At present 33 deep tubewells having depth of 200 mtrs to 300 mtrs are feeding Manimajra and generating about 4.5 MGD water. Besides 0.5 to 1.0 MGD water is being pumped from Sector 32, Water Works to Manimajra. The average availability of water is 6 to 8 hours per day. The Municipal Corporation has projected the total water requirement of 8.95 MGD in 2022 and 13.57 MGD in 2037 for Manimajra and the adjoining areas of Mauli Jagran. The calculations of the corporation are based on an estimated population of 1, 38, 340.



Water Distribution Network

The distribution network is old and has been laid in phases. Keeping in view the topography of the area, the network has been divided into 5 zones. There are a total of 11525 water connections in Manimajra. All individual households and dwelling units have been provided independent water supply connections .

As brought out above the water supply is based on tubewells and canal water, however the area of Zone 2 which includes the Indira Colony, New Indira Colony, Old Indira Colony and EWS Indira Colony is totally dependant on the 7 tubewells in the area. The Municipal Corporation has submitted that the carrying capacity of the distribution network is sufficient to meet the demand of the estimated population .

Storm water system of Manimajra

The storm water system of the Municipal Corporation consists of open drains, open nallahs and underground SWD.

While the new areas of the town have been provided with storm water lines, the old areas of the town having narrow street widths have no storm water lines and the rain water is carried through open drains located on both sides of the streets and discharge into open nallahs /choes.

Narrow streets of old town without storm water lines

At the time of augmentation of services within the town, due to limitations of narrow street widths in the areas like Mohalla Nagla Basti, Bharamul Khu, Mata Raj Kaur, Dehra Sahib around the old fort, preference was given the laying the very essential services ie water supply lines and sewerage lines rather than storm water lines. Here too the safe distance required between the sewerage and water supply lines was not possible to be maintained due to site constraints.

Ongoing strengthening of the storm water system by the Municipal Corporation. The big open nallah emanating from Indira Colony and crossing of railway track and having a length of about 3 km covering Indira Colony, Subash Nagar, Darshinin Bagh, Masjid, Gobindpura, Sheetla Mata Mindir, Nirankari Sect. and Pocket 6 is being converted into RCC box channel.

The work for laying RCC pipe line for quick disposal of rain water from the Rajiv Vihar to across the National Highway has been taken up. Though the Municipal Corporation carries out regular maintenance of SWD, however unhygienic conditions persist since residents dispose off solid waste containing plastic /vegetable /medical waste /meat waste and cow dung into open nallahs.

POWER





Recommendations

Detailed proposals of sewerage disposal ,water supply and storm water of old abadi areas

Detailed proposals of sewerage disposal, water supply and storm water of the old abadi needs to be worked out on priority as part of the urban renewal of the areas to ensure that all household are provided with the facility. Safe distance between water supply and sewerage lines to be ensured so that the water supply is not contaminated .

Ensuring adequate and dependable supply of potable water and laying of water supply pipes to cater to the increasing population.

Shift from tubewells to canal water supply

The lowering of the water table of Manimajra from 75 meters to 90 meters within a span of 15 years is a matter of grave concern due to the extensive extractions of ground water through tubewells as the main source of water supply for the town. Switch over from tubewells to canal based water is strongly recommended. The endeavor should be to provide 24X 7 water to the residents of the town.

Recharge of deep aquifers and water conservation to be institutionalized

Institutionalizing solid waste management of the town

Door to door collection of segregated solid waste is recommended as is also being considered by the Municipal Chandigarh for the rest of the city.

Segregation of waste at source to be mandated

Sensitizing the residents against dumping solid waste in the open, littering of the open nallahs and sewerage drains .

Preventing flooding and water logging

The detailed surveys of the town to check against flooding needs to be carried out and effective drainage plan prepared rather than piecemeal planning.

Use of tertiary treated water for non potable use

In order to reduce the demand for potable water in the town, it is recommended that the tertiary treated water from the STP Plant at Raipur Kalan is recycled back to the town and used for non potable purposes .



Poor sanitation in the town

Need for institutionalising garbage disposal



Traffic and Transportation improved connectivity with the main city of Chandigarh

Improved connectivity with the main city of Chandigarh

Road connectivity

The Chandigarh Kalka Road which is the main link connecting Manimajra with the main city of Chandigarh and with the towns of Panchkula, the Chandimandir Army Cantonment, Pinjore Complex is experiencing traffic congestion along its length. The problem is acute near Railway Station junction, Housing Board Chowk, Fun Republic and also at the entry point of Panchkula. The other links via Kishangarh /IT park are intercepted by the railway line near the Modern Housing Chowk Junction 126 and near the Handicraft Centre at Junction 128 due to the absence of grade separation – RUBs/ROBs which cause great inconvenience to the residents /commuters .

Recommendation

Construction of grade separators ROB /RUB –at junction 126 and Junction 128 to provide seamless connectivity across the railway track. This will make the Kishangarh –Manimajra links popular and thus reduce pressure on the Chandigarh Kalka road.

Manimajra be connected with the integrated Mass Rapid System – Metro and BRTS (See Chapter Traffic and Transportation) as Part of the Comprehensive Mobility Plan for Chandigarh Urban Complex .

The Manimajra town already enjoys the advantage of being located along the Chandigarh Kalka Highway. The town shall enjoy better connectivity with the city and the region through the proposed metro. While the connectivity along the East West corridor running from Transport Chowk, Mullanpur to Grain Market, Panchkula through the metro node at Chandigarh Housing Board Chowk has been finalized by DMRC, the detailing of the second phase which links the town with IT park is yet to be finalized by DMRC.

Road improvement and connectivity



Manimajra to be linked with metro in the first phase of the project





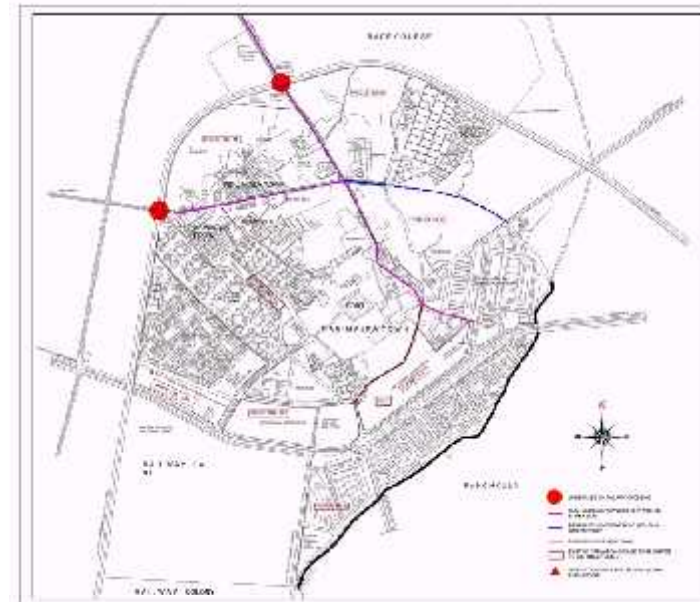
Comprehensive proposal for traffic and transportation of Manimajra

- **Comprehensive proposal for the circulation system** needs to be planned which should provide for improvement of road geometrics and junctions to ensure equitable road space for all modes of traffic /removal of bottlenecks, organisation of parking spaces especially around the Fort area, Commercial areas of the town, proper maintenance to regular monitoring and review, segregation of fast and and the slow, the slow motorised and the non motorised traffic in the town.
- Ensuring unobstructed movement of fire tender and emergency vehicles. Traffic management to restrict movement of freight traffic. Seamless and safe pedestrian and cycle movement /construction of pedestrian underpasses to enable cross over across Chandigarh Kalka Road.

Road improvements

- Road widening and dual carriage-way of Route No.3 from Railway crossing to Fun Republic Multiplex, Manimajra.
- Construction of underpass on Route No.3 on Chandigarh-Kalka Road- Railway Line crossing for smooth functioning of the traffic.
- Construction of 30 m. wide road between Pocket 8 & 9 that will connect Route No.3 Manimajra to Mansa Devi Temple road.
- Widening of road to 30 m. wide from Police Station Chowk to Kishangarh/IT Park.
- Construction of 30 m wide road to connect I.T. Park/Kishangarh road with Route No.3 in Manimajra.
- Widening of road from Manimajra to I.T. Park, Phase-I to 25 m.
- Construction/improvement of 20 m. wide road, from Fun Republic road (backside of Pocket 1) upto Housing Board Chowk, which will give a relief to the highway and will also facilitate the residents living in the adjoining areas.
- Alternative link to Shivalik Enclave from Housing Board Chowk to Panchkula Road.

Map indicating road improvement proposals





Improving circulation system within the town

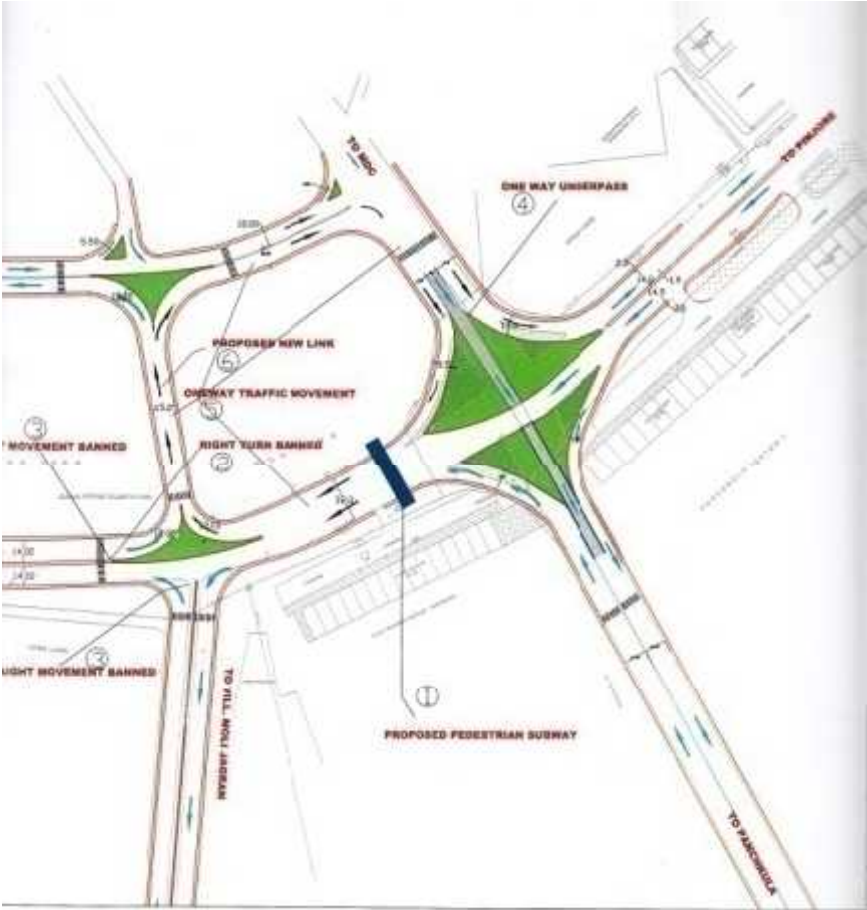
The Chandigarh Kalka Road which cuts across the town carries large volumes of inter city and regional traffic. There is acute congestion at the Housing Board Chowk. The Comprehensive Mobility Plan, prepared by Rites has suggested improvement of the circulation system at the Junction. The proposal is recommended for implementation subject to feasibility at site in view of already constructed areas.

Improved connectivity

Direct dedicated public transport service should also be started from different pockets of Manimajra to help in reducing the traffic and the will improve the overall environment of the town.



Junction improvement at Housing Board Chowk, Manimajra proposed by Rites is recommended for implementation subject to feasibility at site





Need to decongest the old abadi areas of the town

- **A comprehensive Urban renewal proposal** of the old Manimajra Town, is recommended to address the multidimensional issues of accessibility, physical infrastructure and amenities besides ensuring the preservation of its overall ambience which shall be subject to approval of the Chandigarh Heritage Conservation Committee.
- Detailed surveys of ground realities is recommended to include – condition of structures, height of structures, circulation system, availability of social and physical infrastructure, encroachment, land use, fire safety, availability of open spaces etc .
- There is an urgent need of enforce **building regulations** for existing buildings and the proposed constructions in old abadi of Manimajra to keep a check on the developmental activities and ensure conformity of land use, adequate light and ventilation, fire safety norms, structural safety of individual and neighboring property which are being totally ignored at present.
- It is thus recommended that the residual vacant areas in pocket 9 and 11 which are contiguous to the old abadi should be kept as reserved to address the need and planning of the area should be taken up in co-ordination /integration with the development plan of the old abadi .



SOURCE:- Commissioner, Municipal Corporation Chandigarh vide Memo No. 681 dated:-14-11-2012

TABLE M5 – POCKET WISE VACANT LAND IN MANIMAJRA

Sr. No.	Pocket No.	Vacant Land (in acres)
1	1	9
2	2&3	34
3	4&5	25
4	6	19
5	7	Nil
6	8	50
7	9	49
8	10	Nil
9	11	36
	Total	222 Acres



Heritage status to Manimajra Fort, declaration of conservation area and preparation of an Urban Renewal Plan for area around the fort

- The Government of India based on the recommendation of the Expert Heritage Committee has approved Heritage status to the historic Manimajra Fort.
- To take the case forward w.r.t heritage status, preservation, restoration and conservation of this important ancient monument the matter will need to be followed up with the owners of the private property.
- The fort is not easily accessible due to traffic congestion, narrow streets, encroachments and absence of parking lots. Presently out of bounds to the public the fort is expected to attract tourists and residents once declared heritage site for which major steps will need to be taken to improve its accessibility and make provisions for tourist infrastructure .
- A large number of multi-storeyed buildings are coming up in close vicinity of the Fort, which are beginning to over-power it. It is, therefore, proposed that this area be declared “**Conservation Area**” and the guidelines for development be specially laid down so as to be in consonance with the overall character and ambience of the Historic fort.

Sustainable Management Plan for the Conservation Area is recommended which shall be appropriate to the cultural significance of the place. The intervention strategy would reflect the concept of **minimal intervention in the spirit of the place to provide a unique cultural and historical experience to the visitor and to the residents of the area around who shall take pride in the unique heritage and participate whole heartedly in the Preservation and Conservation of the historic building in the midst of the urban area.**

Old Ropar Road --- The historicity of the old Ropar Road also needs to be highlighted through detailed planning / landscaping proposal along the road . Traces of the road also remain in parts within the sectoral grids in Sectors 19, 21 and 22 and Palsora and need to be integrated into the plan.

Plan showing early stages of development around the old Manimajra Fort area .





Manimajra Fort



Source Google earth

Recommendations

Architectural Conservation

The FORT is in an utter state of disrepair. There are structural cracks, broken floors and dilapidated internal and external elements. A conservation plan for the fort needs to be holistically and scientifically worked out through engagement of specialized professionals and experts to address its structural, electrical, drainage and plumbing issues.

Environmental Upgradation

Revitalization of the access to the Fort for an enhanced visitor experience. The present entry to be cleared of encroachments and redesigned for a better sense of entry or arrival .

Adequate provision of parking space and proper planning
Provision of visitor facilities – toilets, drinking water, public seating, signage, resting places etc. all additions and interventions into the area to be in the context with the spirit of the place.

Site interpretation centre along with tourist souvenir shop to be incorporated within the historic fabric .

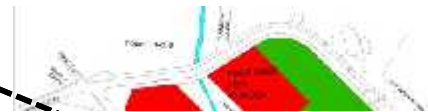
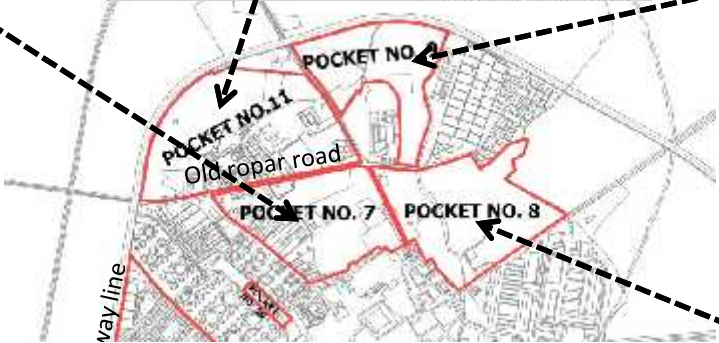
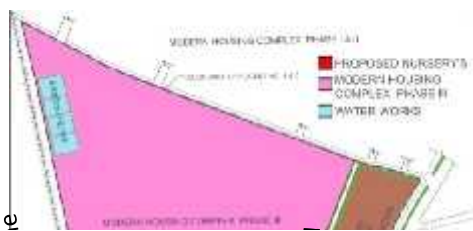
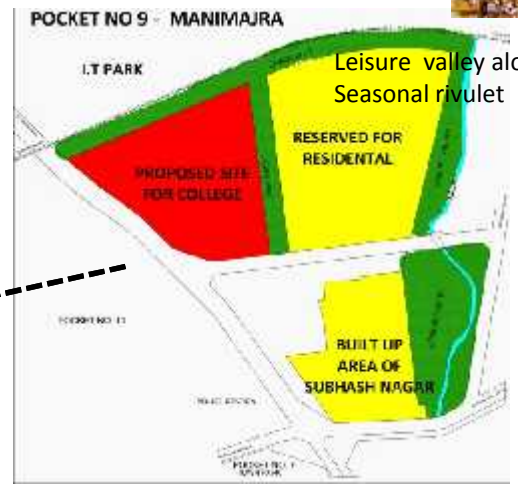
Landscaping –hard and soft landscaping of the areas within the heritage site to be sensitively addressed.



SHIVALIK GARDEN, POCKET 7 IS A MAJOR LUNG OF THE MANIMAJRA TOWN



REGULAR MAINTENANCE OF THE GARDEN AND ITS ENVIRONS IS RECOMMENDED





Pocket Wise Landuse Proposals

Pocket 1 –Landuse - Commercial & Public buildings/Amenities

A linear pocket abutting on the Chandigarh-Kalka Road

Area -27.82 acres

Commercial sites have are already being developed along the Chandigarh Kalka Road

1. Site for Multispecialty Hospital to be retained.
2. Park in place of institutional site behind SCFs.
3. Cremation Ground to be discontinued and area to be developed as green belt .
4. Metro Node – The Elevated Metro line is to run along the Chandigarh-Kalka Road with elevated station near the Housing Board Chowk.
5. A pedestrian underpass has been proposed near the proposed metro node to provide connectivity between the commercial and residential areas on either side of the Chandigarh-Kalka Road.

Pocket 2 and 3 Landuse - Commercial/institutional & Public buildings/amenities

Linear Pockets abutting onto Chandigarh –Kalka Road

Area 59.05 acres

- Conversion of sites for medical hospitals proposed by the Municipal Corporation in the revised Development Plan 2009 into SCOs is not recommended due to deficit of medical facilities in the town .
- School site earmarked in the Development Plan of 1990 to be shifted as the same is near the Chandigarh Kalka Highway which can lead to accidents, the site to be converted into commercial/institutional .
- Longitudinal green belt to be developed behind the commercial area in continuity with the green belt proposed from pocket 1-5 subject to feasibility.
- Construction of Bus Stand to be prioritized since Manimajra has only a make shift bus stand at present resulting in inconvenience to the residents/commuters

Pocket 4 and 5 Land use - Commercial /institutional and green belt

Linear Pockets abutting onto Chandigarh –Kalka Road

Area 75.64 acres

School site earmarked in Development Plan 1990 to be shifted to Pocket 9 near Subhash Nagar due to proximity to Chandigarh Kalka Road .*The vacated site is proposed for institutional use.*

Longitudinal green strip to be developed on the rear side of commercial area *in continuity of green belt and landscaping proposed from pocket 1-5 subject to feasibility to provide the much need the green lung within the congested town.*

Pocket no 6 Landuse - commercial & residential

Triangular pocket bound by Chandigarh-Kalka Road, road leading to Mauli Jagran and road leading to Panchkula. Seasonal choe/nallahs skirts one end of the site.

Area 29.75 acres

- In view of the scarcity of vacant land in Chandigarh as well as in Manimajra, this pocket should be developed as group housing rather than plotted development to enable higher density .
- The density of this pocket is proposed as 175 persons per acre. Further in view of the three storeyed development of Shivalik Enclave, housing board scheme in Sector 18, Panchkula which are in close vicinity of Pocket 6, the height of the buildings should be restricted to maximum of four floors.



Pocket 7 Landuse - Residential, Public buildings/amenities, Open Spaces. Pocket is fully developed .

Rectangle pocket bound by Old Ropar Road on two sides and old abadi on other sides.

Area 39.58 acres

Pocket already fully developed.

Pocket 8 Landuse - Public buildings / amenities, commercial, residential, recreational and open spaces.

Triangular pocket bound by Old Ropar Road on one side and Old Mansa Devi road on the other side.

Area 54.37 acres

100 ft. wide road proposed between Pocket 8 and 9 to connect Mansa Devi Road to provide an alternative link to Mansa Devi Temple/Panchkula and help decongest the other links.

100 ft wide green belt along the choe with proper landscaping to improve the overall environment of the area.

Pocket 9 Landuse - Residential, Open spaces, Public buildings / amenities.

Pocket abuts Kishangarh road and is contiguous to the old abadi area. A railway track falls on the northern side of this pocket.

Area 56.93 acres .

The areas of the old abadi area of Manimajra are very congested and with high density and there would thus be need for decongesting the area after undertaking a detailed surveys and analysis of the area. It is proposed that the pocket 9 and 11 contiguous to the abadi should be reserved for accommodating the spill over effect .

An urban renewal of the old abadi area around the fort has been recommended which will entail decongesting the area, providing additional social/physical infrastructure/green belts and open spaces.

The area shown as residential and that vacated from building material is to be kept as **reserved** for spill over and augmentation of social and physical infrastructure. 30 mtr. Green Belt along the Railway Track in continuity with Green Belt of Pocket No.11 to be developed on priority to provide buffer against air and noise pollution. A site for a college has been proposed in the pocket .

Pocket 10 – Landuse - Green Belt along the Choe/nallah with proper landscaping. To improve the overall environment of the area.

A small piece of land surrounded by old abadi.

Area 1.1 acre

A 30 mtr. Green Belt along the Railway Track to be developed on priority to provide buffer against air and noise pollution and to improve the overall environment .

Pocket 11 Landuse - Residential, Open spaces, Public buildings / amenities.

Triangular pocket bound by Old Ropar Road, road leading to Kishangarh & Chandigarh- Kalka Railway line,

Area 40.06 acres

The area to be kept as **Reserved** for addressing the urban renewal of the old abadi areas and for augmentation of social and physical infrastructure as has been also been recommended for pocket 9 .

A 30 mtr. Green Belt along the Railway Track in continuity with Green Belt of Pocket 9 to be developed on priority to provide buffer against air and noise pollution. to improve the overall environment.



16. DEVELOPMENT CONTROLS AND REGULATIONS

Development controls have been defined as the mechanism through which entire process of urban development is regulated to achieve the objective of promoting overall benefit of the society and creating a distinct image of the city. It includes guiding the development and use of land, curbing misuse of land and promoting rational and orderly development of built environment. Development controls are required to meet situations and contexts which are generally static. In this context they tend to become to rigid and complex. Looking at the far reaching impact and implications of the development controls on the growth and development, character, fabric and personality of a city, they need to be framed with great care and abundant caution. Considering the larger public interest and general welfare of the community, formulation of the development control should satisfy the basic requirements of the health, safety convenience, economy and amenity.

16.1 NEED AND PURPOSE OF DEVELOPMENT CONTROLS AND REGULATIONS:

Chandigarh has been widely acclaimed as a Mecca of planning and architecture in view of various innovations incorporated in the planning, designing, development and management of this capital city of the state of Punjab. The city today is valued universally for being the first realization of Le Corbusier's urban percepts and the site of his most elaborate architectural creation.

Chandigarh has been credited with extensively using mechanism of development controls for promoting state of art development and quality built environment.

In the absence of any statutory master plan, growth and development of Chandigarh has been exclusively regulated through various development controls, which have been put into operation as integral part of city planning and development process.

16.2 TYPES OF DEVELOPMENT CONTROLS AND REGULATIONS IN CHANDIGARH:

To control and regulate the development of the city in accordance with founding concept and ideas as envisaged by the Architect Planner, various Acts/Rules and Architectural and Urban Legislations were put in place, which are as follows:-

(i) The Punjab Capital (Development and Regulation) Act 1952

Development within the city is being managed through various kinds of development controls. Development controls within the city have its genesis in 'The Capital of Punjab (Development and Regulations) Act, 1952. Sections 4 of the said Act, empowers Chief Administrator to issue such directions, as may be considered appropriate in respect of any site or building for the proposes of proper planning or development of Chandigarh. Various rules enacted under said Act are as under:-

(ii) The Punjab Capital (Development and Regulation) Building Rules 1952

Under the provisions of above mentioned Act, The Punjab Capital (Development and Regulation) Building Rules 1952 have been formulated. These Building Rules, various administrative procedures were formulated such as procedure of submission of building



application, planning and architectural controls, materials and structural controls, drainage control etc. Building plans of all private buildings in the city are sanctioned in accordance to these Building rules. Occupancy certificates are issued only to buildings which are built as per sanctioned plans and various types of penalties are also imposed in accordance to these building Rules. These rules have been amended from time to time keeping pace with the advancements in building technology, genuine needs of the masses and various provisions in the referral publication such as NBC.

(iii) The Chandigarh (Sale of sites) Rules 1952

These rules govern the sale of various types of sites in Chandigarh either through auction or allotment.

(iv) Chandigarh Tree Preservation Order 1952

These rules were framed to preserve the protected trees, group of trees or woodland areas which form the green cover of the City. The rules prohibit cutting of trees in any part of the woodland area shown in the zoning plan.

(v) The Punjab New Capital (Periphery) Control Act 1952

Haphazard, unplanned substandard and ramshackle development around the city is regulated and controlled by 'The Punjab New Capital (periphery) Control Act, 1952, Act, which controls and regulates the area contained in 16 kms. belt, around the new capital of Chandigarh, declared as Periphery, under the provisions of the said law. This act was formulated to ensure regulated development of the Capital City and to eliminate emergence of slums and haphazard development around the new City.

The main aim of this Act is :

To freeze the landuse in the peripheral area (primarily agricultural) and to retain its basic character. This act extended up to 16 km. built around the city.

To prevent change in landuse except as permitted.

To provide ample area for future growth

To identify areas, which will provide agricultural, dairy, poultry products for day to day needs of the city.

To clearly demarcate the functions of the capital city and its periphery for evolving harmonious relationship between the two.

To provide a legal framework for achieving above objectives.

To channelize growth and development in identified areas only.

Regulations and controls

All the buildings are subjected to different development controls for regulating their design and construction. The application of the development controls have been largely dictated by the category of buildings, location of the site, size of the site and need to regulate the building design/architecture etc. Therefore, Chandigarh has put in operation following two distinct sets of development controls to regulate its growth and development both within and outside the city:

a. Zoning Regulations

b. Architectural Controls

a. Zoning Regulations

To control and regulate the development of the city in accordance with founding concept and ideas as envisaged by the Architect Planner, the Punjab Government formulated Punjab Act XXVII of 1952 under which the Capital of Punjab (Development and Regulation) Act 1952. This Act lays various mandatory rules and regulations in respect of erection of buildings in the Chandigarh Capitol Project and confers upon the Chief Administrator, Capital Project the power to frame and amend rules.



b. Architectural Control

The Edict of Chandigarh states that certain areas of Chandigarh are of special architectural interest where harmonized and unified composition of buildings is aimed at. In these areas, absolute architectural and zoning controls should remain operative. The planners of the city employed large scale aesthetic controls ranging from urban design measures to extensive architectural controls that prescribe volumes, outlines and skyline, forms, spatial setting, facades, materials, textures, colours, fenestrations and even boundary wall and gates. These architectural controls depict the architect's interpretation of available technology, climate, social order of the democratic nature placed in the context of modernism. These controls were framed to provide an egalitarian outlook to the urban character of the city where the facades and profiles of the built environment do not depict the socio – economic conditions of the citizens.

Types of Architectural Controls

The relaxations have been provided in the controls based on case to case basis and the representations received from time to time from the plot owners. However, most of the relaxations are provided in such a manner that the basic architectural parameters of the related buildings are not altered. Following types of Architectural Controls were made applicable in various parts of Chandigarh:

- a) **Full Architectural controls**
- b) **Controls along major arterial roads**
- c) **Frame controls**
- d) **Architectural controls houses.**
- e) **Controls in Sector 17 and Sub City Centre Sector 34**
- f) **Gate and boundary walls**
- g) **Full Architectural Controls – Phase I of Chandigarh**

- a) **Full Architectural Controls:-** Full architectural controls were created primarily for the commercial and residential buildings abutting the shopping streets (V4 roads) wherein the entire external facades and internal planning was to compulsorily comply with the standard design provided by the Government.

Houses up to 1 kanal plot area were brought under architectural controls for which design was supplied by the Government. These architectural controlled houses were in phase I sectors such as 10, 11,18,19,27 etc. However, these architectural controls have been relaxed vide notification of Chandigarh Administration dated 16.10.2008 and presently in residential houses of all categories, zoning parameters have also been made applicable simultaneously.

The Shop-cum-Flats (SCFs) abutting the V4 streets in Phase I sectors are also covered under architectural controls from the very beginning and the controls provided for mixed land use pattern i.e. shops on ground floor and living units on first floor and barsati. However, the conversion of SCF to SCO has been permitted by the Chandigarh Administration. In Phase II sectors, the full architectural controls were restricted only to commercial buildings (shop-cum-offices and booths) on V4 streets and the plotted attached houses across the street were replaced by multi storied housing.

- b) **Controls along major arterial roads**

The architectural controls for commercial and institutional buildings were evolved for all the major arterial roads of the city - Madhya Marg (V2), Jan Marg (V2) Dakshin Marg (V2)Himalaya Marg (V2b) Shopping streets (V4) and varied from street to street in detailing but retained similar character and concept. The controls whether commercial or institutional can be classified either as brick structures or R.C.C structures or composite built forms. The commercial buildings built initially were mostly linear blocks abutting on parking spaces placed along major avenues, however subsequently the linear layout was changed to an M-shaped layout, creating parking enclosures on front and rear sides of these showrooms.



The service lane and rear courtyards were omitted. The institutional buildings of plotted development which are composed of multiple blocks of varying heights placed at angle to the avenues in order to facilitate north lights. While the tower blocks along Madhya Marg are four storied, those along Jan Marg are higher having six storeys. Incremental development of the complexes and subdivision of these plots was permitted within the architectural control. The architectural controls evolved on the basis of an economical structural grid, of 17'-3" c/c in most of the cases, the same was repeated to carve 2 bays or 3 bays site as per the requirements and optimum use of the space. In the case of SCFs in Phase-I sectors, the grids were of a smaller size, keeping in view the economic limitations and requirement for smaller size of neighbourhood shops.

c) Frame controls

Frame controls were essentially evolved for row type attached houses on plots varying from 5 marla to 14 marla category. Prior to the evolution of frame controls, the houses were designed keeping in view general building byelaws and zoning restrictions. Since the experiment of developing small plots attached to each other and sharing common walls on both sides according to zoning guidelines resulted in a haphazard street picture, the need for frame controls was felt. Frame control design comprises of fixing the extent and heights of the party walls and a top course and connecting them with a frame. The building portion which can be of any design stays behind this frame. Initially, the frame controls provide standard sizes of doors and windows which could be chosen and used in any manner. Further, the size and percentage of fenestrations on facades were also fixed. However, these stringent controls were relaxed subsequently allowing flexibility in the size and shape of the doors and windows.

There are separate frame controls for marla houses in both the phases of Chandigarh. The frame controls in phase I sectors provide for incremental construction in 3 phases up to a maximum height of 32'-3", wherein the final built form is cuboid in volume with equal areas on all floors. The frame controls in phase II sectors mandated compulsory stepped rear terraces, each provided with brick screen walls for outdoor sleeping. The maximum height of these houses is 32'-3".

However, later, the above mentioned maximum height was relaxation upto 33'-0" and coverage of compulsory rear open terraces was also made allowed. But, presently, the above mentioned category of houses is being governed by the Zoning Parameters vide notifications dated 16.10.2008. The description of the same is mentioned in annexure..

d) Architectural Control Houses/Building Height Restrictions:-

Architectural Control Houses are located in Ph-I Sectors along Uttar Marg, Leisure Valley and certain V3 roads. These controls restricted only the footprint, volume and the height of the house. The height of these houses was restricted to double storey in most of the cases to provide unhindered view of the distant Shivalik hills from the northern sectors, where most of the architectural controls houses are located. However, the said height restriction has also been relaxed vide notification dated 16.10.2008. In some of the phase-1 sectors i.e. 4, 5, 11, 19, 20, 27, 28 of Chandigarh, the building height controls were applicable with the maximum height of 24'-0" and 25'-6" respectively with the maximum number of storeyes two. The said controls were later replaced by the provisions of Zoning Plans, which are applicable presently also. The description of the same is mentioned in annexure.



e) Controls in City Centre & Sub City Centre

City Centre: Sector-17

Sector 17 designed as City-Centre of the city has cross-axial layout and rigid architectural controls. Various restrictions have been imposed on design elements like size and grid of columns, height of buildings, width and height of passages, size of show-windows and glazing, placement of core, ducts and staircases etc. Use of materials and system of construction to the extent of shuttering pattern has also been specified in Architectural Control Sheets of the City Centre. The material used for buildings is mainly concrete; brick having been used at some places. The urban form of the City Centre is an extended view of RCC structures which creates a sense of order. Depending on the façade controls, the buildings in the City-Centre can be divided into following three types:

- Exposed brick faced SCFs placed along V4 of the sector. A four storeyed structures planned on a grid of 11'-3", with 3-bays constituting a single plot having a courtyard at the back and a service core for each plot. The ground floor generally consists of shops; first and second floor has either shop or offices. Third floor was designed as the accommodation for the essential staff of the commercial establishment. There is no basement in these blocks, but there is a provision for mezzanine floor. The façade of the building is straight and uniform with exposed brick work; and rectangular concrete columns in the public corridor. The upper floors have recessed balconies on both the facades.
- Exposed concrete SCOs and other public buildings. Four storied structures planned on a RCC framed structural grid of 17'-3"x17'-3" to accommodate large showrooms and departmental stores. The controls permit a combination of two or more floors and also an additional floor provided that the external façade is not altered. On the first, second and third floors 6'-9" wide balcony has been made compulsory to provide shade from the summer sun, monsoon rains and inclement

weather. Repetitive use of concrete parapets on these balconies gives a specific architectural character to the City-Centre. A few public buildings like State Library, Gallery of Portraits, Estate Office, State Bank of India Building and Post & Telegraph Building are also built with slight variations within the framed façade. Undulatory modular glazing has been provided on upper floors.

- * **Schematic Design Controlled:** Special type of buildings such as cinema halls and petrol stations etc. located in architecturally controlled area of the City Centre, Sub City Centre and along important avenues – Madhya Marg, Jan Marg etc. were subject to Schematic Design Control. The controls evolved out of the functional requirements that dictate the architectural character of the building and defines the outer form, skyline, volume whereas the internal planning is left to the discretion of the owner.

Sub City Centre Sector 34

Although the architectural control of Sector 34 differs in detailing from that of Sec-17, but there is similarity of expression due to use of RCC and the modular structural grid adopted.

f) Gates and boundary wall: All gates and boundary walls are also to conform to standard designs in order to ensure a uniform street picture. Initially the front boundary wall of attached as well as detached / semi detached houses was 2'-5½" high but subsequently however the same was increased to 3'-8 ½" height. Further, the provisions regarding locations and number of gates have also been relaxed by Chandigarh Administration. The description of the same is mentioned in annexure.



NEW ADDITIONAL NORMS / REGULATIONS FOR AREAS

The norms, which are not covered in the existing norms already notified by the Chandigarh Administration and norms for the activities which have been freshly proposed in this Master Plan have also been finalized on the basis of the proposals given in the Master Plan as well as the recommendations of Master Plan Committee, which are as follows:-

a) Residential

i) Permissibility of landuses in proposed residential pockets:-

The social, educational and cultural facilities like school, community centre, religious buildings, parks, open spaces and other public facilities as provided in various sectors in Chandigarh shall compulsorily be provided in the proposed residential areas/pockets in Chandigarh.

Servant Quarters in Residences

The servant quarters in the houses having area of 1 Kanal and above has been made mandatory.

Development Controls/norms for buildings in Manimajra

The norms as prescribed by the Municipal Corporation, Chandigarh shall be applicable to the area falling within the limits of planning area of the Chandigarh Master Plan 2031, Manimajra, except the following areas, where the norms mentioned in their Zoning Plans/approved drawings shall be applicable:

Pocket 1 (commercial),

Pocket 6 (Motor Market and Commercial Complex),

61.21 acre residential-cum-commercial scheme on the east of Chandigarh – Kalka Road,

Group Housing in Pocket 2 & 3,

Modern Housing Complex in Pocket 4 & 5 and

Rehabilitation colonies developed by Chandigarh Administration.

On other Group Housing, Commercial, Government and semi government norms as approved by the Chandigarh Administration shall be applicable.

Development controls for abadi deh of Village falling in the limits of U.T., Chandigarh

The notified Rural Bye-laws of Chandigarh Administration shall be applicable on areas falling in abadi-deh/phirnis of the villages and areas proposed for expansion of various villages.

i)The draft of said notification has been submitted for approval before finalization of the same, the detail of the same is as given below:

Initially, the Chandigarh Administration(Erection & Re-erection of building) Rules, 2006 for the villages in the Municipal area of Municipal Corporation of Chandigarh were notified under Sub-Section 2 of the Section 5 (2) read with Section 22 of the Capital of Punjab (Development & Regulation) Act, 1952 vide Notification No.26/6/39/UTFI(3)-2006/7869 dated 27.12.2006.

The provisions of above mentioned notifications were found to have many limitations like limited definitions, not defining elaborated procedure for sanctioning of building plans, not having provisions for the private developers, energy conservation etc. and with limited volumetric controls having only details of site coverage only some categories of plots.



These rules were also deliberated under the Chairmanship of AA, UT on 21.12.2010 and accordingly the same were drafted by the Department Of Urban Planning, UT, Chandigarh. The feedback has been received from EO, UT, Additional Commissioner, MC and Director Rural Development and Panchayat and the same has been incorporated in the draft Rural Building Byelaws. The provisions of draft rules have been made with the following considerations:

- Exhaustive definitions given.
- Detailed provision given w.r.t. contents of the submission drawings - the site plan, floor plans, sections and elevations.
- Plan Approval Committee is defined.
- Provision of 60 days to approve the plans.
- Provision made for revalidation of building plans with prescribed fee as applicable.
- Provision made to give at least one week notice before erection or re-erection. Provision also made for DPC.
- Provision made for partial occupation.
- In addition to width minimum riser/tread for residential as well as commercial buildings defined.
- Provision made for Rain Water Harvesting & Solar Water Heating System.
- No provision for private developers.
- Maximum permissible height.
- Site coverage of commercial and institutional buildings has been defined.
- Siting norms for commercial, social facilities like school, community hall, dispensaries have also been defined.
- The guidelines for earthquake safe construction have been defined on the basis of the Model Rules forwarded by Government of India.

The parameters of volumetric controls of the residential building have been elaborately defined as below:

Plot size (in Sq.Yrds)	Ground Coverage	FAR	Set back
Upto 100	70%	2	5'
101-250	70%	2	10'
251-500	70%	2	10'
501-1000	50%	1.5	15'
Above 1001	separate zoning		



b) Institutional

- **IT Park, Phase-III**:-** For the site for IT Park, Phase-III as earmarked in the Master Plan, if decided to be developed for the said purpose by the Hon'ble Court as the matter is sub judicious, the norms shall be as follows:-

Volumetric Controls:- The following norms shall be applicable on the IT Park, Phase-III, Chandigarh:-

Sr. No.	Parameters	Norms
1	Maximum Plot Density	25 units per acre
2	FSI	1.00
3	Ground coverage	40%
4	Height	36'-0"
5	Other norm	Low density with lush green

(*As decided in the 51st Master Plan Committee meeting held on 17.8.2011)

(**As decided in the 53rd Master Plan Committee meeting held on 6.9.2011)

- **Institutional Area: Sarangpur**

In the institutional pockets in Sarangpur (except Educity), in village Dhanas and near Manimajra shall be developed with low density and low rise buildings with the following parameters:-

Sr. No.	Parameters	Norms
1.	Maximum Ground coverage	20%
2.	Maximum FAR	0.5
3.	Maximum Height	36'-0"
4.	Maximum No. of storey	3
5.	Parking norms	4 ECS for 100 sq. mt. of covered area. Surface parking - Minimum 20% of the site area.

c) Environment

The norms related to various environmental factors related to Chandigarh have been finalized by the Master Plan Committee and in the proposal part of Master Plan, which are given as below:-

i) Green buffer/ strips

The specified width of plantation as green buffer/strip shall be developed along various features/ landuse as described below:

Sr. no	Feature/area	Width of green buffer/ strip in meters	Condition
1.	Patiala-ki-Rao, Sukhna Choe and Natural choe	100	Shall be declared as Eco sensitive zone.
2.	Interstate border of Chandigarh with Punjab and Haryana	100	Wherever non compatible landuse exist on other side of interstate border.
3.	Along roads (on either side)	30	To give the feel of garden city Chandigarh.
4.	Railway Line (on either side)	30	

Note:- The owner of sites, wherein the above areas are falling shall be liable to maintain the specified width of buffer strip.



ii) Open Spaces:

- No further construction of community facilities in the planned open spaces is permitted which interfere with pedestrian movement, availability of green spaces and natural drainage.
- Large campuses like PGI, Panjab University, CSIO, IMTECH and housing societies shall be encouraged to improve their water, energy and resources use efficiencies and introduce waste water recycling.

iii) Securing the Lake's Catchment and Wildlife Sanctuary:-

- The entire catchment of Sukhna Lake must be protected from any activities that may threaten the lake's lifespan.
- No development in the immediate vicinity of the Wildlife Sanctuary should contravene the objectives of the Wildlife conservation.

iv) Eco sensitive Zone:

Chandigarh Administration has constituted a Committee to determine the extent of Eco-Sensitive Zone to be declared around the Sukhna Wildlife Sanctuary and the recommendations of the Committee shall be applicable accordingly. The norms shall be made applicable after approval of the competent authority.

d) Traffic transportation

- **Metro Act:-** Provision of Metro Act to be adopted by the Chandigarh Administration shall be followed.

e) Telecommunication

Provision of Mobile Tower Policy:-

Installation of Mobile Towers shall only be allowed as per the provisions of notified Mobile Tower Policy by the Chandigarh Administration.

- Earlier, Chandigarh Administration issued two policies/guidelines regarding installations of Mobile Towers in Chandigarh, one in 2004 and another in 2008. The features of these policies have been mainly procedural and similar to the Building Byelaws. Mainly the security and structural safety aspect of the buildings has been handled in the policy.
- As per 2008 Policy, these towers are allowed only on non-residential buildings in UT, Chandigarh. The mobile tower operators are required to seek prior permission from Chandigarh Administration before installing the tower. Since, in several parts of UT, Chandigarh adequate number of non-residential buildings are not available, large number of towers have come up on residential buildings in village area is supervised by the Municipal Corporation and some of them have come up in the developed sectoral grid area of Chandigarh. Hon'ble Punjab & Haryana High Court and even in the Hon'ble Supreme Court of India.
- While formulating the new Mobile Tower Policy, the policies/guidelines of the year 2004 and year 2008 and representation of the mobile operators, in addition to the related norms of all the concerned departments/organizations have been taken into account. In the new policy, for the interest of providing seamless uninterrupted mobile services which has become an essential service for any citizen, the area where adequate number of non-residential buildings are not available, it has been proposed that a small Micro Cell based pole be allowed on residential buildings also to provide continuous network availability.



- All the telecom operators are directed to get the EMF level checked from some third party at regular intervals for compliance of these guidelines. The applications for the same shall be submitted to the Estate Office of UT, Chandigarh and Commissioner, Municipal Corporation for their respective areas, which they are mandated to implement the building byelaws. If any applicant is not satisfied with the orders of the Estate officer/Commissioner, MC, then the concerned applicant can file an appeal before the Finance Secretary-cum-Chief Administrator, UT, Chandigarh in this regard. Further, the action regarding unauthorized Mobile towers shall be taken by the above mentioned organizations in their jurisdiction area.
 - The draft Mobile Tower Policy has already been notified by the Chandigarh Administration on 16/10/2012 for public objections/suggestions and the same is under consideration for publication of final policy.
- f) **Agriculture Zone:-** For the activities, which have been made permissible in the agriculture pockets of the Chandigarh Master Plan proposal, the norms have been descriptively evaluated to control and regulate the unauthorized and haphazard development within these pockets.



h) Powers for Development of Areas in Chandigarh:-

The proposed Residential, Commercial, Industrial, Transportation or public facility areas in Chandigarh Master Plan 2031 are reserved for development by the Chandigarh Administration or its undertakings/public authority, as per detailed Scheme Plan and Zoning Regulations as approved by the Chandigarh Administration.

i) Already approved projects

For the projects which have already been approved by Chandigarh Administration, the norms already approved for the same shall be applicable there upon.

Violations of Rule 5/Compoundable Items:-

- i) As per the Punjab Capital (Development and Regulation) Building Rules, 1952 if any change/alteration made by the owner at site during the course of construction these changes are permitted by paying the requisite fee under the provision of Rule 5 of above said Rule.
- ii) The essential services required for the buildings such as overhead water tanks, brick jalli, headway under staircase etc. made compoundable by the Chandigarh Administration at the time of granting the occupation certificate/sewer connection.
- iii) The penalties for not obtaining the DPC certificate and illegal sewer connection has also been imposed by the Chandigarh Administration.

The description of the same is mentioned in annexure.

Need based changes in architectural controls

In Residential Buildings:

The unprecedented and unforeseen growth of population of the city, their growing affluence and changing lifestyles. The emergence of the town as a major trading and service provider city in the present liberalized socio economic scenario have exerted , tremendous pressure on the city's vital infrastructure and the order of the built environment. Illegal construction through additional floors, coverage of balconies and courtyards which are essential for light and ventilation, construction beyond zoned areas, violation of frame controls are some of the major violations being witnessed. Taking cognizance of the situation, Chandigarh Administration has been undertaking periodic review to provide need based relief and address the genuine problems of the citizens.

In Commercial Buildings:

Chandigarh Administration has undertaken gradual and periodical review of various architectural controls to provide for more space. At the same time, an endeavour has been made to retain the architectural facades or make minimal external changes so that the street picture is preserved.



EXISTING DEVELOPMENT NORMS

1 . Residential: Development Controls applicable on various types of residential houses as per notification dated 16/10/2008 are as given below:

(A) Plotted Housing in Sectoral Grid in Chandigarh: Volumetric controls for plotted houses in sectoral grid are as below:-

Sr. No.	Type of houses	Maximum Ground coverage w.r.t. total plot area	Maximum * FAR	Height
1.	Marla houses of less than one Kanal governed by frame control / architectural control.	65% (in main building zone) + 5% (rear court yard) = (70%)	2.0	i) Phase-I: 31'-6" (without additional coverage) and 33'-0" (with additional coverage). Height equivalent to ground floor height. ii) Phase-II: 32'-3" iii) The design of boundary walls of various sites shall be applicable as per the standard design available in the Department of Urban Planning., UT. In marla type houses a railing of 2'-3" high shall be allowed on the front boundary wall.
2.	One Kanal and above but less than two Kanals	50%	1.5	i) Phase-I : 35'-0", ancillary zone : 24'-9" ii) Phase-II-33'-0" ancillary zone : 24'-9" iii) Further height upto 3.0 mt. (except marla houses) shall be allowed for services for services like water tank, solar system, air cooling tower. Gen set & screen wall to enclose services etc.
3.	Two Kanals	45%	1.25	
4.	Above two Kanals	35%	1.0	

Note*: The parameters prescribed in the above table shall be applicable on those sites for which additional coverage is being sought. However, for sites without additional coverage, the norms of Chandigarh Administration prevailing before 16.10.2008 shall be applicable and Architectural Control/Frame Controls and Zoning Plans shall be continued to be applicable on the sites being governed by the same.



B .Group Housing Scheme in Sectoral Grid:- Volumetric Controls applicable on Group Housing Schemes in the sectoral grid of Chandigarh.

Sr. no.	Parameter	Norms	
1.	Minimum area of site	1 acre	
2	Maximum Ground coverage	40% of plot area.	
3	Maximum FAR *	1.2	
4	Maximum Height	46'-9" inclusive of parapet of 3'-9"	
5	Maximum No. of Storeys	4 Nos.	
6	Boundary walls	Specification and design as shown in Drawing Number 1 & 2, Job No. 2507, prepared by Department of Urban Planning, U.T. Chandigarh.	
7	Parking	Total parking space equivalent to atleast 30% accumulated floor area of dwelling units.	
8	Density of dwelling units	<u>Category</u>	<u>Density (units per acre)</u>
		A	25
		B	35
		C	45
9	Category wise area of dwelling units	<u>Category</u>	<u>Area in sq. ft.</u>
		A	1400-1500
		B	1000-1075
		C	800-835
10	Community facilities	Floor area upto 2.5% of the area of the site.	
11	Organized green Parks	a) 15% of total site area. b) Minimum size 600 sq. yds. c) Width not less than 45'-0".	
12	Services	i) Height upto 3.0 mt. shall be allowed for services for services like water tank, solar system, air cooling tower. Gen set 7 & screen wall to enclose	

Note*: In the case of Group Co-operative House Building Societies Schemes, area under stilts with height of 7'-6" from floor to the soffit of the beam shall be permitted for parking which shall not be counted towards FAR, subject to the condition that this additional area shall not be sub divided/enclosed and utilized for increasing the number/area of the dwelling units.



C. Integrated Residential Housing Scheme outside the sectoral grid:- The following volumetric controls shall be applicable for all integrated residential houses schemes **outside Sectoral Grid** of Chandigarh:

Sr. no.	Parameter	Norms
1.	Definition of Integrated Housing	Campus having population of 6250 persons approximately (4.5 persons per dwelling unit) shall be termed as Integrated Housing.
2.	Minimum area requirement	25 acre
3.	Maximum Ground coverage	40% of plot area.
4.	Maximum FAR	2.0
5.	Maximum Height	62'-3" upto top of the parapet except any exemption granted by Chandigarh Administration specifically.
6.	Maximum limits of Commercial area	For commercial area, permissible ground coverage shall be 30% of the total plot area, FAR 2 and height upto 62'-3" upto parapet level. Upto 2.5% of the entire area of the site can be allowed for commercial use to meet day to day requirements of the residents living in the integrated scheme.

D. Cheap Houses:- The norms applicable on the Cheap Houses, wherever proposed in the sectoral grid of Chandigarh, shall be as described below:

Sr. No.	Parameter	Norm/permissible
1.	Maximum Ground Coverage	75% of plot area
2.	Maximum Coverage on 1 st floor	Equivalent to the covered area on ground floor.
3.	Coverage of 2 nd floor	Not permitted.

Note: The above permission shall be subject to the following conditions:-

- I. That existing sewer lines are not coming below the building portion.
- II. Payment of composition fee as fixed by the Chandigarh Administration.
- III. Structural stability of the existing structure to be certified by a qualified structural engineer
- IV. The construction of such houses shall be governed by the Architectural Control Sheets available in the Department of Urban Planning, U.T. Chandigarh



E. Rehabilitation Colonies:- In addition to the norms approved in the plans prepared /got approved by Chandigarh Housing Board or Chandigarh Administration, the following norms shall be applicable to all rehabilitation colonies under the control/supervision of Chandigarh Administration, Municipal Corporation, Chandigarh and Chandigarh Housing Board:-

Sr. No.	Parameters	Norms	Conditions
1.	Maximum number of storeys	G+3 or as approved by Chandigarh Administration from case to case basis.	<p>i) Subject to the condition that the building plans shall be got approved from PAC (Upper) on case to case basis and can be constructed with the prior approval after assessing the structural safety of the existing structure.</p> <p>ii) If the existing structure does not permit additional floor capacity, then the revised building plans have to be got sanctioned from competent authority and the structure with sufficient load bearing capacity for the structural safety and accordingly construction can be carried out.</p>
2.	Permissibility of Trade uses.	<p>i) Mobile repair shop.</p> <p>ii) Barber shop.</p> <p>iii) Beauty parlour.</p> <p>iv) TV/Radio repair shop</p> <p>v) Computer centre</p> <p>vi) Stationery shop</p> <p>vii) Electric shop</p>	
3.	Relaxation in norms	In the houses constructed/ developed by Chandigarh Housing Board, Chandigarh as flats independent houses, duplex flats and other schemes, the relaxation/ amendments shall be allowed as per the provisions of the orders dated 23.3.2010.	



F. Development Controls/norms for buildings in Manimajra:- The norms as prescribed by the Municipal Corporation, Chandigarh shall be applicable on the area falling within the limits of planning area of Master Plan, Manimajra, except the following areas, where the norms mentioned in their Zoning Plans/approved drawings shall be applicable:

- i) Pocket No. 1 (commercial),
- ii) Pocket No. 6 (Motor Market and Commercial Complex),
- iii) 61.21 acre residential-cum-commercial scheme on the east of Chandigarh – Kalka road,
- iv) Group Housing in Pocket No. 2 & 3,
- v) Modern Housing Complex in Pocket No. 4 & 5 and
- vi) Rehabilitation colonies developed by Chandigarh Administration.
- vii) On other Group Housing, Commercial, Government and semi government norms as approved by the Chandigarh Administration shall be applicable.

G. Development controls of Villages: The notified Rural Bye-laws of Chandigarh Administration shall be applicable on area falling in Abadi-deh/phirnis of the villages and areas proposed for expansion of various villages falling in the limits of U.T., Chandigarh.

- i) The draft of said notification has been submitted for approval before finalization of the same, the detail of the same is as given below:
 - Initially, the Chandigarh Administration (Erection & Re-erection of building) Rules, 2006 for the villages in the Municipal area of Municipal Corporation of Chandigarh were notified under Sub-Section 2 of the Section 5 (2) read with Section 22 of the Capital of Punjab (Development & Regulation) Act, 1952 vide Notification No.26/6/39/UTFI(3)-2006/7869 dated 27.12.2006.
 - The provisions of above mentioned notifications were found to have many limitations like limited definitions, not defining elaborated procedure for sanctioning of building plans, not having provisions for the private developers, energy conservation etc. and with limited volumetric controls having only details of site coverage only some categories of plots.

- These rules were also deliberated under the Chairmanship of AA, UT on 21.12.2010 and accordingly the same were drafted by the Department Of Urban Planning
- The feedback has been received from EO, UT, Additional Commissioner, MC and Director Rural Development and Panchayat and the same has been incorporated in the draft Rural Building Byelaws.
- The provisions of draft rules are have been made with the following considerations:
 - a. Exhaustive definitions given.
 - b. Detailed provision given w.r.t. contents of the submission drawings - the site plan, floor plans, sections and elevations.
 - c. Plan Approval Committee is defined.
 - d. Provision of 60 days to approve the plans.
 - e. Provision made for revalidation of building plans with prescribed fee as applicable.
 - f. Provision made to give at least one week notice before erection or re-erection. Provision also made for DPC.
 - g. Provision made for partial occupation.
 - h. In addition to width minimum riser/tread for residential as well as commercial buildings defined.
 - i. Provision made for Rain Water Harvesting & Solar Water Heating System.
 - j. No provision for private developers.
 - k. The parameters of volumetric controls of the residential building have been elaborately defined as below:

Plot size (in Sq.Yrds)	Ground Coverage	FAR	Set- back
Upto 100	70%	2	5'
101-250	70%	2	10'
251-500	70%	2	10'
501-1000	50%	1.5	15'
Above 1001	separate zoning		

- l. Site coverage of commercial and institutional buildings has been defined.
- m. Citing norms for social facilities like school, community hall, dispensaries have also been defined.
- n. The guidelines for earthquake safe construction have been defined on the basis of the Model Rules forwarded by Government of India.



H Permissibility for various activities in Residential premises:

The following activities/services shall be allowed in the residential premises, subject to the fulfilment of certain conditions as described below:-

Sr. No.	Uses permissible	Permissible area for activities	Other conditions
1.	Professional services (Doctors, Advocates, Architects etc.)	25% of the covered area to the maximum extent of 50 sq. m, whichever is less.	<ul style="list-style-type: none"> • After prior approval of Chandigarh Administration • Provision of the Chandigarh Advertisement Control order, 1954 as amended from time to time, shall be strictly observed. • Payments/charges as prescribed by the Chandigarh Administration.
2.	Nursing Homes		<ul style="list-style-type: none"> i) The minimum size of residential premises shall be equal to 500 sq. yds. ii) Permission shall be granted only to those Nursing Homes functioning in the Residential Premises on the date of issue of the orders No. 31/1/294-UTFI(4)-2002/4522 Dated 14.7.2003 iii) Such building should have a parking space for vehicles equal to the number of indoor beds plus two. iv) If there are indoor beds there must be a parking space for atleast five cars/jeeps. v) The said parking space, may be inside and outside of the building or both. vi) The parking space outside the building will be public parking space, which will be maintained by the Municipal Corporation will be at liberty to charge fees from those who park their vehicles thereupon. vii) The fulfilment of other provisions of orders No. 31/1/294-UTFI(4)-2002/4522 Dated 14.7.2003 of Finance Department, Chandigarh Administration shall be mandatory.



Sr. No.	Uses permissible	Permissible area for activities	Other conditions
3.	Crèche	A portion of a residential building upto the maximum of 50 sq. mtrs. or 25% of the covered area, whichever is less.	<ul style="list-style-type: none"> • Shall be permissible with the prior approval of the Chandigarh Administration. • Shall also be subject to the fulfilment of conditions of notification dated 21.2.2003, subject to the approval by Department of Urban Planning, Chandigarh Administration.
4.	Paying Guest	The minimum usable area for one Paying Guest	<ul style="list-style-type: none"> i) Shall be 50 sq. m. shall be with adequate provisions of toilet as per norms of Public Health Department i.e. one WC for five persons. ii) The area of the house for Paying Guest Accommodation shall not be less than (7½) marla and part of it shall be used by the owner himself/herself. iii) The Paying Guest Accommodation shall be permitted only in those residential properties, which are sanctioned as per building byelaws, and no unauthorized construction has taken place after the grant of completion certificate. iv) No extras/new kitchen shall be erected beyond the approved building plans. v) Vehicle should be parked within the house premises as far as possible. vi) Fulfilment of the conditions of notification dated 16-11-2006.
5.	STD/PCO (Installation of a STD, PCO, Fax or Photostat machine).	Maximum of 15 sq. m or 20% of the residential area of the building, whichever is less.	<ul style="list-style-type: none"> i) Only a part of the sanctioned building can be used for such a purpose and no external structures shall be installed. ii) Only the sign boards approved by the Chief Architect, U.T. Chandigarh as per standard design shall be permitted to be installed. iii) No external changes in the building shall be allowed. iv) Fulfilment of conditions of notification dated 19.6.1998.



- I Servant quarters:** The servant quarters in the residential premises shall be provided, subject to the following conditions:-

Sr. No.	Parameter	Norms
1.	Condition of minimum size of plot	Owners of plots above 420 sqm. and above shall make provision of servant quarters for domestic servants.
2.	Permissible areas	Shall be permissible within the zoned area of the house as specified in the respective zoning plan.
3.	Proportion with dwelling units	Minimum one servant room for one dwelling unit.
4.	Construction area	If a servant room is built on ground floor, it shall have separate courtyard of not less than 10 sq. m. but shall be within the maximum permissible covered area.
5.	Provision of kitchen with servant quarter	Kitchenette shall be allowed alongwith servant quarters.
6.	Provision of water closet and bathroom	<ul style="list-style-type: none"> Separate servant room not built as part of the main house shall have a water closet and bathroom attached thereto.

J General norms of Residential

- Minimum size of habitable rooms:-** The parameters regarding size of habitable rooms shall be as follows:

Sr. No.	Parameters	Norms
1.	Minimum size of a habitable room excluding a kitchen	9.3 m floor space
2.	Minimum width of a habitable room	2.2 m.

Note: Subject to the fulfilment of norms of Chandigarh Administration related to light and ventilation

- Provision of Kitchen:** The provision of kitchen in the residential premises shall be made as mentioned below:-

Sr. No.	Type of floor/unit	Maximum no. of kitchens per floor
1.	On the residential plots of less than 250 sq. yds.	1
2.	On the residential plots of 250 sq. yds. or more in area.	1
3.	In the duplex design houses	1
4.	Minimum size of the kitchen	4.5 sq. m.
5.	Minimum width of kitchen	1.5 m.
6.	Minimum height	2.7 m.



- **Lobby, Corridor, Passage or Balcony:-** The minimum width of any lobby, corridor, passage or a balcony in a residential building shall be as given below:-

Sr. No.	No. of users	Minimum width in m.
1.	Upto 10	0.9
2.	11 to 20	1.1
3.	21-100	1.25
4.	For every additional 15 persons	Increase 25 cms. with a maximum of 2.5 m.

- **Minimum height of room, verandah etc.:-**

Sr. No.	Type of room/verandah	Norms
1.	Minimum height of habitable room from the surface of the floor to the lowest point of the finished ceiling.	2.75 m (9'-0").
2.	Minimum height of habitable room from the surface of the floor to the underside of the joists, beams or rafters , if joists, beams or rafters are provided.	2.29 mtrs. (7'-6")
3.	Air conditioned rooms	2.42 m (8') measured from the surface of the floor to the lowest point of the air conditioning duct or the false ceiling.
4.	Minimum height of a water closet, bath room, a store, a gallery, a verandah and mezzanine floor.	2.29 mtrs. (7'-6").

- **Minimum area of the courtyard:-** (a) Interior open space for light and ventilation, the whole or part of one side or one more room intended for human habitation and not abutting on either the front, rear or side open space shall abut on an interior open space whose minimum width in all directions shall be as per table below:

Sr. No.	Height of the building upto in Meters.	Interior open space to be left out on all site (front rear and sides in each plot in Meters.)
1.	10	3
2.	15	5
3.	18	6
4.	21	7
5.	24	8
6.	27	9
7.	30	10

Note:

- *No projection shall be allowed within the maximum width of the courtyard in any direction as mentioned in the table above.*
- *The Chief Administrator may permit 'Pergola' in the buildings if light and ventilation of the building is not affected due to pergola.*
- *The table shall also be applicable in case of exterior open spaces permitted within the zoning regulations.*
- **Coffers/Pergola:-** Coffers/Pergola upto 9" below RCC slab of the projection at first and second floor level shall be allowed in Frame Control Marla houses provided it is sanctioned in the building plans.



- **Projection/Cantilever:-** the provisions of projection/cantilever in residential building shall be made as follows:-

Sr. No.	Area of construction/ cantilever	Norms
1.	First and second floor of all marla houses and one kanal houses governed by Frame Control/Architectural control	Maximum upto 0.91 m. (3'-0") from the building line in the front and rear courtyard and at least 3' away from either side of the building line from the center line of the common wall, subject to structural stability, shall also be allowed.
2.	In kanal type buildings governed by zoning plans in all sectors.	Maximum upto 6'-0" depth from the face of the wall.
3.	On terrace level of all marla type houses	Not allowed.

- **Doors and Window:**
There shall be no restriction on having only square and rectangular shaped doors and windows in residential buildings.

- **Staircase:-**
➤ **In Residential building, single family or two families residential buildings:-** The norms for residential building, single family or two families as below:-

Sr. No.	Parameters	Norms
1.	Requirement of staircases	Every residential building more than one storey high shall be provided with atleast one staircase
2.	Minimum width of staircase	85 cms.
3.	Maximum number of risers in one flight	15
4.	Minimum height of risers	19 cms.
5.	Minimum width of tread	25 cms.

- **In Residential buildings for more than two families:-** Every residential building for more than two families shall be provided with atleast one staircase extending from ground floor level to be highest floor having minimum clear width.

The following width in accordance with the following table:-

Sr. No.	No. of users	Minimum clear width
1.	Number of users upto 10	0.85m.
2.	Number of users upto 11 to 20	1.10 m.
3.	Number of users from 21 to 100	1.25 m.
4.	Increase 1" (2.5 cms) for every additional 15 persons until a maximum of 2.75 mtrs. is reached.	

Note:-The staircases shall be constructed of fire resisting materials.



- **Winders and treads in staircases in residential buildings:-**
In residential building, winders in staircases shall be allowed as follows:-

Sr. No.	Parameters	Norms
1.	Maximum number of risers in winder	2
2.	Maximum number of treads in winder	3
3.	Maximum reduction in width of staircase	3"

Note: Subject to the following conditions:-

- *Fire safety norms*
- *Payment of composition fees*
- **Boundary Wall:-**
- **Front Boundary wall:-** The maximum height of the boundary wall shall be allowed as mentioned in the respective zoning plan, subject to the maximum of 3'-8 ½" (type-B).
- **Rear boundary wall:-** The height of the boundary wall along rear boundary and along the portion of boundary which divides it from other sites in the rear and long side boundary wall form the front building line upto the rear boundary shall be allowed upto 5'-11 ½" in the side of all category of residential plots.
- In case of marla/kanal type plot which are covered under frame controls, rear courtyards are already surrounded by 5'-11 ½" high boundary wall.

- **Glazing:-**
 - Provision of openable glazing in a sanctioned verandah in residential buildings shall be compoundable on the prescribed payment.
 - The glazing or sliding grills in verandahs of a standard door opening and a window, which is not smaller than 1.2 m x 1.2 m (4'x4') for proper light and ventilation shall be allowed in marla houses.
- **Brick Jali:-**
 - The brick jali of any design shall be permitted to the residential houses governed by the frame controls, subject to the condition that no solid wall shall be constructed in any part of the jali as prescribed in the frame control.
 - The jali shall not violate the building lines prescribed in the frame controls.
 - Brick jali at terrace of the houses in the second phase sectors, constructed upto the height of the frame line shall be allowed.
- **Railing:**
Railing of any type and design shall be allowed in houses governed by frame control upto 2'-3" high on front boundary wall.
- **Nitches:**
 - Nitches in the common wall shall be allowed with the consent of the owners.
 - In case where one owner has already constructed nitches and the occupation certificate has been obtained, the owner of the adjoining house shall be allowed to have the nitches in the common wall even without the consent of that house owner.



- **Garage:-**
 - Where a garage adjoins a habitable room there shall be no opening in the common wall. However, a door connecting the garage with the main house shall be permitted.
- **Gates and Gate Pillars:-**
 - In the residential houses the gate of the standard design and any of the standard width as shown on standard Drg. No. S-1/S-5, shall be permitted along the side boundary wall abutting on the accessible street/road. No gate shall be allowed on V-3 roads, public open space, reserved space etc.
 - The height of gates and gate pillars in residential buildings shall be allowed upto a maximum height of 5'-11 ½" .
 - There shall be no change in the width of gate pillars from that shown in the standard design.
 - To facilitate parking and movement of vehicles, two gates shall be permitted along the accessible road in the front boundary wall of the residential buildings in Chandigarh.
- **Parking:-**

As regards to residential buildings, all buildings located on site of one kanal or above shall have parking facilities equivalent to 1 ECS per floor of the building and further subject to the condition that adequate parking is planned to ensure that no vehicle of the owner/occupier of any such building is parked outside the premises.
- **Building Material:-**
 - Different types of building materials shall be permitted in the houses governed by the frame controls.
 - Car parking/porch covered with A.C. sheets or fiber glass roof shall be permitted in the front courtyard of the residential houses.
 - Walls and roofs of all the buildings shall be of fire resisting materials.
- **Underground water tank:-**
 - Underground water tank shall be permitted in the rear courtyard of the residential buildings.
 - It shall be 4'-0" away from the common walls of the site.
 - It shall be constructed as per the satisfaction of public health U.T./ MC.
- **Solar Water Heating System:-**
 - As regards to residential buildings, all houses including the existing houses on a site of one kanal will make provisions for solar water heating system having capacity of atleast 100 ltrs. and on a site of two kanals and above that of atleast 200 ltrs.



2. COMMERCIAL:-

The norms applicable on various commercial sites/area in Chandigarh are given below:-

(A)General: The following norms shall be applicable on all the commercial plots/sites:-

(a)Volumetric Control:- Following volumetric controls/other norms are applicable on the commercial plots/sites in Chandigarh:-

Sr. No.	Parameters	Norms	Condition
1	Permissible uses	Equivalent or lower intensity of use within the same trade category without payment of fees.	-
2.	Sub division	i. An additional entry with door shutter opening inside the shop shall be provided. ii. An additional door in the rear side of the building of same width height and design as that of the existing door will be allowed. iii. The party wall between the two sub divided shops can be constructed upto ceiling height.	<ul style="list-style-type: none"> • Ventilation for the basement floor in the remaining part of the glazing is not disturbed. • The size of the additional entry shall be of the same size as that of existing entry. • As shown in architectural control sheets. • The party wall shall be of any fire retardant material. • On the payment of prescribed fees.
3.	Depression in ground floor	1.21 m.	Structural stability at site
4.	Provision of Mezzanine floor	Allowed	Provision of minimum permissible height in conformity with building rules
5.	Provision of basement storey	Permitted	It shall not exceed the coverage as indicated in the Architectural Control Sheets.
6.	Printing Press	Printing press business with modern computerized machinery and equipment shall be allowed in the commercial buildings.	<ul style="list-style-type: none"> • Only on the ground floor • Provided that there is no structure borne and air borne noise and vibration • The operation does not affect the structural safety of the buildings



- **Change of trade of Ground Floors of Commercial Buildings:-**
- The allottees/lessee of commercial sites/premises in Chandigarh can pursue any trade mentioned in the schedule II i.e. (A) New General Trade and (B) New Special Trade without applying for conversion of trade and without paying conversion fee subject to the following conditions:-
 - I. Migration to 7 trades as mentioned in (B) i.e. New Special Trade from other trade of Category (A) i.e. New General Trade shall be allowed without prior permission of the Chief Administrator and subject to the examination and clearance from the environmental, health and traffic considerations and further subject to the condition that hygiene and sanitation laws are not violated.
 - II. The conversion of trade will be applicable to the ground floor of all commercial sites/premises only.
 - III. The allottee/transferee/occupier will, however, give an intimation to the Estate Office, U.T. Chandigarh in writing about the trade being pursued by him.
- **Parking Requirements:-** Parking requirements for the commercial sites shall be as below:-

Sr.No	Plot area	Norms (ECS per 100 sq. mtrs. of built up area.)
1.	2 kanals and upto one acre	2ECS
2.	1 acre and above plots	4 ECS

- * **Urinals/Water Closet/Toilets:-** Every commercial, warehousing and industrial buildings shall be provided with water closet in accordance with the requirements of the table given below:-

No. of persons working	Minimum number of water closets	Minimum number of urinals or sinks
1 to 9	1	1
10 to 24	2	2
25 to 49	3	3
50 to 100	5	5
Over 100	One water closet for each additional 30 persons	

Note:- Provision of toilets for specially challenged persons is mandatory as per the provisions of Chandigarh Administration.

- **Air Conditioners:-** All the shop owners desirous of installing air conditioners in the verandah for their shops shall fix the same above the false ceiling in the verandah as follows:-
 - I. The false ceiling shall be of any material/specification of their choice subject to minimum clear height to be fixed by the Department of Urban Planning, UT, Chandigarh.
 - II. Every shop owner who is having shop without air conditioner on one or both sides shall have to close the suspended ceiling from the sides, as the case may be.
 - III. As approved by the Department of Urban Planning, UT, shall vary in each case depending upon the height of public corridor.
 - IV. The design of the false ceiling in public verandah shall be based on the guidelines issued by the Department of Urban Planning, UT, Chandigarh.
- **Approach road in newly proposed commercial area:** No commercial activities on roads entering in the city shall be allowed with direct approach. These roads shall have slip roads, commercial area is to be proposed here.



* **SCOs/SCFs:** (i) The norms applicable specifically on SCOs/SCFs in Chandigarh shall be as follows:-

Sr. No.	Parameters	Norms	Condition
1.	Fragmentation/Amalgamation	Permitted	Subject to the condition that the revised plans are approved by the competent authority, prior thereto.
2.	Internal Planning	Allowed	<ul style="list-style-type: none"> The minimum size of room, passage etc. shall not be violated. Provided the ground floor of the building is not depressed. However, if the ground floor is depressed after paying the prescribed charges, the height of any of the floors shall not exceed 13'-0".
3.	External Façade		<ul style="list-style-type: none"> Shall not be allowed to alter FAR and the total covered area. The total number of FAR and total covered area .
4.	External façade, where basement is permissible	Shall not be allowed to alter and the total covered area and the total numbers of floors shall remain same	<ul style="list-style-type: none"> Provided the basement height and use is as per Architectural Controls. Payment of composition fee as prescribed by the Chandigarh Administration. Where the external façade of an entire row of SCO/SCFs is sought to be changed by a majority of transferees in that row.
5.	Height of basement storey to be constructed in the city centre i.e. Sector 17.	Maximum 3.66 mtrs.	
6.	Structural stability	Where adjoining SCO/SCF has already been constructed, independent structural arrangements shall have to be made by the owner so that the structure of the adjoining building is not affected	However, where adjoining SCO/SCF has not been constructed, the owner shall have to make a provision for supporting columns/beams/slabs for the adjoining structure at the level as indicated in the Architectural Control.
7.	Courtyard	Shall be allowed on 1 st and 2 nd floor of the shop-cum-offices all over the city except the SCOs/SCF falling in Manimajra , where there is common wall in rear side.	<ul style="list-style-type: none"> Further subject to the prescribed payment. Payment of charges as fixed by the Chandigarh Administration from time to time. Conditions and directions regarding light and ventilation, minimum habitable height, maintaining the external façade and overall heights and other mandatory conditions as per provisions of the Punjab Capital (Development and Regulation) Building Rules, 1952.



8.	Coverage of courtyard of SCFs of Sector 35-C & D.	Coverage of courtyard of size 12'-0" x 20'-1½" on second floor of Shop-cum-Flats of Sector 35-C&D (internal V4 Market) shall be allowed	<ul style="list-style-type: none"> • Payment of charges to be decided by the Chandigarh Administration, • The owner has converted his shop-cum-office after completing due formalities. • Light and ventilation being provided as per the provisions of the Punjab Capital (Development And Regulation) Building Rules, 1952.
9.	Coverage of courtyard within the Building Line	Allowed in case of SCF/SCO, which have a roof above the covered ground floor courtyard .	<ul style="list-style-type: none"> • This shall not constitute a courtyard, since it falls outside the building line. • No coverage on first and subsequent floors shall be allowed on top of any terrace/roof, outside the building line.
10.	Staircase:	No bar henceforth on providing additional staircases in commercial buildings (including SCOs/SCFs)	To meet with the fire safety requirements as per National Building Code
11.	Machine Room/Lift	Permitted	Upto one meter above terrace level shall be allowed.
12.	Provision of Generator Set	Not allowed.	--
13.	Partitions in Basements	Low height partitions upto 1.37 mtrs (4'-6") shall be allowed in the basements.	<ul style="list-style-type: none"> • To be used for habitable purpose in Showrooms, SCOs. SCFs, Bay Shops and similar buildings • However, for full height partitions, prior approval of the Chief Administrator shall be necessary.
14.	Wide Glazing	Allowed only on 70% of surface area of brick jali/brick wall.	<ul style="list-style-type: none"> • Any change in architectural control/frame control except the buildings identified as heritage buildings identified by the Heritage Committee formulated by Chandigarh Administration. • All the owners/allottees/lessees/ occupiers in a row of a given block shall make a joint request for this purpose to maintain the homogenous character.



- **Conversion of SCF to SCO:-** Norms applicable on the SCF's converted to SCO in Chandigarh are as given below:-

Sr. No.	Parameters	Norms	Condition
1.	Permissibility of office Use	The first and second floor or the building constructed on the site are allowed to be used for the purpose of offices	Payment of prescribed conversion charges.
2.	Permissibility for intensive shopping/ restaurants	i. The upper floors of SCOs (including SCF's converted to SCOs under the rule) meant for office use shall be allowed. ii. Restaurant/ Dhabas is allowed in SCO	<ul style="list-style-type: none"> • On payment of charges to be used for the more intensive purpose of shopping (display and sale of goods) and restaurants (sale and serving of prepared foods and beverages including banquet facilities) provided that such use is allowed under the building rules, byelaws and zoning plan. • To the condition that owner has obtained permission for converting the SCF to SCO. • Fulfilment of conditions imposed by Chandigarh Administration. • On upper floors of commercial buildings (SCOs) which are designated as office space in architectural controls at present. • Other conditions as stipulated in building rules and fire safety norms shall be provided within the existing building lines.
3.	Staircases	Allowed	<ul style="list-style-type: none"> • In accordance with the prescribed architectural controls for shop-cum-Offices. • Otherwise, the lessee may submit revised plans indicating the proposed position of the staircase and other internal changes. In such cases, the conversion shall come into affect only on sanction of the revised plans. • Floor area of SCF/SCO is not increased. • Where adjoining SCO/SCF has already been constructed, independent structural arrangements shall have to be made by the owner, so that the structure of the adjoining building is not affected. • The adjoining SCO/SCF has not been constructed, the owner shall have to made a provision for supporting columns/beams/slabs for the adjoin structure at the level as indicated in the Architectural Control.
4.	Change of trade of Ground Floors of Commercial Buildings	i. Allowed in Industrial Area, Ph-I & II, Chandigarh. ii. Change of trade of upper floors of SCOs and SCFs (converted into SCOs).	The conversion of trade will be applicable to the ground floor of all commercial sites/premises only.



- **Change of trade of upper floors of SCOs and SCFs (converted into SCOs):**

a) In Sector 17, Sector 34 V2 and V3 roads	I. For 1 st floor II. For 2 nd floor III. (For 3 rd and high floors)
b) Other locations in Chandigarh	I. For 1 st floor II. For 2 nd floor III. (For 3 rd and high floors)

* **Bay Shops:**

Note:- Provided that such use is allowed under the Building Rules and Zoning Plans. However, permission for conversion of trade will have to be obtained, where necessary.

Sr. No.	Type of shops	Maximum number of Sub division	Size of sub shops	Condition
1.	Two bay shops in Sector 17 34'-6" x 103'-0"	4	Any size (17'-3" x 17'-3)	-
2.	Three bay shops	6	Any size (17'-3" x 17'-3)	-
3.	Multi Bay	-	Any size (17'-3" x 17'-3)	<ul style="list-style-type: none"> • In accordance with the Building Bye-laws. • On payment of prescribed charges.

- **Urban Street Vendors:-**

The provision of National Policy on Urban Street 2009 by Government of India, Ministry of Housing and Urban Poverty Alleviation shall be applicable on the various zones/street/roads identified/earmarked by the Department of Urban Planning, UT, Chandigarh and subject to approval of Chandigarh Heritage Conservation committee.

- **Other Norms :**

Sr. No	Parameters	Norms	Condition
1.	Cut out	Maximum size of 1 sqm. with a flap door on top of it alongwith the provision of cat-ladder	<ul style="list-style-type: none"> • The approval of the Chief Administrator. • The opening so created shall remain within the parapet height.



- Lodging-cum-Restaurant sites:-**

The norms applicable on Lodging-cum-Restaurant sites are as follows:-

Sr. No.	Parameters	Norms	Condition
1.	Coverage of Courtyard on 2nd floor in LCR sites	Allowed	<ul style="list-style-type: none"> The courtyard shall be covered with transparent poly carbonate or fibre sheets in such a manner that allows in fresh air/ventilation from three sides. The design of the same shall be got sanctioned through Plan Approval Committee (PAC) prior to construction at site. The area covered with fibre sheets shall be used purely for the purpose of circulation at site only and shall not be put to commercial use in any manner.
2.	Conversion of basement storey	compounded	<ul style="list-style-type: none"> Prescribed by the Chandigarh Administration. The area of the basement shall be counted towards FAR. The composition shall be for the entire area of basement. Minimum of two staircases shall be constructed in the basement storey. Out of which one stair case shall be designed and constructed as a fire escape stair case and it must directly open to public corridor or in the public street in relaxation of the provisions of the Architectural Controls. No kitchen tandoor or any other fire catching appliances shall be allowed in the basement floor. Proper fire safety arrangement as per the National Building Code and as per Delhi Fire Prevention and Fire Safety Act, 1986, as extended to U.T. Chandigarh shall be made. The building material used in the construction of basement storey shall be strictly fire proof. Proper arrangement shall be made for the drainage of the sprinkler water for fire fighting purpose. No public health facilities such as toilets, water connection etc. shall be allowed in the basement storey. The ventilation of the basement storey shall not exceed the area as shown on the Architectural Controls/zoning controls and sanctioned building plans. The construction of the Hotel building shall conform to the sanctioned building plans.



- **Stand alone Marriage Palaces/Banquet halls specially earmarked:**

Volumetric Controls:- The following shall be the volumetric control for construction of standalone Banquet Halls specifically earmarked in Chandigarh:-

Sr.no.	Parameters	Norms
1.	Minimum plot area	1 acre
2.	Maximum Ground coverage	40%
3.	Maximum FAR	. 80
4.	Maximum Height	36'-0"
5.	No. of storey	3
6.	Parking Requirement	For every acre of plot, a minimum of parking equivalent to 130 ECS.

- **Hotel sites:**

Volumetric Controls:- The following shall be the volumetric control for construction of Hotel sites specifically earmarked in Chandigarh:-

Sr. No.	Parameters	Norms
1.	Max. Ground Coverage	35%
2.	Max. FAR	1.5
3.	Max. Height	60'-9" (18.52 mtrs.)
4.	Parking requirements	<ul style="list-style-type: none"> • 1 ECS for every 3 bed rooms in Hotel. • For entire commercial area including restaurant, banquet, conference hall, commercial sites etc., 4 ECS per 100 sq. mtrs. of built up area under commercial use. • For rest of the area, 2 ECS per 100 sq. mtrs. of built up area

- **Multiplex/Malls:**

Volumetric Controls:- The following shall be the volumetric control for construction of multiplex/malls specifically earmarked in Chandigarh:-

Sr. No.	Parameters	Norms
1.	Permissible FAR	1.25
2.	Max. Ground Coverage	40%
3.	Max. Height	22.63 m. (76'-3")
4.	Parking requirements for New multiplexes / malls.	4 ECS for per 100 sq mt. of built up area one acre and above 2ECSfor 100 sq.mt. of buit up area below one acre



- **Conversion of existing Cinema/Theatres into Multiplex Theatres:-** The norms applicable on the sites converted from cinema/theatre into Multiplexes in Chandigarh:-

Sr.no.	Parameters	Norms	Condition
1.	Option for conversion	Allowed	Subject to fulfilment of conditions of notification dated 17.11.2000, 5.4.2004, 10.12.2006 and 8.10.2008.
2.	Total seating capacity of the Multiplex Theatres	Not be more than that of existing Cinemas Theatres and it shall not be less than 75% of the sanctioned seating capacity	
3.	Additional FAR	50% of the existing FAR	subject to payment of conversion charges.
4.	Addition and alternation	Allowed	<ul style="list-style-type: none"> • Shall conform to the Building Rules. • Shall conform to Fire Safety Rules, the Punjab Cinemas Regulation Act and other relevant Acts/Rules.
5.	use of basement	Not allowed to be change	For parking and services
6.	Change in exterior	Allowed	<ul style="list-style-type: none"> • With the prior approval of the Department of Urban Planning Chandigarh Administration.
7.	Adequacy of services	conforming of Town Planning Norms	
8.	Commercial area	Allowed	<ul style="list-style-type: none"> • Allowed up to the area under the cinema halls and projection rooms. • If any existing cinema site has some commercial area as a part of the original plan, the same shall be allowed over and above the commercial area allowed under this rule.



- **Timber sites:-** The norms applicable on Timber sites in Chandigarh are as given below:-

Sr.no	Parameters	Norms	Condition
1.	Use of building	Not be used for fabrication of any items other than those notified.	
2.	Additional construction	Allowed	But within the existing 12'-9" height of the boundary wall.
3.	Permission of basement	Not allowed	
4.	Deviation in the outer façade	Not allowed	
5.	Maximum ground coverage	Increased from 50% to 60% of the site/plot area.	On Payment Of Composition Fee

- **Ware housing:-**
a. **Basement**

Sr. No.	Parameters	Norms
1.	Provision of basement storey	Allowed
2.	FAR of basement storey	Shall not exceed 100% of the area of the site coverage of the building of which it forms a part.

- b. **Lobby, Corridor, Passage or balcony:-**

Sr. No.	Type of floor/unit	Maximum number of lobby, corridor, passage or balcony per floor
1.	Upto 20	1.4 m.
2.	20 to 100	1.8 M.
3.	101 onwards	2.3 M.



- **Bulk Material Shops:-** The following norms shall be applicable on Bulk Material shops in Chandigarh:-

Sr.no.	Parameters	Norms
1.	Ground Coverage	60%
2.	FAR	.6
3.	Max. Number of storeys	2
4.	Building Height	<ul style="list-style-type: none"> • Single storey zone 12'-9" • Double storey zone 24'-9"

- **Motor Market:** The construction of Motor Markets proposed in Chandigarh shall be governed by Architectural Controls prepared by the O/o Chief Architect, Department of Urban Planning, Chandigarh Administration.
- **Conversion of Coal Depot:** The conversion of coal depot site shall be permissible for the uses as follows:-
 - Godown & LPG godowns.
 - Storage and hiring of shuttering materials.
 - Storage and sale of bamboos, cane projects, ropes, ban, tokries, wooden ladders etc.
 - Painting and sign board, banners, printing glow signs etc.
 - Storage of tent, utensils, crockery, furniture etc.
 - Cement godowns/stores/
 - Offices of general nature
 - Printing press
 - Computer training and applications; type and shorthand training, or job work.
 - Laundry and dry cleaning.
 - Manufacturing and sale of furniture.
 - Book binding and embossing
 - Coal depot sites having an additions access from the V-4 roads can also be used for service stations, restaurant or banks.

- **Permissibility of commercial activity on Railway land:-** It is proposed to develop the Chandigarh railway station as a Transport hub as envisaged by Ministry of Railways, GOI. However, the commercial activities in the railway land shall be done in accordance with prevailing norms/regulations/policies of the Chandigarh Administration and as per other provisions contained in this Master Plan, subject to the fulfilment of conditions including any fee and development charges as stipulated by the Administration.
- **Solar Water Heating System:** All commercial as well as Hotels, Lodges and Guest Houses, which have use of hot water shall have solar water heating system of adequate capacity installed. The existing buildings which do not have those facilities shall provide this facility within one year from the date these orders are notified in the official gazette.



3. Industrial:

Various norms applicable to Industrial Areas/sites in Chandigarh are as given

Table 1:

Sr. No.	Parameter	Norms	Condition
1.	Amalgamation	Allowed	Subject to the condition that the revised plans are approved by the competent authority, prior thereto.
2.	Fragmentation	Not Allowed	
3.	Increase in covered area/FSI of industrial buildings in Phase-I&II, industrial area	Permitted	<ul style="list-style-type: none"> Only upto maximum 1.00 FSI for plot area upto 1 acre. For plot area in excess of 1 acre, maximum FSI shall be allowed upto 0.75
4.	Ground coverage i.For the plots having an area upto 1 acre. ii.Plots having an area above 1 acres. iii.Being governed by the Arch. Controls	60% 60% for 1 acre and area above 1 st one acre 40%. As provided in the respective architectural controls applicable.	
5.	Additional Coverage If it is not possible to provide the said additional coverage in the form of single storied shed within zoned area	10% of the permissible ground coverage.	<ul style="list-style-type: none"> Within the zoned area. For the purpose of single storeyed shed with unapproachable terrace. For storage of material, generator set, parking and pollution control devices. Light and ventilation of the building is not affected. Approval of the Chief Administrator is obtained in advance. Subject to the condition that it is atleast 6'-0" away from the boundary wall. The Department of Urban Planning, Chandigarh Administration shall suitably amend all the relevant architectural controls/zoning plans as applicable to various categories of industrial plots in Industrial Area, Phase-I& II, Chandigarh.
6.	Gate keeper/watchman office in Industrial Area, Phase-II	Permitted	<ul style="list-style-type: none"> With maximum covered area of 200 sq. ft. along the boundary wall. With internal height of 9'-0". Maximum height of 10'-6" from the adjoining road level. This area shall be within the permissible covered area of the site.



- **Lobby, Corridor, Passage or balcony:-** The parameters of Lobby, Corridor, Passage or Balcony shall be applicable on all industrial plots as given below:-

Sr. No.	Type of floor/unit	Minimum width
1.	Upto 20	1.4 M.
2.	20 to 100	8.M.
3.	101wards	23M.

- **Basement:-** The provision of basement in all industrial plots shall be made as below:-

Sr. No.	Parameters	Norms
1.	Provision of basement storey	Allowed
2.	FAR of basement storey	Shall not exceed 100% of the area of the site coverage of the building of which it forms a part

- Conversion of industrial plots into commercial activities:-



a) Volumetric Controls:

Sr.No.	Parameters	Norms	Condition
1.	Ground coverage	<ul style="list-style-type: none"> • 60% in case of plots governed by architectural controls. • 50% in case of plots governed by zoning plan 	
2.	FAR	<ul style="list-style-type: none"> • 2.0 for architectural controls. • 2.0 for zoning plan 	
3.	Height	30 m	However, height upto 7.0 mts required for services like water chillar plant, lift machine room, mumty, overhead water tanks, solar tanks & DG set shall be allowed subject to the NOCs from Civil Aviation and Air port authority shall be required.
4.	Parking	Minimum 15% of total plot area at surface level.	2kanal upto one acre 2 ECS per 100 sq.mt. builtup area One acre and above 4 ECS per 100 sq.mt. builtup area.
5	Basement	Twin level basement in the built up area is permissible in commercial plots of more than one acre. If the applicant wants to extend this basement beyond the building plan, the same can be considered for approval subject to the condition that the total car parking generated by commercial site is more than which could be accommodated in the twin level basement and the parking allowed at the surface further subject to the norms determined by the Town Planning and Architecture Department which are based on NBC, building bye laws and the Fire Act.	
6	Access	The access to the parking in the basement is as per the norms of the National Building Code in plot size of one acre and above. In the case of plots below one acre size, one ramp and a staircase preferably in opposite direction shall be scrutinized by the committee, in case the owner wants to avail the relaxation in clause 10.9 of part 3 of NBC and makes an application under 7.6 of part 2 of the said Code for the purpose.	



b) Other Controls:

Sr.No	Parameters	Norms	Condition
1.	Permissibility of conversion	Allowed either by converting the land use or by fresh construction in accordance with the guidelines of the architectural controls	After payment of conversion fee in the manner prescribed in the scheme.
2.	Lower Ground Floor	Allowed which is more than half of its height above the mean ground level and rest of the height below the mean ground level.	Subject to the mandatory setbacks as per provisions of Fire Safety Act and National Building Code guidelines.
3.	Basement	Twin level basement in the built up area is permissible in commercial plots of more than one acre. If the applicant wants to extend this basement beyond the building plan, the same can be considered for approval subject to the condition that the total car parking generated by commercial site is more than which could be accommodated in the twin level basement and the parking allowed at the surface further subject to the norms determined by the Town Planning and Architecture Department which are based on NBC, building bye laws and the Fire Act.	<ul style="list-style-type: none"> Subject to the mandatory setbacks as per provisions of Fire Safety Act and National Building Code guidelines.

4. INSTITUTIONAL:

The development controls/norms on various types of Institutional Buildings shall be applicable as given below:-

A. General

• Public buildings:-

i) Lobby, Corridor, Passage or balcony:-

Sr. No.	Type of floor/unit	Minimum width in M.
1.	Upto 20	1.4
2.	20 to 100	1.8
3.	101 onwards	2.3

ii) Basement

Sr. No.	Parameters	Norms
1.	Provision of basement storey	Allowed
2.	FAR	Shall not counted towards FAR

• Staircase:-

Sr. No.	No. of users	Minimum clear width
1.	Number of users upto 200	1.4ms.
2.	Number of users upto 200 to 300	1.8 m.
3.	Increase (2.5 cms) for every additional 15 persons until a maximum of 9' is reached.	



B. IT Park, Phase-I & II:

- i. Following volumetric controls shall be allowed in Rajiv Gandhi Chandigarh Technology Park for Built to Suite site, Main, Campus site and Small Campus sites:-

Sr.no	Site	Site coverage	FSI	Height
1.	BTS	40%	1.50	74'-3"
2.	Main Campus	40%	1.50	74'-3"
3.	Small campus	40%	1.50	74'-3"

- ii. Other parameters applicable on sites for IT Park, Phase-I & II are as follows:-

Sr. No.	Parameters	Norms	Conditions
1.	Minimum Site Area i.Main Campus ii.Small Campus iii.BTS	6 Acres 2-6 Acres Sites of any size may be earmarked as Built to suit sites	
2	Permissible Uses	Information services such as software development and IT enabled services, other related non-polluting activities.	<ul style="list-style-type: none"> Provisions of support facilities such as canteen, catering, sports, entertainment, etc. Upto 20% of the total built up area.

**C) Educational Institutes:**

•**Educity:-** There shall be following **volumetric controls** for the construction of educational buildings in Education city in Chandigarh:-

Sr. No	Parameters	Norms
1.	Maximum Ground coverage	40%
2.	Maximum FAR	1.5
3.	Maximum Height	57'-6" upto top of parapet.



- **Other Educational/Academic sites:**

- (a) **Volumetric Controls:-** The following volumetric controls shall be applicable on all the educational/ academic sites in the Sectoral Grid of Chandigarh:-

Sr.No.	Parameters	Norms	Condition
1.	Maximum Ground coverage	15% to 25%	
2.	Maximum FSI	0.25 to 0.5 (subject to the prescribed payment)	
3.	Maximum Height	48'-9"	
4.	Maximum No. of floors	4	
5.	Height of boundary wall	Upto 5'-11 ½" (solid) + 3'-0" (railing)	
6.	Parking Requirement	20% of the total plot area.	
7.	Gates and wicket gates	<ul style="list-style-type: none"> • Two main gates and two wicket gates in school building shall be allowed. 	<ul style="list-style-type: none"> • Their location will be determined by the Department of Urban Planning, Chandigarh Administration on Zoning consideration.
8.	Multipurpose sports hall in school sites	<ul style="list-style-type: none"> • Multipurpose sports hall of International Standard (minimum size of 44 m x 22 m) shall be allowed over and above the permissible ground coverage and FAR. 	<ul style="list-style-type: none"> • which have out-door facilities to cater to the size of the football ground, area as per norms, for parking and fire tender movement and still have sufficient open space
9.	Security Cabin/check post	<ul style="list-style-type: none"> • Maximum size of security cabin/check post shall be 14 sqm. On every entry and exit • Area of the security cabin/check post shall be free of FAR. 	

**(b) Basement:-**

Sr. No.	Norms	Condition
1.	i)Optional and it shall not be included in F.S.I. ii)Allowed only below the zoned area of the plot.	•It flushes with the ground and is properly landscaped
2.	Uses	<ul style="list-style-type: none"> • Storage, parking, air conditioning plant, lift well etc. in addition, limited use of basement for office space with proper arrangement of light and ventilation, fire safety norms, circulation etc. • Fulfilment of other terms and conditions, which may be required for a basement to be used to habitable purpose. • If sufficient parking space, as per norms, is available within the site.
3.	Toilets, pantry, labs etc. which require water, are not allowed in basement	The area of basement with habitable use shall be counted towards maximum permissible FAR of 0.5.

(C) Cultural and other non-academic institutional sites:- The following volumetric controls shall be applicable on all the cultural and other non academic institutional sites in Sectoral Grid of Chandigarh:-

Sr. No.	Parameters	Norms
1.	Maximum Ground coverage	40%
2.	Maximum FSI	1.25
3.	Maximum Height	48'-9"
4.	Maximum No. of floors	4

(D) Religious sites:- The following volumetric controls shall be applicable on all the religious sites in sectoral grid of Chandigarh:-

Sr. No.	Parameters	Norms
1.	Maximum Ground coverage	40%
2.	Maximum FSI	1.00
3.	Maximum Height	36'-0"
4.	Maximum Number of floors	3



(E) **Integrated Hostel sites:-** The following volumetric controls shall be applicable on all the Integrated Hostels sites in sectoral grid of Chandigarh:-

Sr. No.	Parameters	Norms
1.	Maximum Ground coverage	40%
2.	Maximum FSI	1.25
3.	Maximum Height	48'-9"
4.	Maximum No. of floors	4

(E) **Nursing Homes:-** The following relaxation for the use of basement by Nursing in public interest is as under:-

- Administrative office and accounts.
- Ultrasound machine with allied services.
- Lithotripsy machine.
- Physiotherapy Department.
- Radiology department.
- Any plant, machinery related to diagnostics and Nursing Home, which does not require consumption and disposal of water or use of chemicals or any such item which can generate fire or can cause fire or which can generate foul smell or gas injurious to human health. The area under such habitable use of basement would be counted towards permissible FAR and subject to provision of adequate parking, circulation, light and ventilation, fire protection as per norms.

(F) **Parking on Integrated /dedicated projects:-**

Sr. No.	Parameters	Norms
1.	On Educational/ Institutional Part	Norms of educational/institutional sites shall be applicable
2.	On the hospital part	3 ECS per 100 sq. mtrs. of built up hospital area
3.	On residential part	1.8 ECS per 100 sq. mtrs. of built up area
4.	On commercial part	4 ECS per 100 sq. mtrs. of built up commercial area

(G) **Solar Water Heating System:**

- (i) All institutional buildings which have use of hot water shall have solar water heating system of adequate capacity installed. The existing buildings which do not have those facilities shall provide this facility within one year from the date these orders are notified in the official gazette.
- (ii) Provision of Solar Water Heating System shall be compulsory in the following categories of buildings:-
 - a) Hospitals and Nursing Homes
 - b) Hostels of schools, colleges, Training Centres.



5. Environment

(A) WATER CONSERVATION

Use of recycled water shall be compulsory for the following:-

- All buildings with an area of more than 2000 sq. m. in all new developments. If such water is not supplied by the MC, then the building should set up water treatment plant within its premises for reuse of waste water.
- All apartments or group housing complexes with more than 20 tenements and commercial, institutional and industrial complexes with an area of more than 2000 sq.m.
- Watering parks, gardens landscapes, golf courses, use for construction, laundry, industrial process, flushing, washing roads etc.

(B) STORM WATER MANAGEMENT

a. Zero Drainage of Storm water for the following shall be compulsory:

- All the housing and institutional campuses etc. with a total site area more than 30 acres.
- The Integrated campuses/sites like P.G.I., C.S.I.O., IMTECH, P.U., PEC, GMCH, Sector 17, Sector 34.

b) Integrated Implementation Of Sustainable Urban Drainage Systems (SUDS):

Techniques of Sustainable Drainage System (SUDS) like Pervious Paving, Green Roofs, Filter Drains, Filter Strips, Swales, Detention Basins & Retention Ponds, Infiltration Devices, Pipes and Accessories, Constructed Wetlands shall be compulsorily adopted for the following.

- Sites with area lesser than 10,000 sqm. shall implement Rain Water Harvesting and SUDS Source control and Infiltration instruments such as green roofs, permeable paving, infiltration trenches, infiltration basins, etc.
- Larger sites (area greater than 10000 sqm.) shall implement integrated SUDS techniques as feasible that would effectively reduce runoff.
- Still larger sites (with area greater than 20 acres) should go for Soil Infiltration rate testing before implementing SUDS Infiltration devices & passive treatment techniques to enable successful implementation of “zero” storm water drainage from the site.

(C) Sewerage System

There shall be zero sewerage discharge into the nallah/choe/river.

1. FAB Technology should be used.
2. Large campus should have decentralized sewerage treatment plants.
3. Tertiary treated water should be used intensively.



(D) Solid waste management

- All residences other than the apartments and small neighbourhood shops are required to store segregated waste (biodegradable and non-biodegradable) for collection by the Municipal Corporation
- Group Housing Societies with more than 20 households and apartments with similar strength in each sub -sector shall provide segregated Solid Waste Management facilities within the site.
- All commercial buildings shall have arrangement for storage of segregated waste
- Medical organizations shall be bound to segregate and dispose off the biomedical waste as per the municipal guidelines.
- The concerned organization shall follow the guidelines of the concerned department for the safe disposal of E-waste

(E) Air Pollution:

- 'Air Pollution Control Area' under Air (Prevention & Control of Pollution) Act, 1981 on 1st Feb. 1988 and the Act was implemented by the Central Pollution Control Board (CPCB)
- **Disposal of fallen trees leaves:-** Field workers not to burn any type of garbage or dry leaves.
- **Noise Pollution:-** The provision of **Noise Pollution Act 1986** shall be applicable.

(F) Water Pollution:

Water (Prevention and Control of Pollution) Act, 1974.

(6) Agricultural and forest areas:-

Size of Nurseries:- The building size for the proposed nurseries in the agricultural area shall be from 1 kanal to 1 acre.

(7) General:-

- **Volumetric Controls:** The volumetric controls on all the building/ sites except residential shall be as follows:

Sr. no.	Area	Parameters
1.	Sector 1 to 30	Governed by architectural control
2.	Sector 31 and beyond in sectoral grid	Governed by such volumetric controls duly approved and prescribed.
3.	All other sites/Plots	Shall be governed by a zoning plan duly approved by the Chief Administrator.



- **Exemption from FAR:**

Following areas in various buildings in Chandigarh shall not be counted towards FAR:-

- Mumty or stair covers leading to terrace where no habitable use is proposed.
- A watchman shelter at every entry/exit point each not exceeding upto 14 sqm. in area.
- Mezzanine floor which shall be only 25% of the total area in the hall where such facility is being proposed.
- Machine room for lift on top floor as required for lift installation.
- Open to sky ramp/staircase for emergency exit.
- Service chutes, service ducts for essential services.
- Service floor.
- Non habitable stilt floor for parking.
- Basement for parking and service/storage (minimum of 80% area for parking and maximum of 20% area of services storage in non residential buildings).
- **Height restrictions:-** To comply with the height restrictions in Air funnel zone imposed by Civil Aviation Authorities and Air port Authorities, NOC from these shall be mandatory.
- **Plinth height:-** The plinth height of all the buildings in Chandigarh shall be a minimum of 0.3 m. above the centre of finish level for the street abutting the boundary.
- **Number of storeys:-** There shall be no restriction in the number of storeys in all buildings having volumetric controls in Chandigarh, where height, FAR and ground coverage are already restricted, subject to the condition that clear height shall be maintained as per rules.

- **Gallery floor and mezzanine floors:** Where gallery floors and mezzanine floor are built, they shall comply with the following:-
 - i. They shall be built in any room the height of which is not less than 4.9 m.
 - ii. Gallery floor shall not cover more than one third, and mezzanine floor shall not cover more than one fourth of the floor area of the rooms in which they occur and
 - iii. They shall not be lower than 2.28 m. when measured from the surface of the floor to the under surface of the gallery or mezzanine floor.

Any building in Chandigarh shall be used only for the purposes mentioned in the allotment letter and the zoning plan of that particular site.
- **Annexe:-** The height of annexe of 1 kanal houses and above in Phase-I sectors shall be increased upto the maximum height of 24'-9" in the single storey zone for construction for double storey buildings.
- **Party Walls:** Party walls above roof at height of parapet: The party walls of all roof having access by means of staircase shall have party wall of minimum height of 1.8 m, throughout its length between the internal faces of outer parapet walls. Notwithstanding the above, terminal ends of these walls may be shaped for architectural considerations. In the case of multistoreyed flats this provision shall be optional. All parapet walls, balustrade or railings affording protection to roof terrace balconies or verandahs at or above first storey level and having access thereto by staircase door or other opening shall have a height of not less than 0.75 m.



- Basement:**

The major norms applicable to basements shall be as given in the table below:-

Sr.no	Parameters	Norms	Condition
1.	Permissibility of Basement Storey	(i) One basement shall be mandatory in the following categories of the buildings in the city:- <ul style="list-style-type: none"> • Cinemas converted into Multiplexes. • Industrial sites in Industrial area, Phase I & II converted into commercial usage after payment of conversion charges. • Shopping Malls. • Hotel sites on independent plots. • Sites In the Chandigarh Technology Park. • Special sites such as the proposed 11 storeyed tower in City Centre, Sector 17. • Commercial sites, offices and Industrial sites (except educational & residential) comprising independent plots of one acre and above plot area. ii The twin level basement shall be optional .	Provisions given under rule 28-C (Use of Basement Storey) of the Punjab Capital (Development and Regulation) Building Rules, 1952).



Sr.no	Parameters	Norms	Condition
2.	Use of Basement Storey	<p>The one floor of the basement (entrance floor) may be put to the following uses:</p> <p>(a)Storage of household or other goods of ordinarily incombustible material.</p> <p>(b)Storage rooms, bank-cellars etc.</p> <p>(c)Air conditioning equipment and other machines used for services and utilities of the building; and</p> <p>(d)Parking spaces.</p> <p>(e)Installation of printing press in respect of press sites.</p> <p>(f)Modern automatic laundry shall be allowed only in the basement of hospitals/nursing home sites,</p>	<p>Subject to the condition that the effluent of the laundry shall be properly pumped upto the ground floor inspection chambers and discharged to the main sewer.</p>
3.	Habitable use of basements	Non-residential habitable use of basements shall be allowed	<ul style="list-style-type: none"> • Allowed in conformity with the Building Byelaws (Rule 28D (iii))/ National Building Code, in this case the ground floor shall have to be higher than the average ground level as prescribed in the code. • Habitable basement is to be counted in the FAR. • Excess FAR composition fee shall be payable as fixed by the Administration from time to time.
4.	Partitions in a basement storey	Allowed	<ul style="list-style-type: none"> • Provided it is used as a single premise or as a service area for upper floors, • In accordance with the Building Byelaws, National building Code and Fire Safety Regulations.



Sr.no	Parameters	Norms	Condition
5.	Area for construction for basement	<ul style="list-style-type: none"> • To be constructed within the prescribed set-back and prescribed building lines. • In the case of basement meant for parking only, the basement shall be permitted to be extended by additional 10% of the plot area beyond the permissible built up zone in plots measuring 2 kanals upto one acre in case of commercial and institutional buildings, subject to the condition that the basement so extended shall be flushed with the ground and roof slab shall be designed to take the load of fire tender to be ensured by the registered structural engineer and other public safety/other emergency equipments as per the provisions of the National Building Code. • Twin level basement in the built up area is permissible in commercial plots of more than one acre. If the applicant wants to extend this basement beyond the building plan, the same can be considered for approval subject to the condition that the total car parking generated by commercial site is more than which could be accommodated in the twin level basement and the parking allowed at the surface further subject to the norms determined by the Town Planning and Architecture Department which are based on NBC, building bye laws and the Fire Act. 	Provided that the services shall be so arranged that these do not affect the free flow of vehicles/fire tender and shall be properly encased within the basement.
6.	Height of Basement storey	The minimum clear height of a basement storey shall be 2.29 mts. (7'-6") and maximum height of basement storey shall be upto 3.66 mts.(12'-0") from floor to ceiling, subject to structure stability to be certified by registered structure engineer. However, in case of the services such as printing press, Lift, Ac Plant, Electrical panels, Filtration Plants, Laundry Plants or machines related with the services relating to the use of the site, the clear height upto 16'-6" shall be allowed by the competent authority subject to the condition that no mezzanine floor shall be permitted after ensuring the structure stability and provisions of fire safety rules.	However, the height for mechanical parking in basement shall be as approved by Chandigarh Administration on case to case basis.
7.	Access to Basement	The access to the basement shall be separate from the main and alternative staircase providing access and exit from height floors. Where the staircase is continuous in the case of building served by more than one staircase, the same shall be of enclosed type serving as a fire separation from the basement, floor and higher floors. Open ramps shall be permitted if they are constructed within the building line subject to the provision of adequate surface drainage provisions.	
8.	Lighting and ventilation of basement storey	<ul style="list-style-type: none"> • An open area of a minimum width of 1.8 mtrs. shall be provided across the full length and/or width of a basement storey. This area shall be within the limits of the site and shall be paved with impervious material above a concrete bed. It shall be completely unobstructed except that in this area steps may be allowed for access to it, if considered necessary. • Basement storey shall be and ventilated by means of windows or a minimum area or 1/10th of the total floor area atleast half of which must open. • The basement storey for any other purpose conforming to the land use of the site can be allowed. 	<ul style="list-style-type: none"> • Provided that this provision shall not apply to the basement storey in city centre i.e. Sector 17 or in such other area as may be specified by the Chief Administrator. Where it may not be possible to provide open areas, the access to the basement storey in such case be provided through the ground of the building • In case of buildings governed by architectural control, the provision of light and ventilation shall be as shown in the control sheets.



Sr.no	Parameters	Norms	Condition
		Adequate ventilation shall be provided for the basement. The ventilation requirements shall be the same as required by the particular occupancy according to byelaws. Any deficiency may be met by providing adequate mechanical ventilation in the form of blowers, exhaust fans, air conditioning systems etc.	<ul style="list-style-type: none"> • Proper light and ventilation as required under the rule is provided or proper air conditioning is made. • The basement area of such uses shall be counted as part of the permissible covered area/floor space index of the site.
9.	Damp proofing of basement storey	The walls of the basement storey shall be properly damp proofed and if in contact with the soil, they must be effectually secured against dampness from the soil with vertical and horizontal damp proof course.	
10.	Structural requirements of Basement Storey	The wall of a basement storey shall have a thickness at the base or at any section and not less than 1/3 rd the height of the base or the section below the ground level, unless the thickness has been determined by calculations of the wall acting as a retaining wall.	
11.	Drainage of Basement	<p>a) Open area adjoining a basement storey, if any, shall be effectually drained to the satisfaction of the Chief Administrator.</p> <p>b) The responsibility for draining a basement storey and for protecting it from rain and surface water shall be that of the owner.</p>	



- **Site coverage of Basement Storey:**

Sr. No.	Extent/ area of construction	Norms	Other conditions
1.	Extent of construction of basement area	i) 100% of the total permissible ground coverage, subject to the provisions of the Punjab Capital (Development & Regulation) Building Rules, 1952 and technical feasibility at site. ii) In the case of basement meant for parking only, the basement shall be permitted to be extended by additional 10% of the plot area beyond the permissible built up zone in plots measuring 2 kanals upto one acre in case of commercial and institutional buildings.	1) Subject to the condition that the basement so extended shall be flushed with the ground and roof slab shall be designed to take the load of fire tender to be ensure by the registered structural engineer and other public safety/ other emergency equipments as per the provisions of the National Building Code. 2) Provided that the services shall be so arranged that these do not affect the free flow of vehicles/fire tender and shall be properly encased within the basement.
2.	Minimum 'no basement zone'	8' wide on the side of the plot where the adjoining building/house is already constructed without basement.	To maintain the structural stability.
3.	Maximum height of a basement storey	3.66 mtrs.	2.29 mts. under the soffit of beam.

b) **Other Requirements:-**

The requirements of basement shall be as following s:-

- Every basement shall be in every part at least 2.28 m. in height from the floor to the underside of the roof slab or ceiling.
- Adequate ventilation shall be provided for the basement. The ventilation requirements shall be the same as required by the particular occupancy according to byelaws. Any deficiency may be met by providing adequate mechanical ventilation in the form of blowers, exhaust fans, air conditioning systems etc.
- Adequate arrangements shall be made such that surface drainage does not enter the basement.



- **Ramp:-**
- The clear width of the ramp leading to the basement shall be 4.00 m with an adequate slope not less than 1:10.
- Separate entry/exit of ramps in the basement should be provided and the ramp for basement parking shall be allowed outside the zoned area subject to fire tender movement.
- The ramp shall be on non slippery surface.
- **Barrier free approach:-** Barrier free approach shall be compulsory in all non-residential sites in Chandigarh to facilitate differently abled persons.
- **Toilets for especially abled person:-** Toilets for **especially abled person** shall be compulsory in all non-residential sites in Chandigarh to facilitate differently abled persons.
- **Courtyard:** Where the minimum size of courtyard for providing light and ventilation to the basement is provided i.e. Minimum width in all directions is 3 meters as specified in rule 20 of the Punjab Capital (Development and Regulation) Building Rules, 1952.

“Lighting and Ventilation of Basement Storey: An open area of a minimum width of 1.8 m. shall be provided across the full length and/or width of a basement storey. This area shall be within the limits of the site and shall be completely unobstructed except that in this area steps may be allowed for access to it, if considered necessary.

Provided that this provision shall not apply to the basement storey in city centre i.e. Sector 17 or in such other area as may be specified by the Chief Administrator . Where it may not be possible to provide open areas, the access to the basement storey in such cases be provided through the ground floor of the building.”

- **Lift:** Lift shall be allowed to open in basement of buildings in Chandigarh.
- **Staircase:**
 - a. **Design of Staircase:-** As per new fire safety norms, minimum of two staircases are to be provided in buildings above 15m. height. In old buildings which already stand constructed with one staircase as per the approved plan and architectural control, it shall be mandatory to have more staircases as fire safety staircases. If the fire staircase cannot be provided within the existing building, it can be allowed beyond the architectural control of the building and beyond the zoned area. These staircases shall be open to sky and hence, shall not be counted towards FAR. While providing the extra staircase the uniformity shall be maintained.
 - b. **Location of Staircase:-** The staircase in any building shall be so located that the travel distance on the floor shall not exceed 30 m.). However, travel distance in various parts of buildings shall also be governed by the Fire Safety Norms or the norms specified in NBC.
- **Access to Terrace:** The terrace of all buildings in Chandigarh shall be allowed to be accessed by staircase except marla houses.
- **Service zone on terrace:** Mumty to be located within the service zone to create refuge area in case of fire.
- **Location of mumty:-** The service zone on the terrace shall be allowed to have 3’ high parapet all around, which shall not be used for any other purpose except for specified services.



- **Cut out in roof slab:** Cut out of 1 sq. mtr. area with flap, shutter/sky light shall be provided in roof slab on 2nd floor to facilitate access to services on terrace floor through cat ladder, subject to the condition that the flap door/skylight on the roof of second floor is within the parapet height. Overhead water tank on terrace is also provided at least 4'-6" away from the front building line and wall of the corner house.
- **Roof and site drainage:-**
The roof of the building (whether flat or sloping) shall be constructed so as to drain effectually to suitable and sufficient gutters, shoots or troughs, which shall be provided for receiving and conveying all rain water that may fall on the roof. Such gutters, shoots or trough shall be connected to a sufficient number of suitable down pipes so as to carry away all such water without causing dampness in any part of the building or any adjacent building. Spout for discharge of rain water from roof may be used, provided the water from such spout falls within the applicant's property.
- **Boundary Wall:-**
 - i. Boundary wall of any site shall be as per the specifications and design shown on the respective drawings prepared the Department of Urban Planning, Chandigarh Administration.
 - ii. In case of sloping sites, the prescribed height of the wall may exceed over portions of its length provided that at no point it shall be more than 0.60 m (2'-0") above the prescribed height.
- **Parking for all types of buildings:**
 - a) Multi level parking above the ground level shall also be allowed which shall be free from FAR. However, the footprint of the separate parking building block shall be counted upto 50% of the ground coverage permissible. In this block, no other use except parking, drivers rest room with toilet, toll centre and any other facility which is essential for parking facility shall be allowed subject to condition that these facilities shall not exceed 150 sq. mtrs. per 100 ECS (Equivalent Car Space) of parking space or in multiple of that. Other parameters such as ground coverage, height etc. for such parking shall be governed by the existing rules for any other multi level building. Multi level mechanical parking shall also be permissible for which the norms shall be decided on case to case basis.
 - b) Parking along V-4, V-5 and V-6 roads shall be strictly prohibited.
- **Material:-** All material to be used for the erection or re-erection of the building shall be of the specification and standard laid down in part V of the National Building Code of India on Building Material, subject to any restriction in Architectural Control Sheet prepared by the Department of Urban Planning, U.T. Chandigarh.
 - i. No staircase in a public or commercial building or warehouse and industrial building shall be of width less than that given below:-
 - a. Number of users upto 200
 - b. Number of users from 200 to 350
 - c. Increase by 2.5 cms. for every additional 15 persons until a maximum of 2.75m.'.



- ii. The staircase in these buildings shall be of fire proof materials. Notwithstanding the above staircases in private portions of public buildings/commercial buildings or warehouse and industrial buildings, not open to general public may be of the sizes mentioned for the residential buildings, for more than two families and commercial buildings.
 - iii. The minimum tread shall be 28 cms and maximum riser 18 cms. All staircases and walls enclosing the staircase in public building, warehouse and industrial buildings shall be of fire proof materials.
- **Sign Board:**
 - Only the sign boards approved by the Chief Architect, U.T. Chandigarh as per standard design shall be permitted to be installed.
- **Advertisement stand and structure:-**
 - a. No structure shall be constructed to carry on advertisement except in the plan/architectural control sheet/standard design, area shown on the zoning
 - b. RCC projections over light on advertisement panels of booths, if not provided, shall be compounded on payment of composition fee as prescribed by the Chandigarh Administration.
 - c. Additional advertisement space for fixing Neon signboards in LCR and Hotel buildings shall be provided in the architectural controls applicable to these sites, by the Department of Urban Planning as per the guidelines of the Chandigarh Administration Control Notification 1954.

- **Generator Set:**

- a) A silent generating set of any capacity and dry type transformer/sub-station equipments shall be allowed on the terrace/roof top of all commercial/industrial, public and apartment buildings in Chandigarh within service zone subject to the following conditions:-
 - i. That the structural stability is certified by the Structural Engineer,
 - ii. That the Chief Fire Officer, Municipal Corporation, Chandigarh issues a No Objection Certificate for the purpose.
 - iii. That consent/clearance is obtained from the Chandigarh Pollution Control Committee, Chandigarh.
 - iv. The applicant shall apply to Electricity Department, Chandigarh Administration for clearance and electric connection.
- b) A Silent Generating set upto 25 KVA capacity shall be allowed on the lowest level of the residential building subject to fulfill the norms of the air pollution and structure noise levels being as approved by Chandigarh Pollution Control Committee and the Electricity Department of Chandigarh Administration as per their norms.

- **Water Conservation:**

In all the buildings having toilets/washrooms, henceforth dual flushing system of not more than 7 lts. capacity per W.C. shall be mandatory in order to take care of water conservation. All the commercial institutions and non-residential buildings will install the requisite flushing system within two years.



- **Rain Water Harvesting System:** All the buildings, which are or will be located on plot of one kanal and above shall have rain harvesting system to recharge ground water installed as per the specifications given by the Administration. All the existing buildings shall install rain water harvesting system to recharge the ground water.
- **Solar Water Heating System:**
The Solar Water Heating Devices shall be installed in the service-zone on the terrace.
- **Tree Preservation:-**
 - (i) The relevant provision of Chandigarh Tree Preservation Order, 1952 shall be applicable.
 - (ii) If it appears to the Chief Administrator that it is necessary or expedient to preserve or plant trees generally specified kind in Chandigarh, he may, by notification in the official gazette make an order (hereinafter referred to as the Trees Preservation Order) with respect to trees generally or such kind of trees, as may be specified in that orders, and such order may regulate, restrict or prohibit. :-
 - The cutting, topping, lopping or wilful destruction of trees, except with the previous permission of the Chief Administrator.
 - The planning and re-planting of trees or kinds of trees in any site or location therein as may be specified in the orders issued in this regard.
 - Minimum 6' X 6' area shall be provided around the trees during road construction/widening and pavement.
- **Fire Protection Requirements:**
 - i) The buildings shall be planned designed and constructed to ensure the fire safety and this shall be done in accordance with provision laid down in National Building Code of India Part IV on Fire Protection.
 - ii) For building having height of 15 m. and above, the Chandigarh Fire Prevention and Fire Safety Rules, 1991 shall also be applicable.
- **Architectural Control Sheets, Zoning Plans, Government Type Designs:**
 - a) The erection or re-erection of every building shall be subject to the restrictions of the zoning plan and the schedule of clauses appended thereto and the architectural control sheets, if applicable (Rule 19)
 - b) All the sites/plots in Chandigarh shall have a Zoning Plan duly approved by the Chief Administrator.
 - c) Due to increase in ground coverage area, the increased area will be first adjusted within the existing footprint of the building. If need be, increased coverage can be adjusted on the rear side or on either sides of the existing building. Only in such cases where permissible coverage cannot be achieved after increase in rear and either side of the existing footprints, the same shall be allowed to be adjusted on the front side of the existing footprint as per the amended zoning plan.
- **Other norms:-** The parameters, whereupon these zoning regulations are silent, shall be covered by the respective notifications of Chandigarh Administration. However, even if the norms of Chandigarh Administration are also silent w.r.t. some parameters, then the guidelines of UDPFI, TCPO and NBC shall also be applicable.



- **Construction of buildings in violation of Rule 5:-**

- a. Where the plans have been got sanctioned and during the course of construction, the owner has made certain minor changes within the permissible covered area already sanctioned i.e.. changes in size of rooms etc. but the planning remains the same as per the sanctioned plan, in such cases no composition fee shall be charged provided the construction made at site conforms to the Punjab Capital (Development and Regulation) Building Rules, 1952 as amended from time to time and the revised building plan indicating the changes at site are approved by the competent authority.
 - b. Where plan has been sanctioned and the owner has totally changed the planning during the course of construction, in such cases, a composition fee of the total covered area shall be charged provided the construction made at site conforms to the Punjab Capital (Development and Regulation) Building Rules, 1952 as amended from time to time and the revised plan indicating the changes at site is sanctioned by the competent authority.
 - c. The construction of building without the sanction of building plans shall be taken seriously. The officials/persons responsible for such construction shall not be given water supply and electric connection etc. The licence of the architect who designed and supervised the construction of such building shall be cancelled and he shall not be allowed to do his practice in the city.
- d. In case construction has been raised in violation of Rule 5 of the Punjab Capital (Development and Regulation) Building Rules, 1952, as amended from time to time i.e. construction without any sanction but it conforms to the Zoning Regulations/Architectural Controls/Frame Controls and other Building Byelaws, the composition fees shall be charged, subject to the following conditions:-
 - i. The owner of the building shall get the building plans approved from the competent authority.
 - ii. The building conforms to the rules and regulations and no excess coverage shall be permitted.
No excess coverage, violation of architectural control, frame control etc. shall be permitted under any circumstances.
 - e. Minor internal changes made in the building during the course of construction i.e. change in size and location of the doors, windows and ventilations, minor change in size of rooms; construction of WC and baths instead of toilet, and change in the position of toilet, stores and kitchens, shall be compoundable provided there is no violation of the architectural controls, frame controls, zoning regulations and building rules.

Note:- In case of any difference or variation in provisions of any of the above norms viz-a-viz the notified norms by Chandigarh Administration, only the contents of respective original notifications of the Chandigarh Administration shall be applicable and followed.



17. ECOLOGY AND ENVIRONMENT

17.1 INTRODUCTION

As already detailed in Chapter 4, the ecological and aesthetic values of Chandigarh's location were major considerations in selection of the site and planning of Chandigarh. While the Shivalik Hills to the north provided a visually attractive backdrop to the monumental Capitol Complex, the two choes (seasonal rivulets) on either side defined the eastern and western boundaries of the Chandigarh Plan. The N Choe going through the middle of the site was converted into a continuous green belt (the Leisure Valley) and the north to south slope provided natural drainage. Subsequently, it was decided to dam the Sukhna Choe to provide Chandigarh with its much loved lake.

Both the Chandigarh Plan and the 'Edict of Chandigarh' strove to preserve the city's proximity with nature by prohibiting any development to the North of the city, leaving the hills ecologically and visually undisturbed. The Periphery Control Act was similarly meant to maintain a clear rural urban dichotomy and prevent unregulated urban development within a radius of 16 kms around the city.

- **Objectives of ecological planning for the Union Territory of Chandigarh**
 - Protecting the ecological integrity of Sukhna Lake catchment and the wildlife sanctuary
 - Protection & conservation of Choes
 - Increasing the green cover and its diversity
 - Minimizing noise & air pollution

17.2 PROTECTING SUKHNA LAKE'S CATCHMENT IN THE ECOLOGICALLY FRAGILE SHIVALIK HILLS

Realizing the grave threat posed to the Sukhna Lake by soil erosion from the degraded Shivalik Hills, in 1963, the erstwhile Punjab Government acquired 2,598.42 ha of hilly catchment area of the lake from different villages for undertaking soil and moisture conservation works.



Despite conservation measures taken, the first major ecological problem encountered by the city was the high rate of siltation of the lake. 63% of the lake's storage capacity had already been eaten away by silt till 1974. After the reorganization of Punjab in 1966, the catchment got divided between the UT of Chandigarh and the states of Punjab and Haryana. Out of the lake's total catchment area of 4207 hectares, 3312 ha (66% of the catchment area) is in the hills out of which 770 ha now falls in Haryana. Most of the remaining 895 ha of the catchment area in the plains is under agricultural use and habitations and falls partly in Punjab (Kansal village), Haryana (Saketri Village) and the UT of Chandigarh (Kaimbwala village, a part of the Capitol Complex and the Rock Garden).

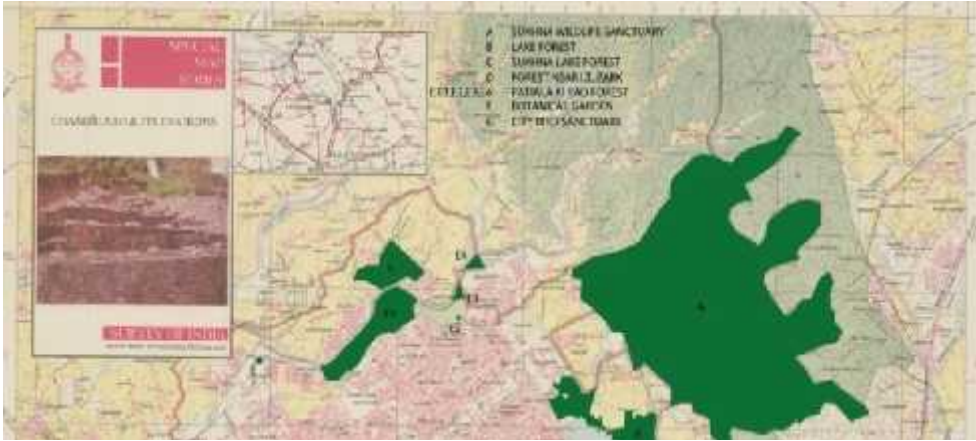
(Source: Management Plan for Sukhna Wildlife Sanctuary and Survey of India map of the Lake's catchment).



THE CAPITOL COMPLEX AND THE AREA TO ITS NORTH (GOOGLE MAP)



LOCATION OF SUKHNA WILD LIFE SANCTUARY ON THE NORTH OF CHANDIGARH



FOREST AREAS IN CHANDIGARH

SUKHNA LAKE AND THE RESERVE FORESTS IN THE BACKDROP



SUKHNA LAKE AND THE FORESTS IN THE BACKDROP



CONCERN - THE DRYING UP OF THE SUKHNA LAKE



EMERGING THREATS TO THE NATURAL SETTING. STRICT MONITORING OF DEVELOPMENTS ON THE NORTH IS ESSENTIAL.



PROBLEM OF SILTATION IN THE LAKE



Examination of the catchment area in the mid 1970s revealed that the highest rate of siltation was taking place in the area adjoining Sukhomajri Village in Haryana due to unregulated grazing in the hills and breaking of hilly land for cultivation. This resulted in the Central Soil & Water Conservation Research & Training Institute taking up an operational research project in the Sukhna catchment from the mid-1970s which led to the famous pilot project of social fencing in Sukhomajri Village. With grazing voluntarily brought under control by the villagers, combined with extensive soil and water conservation measures undertaken under the operational research project, the rate of siltation in the catchment came down dramatically.

Chandigarh's forest department has subsequently continued intensive soil and water conservation measures including effective closure, large scale plantation, construction of silt detention dams and masonry check dams supported by vegetative conservation measures. These measures have further reduced the siltation rate of the lake to less than 5 tonnes/ hectare/ year and the overall tree density has increased from 162 to 450 trees per hectare. However, this seems to have also decreased the surface water runoff into the lake.

In 1998, the 2598.42 ha hilly area acquired in the lake's catchment was first notified as a Reserve Forest (RF) and then as a wildlife sanctuary under the Wildlife Protection Act, 1972 with effect from 16.03.1998. This ensured a still higher level of protection to this area for which a separate Management Plan has been prepared. Another 456.31 ha was notified as Reserve Forest in the UT consisting of the Sukhna Choe Reserve Forest and Lake Reserve Forest. An additional 23.29 ha of land along Patiala Ki Rao was notified as RF in 1961. With about 9 ha having been diverted for non-forest purposes, the total RF area in the UT (excluding the sanctuary area) at present is 470.38 ha. (source: *Working Plan, UT Forest Division and Management Plan for the wildlife sanctuary*). Another 183.14 ha adjoining the Patiali –ki-Rao, Sukhna Choe and lake RFs is recorded as Unclassified Forest.

17.3 SUKHNA WILDLIFE SANCTUARY

Sukhna Wildlife Sanctuary spread over an area of 2598.42 ha is located in the North –East of the Sukhna Lake and forms part of Sukhna lake's catchment area falling in the Shivalik Hills. The Shivalik hills geologically unstable and thus are highly prone to soil erosion during rains. The soil in the Shivalik is sandy, embedded with pockets of clay which is highly susceptible to erosion by surface run off. Concerted measures taken towards prevention of erosion /silt into the Sukhna Lake have resulted in a thick forest cover and rich biodiversity of the area. Approximately 10 % of the perimeter of the sanctuary abuts the Chandigarh UT, the major part being along the states of Punjab and Haryana.

193 water bodies have been built in the Sukhna Wildlife Sanctuary which support wildlife and migratory birds that flock to this sanctuary.

The first wildlife census carried out in the Sukhna Wildlife Sanctuary in December 2010 found nine species of mammals and 63 species of birds including two species of Schedule I, two in Schedule II, three in Schedule III and one in the Schedule IV category of the Wildlife Protection Act.

Nine species of mammals include Leopard, Sambar, Chitah, Wild Boar, Indian Porcupine, Indian Pangolian, Blacknaped Hare, Golden Jackal and Grey Langur. The presence of predators such as the leopard, which requires enough prey for its sustenance, suggests the importance of Sukhna and its rich biodiversity. Prominent among the birds are Peacock, Red Jungle Fowl, Grey Partridge, Cuckoo, Night Jar, Golden Oriole, Kingfisher, Swift, Hoopoe, Hornbill, Barbet, Woodpecker, Roller, Barn Owl, Parrot, Dove, Jacana, Plover, Coot, Hawk, Goose, Swan, Duck, Grebe, Black Drongo, Tree Pie, Jungle Crow, Bulbul, Hill Myna, Koel, Bee-eater, Common Myna etc.



Entrance to the Sukhna Wildlife Sanctuary



CATCHMENT AREA OF THE SUKHNA LAKE



SUKHNA WILDLIFE SANCTUARY



17.4 THE CHOES (SEASONAL RIVULETS)

Both Sukhna Choe and Patiali ki Rao, as well as the N choe flowing through the city (now converted into the Leisure Valley) perform important ecological functions which have not received the same attention as the problem of siltation of the lake. All the three choes originate in the Shivalik Hills and provide seasonal drainage for the surface water run off from their catchments during the monsoons. Their sandy beds also recharge the deep sub-soil water aquifers which provide Chandigarh about 20% of its water supply. Many of Chandigarh's tube wells are located in the beds of these choes.

Unfortunately, several insensitive developments are taking place next to and within the choe beds both in the UT and Punjab. Untreated sewerage and solid waste of Naya Gaon in Punjab and Khuda Lahora and Khuda Jassu in the UT is being thrown into Patiali Ki Rao. The same is happening in parts of the Sukhna Choe in the UT and Punjab and even the N Choe going through Chandigarh's southern sectors has not been spared. Besides destroying the local ecology and becoming a public health hazard, it is likely to pollute the sub-soil water. Rampant unregulated sand mining in Patiali Ki Rao is also threatening its water recharging capacity. In contrast, the parts of Sukhna Choe and Patiali Ki Rao with notified Reserve Forests along their sides are in much better condition with lush vegetation. These Choes suffer from :

- i) High degree of man made encroachments.
- ii) High degree of water/environment pollution.
- iii) Discharge of untreated sullage in the choe bed.
- iv) Mushroom development of slums along the river bed.
- v) Low availability of fresh water.

17.5 SECURING & ENHANCING THE VALUE OF EXISTING GREEN COVER

Open spaces in the Chandigarh Master Plan were meant to provide a continuous stretch of green spaces for pedestrians and cyclists to walk/cycle across the city in safety. The Forest Department has been preparing an annual 'Greening Action Plan' synergizing the efforts of different stakeholders like the, Municipal Corporation, Engineering Department, NGOs etc. Due to these efforts the tree cover in the UT is placed at 8.93% (10 sq km) of the geographical area.

The forest & tree cover of the UT of Chandigarh has increased consistently over the last decade and as per the State of Forest Report 2011, the total green cover (forest cover + tree cover) of UT, Chandigarh is placed at 23.65% of its geographical area. Recognizing these efforts, the Union Territory of Chandigarh was awarded the 'Indira Priyadarshini Vriksha Mitra (IPVM) Award-2010' under the UT category.



THE FOREST & TREE COVER OF CHANDIGARH



PATIALI KI RAO



ENCROACHMENTS WITHIN THE NATURAL RIVULETS



POLLUTION INTO PATIALI KI RAO



POLLUTION INTO PATIALI KI RAO



ENCROACHMENT INTO THE NATURAL RIVULETS



17.6 Air and Noise Pollution

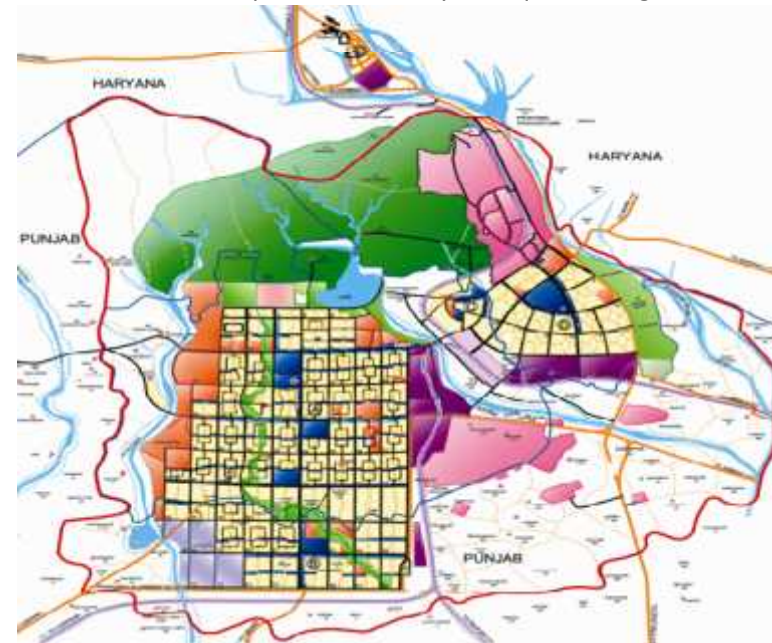
The entire Union Territory of Chandigarh was declared an 'Air Pollution Control Area' under the Air (Prevention & Control of Pollution) Act, 1981 on 1st February, 1988 by the Ministry of Environment & Forests. Earlier, the Central Pollution Control Board was enforcing the Environmental Acts/Rules in Chandigarh. After 1991, the Chandigarh Pollution Control Committee became responsible for performing the functions of State Pollution Control Board in Chandigarh. The Ministry of Environment & Forests has notified National Ambient Air Quality Standards for various pollutants and the Chandigarh Pollution Control Committee monitors ambient air quality at five different locations and implements various Environmental Acts/Rules in Chandigarh. The ambient air quality of Chandigarh is now under pressure. Respirable suspended particulate matter in the city has started crossing permissible limits. Studies have shown that the air quality of Chandigarh is largely impacted by vehicular pollution.. The other major contributors to air pollution are industries, burning of leaves from trees & gardens and the use of diesel generator sets in certain areas.

In addition to the air pollution, the city is also facing problems in terms of noise pollution. Despite the care taken to minimize noise pollution during Chandigarh's planning through measures such as restricting the movement of heavy vehicles on internal roads, separating industrial area with green belt and dense vegetation cover, etc., most of the areas now exceed the noise pollution limits. The most prominent sources of noise in the city are traffic, commercial and industrial activities, celebration of festivals, diesel generators, construction activities, etc.

A road length of over 2000 kms. and over six lakh vehicles contribute a major share of noise pollution to Chandigarh's environment. The noise levels notified for different categories of area in Chandigarh are shown **Annexure-A1**.

• EMERGING THREATS TO THE NORTH OF CHANDIGARH

The Edict of Chandigarh prohibits any urban development to the north of the Capitol Complex. This was reiterated by the Chandigarh Urban Complex Plan prepared in 1977 by the Co-ordination Committee. This plan clearly indicates the area of Kansal Village (falling in Punjab) north of the Capitol complex as a "No Development Area'. Although Chandigarh itself has refrained from undertaking any development to the north of the city, both Punjab and Haryana have now planned intensive urbanization in this belt, held almost sacred by the original planners as well as the city's residents, in total violation of earlier decisions. Besides marring the aesthetic value of the undisturbed hills crowning all Chandigarh's north-south roads, and mocking the conceptual basis of Chandigarh's original Plan, these contradictory developments in the pipeline will jeopardise the Capitol Complex's sanctity and make the efforts futile to preserve the city's unique heritage.



Chandigarh Urban Complex Plan



Due to large scale urban development taken up by the States of Punjab and Haryana, to the city's north falling in the catchment of the Sukhna Lake, such development will pose a long term threat to Chandigarh's already threatened lake.

The notified Development Plan of NAC, Naya Gaon 2021 falling in Punjab provides that one kilometer zone from the north-eastern edge of the Secretariat building shall be a low rise zone. Beyond that, the building height can be 1.5 times the width of the road in front of the building plus the width of the front setback.

Based on these norms, a group housing-cum-retail complex on a site of 53.39 acres in the vicinity of the Capitol Complex, and almost adjoining the wildlife sanctuary in Kansal Village, has been designed. With a planned built up area of 7,01,370 sq. m, the project envisions building 28 high rise towers ranging from 12 to 35 floors implying minimum heights of 120 to 350 feet. Besides overshadowing Le Corbusier's Capitol Complex, enormous volume of built space generated by these tall buildings and the large increase in traffic on the road just outside the sanctuary will cause serious disturbance to wildlife, flora and fauna.

Such a project will also have an adverse impact on Chandigarh's ecology and infrastructure in terms of air and noise pollution, high extraction of ground water, lowering the ground water table, waste water and solid waste management, besides, generating high volume of traffic. In addition, the development is likely to pose a serious threat to wildlife.

17.7 PROPOSALS OF THE CHANDIGARH MASTER PLAN 2031

To deal with above problems, the Chandigarh Master Plan 2031 proposes following interventions :

a. **Securing the entire catchment of the Sukhna lake**

In order to preserve the Sukhna Lake, it will be appropriate that entire catchment area of Sukhna Lake is brought under Regulation

and Control to secure it. At present, only the hilly part of the lake's catchment area has been notified as the wildlife sanctuary. However, area under urbanisation forming lower part of the catchment has not been strictly regulated. This needs to be done on a priority basis in order to minimize its adverse impact to prevent flow of sediment or polluted water into the lake. Any change in the landuse in this area also needs to be strictly regulated in order to preserve the sanctity and basic character of the area. Development in the immediate vicinity of the Wildlife Sanctuary should not be permitted which contravenes the objectives of wildlife conservation. The Catchment Area of Sukhna Lake consists of 4207 hectares, out of which 3312 ha is hilly and forested. The remaining 895 ha of area is comprised of villages Kansal (Punjab) Saketri (Haryana) and the UT of Chandigarh (Kaimbwala village, part of the Capitol Complex and the Rock Garden.

b. **Notifying an Eco-sensitive Zone (ESZ) around the Wild life Sanctuary**

In order to protect the environs of Wildlife Sanctuary, the area around it should be identified and declared as Eco-Sensitive Zone in consultation and collaboration with the governments of Punjab and Haryana. Only ecologically compatible landuses and activities shall be permitted in this zone as per the guidelines issued by the Ministry of Environment and Forest. Accordingly, plans for the area falling in Kansal Village in the Development Plan of NAC, Naya Gaon 2021, and the Mansa Devi Urban Complex in Haryana should be reviewed and revised to conform to the requirements specified for the ESZ. The Chandigarh Administration has already finalised the draft notification of Eco Sensitive Zone of Sukhna Wildlife Sanctuary for the area falling in UT, Chandigarh's jurisdiction and submitted to the Ministry of Environment & Forests, Government of India, for notification. The Chandigarh Administration has determined a width of Eco Sensitive Zone ranging from 2.0 to 2.75 km upto Uttar Marg on southern side of the Sukhna Wildlife Sanctuary so as to include Sukhna Lake & its catchment area.



c. Protecting the Choes

Considering the role and importance of choes in the context of overall ecology of the city and its environs, it is recommended that -

- the flood plains and the beds of the two choes on either side of the sectoral grid must be demarcated and protected from any kind of construction, sand mining and dumping of sewage and solid waste in them to maintain their ecological integrity and natural drainage function.
- The Reserve Forest area along both the Sukhna and Patiala Ki Rao Choes should be expanded by notifying the unclassified forest land adjoining them as reserve forests. The feasibility of notifying the choe beds, consisting of revenue land as reserve or protected forests should be explored in order to protect this area from unauthorized construction. This would help in not only increasing the UT's Forest cover but will also provide a corridor for wildlife connecting different forest patches which are presently not integrated.
- Alternatively, the demarcated choe beds and, where available, 30 meters of land on their sides should be declared as Eco-Sensitive Zones under the Environment Protection Act for prohibiting uses/activities considered detrimental to their ecological functions and regulated as per MoEF guidelines .
- Decentralized sewerage treatment plants must be set up for the existing villages and other developments along the choes on priority for preventing pollution of subsoil water by untreated sewage.
- Channelizing the choes and stone facing their sides must be reviewed and revoked. Stone facing may be undertaken only in selected/identified patches .

- As choes are ecological entities cutting across state or administrative boundaries, efforts must be coordinated with the state governments of Punjab and Haryana to adopt similar measures for the parts of the choes passing through their territories.
- e. **Securing & Enhancing the Value of Existing Green/Open Spaces**
- Surviving old trees and groves in the UT should be identified and protected.
 - All existing Zoning Plans should be reviewed and revised in order to ensure that no future construction of community facilities in the planned open spaces are permitted which interfere with pedestrian movement, availability of green spaces and natural drainage.
- f. **Air and Noise Pollution**
- For tackling the menace of air and noise pollution and to minimize the same to bring it within the prescribed norms, it is proposed that time bound switchover to use of CNG by public transport vehicles and giving priority to developing footpaths and cycle tracks to reduce the dependence on motorized vehicles should be promoted on priority. A Comprehensive Urban Air Quality Management strategy may be formulated based on emission inventory, dispersion models and urban policy inventory. The proposed Multi-Modal Mobility Plan with Mass Rapid Public Transport linking the city to neighbouring towns should be put in place on priority in order to reduce the air and noise pollution.



17.8 WILD LIFE CORRIDOR

The Lake Reserve Forest and Wild Life Sanctuary are separated by agricultural land. The growing wildlife population in the Sanctuary has often resulted in animals straying into nearby settlements in Kishangarh and Khuda Ali Sher in the Union Territory and in Kansal in Punjab leading to number of casualties. In order to overcome this problem, the UT administration has launched a massive afforestation drive of the agricultural land separating the two forests in order to create a Wildlife Corridor between the Reserve Forest area and the Regulator End of the Sukhna Lake on a stretch spanning nearly 1.4 km. The programme is aimed at preventing unauthorized construction taking place in the area and to preserve and protect the wildlife in the Sanctuary.

The proposed Wildlife Corridor will help in converting the agriculture use of land into afforestation and would act as the connector between the Sanctuary and the Lake Reserve Forest. For preserving the area under corridor, it should be declared as a 'No Development Zone'.

Plantation in the newly acquired land at village Kaimbwala

On the recently acquired 50 acre land at village Kaimbwala, the Forest Department has carried out thematic plantation of fruit bearing tree species in approximately 48 acre area. The rest of the two acre area, which already has the vegetation is being maintained as such. A massive plantation drive was organized by the Department of Forests, UT, on the occasion of the World Environment Day-2011 to take up the plantation on the newly acquired land. Tall saplings of following fruit bearing species have been planted - Mango, Jamun, Guava, Shatoot, Neem, Pipal, Pilkhan, Dhek, Kankankchampa, Arjun, Imli, Amaltas etc. Plantation of fruit bearing species will improve the Quality and Bio- Diversity of the vegetation in the Lake Reserve Forest behind Sukhna Lake. Availability of the food to the wildlife and monkeys will be ensured by this plantation.



THEMATIC PLANTATION IN THE NEWLY ACQUIRED LAND FOR THE WILD LIFE AT VILLAGE KAIMBWALA



18. CHANDIGARH DISASTER MANAGEMENT PLAN

18.1 INTRODUCTION

Although the common man is not so familiar with the term Disaster Management, people today are much aware of certain phenomena like earthquakes, cyclones, landslides and now even the tsunami. Since times immemorial India has been highly prone to natural calamities. The Union Territory of Chandigarh spread over an area of 114 sq. kms. has high vulnerability to earthquakes as it lies in Seismic Zone IV.

- **Disasters**

Disasters are characterized by some or all of the following:

- They are disruptive to individuals and communities.
- They are not part of day to day experience and are outside normal life expectations .
- They are unpredictable in occurrence and effects can be of sudden on set.
- They require a response for which normal local resources may be inadequate.
- They have a wide range of effects and impacts on the human and physical environment.

- **Disaster Management Cycle**

Three major functional areas were recognized as necessary components of a comprehensive approach; prevention, response and recovery. Without these areas, the key responsibilities of agencies include:

- **Planning:** -
The analysis of requirements and the development of strategies for resource utilization.
- **Preparedness:** -
The establishment of structures, development of systems and testing and evaluation by organizations of their capacity to perform their allotted roles.
- **Co-ordination:-**
The bringing together of organizations and resources to ensure .

18.2 OBJECTIVES

Disaster Management Plan is a comprehensive plan, which optimally utilizes men, material and available resources to prevent loss to lives and minimizes loss to property. It ensures fastest approach for rescue and rehabilitation. Disaster Management Plan guides the entire machinery engaged in relief operation and induces courage amongst the community to face the eventuality boldly. The key objectives of the Chandigarh Disaster Management Plan are:

- To improve the preparedness for disaster through risk assessment and vulnerability analysis of Chandigarh.
- To evolve a suitable mitigation strategy so as to minimize the impact of disaster in terms of men and material loss.
- To give professional guidance to the relief machinery engaged in relief operations.
- To create awareness amongst the community to face the disaster in case of an eventuality.
- To involve the voluntary organizations & NGO's in awareness creation and in relief operations.
- To enable quick restoration of the public service system affected by the disaster.
- To prevent the spread of post-disaster epidemics.

Risk and Vulnerability, Analysis (RVA)

- Risk and Vulnerability Analysis (RVA) is an essential tool for any disaster management plan. In the Chandigarh Disaster Management Plan (CDMP)-2008, a conscious effort has been made to include a preliminary RVA which will help identify people, property and resources that are at risk of damage, injury or loss during disasters. Such information would aid in prioritizing the precautionary measures.



18.3 identification and prioritization of hazards

- * Earthquake
- Terrorist Attack
- Fire
- Chemical Hazards.
- Flood
- Accidents (Road, Railways, Air, Building Collapse)
- Road Blockade

18.4 HAZARD ANALYSIS

Hazard Analysis involves mapping of areas, which are prone to disaster so as to develop a visual representation of the hazard. The analysis aims at identifying areas in which the potential impact of a disaster is higher.

based on the analysis, the following vulnerable areas in Chandigarh have been identified. Plan showing location of vulnerable areas is at Plan DM 1.

Sr. No.	Industrial Location	Natural of Hazard	Vulnerable Areas
1.	Industrial Area-Phase-I	Chemical Spills, Effluent Discharge, Fire, etc.	Sector 28, 29, Sukhna Choe, Reserved Forest
2.	Industrial Area-Phase-II	Chemical Spills, Effluent Discharge, Fire, etc.	Sector 31, Karsan Rehabilitation Colony
3.	Industrial Area-Phase-III	Chemical Spills, Effluent Discharge, Fire, etc	Mauli Jagran Rehabilitation Colony
4.	Sewerage Treatment Plant	Sewer Leakage, Methane Gas leakage, Drinking water pollution, etc.	Sectors 47 & 48, Karsan Rehabilitation Colony.

18.5 CRITICAL FACILITIES ANALYSIS

This analysis aims at identifying the critical facilities in Chandigarh like educational institutions, police stations, hospitals, fire and rescue stations, etc. These facilities play a central role in disaster response and recovery and, hence, it is important to protect these critical facilities to ensure that disruption of public service is minimized during the disaster. The list of the critical facilities includes:

- Schools, Colleges and University
- Hospitals
- Police Stations
- Shelter Homes
- Telecom Offices
- Key Government Offices
- Community Centres
- Fire Stations
- Hotels.



PLAN DM 1 – HAZARD ANALYSIS AND VULNERABLE AREAS IN CHANDIGARH





MILD CRACKS ON THE WALLS OF THE SECTOR 42 INDOOR BADMINTON HALL AFTER THE EARTHQUAKE IN CHANDIGARH ON 08-10-2005



DRAINAGE CAUSED IN KALAGRAM

18.6 State Disaster Management Authority

State Disaster Management Authority for Chandigarh has been formed under the Chairmanship of the Adviser to the Administrator, U.T. to evaluate the disaster preparedness for different type of calamities. This Authority is the pioneer Committee in the U.T. to take stock of the situation, monitor routine preparedness and to suggest improvement in the response mechanism. This has been done to ensure coordinated mitigation, preparedness and response measures whenever disaster strikes.

The State Disaster Management Authority comprises of the following officials:

Sr. No.	Functionaries	Designation
1.	Adviser to the Administrator, UT, Chandigarh	Chairman
2.	Home Secretary, Chandigarh Administration.	Member
3.	Finance Secretary, Chandigarh Administration.	Member
4.	Commissioner, Municipal Corporation, Chandigarh	Member
5.	Secretary, Social Welfare, UT, Chd.	Member
6.	Inspector General of Police, U.T., Chandigarh	Member
7.	Deputy Commissioner, U.T., Chandigarh.	Member Secretary



18.7 DISASTER MANAGEMENT STRATEGY

Optimum strategy is to be followed in accordance with the comprehensive District Disaster Management Plan to combat the effects of the disaster and to minimize the loss of life and property. Different stakeholders from district administration, public, NGO sector, civil defense, interest groups are required to play a major role in disaster mitigation. Broadly it has been divided into three major strategies viz Pre-Disaster Phase, Impact Phase and Post Disaster Phase.

1. **Pre Disaster Phase-** Preparedness in “No Disaster Situation”.
In the Pre Disaster Phase – prevention, Mitigation and Preparedness activities are undertaken. The key activities are:-
 - Formation of the District Disaster Management Committee.
 - Formulation of District Disaster Management Plan for running year.
 - Risk Assessment and Vulnerability Analysis.
 - Resource Inventory.
 - Allocation of responsibilities to the individual actors/Groups/Institutions/Organizations.
 - Training and capacity building etc.
2. **Impact Phase-** Emergency Relief Measures
This phase includes measures taken immediately after the disaster. The key activities are:-
 - Rescue operation/Evacuation by teams (already identified) and providing basic infrastructure and movement to rescue centres.
 - Functioning of District Control Room (DCR) & other Sub Divisional/Block/Tehsil /Line Departmental Control Rooms.
 - Coordination meeting with officials at District Control Room at each 12 hours interval to take stock of the situation.
 - Management of Rescue Shelters
 - Monitoring Disaster Management by ensuring a line of control through Police & Paramilitary forces, Civil Defence, Fire services, Civilians, PSUs, NGOs etc.
 - Administration of Relief.

3. **Post Disaster Phase-** Damage Assessment and Long term relief.
 - All measures at this stage aim at speedy return of the affected areas to normalcy and to mitigate the long-term consequence of the disaster. The key activities are:-
 - Assessment & enumeration of damage.
 - Developing a Reconstruction and Rehabilitation plan.
 - Monitoring Relief Operation organized by outside agencies/ UN Agencies/ Red Cross/ NGOs/ PSUs/ other states etc through District Administration.
 - Restoration of Communication- Roads, Railways, Electronic Communication etc.
 - Maintenance of Law & Order.
 - Provision of Medical facilities, Minimum sanitation, drinking water, free kitchen etc.
 - Removal of debris and disposal of carcasses.
 - Meeting officers of both District level and Field level in every 24 hours to take stock of the situation.
 - Collection of Information and submission of daily situation report to Government through District Collector.
 - Documentation of the entire event – Black & white/ Audio & Video.

18.8 DISTRICT DISASTER MANAGEMENT COMMITTEE CHANDIGARH

District Disaster Management Committee is the high-powered committee at district level to look after disaster management and emergency response. This high-powered committee would be chaired by the Deputy Commissioner with all policy makers from the District/ Nodal Officer of each line department/ ADC/ SDMs and nodal officers from various organizations as its members. ADC would be the convener of District Disaster Management Committee (DDMC).



18.9 DISASTER MANAGEMENT PLANNING

The first responder of any disaster anywhere is none other than the local people who are the victims too. The strategy of planning shall be as follows:

- The territory of each RWA or Local Body or NGO can be taken as logical unit for planning.
- Every school in the district, irrespective of size, shall be a logical unit.
- Every hospital with more than 10 bed shall have disaster management plans.
- All cinema Halls, clubs, religious centers etc where gatherings are possible, shall have Disaster Management plans.
- Every Government office/building/department shall have separate disaster management plans.
- Every Merchant Traders Associations (MTA), shopping center and district center shall have a DM plan.
- All industries in the district, irrespective of size and nature to have disaster management plans.
- Each logical unit shall have the template/modal plan document for the disaster management which shall be updated at least bi annually.

Enforcing Existing Codes and Laws

Lists of codes are already in place to monitor the construction practices in the district Bureau of India Standards, National Building Codes of India and subsequent amendments in various acts provides sufficient legal protection to the enforcing agencies for safe construction practices. In Chandigarh, the major government bodies undertaking construction and granting permission to the private players' viz, MC, CHB, Engineering Department would undertake sufficient measures to enforce the building codes.

Structural Mitigation Measures

It is immensely pivotal for the planning community to respond towards disaster management positively. Urban disaster management is intimately connected to the wholesome process of urban development and therefore needs a sincere incorporation in the development planning itself. The industrial relocation/location, unauthorized-regularization issue, slumming, over densification and continuous influx of population to Chandigarh are some of the open concerns. Besides a planning challenge, these are concerns for disaster management.

The district shall take steps for structural mitigation of disaster management. The departments that are associated with development of residential and commercial plots shall stick to the NOC norms. The Building Codes shall be strictly enforced in the district. Only seismically oriented engineers, contractors and masons shall be given certificates for multi storey constructions and real estate. Simultaneously retrofitting is to be promoted with expert advice. The possible two structural measures for disaster protection are Retrofitting of the existing building and Earth Quake Resistant new construction.

Retrofitting

For an existing building, Retrofitting or Seismic Strengthening is the only solution to make it disaster resistant. In Chandigarh, all lifeline buildings such as major hospitals, Schools with large space for storage, district administration offices and other vital installations shall be retrofitted in the first phase. In the second phase all other significant buildings shall be given priority for seismic strengthening. Before carrying out retrofitting, a panel of experts shall be approached for assessing the structure and to suggest the type of retrofitting required.



Earth Quake Resistant Construction

Promotion of Earth Quake Resistant Construction mainly includes construction safety, quality control and inspection. In previous decades, there were no specific guidelines on EQ resistant construction and seismic strengthening. Due to the very fact, most of the buildings till 1990a were built without any safety measures. But in the present scenario, there are building byelaws and guidelines. Civic Bodies like Municipal Corporation and Chandigarh Housing Board in the district shall try to enforce these laws. Construction shall be carried out under the supervision of the Construction Engineer on Record or Construction Management Agency on Record for various seismic zones. They shall be given a certificate based on the norms on completion of the construction. Illegal constructions, encroachments, unapproved additions, alterations etc of residential buildings and conversion of residential building into commercial purpose etc shall be checked by the District Administration.

18.10 LONG TERM RESPONSE PLAN

The long-term response plans are related with Recovery and Reconstruction activities on one side and institutionalizing disaster management in district administration on the other. The former includes:-

- Operation Procedures (SOPs) for the Emergency Support Functions. In long term measures the following actions shall be undertaken duly.
 - Constitution of Emergency Support Functions, Disaster Management Teams, Quick Response Teams, Field Response Teams.
 - Refresher trainings for all such teams in a regular interval of time and exercise of Mock Drills.
 - Continuous awareness/sensitization programmes for the stakeholders and the general public.
- A mega exercise replicating an earthquake at Panchkula, Chandigarh, Mohali, Shimla and adjoining region was organised in February 2013 by the National Disaster Management Authority (NDMA) and the Haryana, Himachal Pradesh, Punjab and Chandigarh authorities. Observers from Jammu & Kashmir and Uttarakhand were also deployed to oversee the entire exercise. of 7.8 intensity in 1905.
 - The exercise was based on a hypothetical earthquake with epicentre at Sundarnagar in Mandi district of Himachal Pradesh with a magnitude of 8.0, maximum intensity of IX+, depth of 15 km and rupture length of 200 km. The exercise carried out to assess “multi-State earthquake preparedness” and to understand the implications of a possible major earthquake and its likely impact on several States regarding preparedness, response and coordination,” Himachal Pradesh, Punjab, Haryana, Uttrakhand, Jammu & Kashmir and Chandigarh are highly vulnerable due to proximity to prominent fault lines and are likely to suffer extensive infrastructure and building damage. Schools and colleges, shopping malls, metro rail stations, hotels and residents' welfare associations would also be involved in the exercise.
 - Also proposed to assess the vulnerability of lifeline of all buildings in Chandigarh and prepare a list of the same. “Review of Disaster Management Plans of Chandigarh and various departments will be undertaken by the UT Administration and GHS.



19 CHANDIGARHS HERITAGE

The chapter on Heritage deals with the modern heritage and rich Urban and Architectural legacy of the City Beautiful which holds a special place in this young city's history.

Chandigarh holds its significance as the first attempt in comprehensive city planning and the first large experiment in Modern Urbanism which has placed India on the World Map. The vision of the first Prime Minister of India combined with the path breaking planning concepts of the internationally renowned architect Le Corbusier, have together helped create one of the most livable cities of India. The creative excellence, holistic approach to design, meticulous and painstaking detailing has helped produce excellent town planning, urban design, landscaping and architecture despite the constraints of a stringent budget. The use of ordinary building materials embellished with integral works of art have created the internationally researched Chandigarh Style of Architecture.

The city, when conceived, symbolized a new way of community living in modern India for a generation who had faced the painful trauma of the partition.

Today, six decades after its inception thanks to the far sightedness of the planners and careful nurturing by its caretakers, the city has maintained the integrity of its concepts despite the geo-political upheavals and the internal and external pressures. The '**Edict of Chandigarh**' (See Annexure II of Preamble Chapter) on which the city was planned has ensured the preservation of its heritage which lies in its unique architectural character, urban design, planning principles and natural environs, precincts and zones.

The unique legacy of the City Beautiful ought to be preserved and maintained against all odds and challenges.

The Government of India's concern to safeguard city's culturally valued elements led to the constitution of the Expert Heritage Committee under the chairmanship of HE, the Administrator, UT.

19.1 THE MAJOR RECOMMENDATIONS INCLUDE

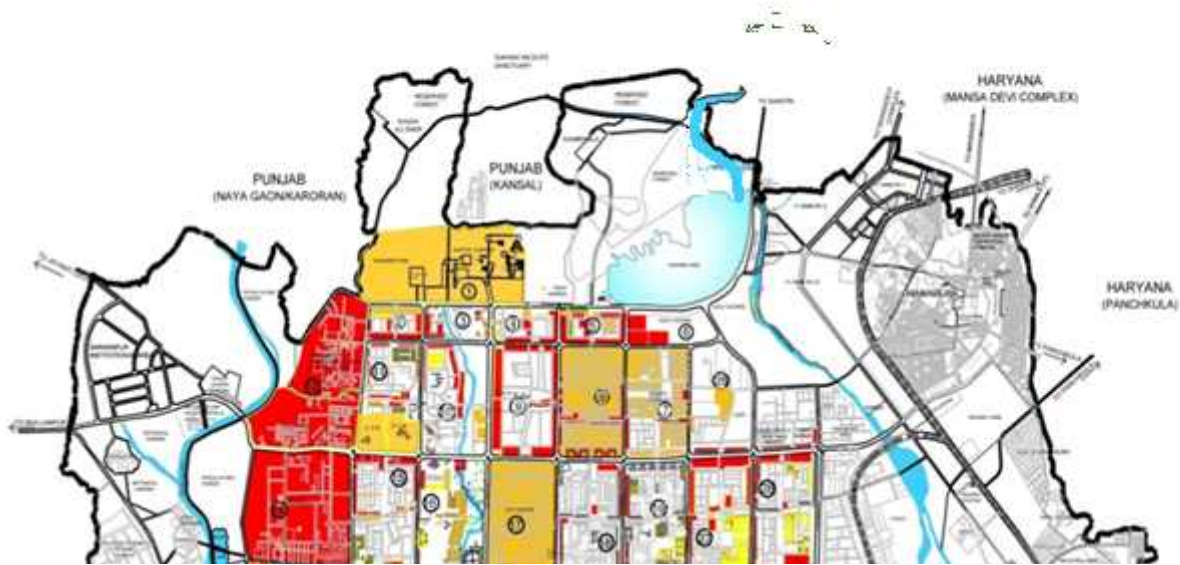
1. The city's monumental architecture, principles of town planning of **Sun, Space, and Verdure**, as enunciated by Le Corbusier, along with urban design, landscaping, honesty in the use of construction materials, like shuttered concrete and exposed brick-work, ought to be preserved as **Modern Heritage of Universal Value** for which Chandigarh has become known throughout the world.
2. A holistic approach towards protection, preservation, and maintenance of heritage buildings and unique characteristics of the city should be adopted.
3. The philosophy, plans and approach envisioned by Pandit Jawahar Lal Nehru with regard to the new city should not be lost sight of and kept in mind while taking the steps for the above purposes.
4. The philosophy, plans and designs propounded and used by Le Corbusier, while building the city, should not be allowed to be affected and should be kept in mind while protecting, preserving, maintaining and expanding heritage structures.
5. Efforts should be directed to retain the essence of the original Plan of the city and as such the following is recommended:
 - Chandigarh shall remain an Administrative City.
 - Chandigarh shall retain the essential planning postulates of Sun, Space, and Verdure.
 - Chandigarh shall be a Low-Rise City.
 - Chandigarh shall be a Green City.
6. **Corbusian Chandigarh title** to the first phase of the city which is the most representative of Le Corbusier's thought and philosophy is truly worthy of recognition for its **Modern Heritage Value**. The sectors 1 to 30 planned and detailed out by the original team in fulfillment of the CIAM principles of Living, Working, Care of Body and Spirit and Circulation.



7. Heritage status to Sector 22 , built as the first typical sector on the concept of the neighbourhood and Heritage status to Sectors 7 and 8 as a tribute to the architect planner, Albert Mayer.
No development must be allowed that may jeopardize their original concept.
8. Preservation of the concept of a neighbourhood unit, no further enhancement in FAR, supplementing the V7s with an efficient public transport system, execution of the pedestrian footpaths and cycle tracks, augmenting parking spaces in the city, development of villages and slum rehabilitation, regular upkeep.
- 9 The Committee has also made recommendations for a Master Plan for Chandigarh to ensure regulated development of the city, Inter State Regional Plan and mechanism for its implementation, City Development Plan, Solar City, restoring the city's strong imageability, Urban Design, restoration of Architectural Control/Frame Control, Design, Advertisement Control Order.
10. Revitalisation of the City Centre, construction of the Eleven Storied Tower.
11. Holistic planning of Capitol Complex to address immediate and future requirements, no scope for additional buildings within campus completion of the incomplete projects of the Capitol Complex, including the Museum of Knowledge, the Martyrs' Memorial, revitalization of the plaza, campus lighting and illumination to highlight building edifices, **addressing the security issues to enable comfortable visitor access to the Capitol Complex** The concern of development on the North of Chandigarh and the peripheral areas around the Capitol Complex.
12. Redensification of pockets of Government Housing The concept of Redensification has not been recommended in the Master plan .Instead pockets identified by the Expert Heritage Committee have been recommended for Reutilisation if required. (see Chapter on Housing).
13. Prior Concept Approval for identified private and Government buildings with the principal objective to maintain a harmonious urban form of Chandigarh and in keeping with it's original concept, **Prior Concept Approval of new buildings and/or additions-and-alterations in old ones of identified private and government properties has been recommended.** Following are the parameters for imposing the regulation of prior concept approval:-
 - Since many private buildings fall along important arteries, namely, V3s and V4s, constituting major part of Chandigarh's urban imageability, there is an urgent need to regulate individualistic / idiosyncratic use of weird forms, senseless geometry, garish colours and unaesthetic materials to preserve the original character of the city besides retaining sanity in architectural and urban designs.
 - The second criterion is the building's architectural importance and the individual professional standing of the architects who constituted the foreign team of architects.
 - The third parameter is the location of the building, which is crucial because an ill-designed structure can become an eyesore whereas a sensitive design that respects its architectural legacy would be a landmark asset in many ways.
 - Similarly, the development /additions and alteration of green belts should be done sensitively and in the same spirit as that of the original plan.
 - Location of Mobile Towers is very important from the urban design point of view and as such, this too has been recommended for prior concept approval.
14. Constitution of the Chandigarh Heritage Conservation Committee.
15. Restoration and preservation of building materials – Concrete & Brick buildings.



PLAN P1 - HERITAGE AREAS AND CONCEPT APPROVAL AREAS IN CHANDIGARH





19.2 LISTING AND GRADING OF HERITAGE IN THE CITY

Buildings, Campuses, and Natural Features, which have been listed for Heritage Status have been categorized as **Heritage Zones, Heritage Precincts, and Heritage Buildings by the Expert Heritage Committee**. These have also been graded into three categories as per varying levels of importance to the heritage of the city .

HERITAGE ZONES

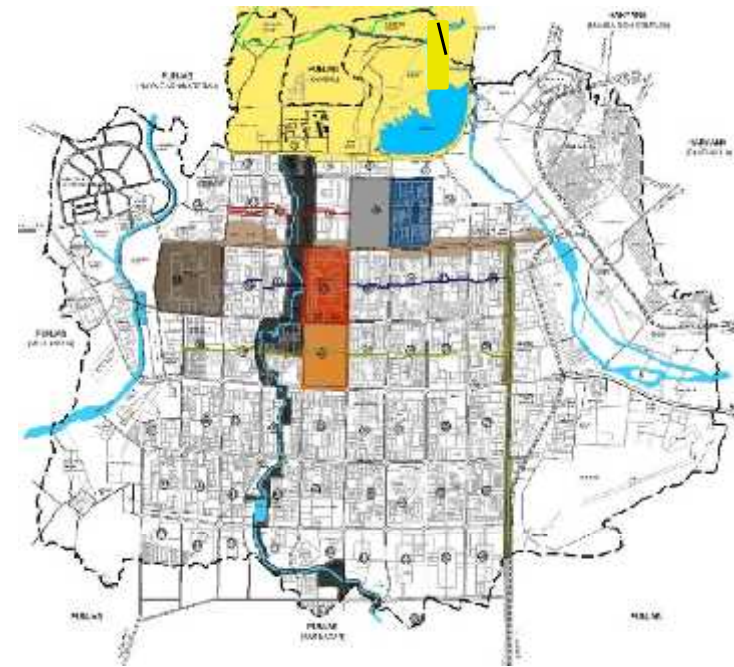
13 Zones have been shortlisted for Heritage status (Refer Map).

These heritage areas have been graded in three categories — I, II, III. The heritage zones I, II, VII, IX including the heritage precinct and heritage buildings was placed under Grade-I. Alike, heritage zone-VIII, X, XI, XII was placed under Grade II.

HERITAGE ZONE-I extends from outer boundaries on the North-West side of Rajendra Park covering all areas along it and extending to the South-East extremities under the administrative control of the Chandigarh Administration. This area is bound on its South-West extremities by Uttar Marg including the green belt which runs along it on lower end. Similarly, extremities of this “Heritage Zone” on the North-East will extend to lower range of the Shivalik Hills covering all natural environmental features and landmarks, notably, the Catchment Area of the Sukhna Lake, Wildlife Sanctuary, etc.

Heritage Zone-II with its origin in the Shivalik FOOTHILLS, on the North-East running through the entire city of Chandigarh and extending along the Leisure Valley towards the South-West into Punjab. The width of this Zone of prime importance is demarcated by the Institutional Belt along Jan Marg on the South-East and closing on the junction of Sectors 16, 17, 22 and 23.

P2- MAP SHOWING HERITAGE ZONES



Heritage Zone-III extends across Sector 7

Heritage Zone-IV extends across Sector 8

Heritage Zone-V extends across City Centre, Sector 17

Heritage Zone-VI extends across Sector 22

Heritage Zone VII extends across Panjab University, Sector 14



Heritage Zone-VIII extends along Madhya Marg from PGI to the Sukhna Choe on the South-East and includes the institutional, commercial buildings and the Green Belts along it on its either side. Institutional Belt along Madhya Marg in Sector 15.

Heritage Zone-IX consists of belt of Mango Grove along Purv Marg as demarcated in the drawing.

Heritage Zone-X stretching NW to SE across sectors 11, 10, 9, 8, 7 along V4.

Heritage Zone-XI stretching NW to SE across sectors 14, 15, 16, 18, 19, 27, 28 along V4.

Heritage Zone-XII stretching NW to SE across sectors 24, 23, 22, 21, 20, 30, 29.

Heritage Zone-XIII along V3s: Vidya Path, Udyan Path, Himalaya Marg, Sarovar Path, Sukhna Path, Chandi Marg Purv Marg, Vidya Path, Udhog Path and Dakshin Marg.



GOVERNMENT MUSEUM & ART GALLERY, SECTOR-10

HERITAGE PRECINCTS

Precincts have been shortlisted for Heritage status

- The Rajendra Park
- The Capitol Complex
- The Lake Club
- The Sukhna Lake
- The Lake Promenade
- MLA Hostel and MLA Flats, Sector-3
- MLA Hostel and Flats, Sector-4
- Government Museum & Art Gallery, Sector-10
- Institutional Belt along Madhya Marg sectors 18, 19, and 27.
- Commercial belts along Madhya Marg in sectors 7 & 26.
- Government College for Boys & Girls, Sector 11
- The Post Graduate Institute of Medical & Education Research, Sector 12
- Neighbourhood Shopping Centres, Institutional, and Residential Buildings on either side along V4 of sectors 11, 10, 9, 7 and 8.
- Neighbourhood Shopping Centres, Institutional, and Residential Buildings on either side along V4 of sectors 14, 15, 16, 18, 19, 27 and 28.



19.3 HERITAGE PRECINCTS AND BUILDINGS AT A GLANCE

GOVERNMENT BUILDINGS

Institutional

Capitol Complex, Sector 1
 Government Museum & Art Gallery Campus. Sector 10
 Central State Library. Sector 17
 Town Hall Building. Sector 17
 Government Press Building along Madhya Marg and Himalaya Marg, Sector 18
 Few of the Architectural Controls of Institutional Buildings along Jan Marg and Madhya Marg.

EDUCATIONAL

Panjab University, Sector 14

Administrative Complex
 AC Joshi Library.
 Administrative Complex
 Fine Arts Museum

COLLEGES

Government College of Art. Sector 10
 Government College for Boys along Madhya Marg (original blocks) Sector 11
 Government College for Girls along Madhya Marg (original blocks), Sector 11.
 Chandigarh College of Architecture, Sector 12
 Administrative Block, Punjab Engineering College, Sector 12



OLD ARCHITECTS OFFICE, SECTOR 19



LEGISLATIVE ASSEMBLY, CAPITOL COMPLEX



GANDHI BHAWAN , PANJAB UNIVERSITY



ADMINISTRATIVE COMPLEX PANJAB UNIVERSITY



GOVERNMENT COLLEGE FOR GIRLS , SECTOR 11



GOVERNMENT COLLEGE OF ARCHITECTURE ,SECTOR 12



SCHOOLS

Government Model Senior Secondary School Sector 10 which functioned as the Assembly in the initial stages.

Government School, Sector 15

Government Model Senior Secondary School, Sector 16

Government Senior Secondary School / Government Model School (original blocks), Sector 18

Government Model Senior Secondary School (original blocks),Sector 19

Government Senior Secondary School, Sector 21

Government Junior Model School, Sector 22

Government Senior Secondary School, Sector 23

HEALTH

Poly-Clinic. Sector 22

CULTURAL

Lake Club, Sector 5

Janj Ghar, Sector 23

Swimming Pool, Sector 23

GOVERNMENT HOUSING

Government houses of the Chief Ministers /Ministers of Punjab and Haryana located along Uttar Marg, Sector 2 and Sector 3

Government Houses for the High Court Judges, and the Chief Justice, Sector 4.

MLA Flats and MLA Hostels along Jan Marg originally designed by Pierre Jeanneret in sectors 3 and 4

Government House No.56, Sector 5 to be dedicated to architect Pierre Jeanneret

Identified Government houses in sectors 5, 7, 11, 16, 19, 20 23, 24, 27, 28, 29 as shown in sector layouts

Few of the architectural controlled Shop-cum-Offices/Shop-cum-Flats



GOVERNMENT MODEL SENIOR SECONDARY SCHOOL SEC 10



GOVERNMENT HOUSING



CHANDIGARH COLLEGE OF ARCHITECTURE



JANJ GHAR. SECTOR 23



PRIVATE BUILDINGS

Commercial

Architectural Controls of SCOs/SCFs, City Centre, Sector 17
Shop-cum-Offices along Madhya Marg, sectors 7 and 26
Shop-cum-Offices along Dakshin Marg, Sector 22
Shop-cum-Offices/Shop-cum-Flats along V4.
Sectors 7, 8, 9, 10, 11, 15, 16, 18, 19, 20, 21, 22, 23, 24, 27, 28, 29 and 30

CULTURAL

Kiran Cinema, Sector 22

RELIGIOUS

Church on V4, Sector 18
Mosque, Sector 20
Gurudwara on V5, Sector 22
Mandir on V4, Sector 23.



SHOP-CUM-OFFICES, CITY CENTRE, SECTOR 17



KIRAN CINEMA, SECTOR 22



MOSQUE, SECTOR 20



MANDIR, SECTOR 20



PRIVATE RESIDENCES

Nirlep Kaur House # 33 , Sector 4
Oberoi House # 22, Sector 5
PL Varma House # 28, Sector 5
Gautam Sehgal House # 32, Sector 5



PRIVATE RESIDENCES



MANIMAJRA FORT





GREEN BELTS/PARKS/GARDENS

Rajindra Park, Sector 1

Rock Garden, Sector 5

Memory Garden, Sector 5

Mango Belt along Purv Marg Sector 28 and Sector 29.

Butterfly Park, Sector 26

Commemorative Stone in Jawahar Park, Sector 9

Parrot Park, Sector 21



ROCK GARDEN



RAJINDRA PARK



MEMORY GARDEN



COMMEMORATIVE STONE



BUTTERFLY PARK





19.4 NATURAL FEATURES, AREAS, AND VISTAS

The site of the city of Chandigarh has many natural features which make them suitable for conservation on account of their environmentally-significant nature and scenic beauty besides their geographical history. These are:

1. Shivalik Hills, as the most outstanding natural landmark which forms the backdrop of Chandigarh, notably, the Capitol Complex
2. Sukhna Lake and its catchment area
3. Patiali-ki-Rao Choe
4. Sukhna Choe
5. Leisure Valley with its 8-kilometre-long monsoonal gorge and further extending into the State of Punjab
6. Sukhna Wild-Life Sanctuary
7. N-Choe
8. Protected Forests
9. Forest Areas
11. No-Construction Zone on the North of the Capitol Complex.



ROSE GARDEN



ENTRY TO SUKHNA LAKE

19.5 VISTAS

The enlisted Vistas form an intangible part of the Chandigarh Heritage and need to be preserved. No building/development should be carried out that conflict with the following:

- * Uninterrupted View of Shivalik Hills along all roads running NE to SW
- * Uninterrupted View of the Shivalik Hills from the City Greens
- * Uninterrupted backdrop of the Shivalik Hills in the Capitol Complex
- * Uninterrupted View of Sukhna Lake from the Uttar Marg.


GRADING OF HERITAGE ZONES, HERITAGE PRECINCTS, AND HERITAGE BUILDINGS –BASIS, OBJECTIVE AND SCOPE FOR CHANGE

Grade-I	Grade-II	Grade-III
<p>(A) Definition</p> <p>Heritage Grade-I comprises buildings and precincts of national or historic importance, embodying excellence in architectural style, design, technology and material usage and/or aesthetics; they may be associated with a great historic event, personality, movement or institution. They have been and are the prime landmarks of the region.</p> <p>All natural sites shall fall within Grade-I.</p>	<p>Heritage Grade-II comprises buildings and precincts of regional or local importance possessing special architectural or aesthetic merit, or cultural or historical significance though of a lower scale than Heritage Grade-I. They are local landmarks, which contribute to the image and identity of the region. They may be the work of master craftsmen or may be models of proportion and ornamentation or designed to suit a particular climate.</p>	<p>Heritage Grade-III comprises building and precincts of importance for townscape; that evoke architectural, aesthetic, or sociological interest through not as much as in Heritage Grade-II. These contribute to determine the character of the locality and can be representative of lifestyle of a particular community or region and may also be distinguished by setting, or special character of the façade and uniformity of height, width and scale.</p>
<p>(B) Objective:</p> <p>Heritage Grade-I richly deserves careful preservation.</p>	<p>Heritage Grade-II deserves intelligent conservation.</p>	<p>Heritage Grade-III deserves intelligent conservation (though on a lesser scale than Grade-II and special protection to unique features and attributes).</p>
<p>(C) Scope for Changes:</p> <p>No interventions be permitted either on exterior or interior of the heritage building or natural features unless it is necessary in the interest of strengthening and prolonging the life of the buildings/or precincts or any part or features thereof. For this purpose, absolutely essential and minimum changes would be allowed and they must be in conformity with the original.</p>	<p>No external change is to be permitted, however, only limited internal change is permitted which does not affect the exterior of the building.</p>	<p>Internal changes may by and large be allowed. Changes can include extensions and additional buildings in the same plot or compound. However, any changes should be such that they are in harmony with and should be such that they do not detract from the existing heritage building/precinct.</p>
<p>(D) Vistas / Surrounding Development:</p> <p>All development in areas surrounding Heritage Grade-I shall be regulated and controlled, ensuring that it does not mar the grandeur of, or view from Heritage Grade-I.</p>	<p>All development in areas surrounding Heritage Grade-II shall be regulated and controlled, ensuring that it does not mar the grandeur of, or view from Heritage Grade-II.</p>	<p>All development in areas surrounding Heritage Grade-III shall be regulated and controlled, ensuring that it does not mar the grandeur of, or view from Heritage Grade-III.</p>



19.6 CAPITOL COMPLEX – HERITAGE PRECINCT

The Capitol Complex: The symbolic ‘head’ of the city, set against the backdrop of the Shivalik Hills, consists of a group of buildings designed by the Master architect Le Corbusier: Secretariat, High Court, Legislative Assembly and the Museum of Knowledge. The complex also has monuments like the Tower of Shadows, Open Hand, and Martyrs Memorial built on a monumental scale and is flanked by the Rajendra Park and the Sukhna Lake. The architecture of the Capitol Complex, the most representative of Le Corbusier’s works, is the embodiment of the spirit of exaltation, power and permanence experienced by Indians on acquiring the prerogative of self-governance after long, bitter struggle for freedom. The Capitol Complex was designed as a great pedestrian plaza with motorised traffic confined to sunken trenches.

The Capitol Complex is planned on a cross axis wherein rigid symmetry has been avoided in the placement of various buildings. While the linear façade of the Secretariat marks the edge of the Complex on the left side, the Assembly and the High Court are placed on the opposite ends of the cross axis, facing each other across a 450-metre Esplanade where a number of monuments symbolising Le Corbusier’s theories of City Planning have been placed.

The sculptural buildings built to excellence have earned international recognition and this masterpiece of human creative genius needs to be given ‘Heritage Building’ status of the first order. The location of the Capitol Complex at the highest point of the city-site and at the foothills with the Shivaliks as the backdrop was a conscious decision underlying the concept of Chandigarh’s urban design. The placement of buildings of the Secretariat and the High Court with the longer facades perpendicular to the hills lent an unobstructed view of the foothills. Future development should ensure that the above concepts are not marred by any physical barriers.





THE PLAZA AND THE MONUMENTS/THE TRENCH OF CONSIDERATION AND THE BUILDINGS NOT OPEN TO PUBLIC DUE TO SECURITY ISSUES,THUS THE PLAZA IS NOT BEING USED AS PER INTENT J

Present status of the Capitol Complex

Incomplete projects

- Museum of Knowledge
- Martyrs Memorial/Geometric Hill /not fully completed

The interventions

- The Chandigarh Club constructed adjoining the Rajendra Park.
- The Canal along the Uttar Marg stretching from Rajendra Park to Sukhna Lake not developed rather area intruded upon.
- Rock Garden developed in area between High Court and Lake.
- Rajendra Park not fully developed as per plan. Rather being used as Helipad and not open to public due to security issues.
- Tree plantation not as per planned clusters/groves .
- High Court - Additional buildings constructed.
- Demand raised for additional buildings ---
- Secretariat – Constructions of porch / sheds on the rear and at the entry to the ramp
- Covering of verandahs /construction of toilets etc
- Legislative Assembly –changes in the interior /partitions /floorings etc.
- Temporary allotment to security personal -ITBP, Punjab Police, Haryana
- Demand for construction of additional barracks.



19.7 FOLLOW UP ON THE GOI APPROVED RECOMMENDATIONS/ITS OBSERVATIONS ON THE REPORT OF THE EXPERT HERITAGE COMMITTEE IN THE MASTER PLAN -2031

The recommendations of the Expert Heritage Committee w.r.t Preservation, Conservation and Management of Chandigarh's heritage have been duly examined /analysed by the Master Plan Committee and incorporated in the Chandigarh Master Plan 2031 after taking into consideration the observations of the Ministry of Home Affairs and the Ministry of Urban Development conveyed vide letter No.V.13034/13/2010-CPD, dated 23/12/2011 while according approval to the reports of the Expert Heritage Committee.

The observations of the ministries on a few recommendations the Expert Heritage Committee are as under:

The Expert Committee's recommendation - The entire city of Chandigarh be retained as low rise and low density

The Gol Ministries observes that

In view of the population pressure and increasing density, it may not be possible for entire city to remain low rise. The Chandigarh Administration may like to identify those areas in the city which are in dilapidated condition and require renewal. Such areas may be redeveloped as medium rise – medium density without compromising the overall character of the city. This may require increase in Ground Coverage/FAR which may be stipulated after studying built form.

The Master Plan Committee has through a visual survey identified areas in the city which are in a dilapidated condition and require renewal. These areas are in addition to the pockets of single storeyed /double storied government housing recommended for redensification by the Expert Heritage Committee (see **Chapter 6 on Housing**)

The Gol Ministries observation that *there is an immediate need to formulate a **Comprehensive Town and Country Planning Act** for the UT of Chandigarh, which should provide for formulation and revision of Master Plan.* Matter has been put forth in the High Powered Coordination Committee meetings held on 08.02.2011, 28.06.2011 and 25.06.2012.

Included in the Chandigarh Master Plan 2031 (See Chapter 2 Regional)

The Gol Ministries observation that *the **constitution of a Chandigarh Regional Planning Board** on the lines of NCRPB and appropriate legislation on the lines of NCRPB Act as well are necessary to achieve the above objective.* Matter has been put forth in the High Powered Coordination Committee meetings dated 08.02.2011.

Included in Master Plan 2031 (See Chapter on Regional Context)

The Gol Ministries observation that *with regard to the Architectural Control on built form along V1 to V7, it would be desirable that **detailed Guidelines for Facade Control, Sign ages, Streetscape and Landscape** be formulated as per the character of streets.* These violations need to be checked keeping in view the overall architectural character envisaged for commercial development in the city. These may be included in the Terms of Reference of the Chandigarh Heritage Conservation Committee.

Included in the Chandigarh Master Plan 2031 (See Chapter on Development Controls)

The Department of Urban Planning, Chandigarh Administration must have Landscape Architects and Urban Designers on its staff roll in order to formulate comprehensive landscape policy and urban design norms for the city.



RESTORATION AND PRESERVATION OF BUILDING MATERIALS – CONCRETE & BRICK BUILDINGS

Secretariat Building, Capitol Complex to be taken as a pilot project

The buildings of the Capitol Complex which were inaugurated in the period 1953 to 1968 have already completed around 60% of their useful designed life. Appearance of superficial cracks in concrete/spalling of concrete, rusting/carbonation of steel reinforcement, leakages, vegetation growth and damaged fascia are testimony to the aging of these buildings of heritage importance.

The Expert Heritage Committee through its Sub Committee on Restoration and Preservation of Building Materials highlighted that *Visual assessment of the buildings of the Capitol Complex, Government Museum, Sector 10, City Centre, Sector 17, Panjab University and Residential houses in Sector 22 indicates that there is no major threat to the stability of the structures, however there are definite signs of neglect because of poor /unplanned maintenance, which the State owning agencies need to monitor through a well defined Maintenance Protocol that will help in identifying the crucial areas for consideration under any remedial/restoration works at a later stage.*

On the recommendations of the Expert Heritage Committee the Chandigarh Administration has initiated the complete analysis of the health of the buildings by destructive /non destructive tests and through comprehensive Condition Assessment of the Heritage Buildings. The Secretariat Building, Capitol Complex has been taken up as a pilot project for which the detailed project report has been assigned to the **Central Building Research Institute CBRI, Roorkee.**

The further strategy for rehabilitation of buildings will flow from the detailed outcome of the Condition Assessment that will also determine the level of improvement required .

DEVELOPMENTS ON THE NORTH OF THE CAPITOL COMPLEX CONCERN W.R.T HIGH RISE BUILDINGS

The Chandigarh Administration has been raising the concern of the proposed high rise developments in the North of the Capitol Complex in various meetings of the High Powered Coordination Committee and interstate meetings .

The State Government of Punjab and Haryana have been requested to review the planning and the development controls of the townships of Naya Gaon and Mansa Devi Complex.

NOTIFICATION OF ECO SENSITIVE ZONE

The Chandigarh Administration in the meeting of the High Powered Coordination Committee meeting dated 01.09.2011 apprised the State Governments regarding the directions of the Ministry of Environment and Forest Government of India w.r.t to notification of Eco-Sensitive Zone around the Sukhna Wild Life Sanctuary.

The Chandigarh Administration has itself initiated the process of notifying the Eco Sensitive Zone(See Chapter – Ecology and Environment)

HERITAGE STATUS TO GOVERNMENT HOUSING

The Department of Urban Planning has done a detail stocktaking of various category of residential houses designed by Le Corbusier and his team. The analysis indicates that that there are a total of 5238 such houses within the city. (The figure however does not include the institutional housing in the Panjab University and the PGI etc .)

ANALYSIS INDICATES

Of the areas marked for as heritage /redensification by the Expert Heritage Committee in the sector wise layouts, a total of 3888 houses shall fall under heritage status and pockets with 1350 houses shall be available for reutilisation if required.



19.8 COMMENTS OF THE MASTER PLAN COMMITTEE - REVOKING OF NOTIFICATION DATED 16.10.2008

- The **Expert Heritage Committee** has recommended revoking the notification dated 16-10-08 which allowed enhancement of FAR to private residential properties, due to its adverse impact on the urban design of the city. It has been highlighted that doing away with the Frame Control of Marla Houses and additional construction in the rear courtyards of these houses has adversely impacted the Sun, Space and Verdure concept and the streetscape/urban design of the city.

The Master Plan Committee View

Revoking of the said notification may invite endless litigations and shall be discriminatory as benefit of increased FAR has already been availed by some residents and its denial to remaining at this stage may be construed as discriminatory. It is recommended

That enforcement should be made stronger for the encroachments/violations which have huge impact on the urban design of the city.

- Some frame controls for the boundary/constructions along V3 roads should be defined for bringing visual order in the urban design.

19.9 PREPARATION OF CONSERVATION MANAGEMENT PLAN AND FRAMING OF HERITAGE REGULATIONS

Preparation of a Conservation Management Plan for Chandigarh and framing up of Conservation Byelaws/Specific Regulations, Guidelines and Conservation Principles shall be undertaken by the Chandigarh Heritage Conservation Committee in consultation with the subject matter Ministries for upkeep, maintenance and management of such Heritage Buildings and Heritage Zones etc.

The Ministry of Urban Development has recommended that all Areas/ Buildings/ Precincts / Vistas would be better represented if their cause and the degree of necessary interventions are required to be correlated with Listed Heritage of Chandigarh.

“Grading of each such entity as per identification in the list would exclusively determine the regulations of conservation, preservation or development applicable. Any specific situation / special recommendations may be exclusively mentioned in special recommendations”.

Master Plan Committees’ recommendation

Preparation and notification of Heritage Regulations should be prioritized .The earlier approved Draft Notification prepared at the time of preparation of the UNESCO Nomination Dossier and the Model Heritage Regulations issued by the GOI can be used as a reference .

To prevent undue change or damage to the historic and cultural value of Le Corbusier’s urbanism, interim orders must be issued not to make any modifications in the heritage areas approved by the Government of India, the circulation structure, the generic sector, architectural controls and the plantations till such time as heritage regulations are finalized.



Since a large number of the buildings /complexes approved for Heritage Status are being used by the State Governments of Punjab and Haryana ,the Punjab and Haryana High Court, a complete set of documents containing the **Action Taken Report** which is to be read along with the approval letter of the Government of India and the **document containing reports of i) Sub Committee on Identification of Government Buildings requiring Conservation, (ii) Sub Committee on Identification of Private Buildings and Precincts and Document iii) report of Sub Committee for maintenance of heritage buildings have been forwarded to the concerned organizations by the Chandigarh Administration.**

19.10 PRESERVATION OF THE DESIGN ELEMENTS, ART AND ARTIFACTS

The unique architectural character of the city including its modern, minimalist straight line built forms, fenestrations and artifacts such as furniture in public buildings, street elements and other works of art such as the colorful tapestries, sketches, paintings, murals designed by Le Corbusier and the first team of architects which have huge symbolic value and architectural expression associated with the thought process which translated into the creation of this city.

The Chandigarh Administration carried out detailed stocktaking of the movable artifacts designed by the first team of architects and in possession with various departments of the Chandigarh Administration, (including the Government Museum and City Museum) and the State Governments of Punjab and Haryana. Detailed inventories have been prepared and the departments have been sensitized not to dispose off any of the items without the prior approval of the Chandigarh Administration.

Annual auditing of the items are to be conducted.

Further action for the Enlistment, Preservation and Conservation of the Heritage items is proposed to be taken up.

Besides the existing two museums of architecture in the city, other large organizations -- which still hold a lot of old heritage furniture and other art objects – will be motivated to set-up small in-house museums and display centre for these items.

Increase awareness about the city's heritage through properly guided tours of school children and college students etc. and other citizenry to these museums and also regular seminars/exhibitions/heritage walks and other such like activities focusing attention on the heritage of the city and its awareness will go a long way in the long term preservation of city's heritage by making citizens as its stake holders and the real custodians.



19.11 INCLUSION OF CHANDIGARH IN THE UNESCO WORLD HERITAGE LIST DUE TO ITS OUTSTANDING UNIVERSAL VALUE

CHANDIGARH ON THE TENTATIVE HERITAGE LIST

The city of Chandigarh stands nominated to the Tentative Heritage List of World Heritage Sites for the Urban and Architectural Work of French Architect Le Corbusier in the city since 2006.

A TRANS BORDER SERIAL NOMINATION WAS PREPARED BY THE CHANDIGARH ADMINISTRATION IN 2008.

THE CHANDIGARH ADMINISTRATION HAS BEEN WORKING TOWARDS CHANDIGARH'S NOMINATION FOR THE WORLD HERITAGE STATUS AND "THE MODERN HISTORIC CENTRE OF CHANDIGARH " was included in the Trans Border Serial Nomination " Urban & Architectural Work of Le Corbusier "in the year 2008 under the guidance of the Ministry of Culture, Government of India through Archaeological Survey of India. However, India could not join the serial nomination along with France and other state parties and it was advised by Permanent Representative of India (PRI) that India should submit a separate nomination of Chandigarh for extension.

The serial nomination submitted by France along with other State parties were recommended deferral by ICOMOS and now it has been stated by the French Government that they will submit a fresh nomination dossier with India.

The PRI to UNESCO based on the recommendations of ICOMOS has advised that the revised nomination dossier should focus on 10-12 buildings along with their complete documentation indicating date of construction, it's administrative control and photographs of buildings rather than their architects and the urban plans of the entire city which should be forwarded to the Archaeological Survey of India and the Ministry of Home Affairs, GOI.

ASI would take a decision in principle in consultation with the PRI to UNESCO for revised nomination dossier once the details of buildings are made available.

RECOMMENDATION OF THE MASTER PLAN COMMITTEE

It has been perceived that Chandigarh's inscription on World heritage list would bring many benefits as the city would join a select list of other modern movement cities/urban areas currently inscribed on the UNESCO's heritage list.

A UNESCO heritage status shall bring about a **boost to domestic and international tourism** and related benefits to the city's economy and build public awareness about the values of Chandigarh's unique modern heritage.

It will not only **ensure protection of significant heritage buildings** and areas from neglect, willful destruction, defacement, inappropriate alterations but will also provide for preparation of a comprehensive urban development plan which respects international heritage conservation criteria, is environmentally sustainable and also handles the future developmental needs of the city. The move was intended to train our officials for technologically appropriate repair and conservation of heritage buildings.

CHANDIGARH SHOULD MAKE CONCERTED EFFORTS FOR WORLD HERITAGE STATUS IN CONSULTATION WITH THE MINISTRY OF HOME AFFAIRS AND THE ARCHEOLOGICAL SURVEY OF INDIA .



20. SUSTAINABLE DEVELOPMENT

20.1 NEED FOR SUSTAINABILITY

International Agenda to reduce the Carbon Foot-print

The urgent need for addressing global warming and climate change has led the international community to sign the Kyoto Protocol, which legally bound nations to reduce green house emissions by an average of 5% below their reported 1990 levels within the period of 2008 to 2012.

In mid 2009 Prime Minister formally launched India's National Action Plan for Climate Change. As part of the plan, eight National Missions are to be pursued as key components of the strategy for sustainable development. These include Missions on:

- Mission on Solar Energy,
- Mission on Enhanced Energy Efficiency,
- Mission on Sustainable Habitat,
- Mission on Conserving Water,
- Mission on Sustaining the Himalayan Ecosystem,
- Creating a "Green India",
- Sustainable Agriculture and
- Establishing a Strategic Knowledge Platform for Climate Change.

The broad intent of these Missions is as under:

1. Reduce total carbon footprint of the development
2. Reduce total energy footprint of the cities
3. Increase the green cover of the cities .

The endeavor is thus to make cities energy efficient, people friendly and ensure '**sustainable development**'.

In order to achieve these objectives, following action is being proposed in the development parameters at the local level

20.2 ALL EXISTING AND PROPOSED NEW TOWNS WITHIN THE REGION SHOULD BE "GREEN TOWNS"

- Inter State Regional Plan –all the three stakeholders i.e. Punjab, Haryana and Chandigarh have initiated coordination and are collaborating to form the vision for the sustainability and balanced development of the region.
- In keeping with one of the intents of the Capital of Punjab Periphery Act, 1952 to maintain the environmental concerns around urban agglomerations, it is once again recommended that in addition to Chandigarh's endeavour to be a Green Town, the neighbouring states should also ensure through the Inter State Regional Plan that all existing and proposed new towns in the region are 'Green Towns'.

20.3 AN EFFECTIVE ENVIRONMENTAL MANAGEMENT PLAN FOR CHANDIGARH AND FOR THE REGION

- It is recommended that an Effective Environmental Management Plan be devised for the region including Chandigarh which includes environmental strategy, monitoring regulation, institutional capacity building and economic incentives. The proposal needs a legal framework and a monitoring committee to examine the regional level proposals/ big developments by Constitution of an Inter State high powered "**Regional Environmental Management Board**" as per the proposal of Ministry of Environment and Forests, Government of India.

20.4 CHANDIGARH'S STRENGTHS AS SUSTAINABLE HABITAT OBJECTIVE OF THE ORIGINAL PLAN

The city of Chandigarh was planned far ahead of its times with the key ingredients of the modern concepts of a **SUSTAINABLE HABITAT** as is evident from the adoption of the following CITY AND REGIONAL concepts

CITY CONCEPTS

- Sensitive site selection.
- The natural gradient of the site facilitating storm water drainage, availability of water, scenic beauty, backdrop of the hills
- Concept of Sun, Space and Verdure.
- Self sufficient neighbourhoods offering serene family life.
- Size of the sector based on walkability to enable easy access to daily needs.
- Each dwelling unit having abundance of sunlight, air, ventilation and greenery.
- Solar Passive Architecture.
- Longitudinal green belts - green lungs connecting communities and nature.
- City forests .
- The hierarchical and equitable distribution of social infrastructure, efficient circulation system-V7s aimed at enabling men and machine to seamlessly connect within the city and outside without conflict.
- The mandatory space for the pedestrian in the road sections .
- The use of natural materials for building construction.
- The orientation of buildings for comfortable indoor living and to reduce heat gain.

Regional concepts

- The concept of the periphery with the expanse of green belt surrounding the city to enable-
- Nourish the city .
- Improve the microclimate .
- Ensure regulated development around the city.
- Maintain Man Cosmos relationship.
- Enable scope for future expansion.

20.5 CHANDIGARH'S COMMITMENT TO FURTHER THE CONCEPT OF SUSTAINABILITY

To further the sustainable practices within the city recommendations for various facets of the city have been elaborated in the Chandigarh Vision and in detail in various chapters namely

Regional settings - chapter 2

Physical infrastructure - chapter 10

Open spaces and landscaping of Chandigarh - chapter 11

Ecology and environment - chapter 17



20.6 LONG TERM REGIONAL AND CITY LEVEL MEASURES FOR SUSTAINABLE DEVELOPMENT AND GROWTH OF THE CITY:

- The Chandigarh Master Plan with a vision for 2031 is being prepared for the city and its immediate periphery, wherein the challenges and the problems affecting the sustainability of the city are being attempted to be addressed holistically in the plan. Directions for future development and growth of the city as enunciated are in line with the above vision.

20.7 INTEGRATED URBAN PLANNING APPROACH:

An integrated planning approach is proposed to be adopted encompassing various facets of the city's development in terms of the following:--

- Sensitive site selection and Eco-sensitive Planning,
- Chandigarh to be declared Solar City,
- Environmental friendly management of city level services-
- Concepts of REDUCE, RECYCLE AND REUSE of water, solid waste, sewerage,
- Creating Self Sustaining Neighborhood units in terms of Power, Water and Sewage Disposal,
- City's Green -- High percentage of land dedicated to open spaces, city greens and water bodies,
- Increasing the Green Cover by Mandatory Plantation,
- Comprehensive Mobility Plan for Chandigarh and the Region.
- Efficient Transportation System,
- Eco-friendly transport system within sites,
- Promote Bicycle as a Mode of Transportation in the City,
- Construction of Green Buildings/Campuses,
- All future developments in & around the City sensitive to its environs.

20.8 CREATING SELF SUSTAINING NEIGHBOURHOODS IN TERMS OF POWER, WATER AND SEWAGE DISPOSAL

Le Corbusier's neighbourhood units mainly provide for all community facilities within a reasonable distance to make self sufficient units for the living, religious, medical recreational and cultural needs of the citizens. This concept needs to be further enhanced into a holistic vision by making the neighbourhood units self sufficient in terms of requirements of power, sewerage disposal, waste water management, solid waste management with the active participation of the community i.e. residents, shop-owners, councillors etc. The self sufficient unit can be in the form of single sector to a cluster of four sectors, depending on the existing services, layout, population density and the other green parameters to be assessed by the Engineering Wing of UT and Municipal Corporation.

- Today, advanced technology has made available compact Sewage Treatment Plants which can be accommodated within a neighbourhood and can thus eliminate the need of first carrying the sewage down south to the STP Plants at Diggian, and thereafter of pumping up tertiary water for its usage for irrigation etc. The city should preferably have localised STPs with FAB technology within large campuses and at sector level. These green communities will thus aim at zero discharge so as to help reduce pressure on the potable water.
- Similarly each house should produce solar power to be self reliant for its essential domestic needs and gradually build up surplus power generation to feed the power grid. Emphasis should be laid on roof top solar energy. Roof top Solar Photovoltaic panels should be made mandatory for all the government buildings, institutions and residential houses above 10 marlas (250 sq yds).



Solid Waste Management at the sector level/cluster of sectors to recycle waste and generate power for public utility at neighbourhood level .

20.9 WATER HARVESTING FOR CHANDIGARH

- The demand for water is growing in direct proportion to the city's growth. Rain Water Harvesting is one of the ways to protect and sustain its water resources. The Ministry of Urban Development had appointed CSE (Centre for Science and Environment) to prepare a plan for rain water harvesting at city level for Chandigarh. A report has been submitted titled "Capturing Rainwater: A way to augment Chandigarh's water resources."

Key findings of the project:

- The city taps groundwater from the deep confined aquifers, which do not get naturally recharged. **Hence recharging these aquifers is a must.**
- Tube wells are located all across the city. Harvesting rainwater from the storm water drain network to recharge confined aquifers through structures all along the network is a simple solution to access the city's endowment of rainwater.

The rainwater harvesting in the above report is to exploit the independent storm water drainage network from the very inception in the city at a sector level. This shall ensure management of the ground level depending on the local conditions and will recharge the over-exploited deep aquifers to maintain balance with increasing population density in the overall water management plan.

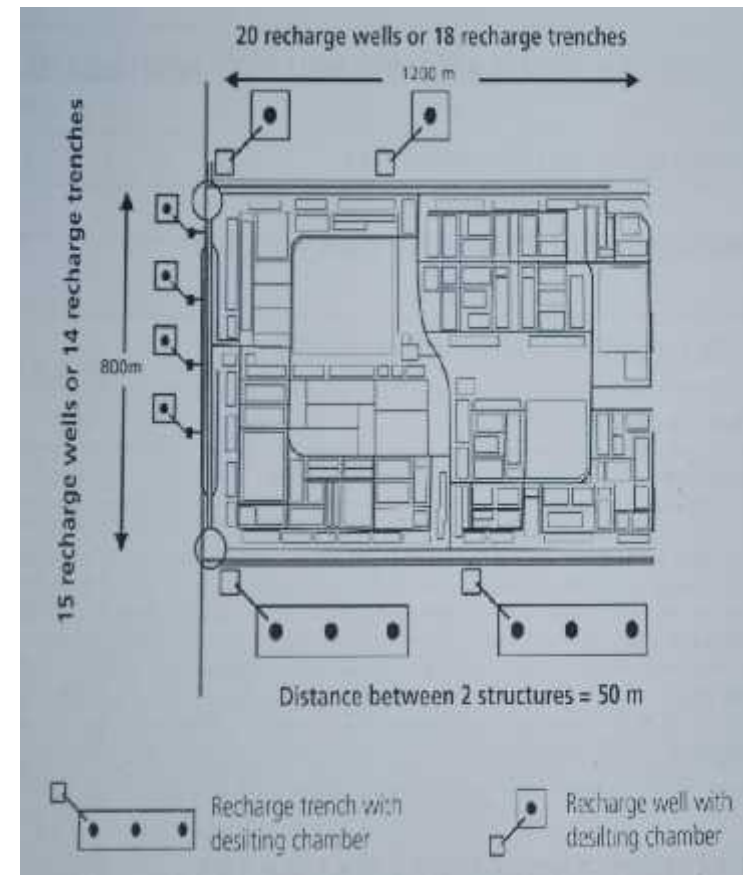


DIAGRAM OF RAIN WATER HARVESTING FOR A TYPICAL SECTOR FOR RECHARGE WELLS



Areas suitable for rainwater harvesting in the city are as follows:

- 1) **Roads and Roundabouts:** Recharge along storm water drains to both recharge rainwater as well as prevent flooding.
- 2) **All green areas:** Recharge where suitable and store where hydrogeology is not suitable. Stored water can be used for horticulture. Ponds can be constructed to harvest and use rainwater as in Botanical Garden.
- 3) **Institutional areas such as Punjab University, Capitol Complex:** Recharge where suitable and store where hydrogeology is not suitable. Stored water can be used for horticulture.
- 4) **Commercial areas:** Store in underground tanks for non-potable use.
- 5) **School, colleges and religious places:** Store and recharge stored water can be used for horticulture and other non-potable uses.
- 6) **Industrial areas and airport:** Water from roof top catchments to be stored and can be used for industrial purposes. Overflow of rooftop water can be recharged. Water from rooftops and hangers to be harvested in storage tanks to be used for non-potable purposes.

The Chandigarh Administration has already initiated the process of implementing the above mentioned report of CSE through the public health wings of the Engineering Department and Municipal Corporation, Chandigarh.

20.10 MANDATORY PLANTATION PLAN IN LARGE CAMPUSES/SITES & HOUSES

It is recommended each large campus and large house shall have mandatory tree plantation plan, duly approved to augment the city with one of the highest Green Cover in a

urban area, as found out by the Ministry of Environment and Forests, Government of India. This shall help sustain the air quality and provide the protection to local flora and fauna to attain higher environmental considerations.

All these campuses and large residential units have independent STP's & Solar Photo-Volatics of modern technology and provide zero dependence of water and power on city levels infrastructure because of increasing population. The overall principles of Reduce, Reuse & Recycle in all aspects of development needs to be adopted both at Macro & Micro level. This shall result in sustainability issues of the community development being taken to the grass root level and shall act as role model for all further community development in the country. This entire endeavour should compliment the 'Green Action Plan' prepared by the Department of Environment and Forests, Chandigarh Administration

20.11 FOLLOWING ALSO TO BE PROPOGATED:-

- The high density traffic arteries like MRTS for inter- city movement needs to be strengthened with appropriate vegetation and plantation plan.
- All heritage flora and fauna mainly spread towards the North of Chandigarh needs to be augmented and strengthened to maintain the local environment.
- Protection of natural choes outlining the peripheral area of Chandigarh grid plan i.e. Sukhna Choe and Patiala-Ki-Rao needs to be redeveloped with low density, low-rise construction, which should be sustainable in terms of its needs without depending on city level services and should emulate the model of Zero Discharge Facilities' along both the originally planned green buffers by Mons. Le Corbusier in his plan.



20.12 ADAPTATION OF GREEN RATING SYSTEMS

- Chandigarh Administration has recently adopted CWPD guidelines for placing minimum three star GRIHA rating in all public building in future by notifying has already been initiated wherein holistic vision has been taken in terms of the construction industry being monitored for environment concerns in terms of the following:
 - I. Site level measures
 - II. Material conservation
 - III. Indoor environmental quality
 - IV. Water efficiency
 - V. Energy efficiency
 - VI. General guidelines
- All the issues such as promoting ideal solar passive measures in architectural & structural design, maximum naturally lit & ventilated buildings in ideal wall, window ratios with the local low maintenance, high performance materials (including recycled material in renovation & road relaying projects) in consonance to the regional climatic conditions, minimising hard landscape & paved area (with provision of green pavers where absolutely essential), protection of top soil in construction activity, encourage terrace gardens to reduce heat island effect, adaptation of ECBC in all new construction, occupancy sensor energy, fire & water control, mandatory water-harvesting, tertiary water usages in non-potable functions, adoption of Solar City concepts thus reducing the overall carbon footprint of the future development with higher densities. This needs to be further incentivized or enforced in all private development being promoted because of growing economic activity in the region & country.

- This shall be possible by involving some NGOs/organisation, like TERI, CSE etc. to monitor and guide the Chandigarh Administration in adopting latest best technologies in every aspect of environment sustainability who shall actively participate in preparing a **Comprehensive Sustainable Plan**, monitoring its implementation and bench marking its positive features to help and receive incentives floated by Government of India in promoting Environmental Sustainability.

20.13 ADOPTION OF GREEN BUILDING CONCEPTS IN THE BUILDING DESIGNS OF THE CITY SUCH AS:

- Sensitive Site Selection.
- Orientation.
- Reduction of paving on the un-built site area.
- Green roof concepts.
- Mandating rain water harvesting.
- Zero drainage of storm water for large development sites (>30 acre).
- Adaptation of low energy ,locally adaptive materials, labour & technology.

Other measures as :

- Energy Audit of Buildings.
- Proposed Road Map to make ECBC mandatory in Chandigarh
- Retrofitting existing government buildings to make them more energy efficient.
- Annual waste audit report of commercial building.
- Reduce carbon footprint due to waster to reduce waste resource to 0.4 kg/person /day



- Encourage small capacity Biomethanization Plants near source of waste – Grain Mandis /Hotels etc
- Reduce dependence on ground water by 50% and consumption of potable water .
- Promote eco park concepts across the city .
- Promoting bike tourism
- Ban on burning of leaves,
- Chandigarh as a Smoke Free City
- Controlling noise pollution
- Modernisation of dhobi ghats.



These concepts have been elaborated in the ‘ GREEN CODE of CHANDIGARH’ proposed by the Chandigarh Administration in detail, which needs to be implemented by means of :

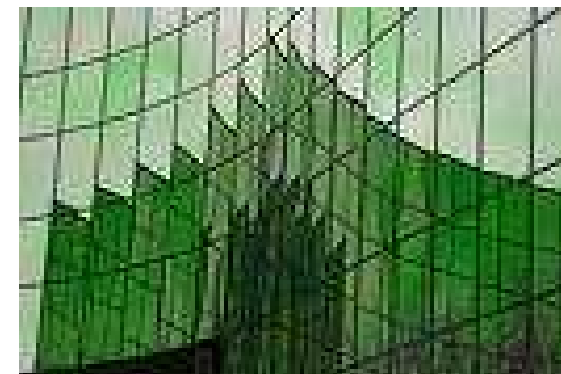
20.14 MANDATORY ENVIRONMENTAL CLEARANCE IN BUILDING PLAN APPROVALS & ADAPTATION OF GREEN CODE.

In order to ensure that the built environment of the city fits in harmoniously within the overall character of the city and is safe, healthy and functional and benefiting built environment, all building plans are required to be approved by the Chandigarh Administration and implemented through a well laid out mechanism.

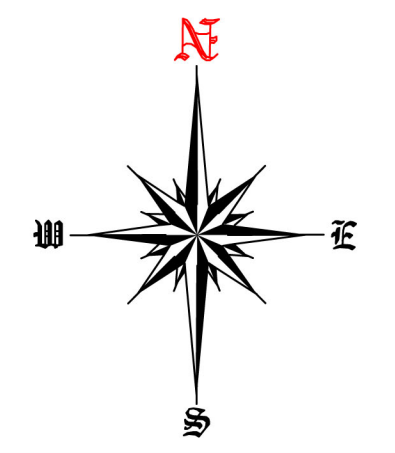


20.15 ECO-FRIENDLY TRANSPORT SYSTEM WITHIN SITES

- All large campuses, housing complex sites shall provide eco-friendly modes of intra -site transportation. The new construction must have footpath for the streets longer than 100 m and bicycling tracks for the streets longer than 200 m. Public mode of electric driven vehicles within the site for the elderly people and people with disability should be provided. In case of new construction/re-development of such sites it is recommended that planning should be on the concept of cluster development and linear layouts be avoided to avoid large vehicular lengths.



DEPARTMENT OF URBAN PLANNING CHANDIGARH ADMN.



- UNDERPASS ON RAILWAY CROSSING.
- DUAL CARRIAGE WAY WITH 24'-6" WIDE ON EITHER SIDE.
- PROPOSED 100'-0" WIDE ROAD WITH DUAL CARRIAGEWAY
- PROPOSED 70'-0" WIDE ROAD .
- EXISTING CREMATION GROUND TO BE SHIFTED TO IND. AREA PHASE- i . .
- ▲ College & Polytechnic, IT and Engineering

NOTE:
THIS DRAWING SUPERCEDES THE PREVIOUS DRAWING NO. 46 OF JOB NO. 72 DATED 2-1-1990

CHIEF ARCHITECT SENIOR TOWN PLANNER

DIVISIONAL TOWN PLANNER ASSISTANT TOWN PLANNER

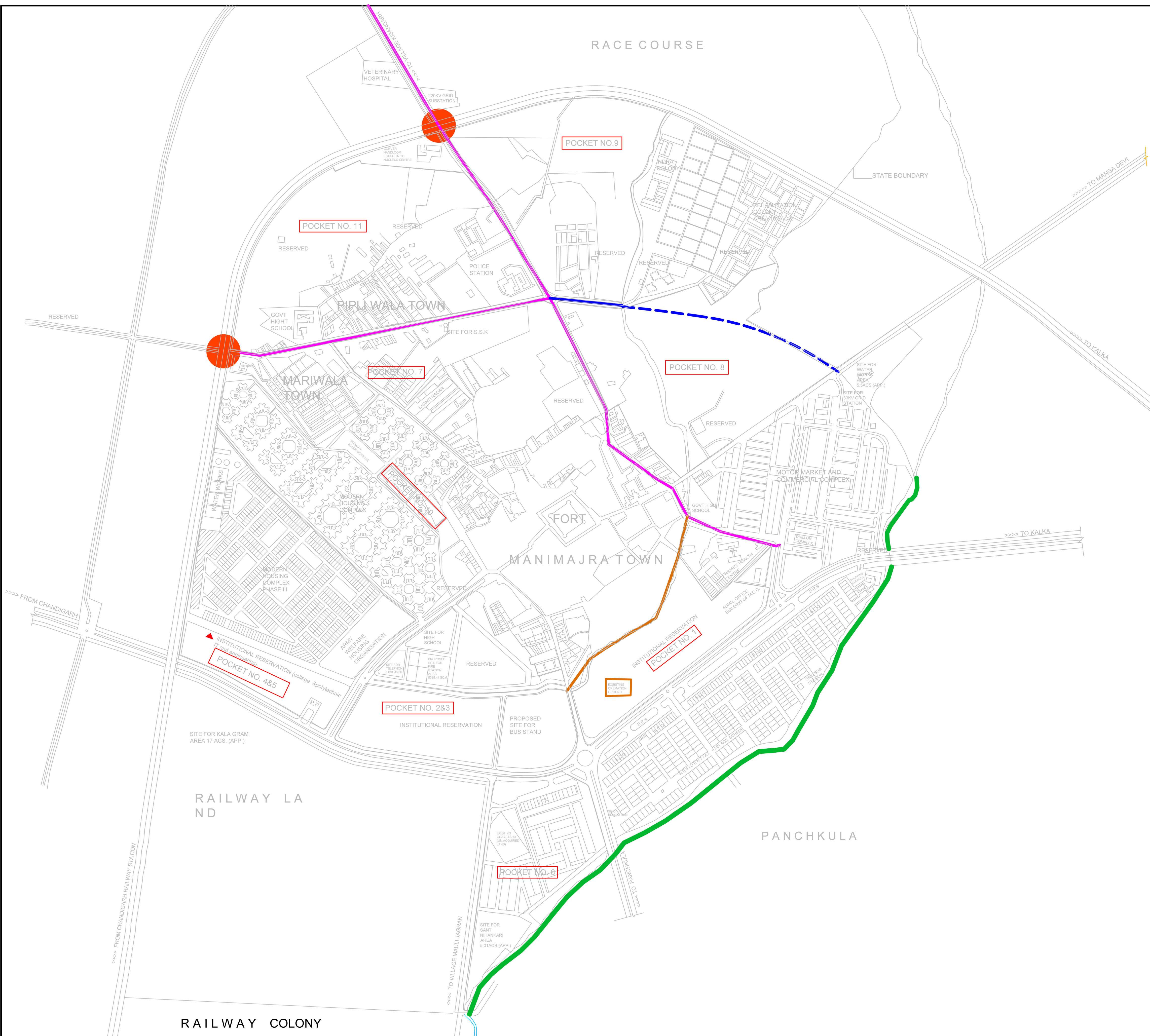
OFFICE OF THE SENIOR TOWN PLANNER, U.T., CHANDIGARH

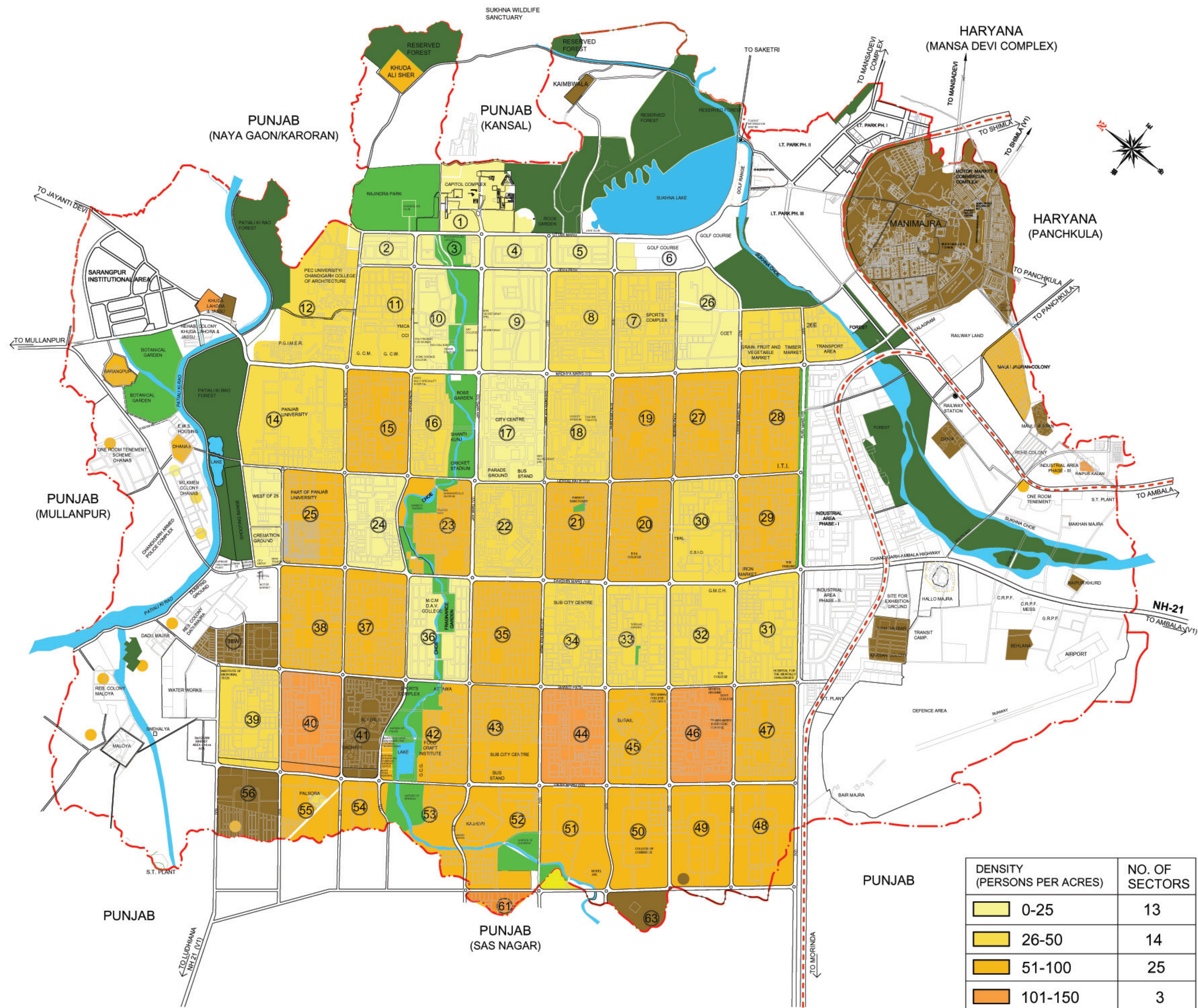
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DRG. NO.: JOB NO.: DATED:

CIRCULATION PLAN MANIMAJRA





DENSITY PLAN OF CHANDIGARH AS PER HOLDING CAPACITY

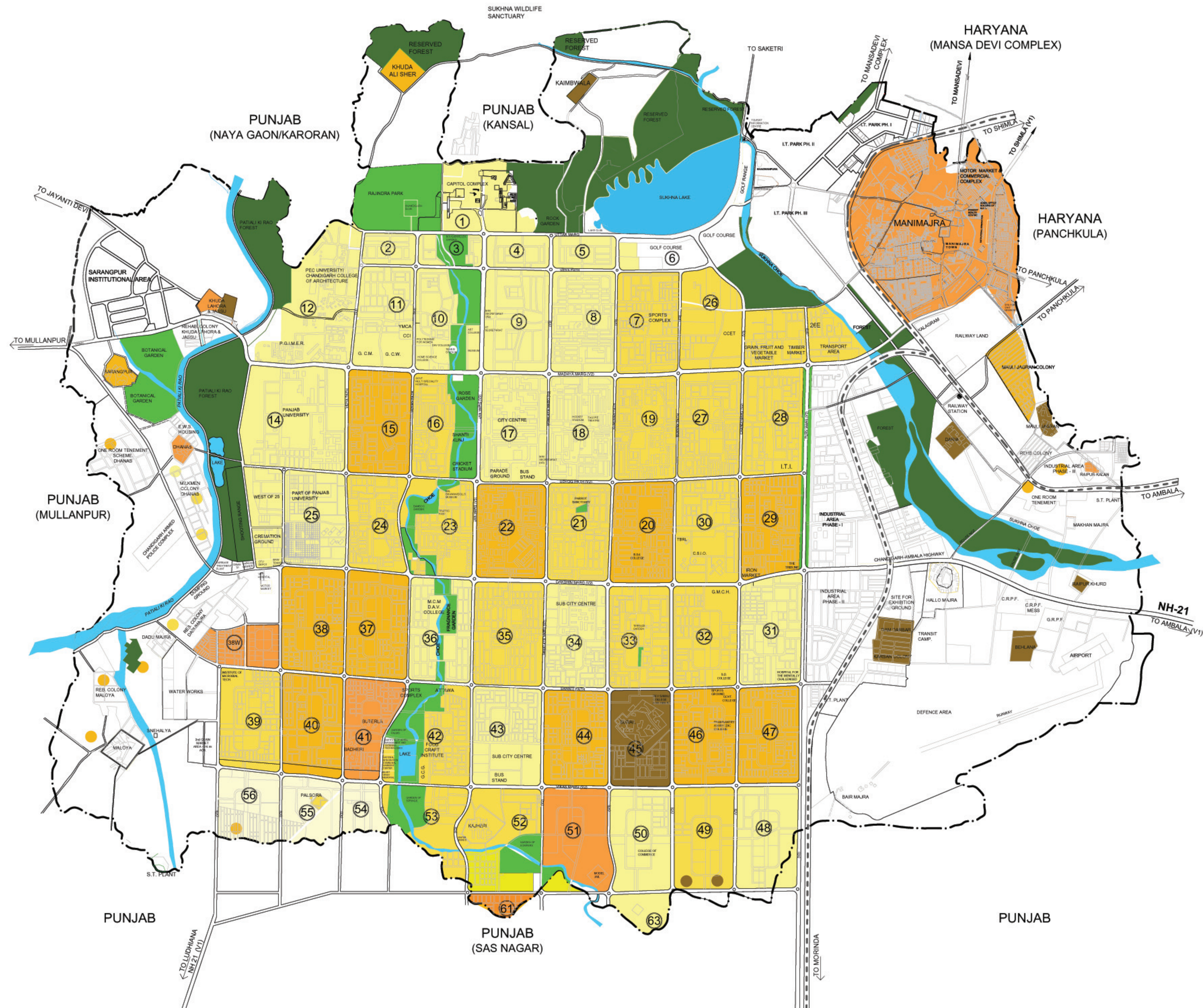
DENSITY (PERSONS PER ACRES)	NO. OF SECTORS
0-25	13
26-50	14
51-100	25
101-150	3
ABOVE 150	4

DEPARTMENT OF
URBAN PLANNING
CHANDIGARH ADMN.



LEGEND:

DENSITY (PERSONS PER ACRES)	NO. OF SECTORS
0-25	26
25-50	18
50-100	10
100-150	3
ABOVE 150	1



CHIEF ARCHITECT	SENIOR TOWN PLANNER	
DIVISIONAL TOWN PLANNER	ASSISTANT TOWN PLANNER	
OFFICE OF THE SENIOR TOWN PLANNER, U.T., CHANDIGARH		
DRAWN BY:	CHECKED BY:	
SCALE : 1 CM : 200 MTS.		
DRG. NO.	JOB NO.	DATED












DENSITY PLAN OF
CHANDIGARH 2001

DEPARTMENT OF
URBAN PLANNING
CHANDIGARH ADMN.



GENERAL NOTES :

Legend :

- PERIPHERY BOUNDARY 
- U.T. / STATE BOUNDARY 
- WATER BODY 
- URBANISABLE AREA 
- CANTONEMENT / MILITARY AREA 
- EXISTING ROADS 
- PROPOSED ROADS 
- PROPOSED EXPRESSWAY 
- AGRICULTURAL ZONE 
- RESERVED FOREST 
- PROTECTED FOREST 

CHIEF ARCHITECT SENIOR TOWN PLANNER

DIVISIONAL TOWN PLANNER ASSISTANT TOWN PLANNER

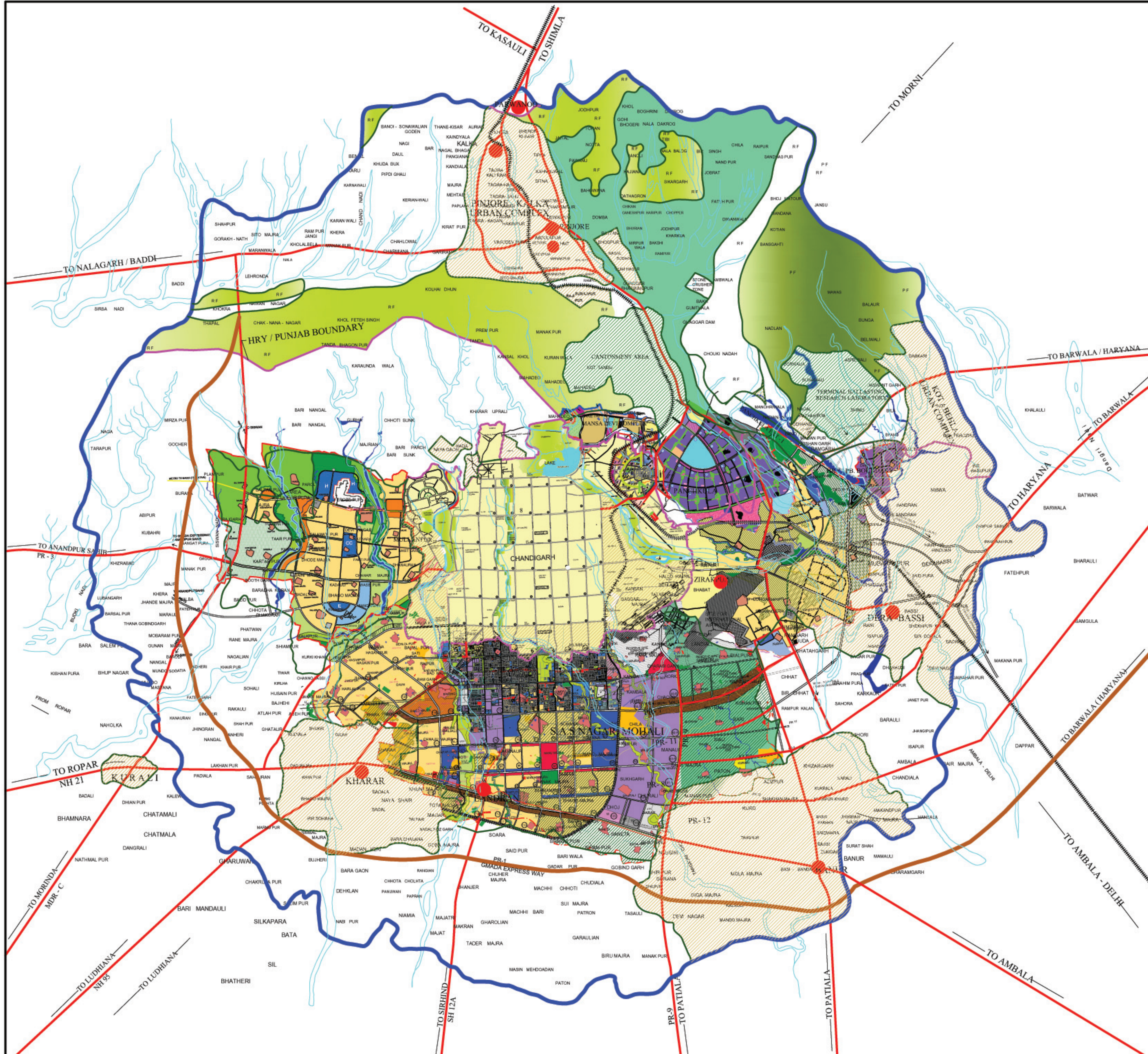
OFFICE OF THE
SENIOR TOWN PLANNER,
U.T., CHANDIGARH

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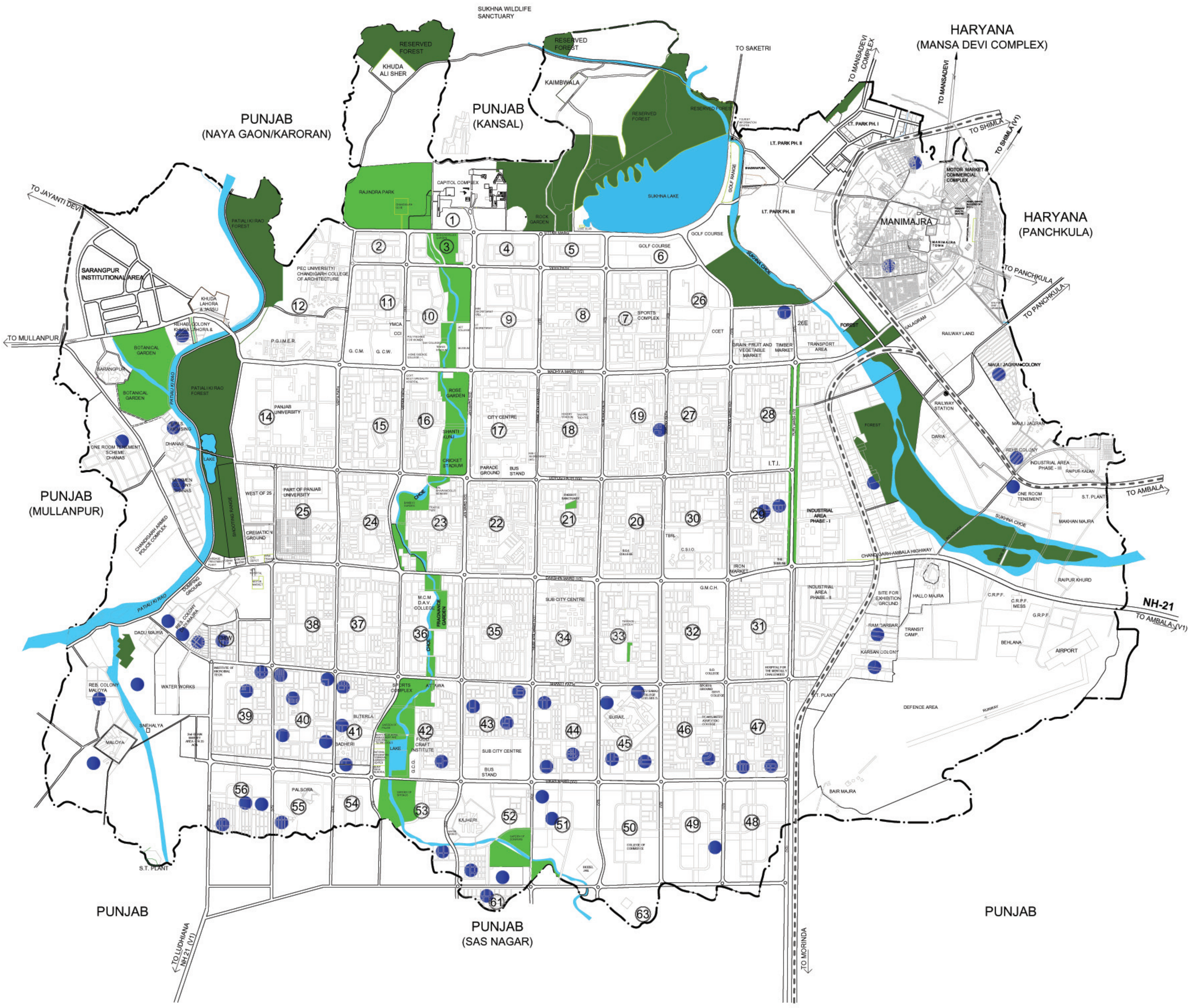
DEVELOPMENT OF PUNJAB
AND HARYANA IN THE U.T.
PERIPHERY.



DEPARTMENT OF
URBAN PLANNING
CHANDIGARH ADMN.



CHANDIGARH
HOUSING BOARD (SITES) ●



CHIEF ARCHITECT SENIOR TOWN PLANNER

DIVISIONAL TOWN PLANNER ASSISTANT TOWN PLANNER

DRAWN BY: CHECKED BY:

SCALE : 1C M : 200 M T S .

DRG. NO. JOB NO. DATED

HOUSING COLONIES
CONSTRUCTED BY
CHANDIGARH HOUSING
BOARD INCLUDING
REHABILITATION COLONIES

DEPARTMENT OF URBAN PLANNING
CHANDIGARH ADMN.



COMMERCIAL

- CITY/SUB CITY CENTRE
- NEIGHBOURHOOD CENTRE
- CONVENIENT SHOPS
- WHOLE SALE MARKETS



CHIEF ARCHITECT SENIOR TOWN PLANNER

DIVISIONAL TOWN PLANNER ASSISTANT TOWN PLANNER

DRAWN BY: CHECKED BY:

SCALE : 1 CM : 200 M T S .

DRG. NO. JOB NO. DATED

EXISTING COMMERCIAL AREAS

DEPARTMENT OF URBAN PLANNING
CHANDIGARH ADMN.



●	COMMUNITY CENTRE/ JANJ GHAR / DHARAMSHALA	31
●	AUDITORIUM	5
●	MELA GROUND	3



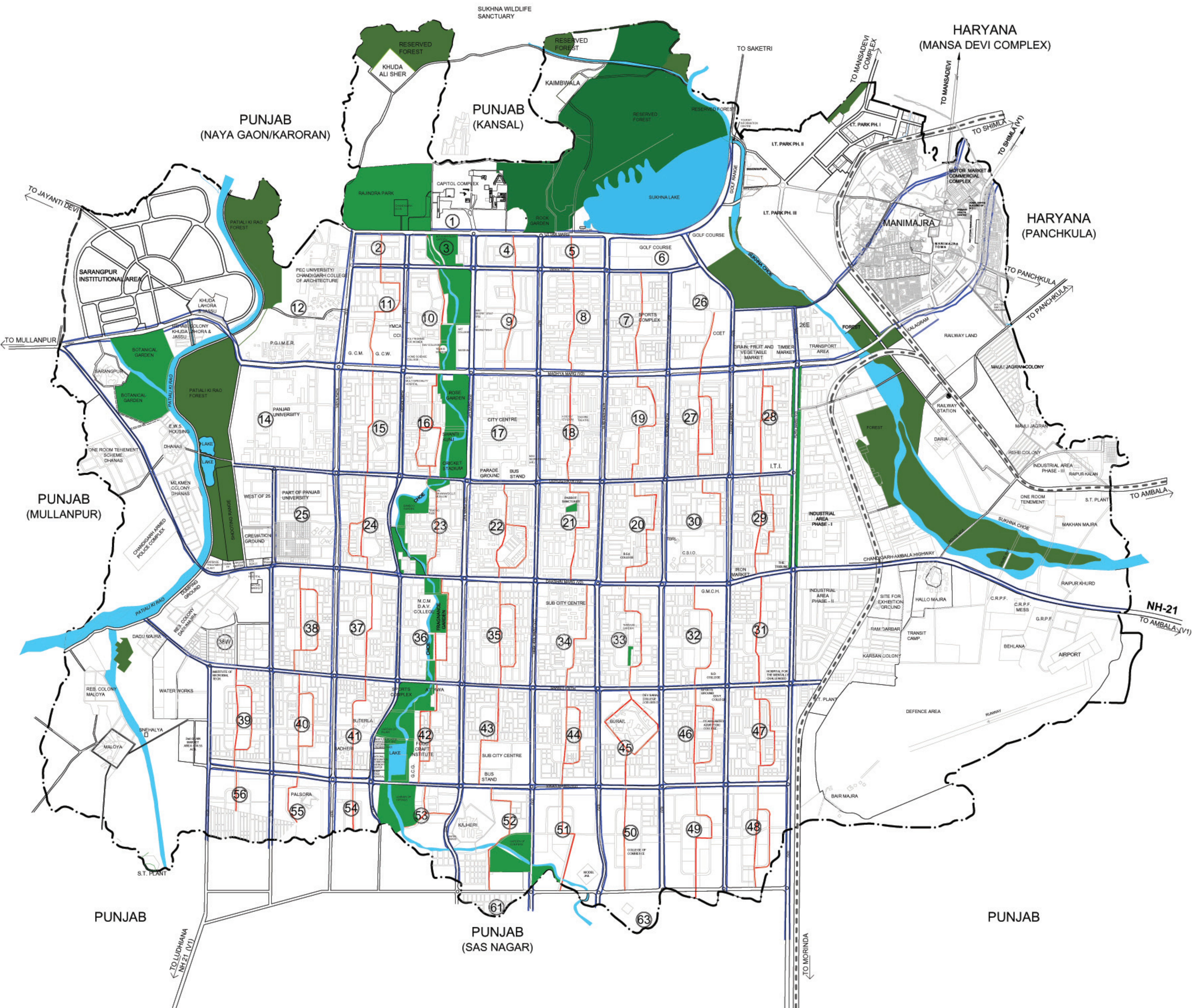
CHIEF ARCHITECT	SENIOR TOWN PLANNER
DIVISIONAL TOWN PLANNER	ASSISTANT TOWN PLANNER
DRAWN BY:	CHECKED BY:
SCALE : 1 CM : 200 M T S .	
DRG. NO.	JOB NO.
	DATED

EXISTING
COMMUNITY FACILITIES

DEPARTMENT OF URBAN PLANNING
CHANDIGARH ADMN.



V2-V3 ROAD WITH CYCLE TRACK ON BOTH SIDES
PROPOSED CYCLE TRACKS THROUGH SECTORS.



CHIEF ARCHITECT	SENIOR TOWN PLANNER
DIVISIONAL TOWN PLANNER	ASSISTANT TOWN PLANNER
DRAWN BY:	CHECKED BY:
SCALE : 1 C M : 200 M T S .	
DRG. NO.	JOB NO.
	DATED

PLAN SHOWING
CYCLE TRACKS

DEPARTMENT OF URBAN PLANNING
CHANDIGARH ADMN.



●	PRIMARY SCHOOL	160
●	HIGH SCHOOL/SR. SEC. SCHOOL	127
●	COLLEGE	12
●	TECH. COLLEGES/INSTITUTES	2



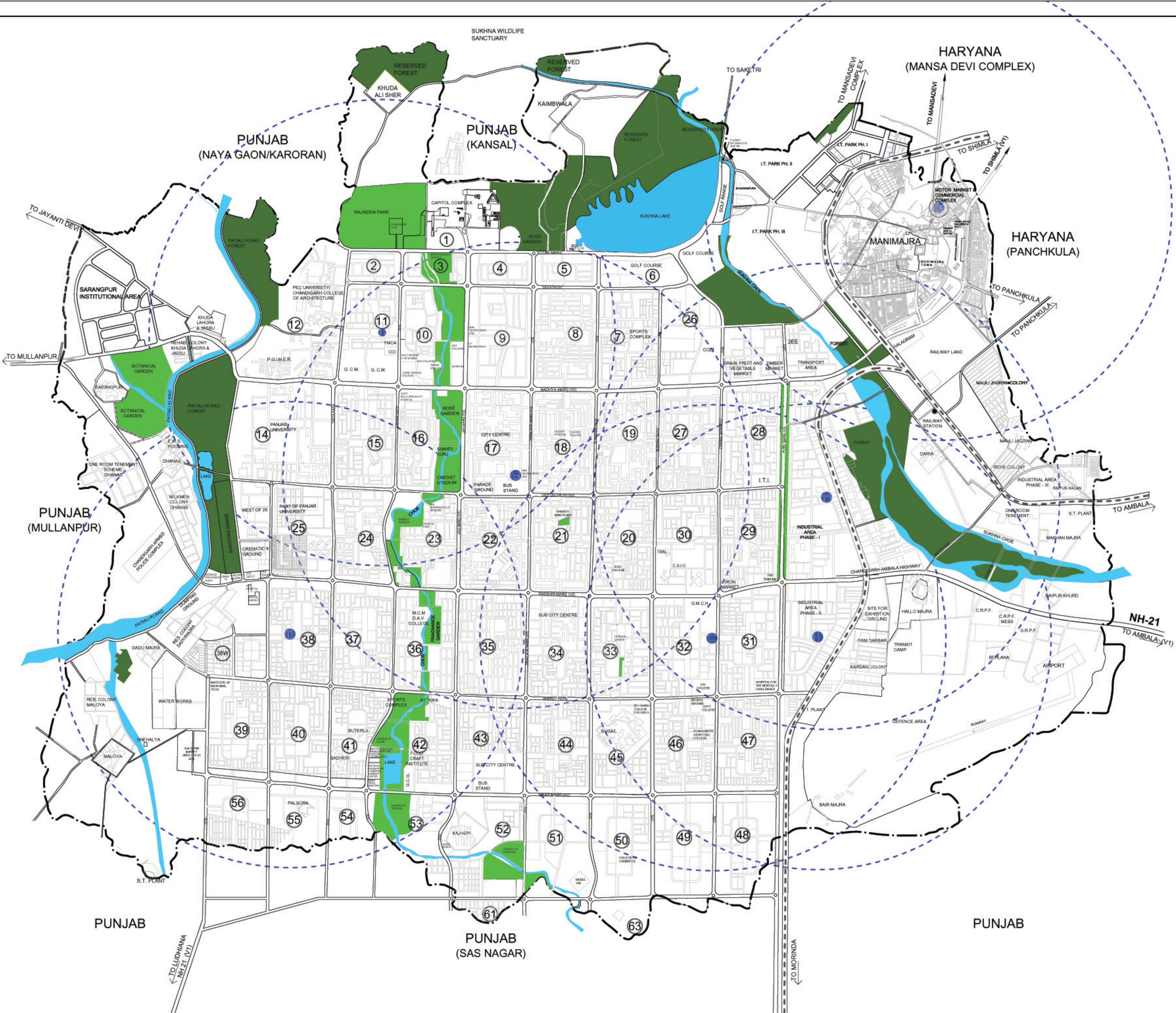
CHIEF ARCHITECT	SENIOR TOWN PLANNER
DIVISIONAL TOWN PLANNER	ASSISTANT TOWN PLANNER
DRAWN BY:	CHECKED BY:
SCALE : 1C M : 200 M T S .	
DRG. NO.	JOB NO.
	DATED

EXISTING EDUCATIONAL BUILDINGS

DEPARTMENT OF
URBAN PLANNING
CHANDIGARH ADMN.



FIRE STATION - 7 Nos.



CHIEF ARCHITECT	SENIOR TOWN PLANNER
DIVISIONAL TOWN PLANNER	ASSISTANT TOWN PLANNER
DRAWN BY:	CHECKED BY:
SCALE : 1C M : 200 M T S .	
DRG. NO.	JOB NO.
	DATED

LOCATION AND
COVERAGE AREA OF
FIRE STATIONS

DEPARTMENT OF URBAN PLANNING CHANDIGARH ADMN.



OUTER HORIZONTAL SURFACE NO CONSTRUCTION ABOVE 150MTS. AT A DISTANCE OF 6.1KM TO 15 KM. FROM EITHER SIDE OF RUNWAY END IS PERMITTED.

CONICAL SURFACE BETWEEN 4KM. TO 6.1KM. FROM EITHER SIDE OF RUNWAY END STRUCTURE CAN BE PERMITTED FROM 45MTS. TO 150MTS. AT A RATE OF 5% (i.e. 05 METER HIGH FOR EVERY 100MTS.).

INNER HORIZONTAL SURFACE NO CONSTRUCTION ABOVE 45MTS. IN THE SHADED PORTION (INDICATED BY BLUE) WITH RADIUS OF 4KM. FROM EITHER SIDE OF RUNWAY.

NOTE:- THIS PLAN OF HEIGHT RESTRICTIONS IN VICINITY OF AERODROME HAS BEEN RECEIVED FROM WG. CDR. NPS TAPRIAL, DY C ADM O FOR AOC VIDE LETTER NO 12W2602 / 5 / 2/WKS DATED 20 JULY 2005 (1-28).

CHIEF ARCHITECT SENIOR TOWN PLANNER

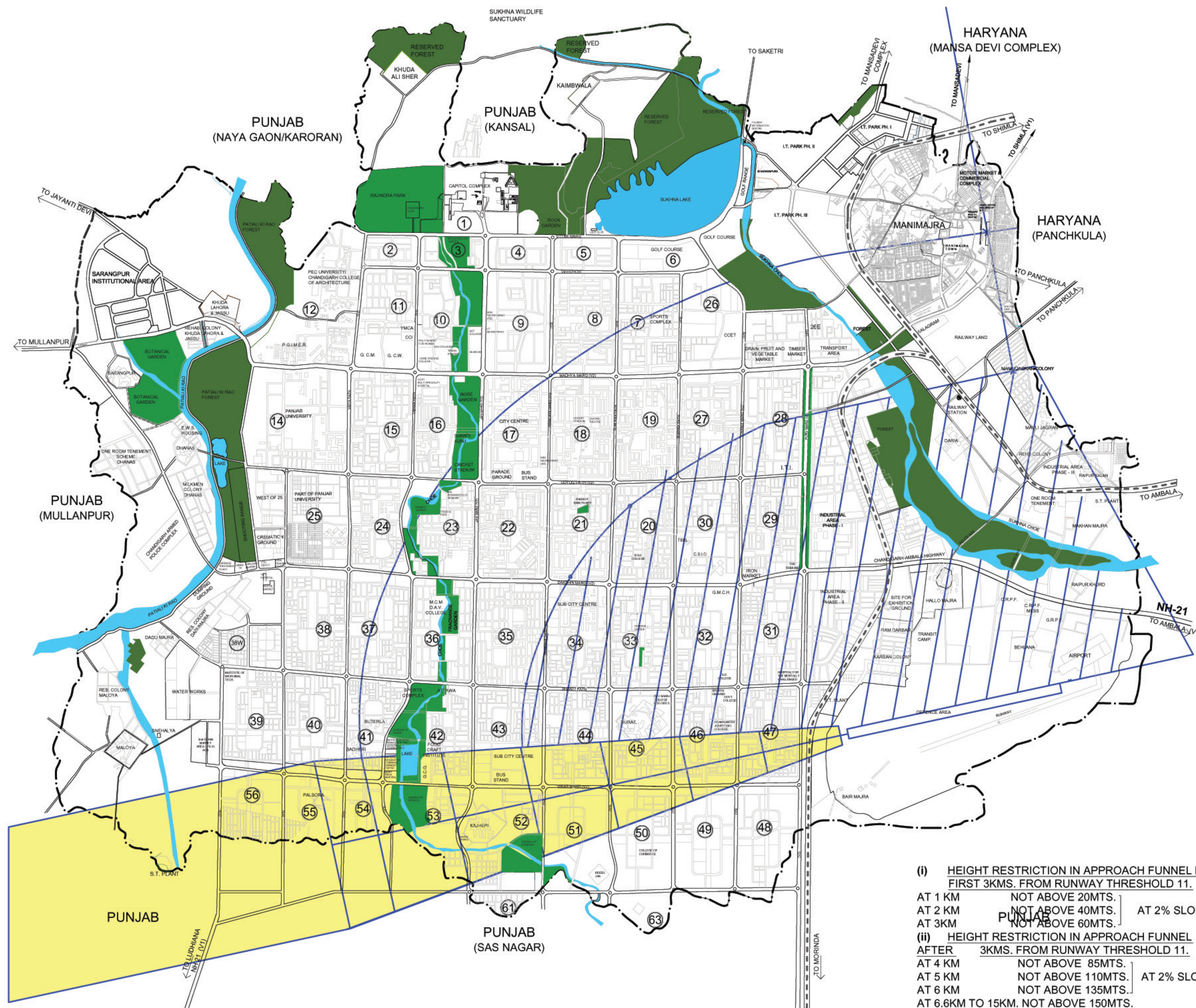
DIVISIONAL TOWN PLANNER ASSISTANT TOWN PLANNER

DRAWN BY: CHECKED BY:

SCALE : 1C M : 200 M T S .

DRG. NO. JOB NO. DATED

PLAN SHOWING FUNNEL ZONE



- (i) HEIGHT RESTRICTION IN APPROACH FUNNEL FOR FIRST 3KMS. FROM RUNWAY THRESHOLD 11.
 - AT 1 KM NOT ABOVE 20MTS.
 - AT 2 KM NOT ABOVE 40MTS.
 - AT 3KM NOT ABOVE 60MTS.
- (ii) HEIGHT RESTRICTION IN APPROACH FUNNEL AFTER 3KMS. FROM RUNWAY THRESHOLD 11.
 - AT 4 KM NOT ABOVE 85MTS.
 - AT 5 KM NOT ABOVE 110MTS.
 - AT 6 KM NOT ABOVE 135MTS.
 - AT 6.6KM TO 15KM. NOT ABOVE 150MTS.

DEPARTMENT OF URBAN PLANNING CHANDIGARH ADMN.



LEGEND:

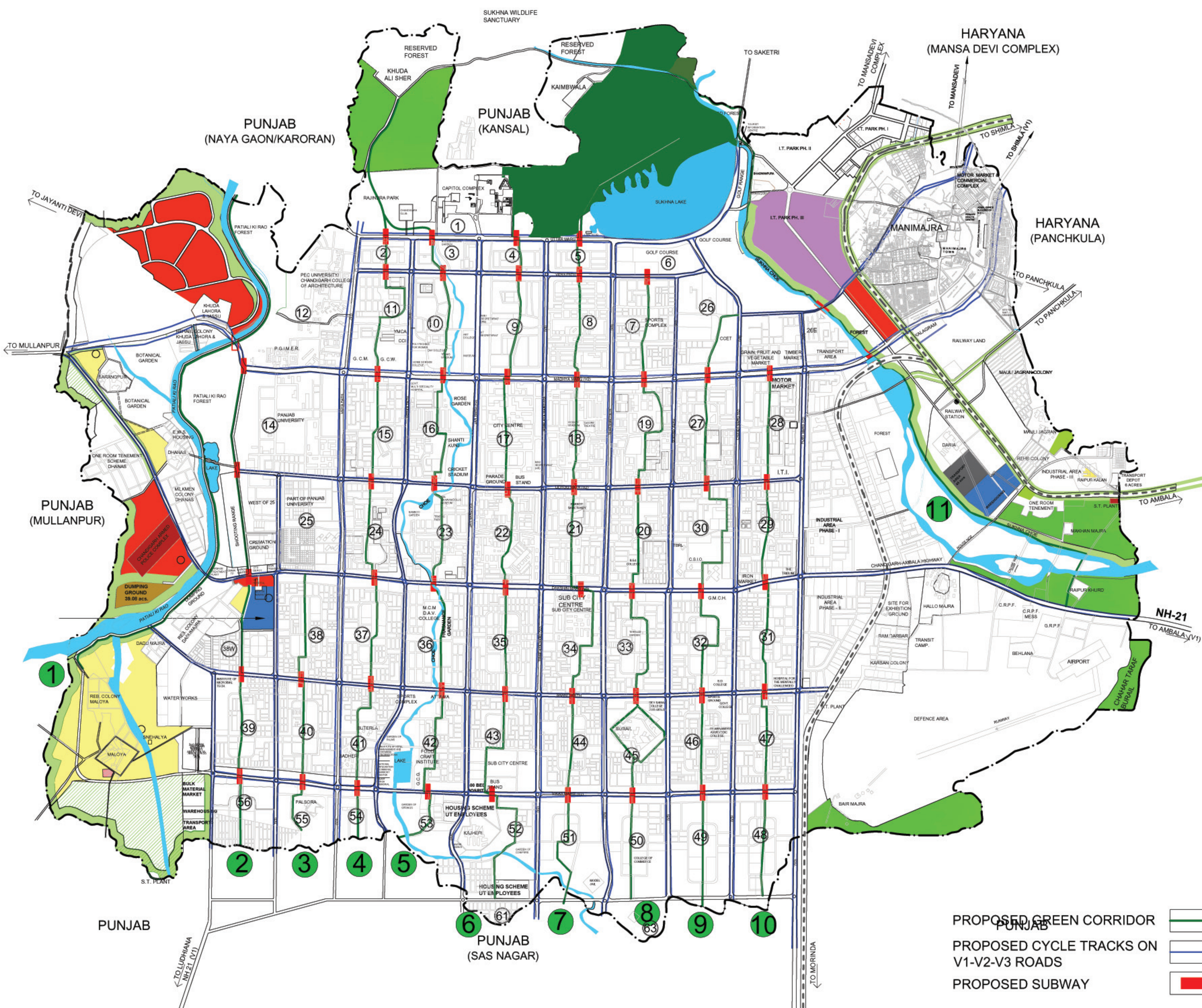
GH-1 (TYPE-1)	GH-25 (10-F)
GH-2 (2-JSS)	GH-26 (10-B)
GH-3 (2-JDS)	GH-27 (10-J)
GH-4 (3-F)	GH-28 (11-JSS)
GH-5 (3-FC)	GH-29 (11-B)
GH-6 (4-D)	GH-30 (11-JC)
GH-7 (4-J)	GH-31 (11-F)
GH-8 (4-DM)	GH-32 (11-JDS)
GH-9 (5-J)	GH-33 (11-JD)
GH-10 (6-D)	GH-34 (12-D)
GH-11 (6-J)	GH-35 (12-JC)
GH-12 (6-B)	GH-36 (12-JB)
GH-13 (7-D)	GH-37 (12-JE)
GH-14 (7-F)	GH-38 (13-D)
GH-15 (8-F)	GH-39 (13-JB)
GH-16 (8-D)	GH-40 (13-JSS)
GH-17 (8-F) WEST FACE	GH-41 (13-JDS)
GH-18 (9-F)	GH-42 (14-D)
GH-19 (9-FB)	GH-43 (14-JSS)
GH-20 (9-FC)	GH-44 (14-JDS)
GH-21 (9-JA)	GH-45 (14-JS)
GH-22 (10-D)	GH-45 (M/A FLATS)
GH-23 (10-JA)	GH-46 (E-1)
GH-24 (10-JC)	GH-47 (PEONS' HOUSES)



CHIEF ARCHITECT	SENIOR TOWN PLANNER	
DIVISIONAL TOWN PLANNER	ASSISTANT TOWN PLANNER	
DRAWN BY:	CHECKED BY:	
SCALE : 1C M : 200 M T S .		
DRG. NO.	JOB NO.	DATED

GOVERNMENT HOUSING & BUILDINGS SHORT LISTED FOR HERITAGE STATUS IN FIRST PHASE SECTORS

DEPARTMENT OF
URBAN PLANNING
CHANDIGARH ADMN.



CHIEF ARCHITECT	SENIOR TOWN PLANNER	
DIVISIONAL TOWN PLANNER	ASSISTANT TOWN PLANNER	
DRAWN BY:	CHECKED BY:	
SCALE : 1 C M : 200 M T S .		
DRG. NO.	JOB NO.	DATED

**PLAN SHOWING
PROPOSED GREEN
CORRIDORS**

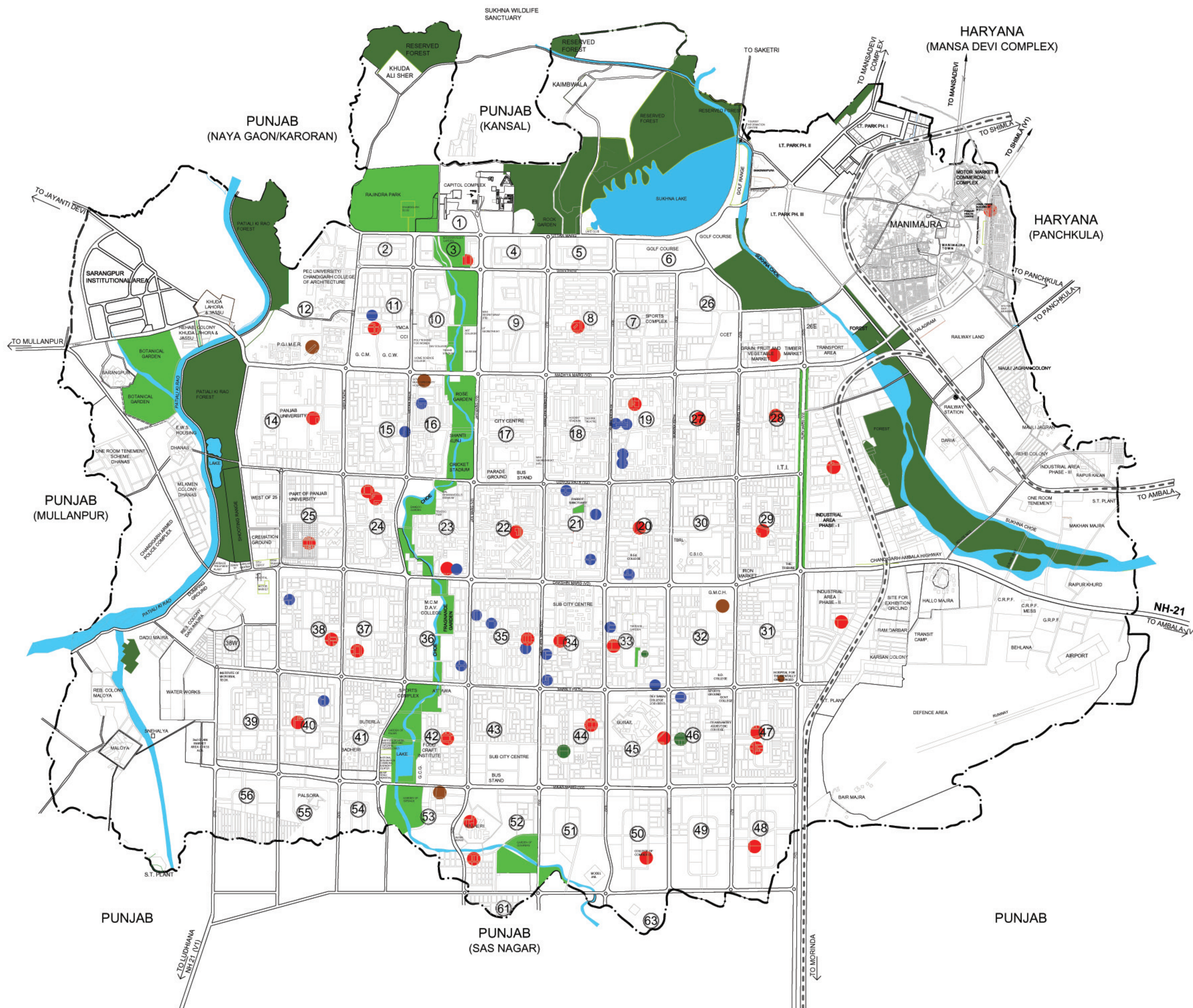
- PROPOSED GREEN CORRIDOR
- PROPOSED CYCLE TRACKS ON V1-V2-V3 ROADS
- PROPOSED SUBWAY

DEPARTMENT OF
URBAN PLANNING
CHANDIGARH ADMN.



LEGEND:

	HOSPITAL	5
	DISPENSERY	33
	NURSING HOME (IN RESIDENTIAL AREA)	23
	NURSING HOME SITES (ALLOTTED)	3



CHIEF ARCHITECT SENIOR TOWN PLANNER

DIVISIONAL TOWN PLANNER ASSISTANT TOWN PLANNER

DRAWN BY: CHECKED BY:

SCALE : 1C M : 200 M T S .

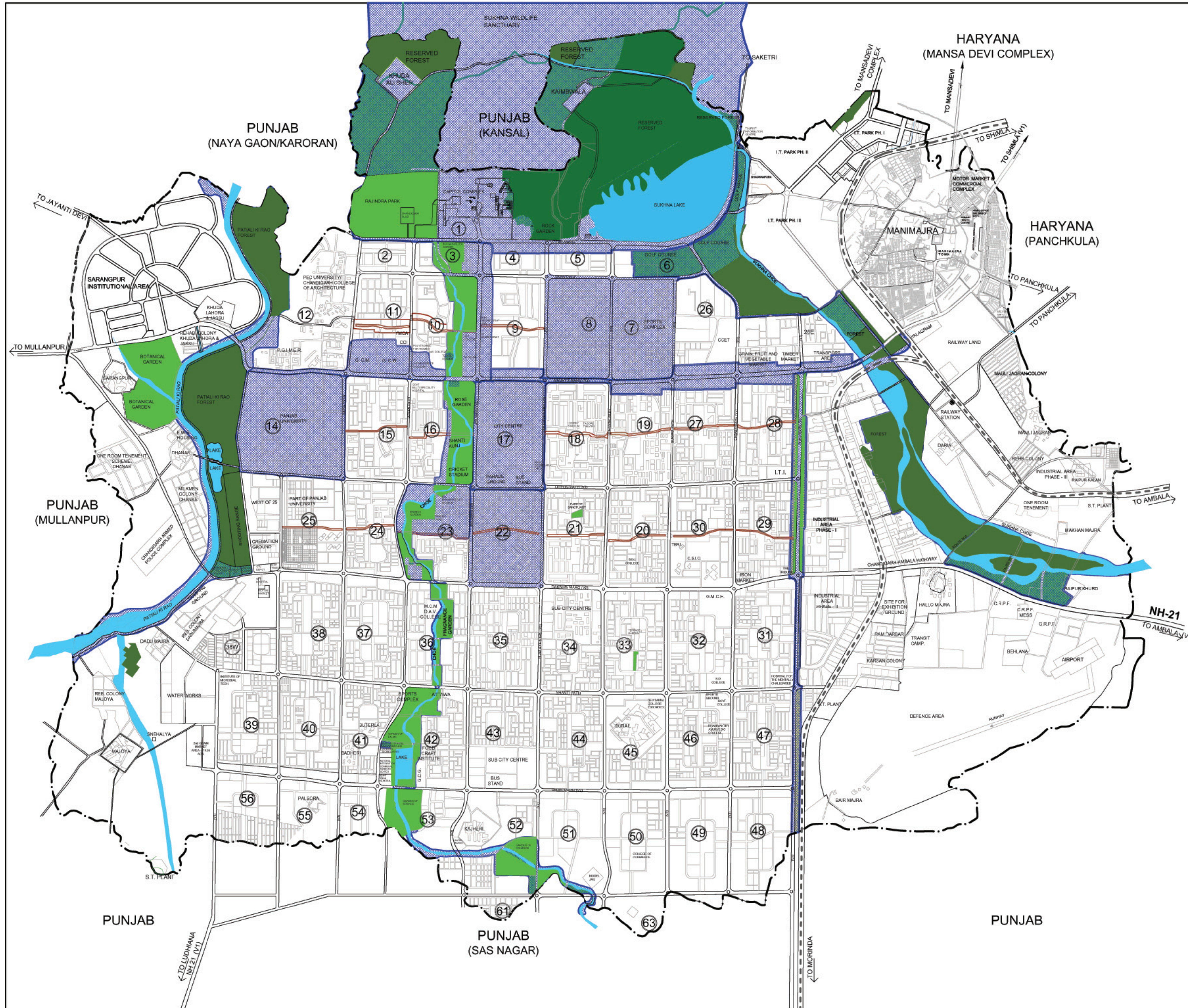
DRG. NO. JOB NO. DATED

EXISTING HEALTH
INFRASTRUCTURE

DEPARTMENT OF
URBAN PLANNING
CHANDIGARH ADMN.



- HERITAGE ZONES
- V4 ROADS
- GREEN AREA/PARKS
- SUKHNA WILDLIFE SANCTUARY
- SUKHNA CATCHMENT AREA



CHIEF ARCHITECT	SENIOR TOWN PLANNER
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DIVISIONAL TOWN PLANNER	ASSISTANT TOWN PLANNER
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OFFICE OF THE
SENIOR TOWN PLANNER,
U.T., CHANDIGARH

DRAWN BY:	CHECKED BY:
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SCALE : 1C M : 200 M T S .

DRG. NO.	JOB NO.	DATED
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**CHANDIGARHS
ENLISTED
HERITAGE ZONES**

DEPARTMENT OF
URBAN PLANNING
CHANDIGARH ADMN.



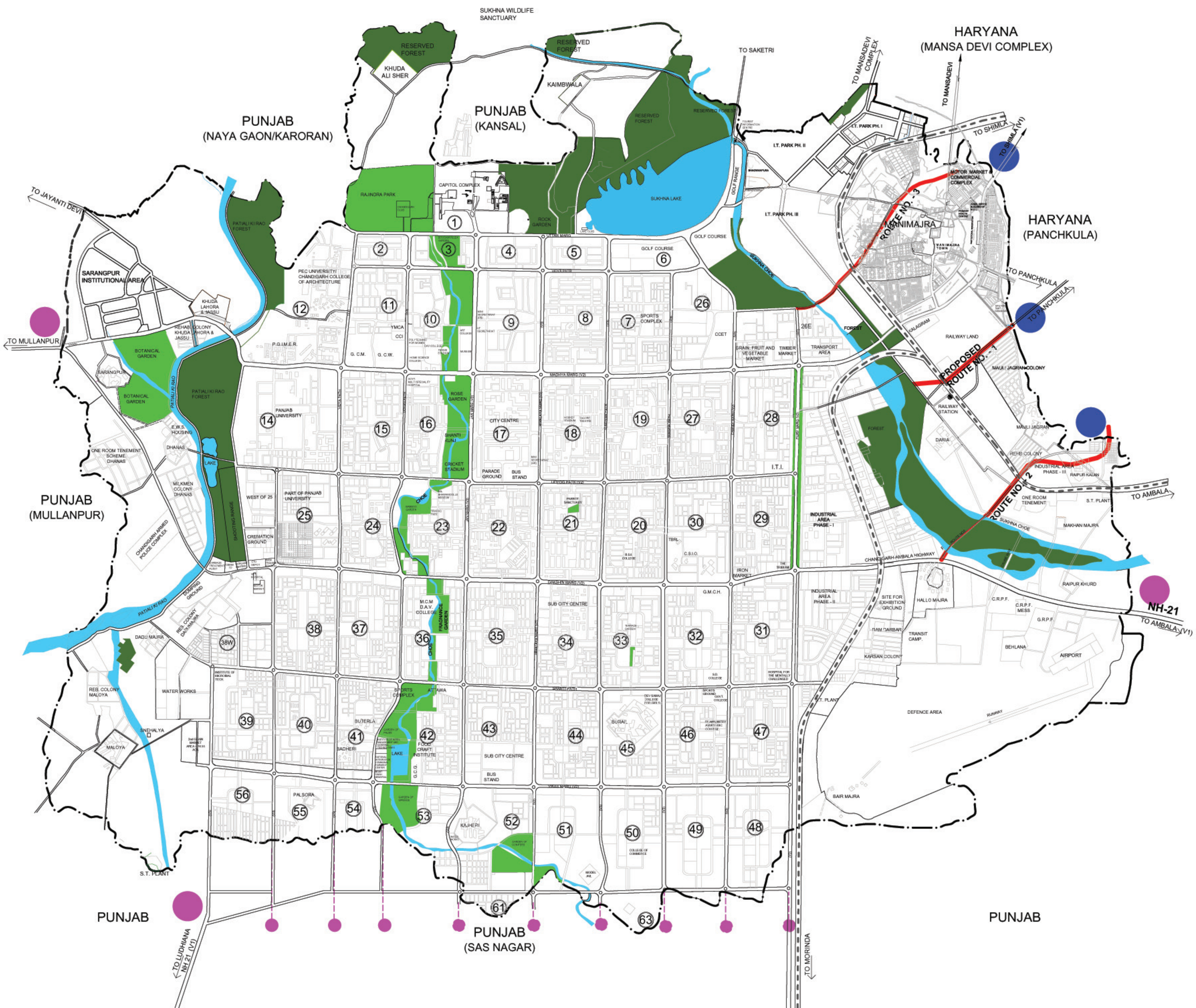
CHIEF ARCHITECT	SENIOR TOWN PLANNER
DIVISIONAL TOWN PLANNER	ASSISTANT TOWN PLANNER
DRAWN BY:	CHECKED BY:
SCALE : 1C M : 200 M T S .	
DRG. NO.	JOB NO.
	DATED

LOCATION OF
INDUSTRIAL AREA
PHASE I, II & III

DEPARTMENT OF URBAN PLANNING
CHANDIGARH ADMN.



- CONNECTING ROADS TO PANCHKULA
- CONNECTING ROADS TO MOHALI



CHIEF ARCHITECT	SENIOR TOWN PLANNER
DIVISIONAL TOWN PLANNER	ASSISTANT TOWN PLANNER
DRAWN BY:	CHECKED BY:
SCALE : 1C M : 200 M T S .	
DRG. NO.	JOB NO.
	DATED

EXISTING INTERSTATE CONNECTIVITY

DEPARTMENT OF URBAN PLANNING
CHANDIGARH ADMN.



LEGEND

● MILK BOOTHS - (87)



CHIEF ARCHITECT SENIOR TOWN PLANNER

DIVISIONAL TOWN PLANNER ASSISTANT TOWN PLANNER

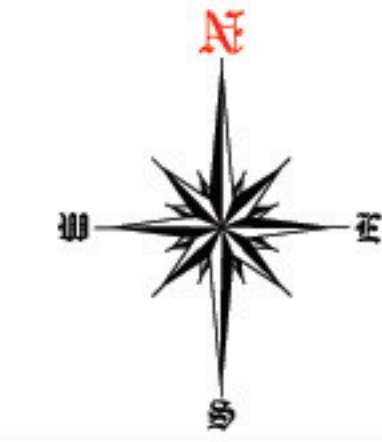
DRAWN BY: CHECKED BY:

SCALE : 1C M : 200 M T S .

DRG. NO. JOB NO. DATED

EXISTING MILK BOOTHS

DEPARTMENT OF
URBAN PLANNING
CHANDIGARH ADMN.



 VACANT LAND

NOTE:
THIS DRAWING SUPERCEDES THE
PREVIOUS DRAWING NO. 46 OF JOB
NO. 72 DATED 2-1-1990

CHIEF ARCHITECT SENIOR TOWN PLANNER

DIVISIONAL TOWN PLANNER ASSISTANT TOWN PLANNER

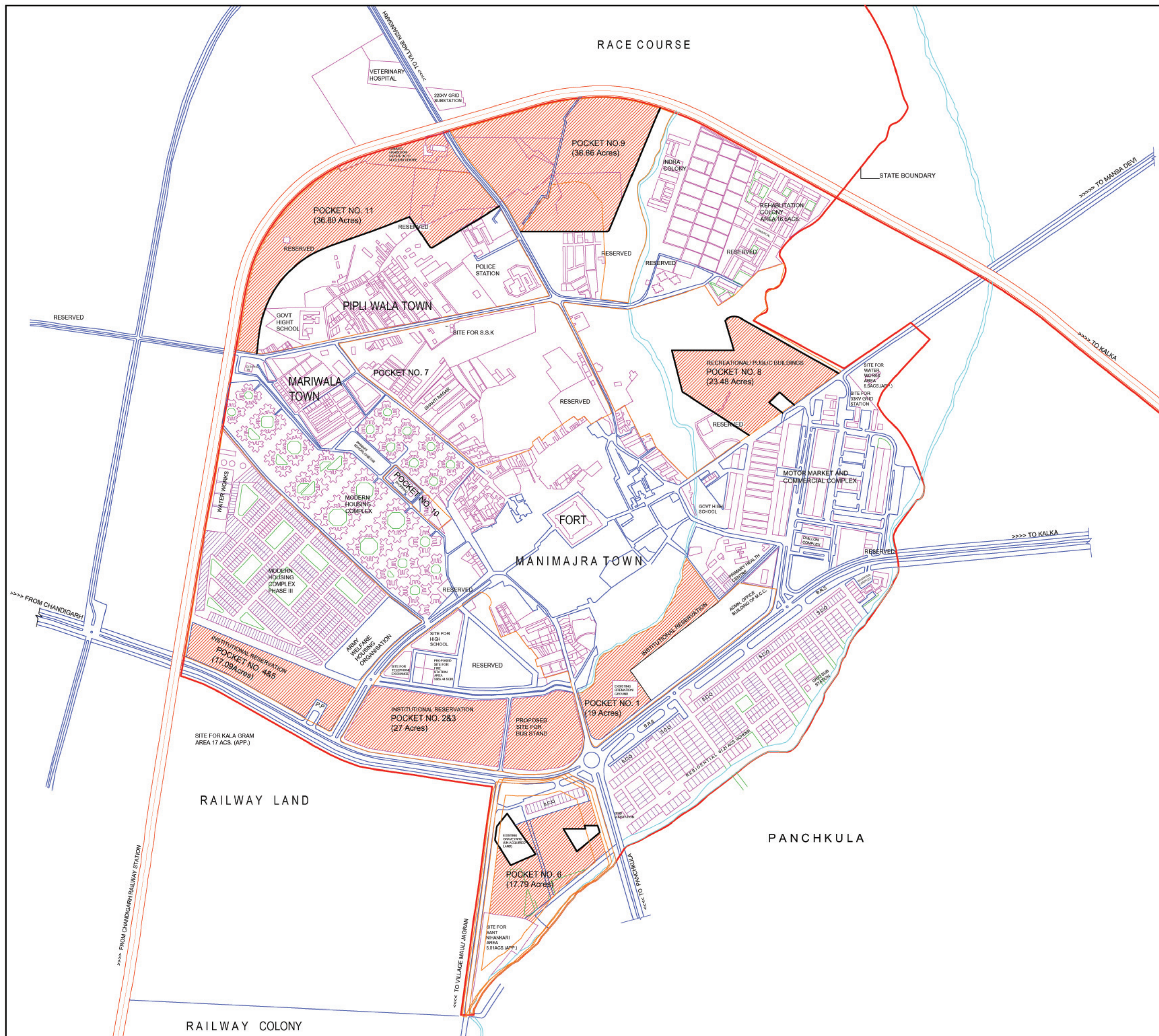
OFFICE OF THE
CHIEF ARCHITECT,
U.T., CHANDIGARH

DRAWN BY: CHECKED BY:

SCALE : 1C M : 200 M T S .

DRG. NO. JOB NO. DATED

GUIDE MAP OF
MANIMAJRA



DEPARTMENT OF URBAN PLANNING
CHANDIGARH ADMN.



● FILLING CUM SERVICE STATION - (41)

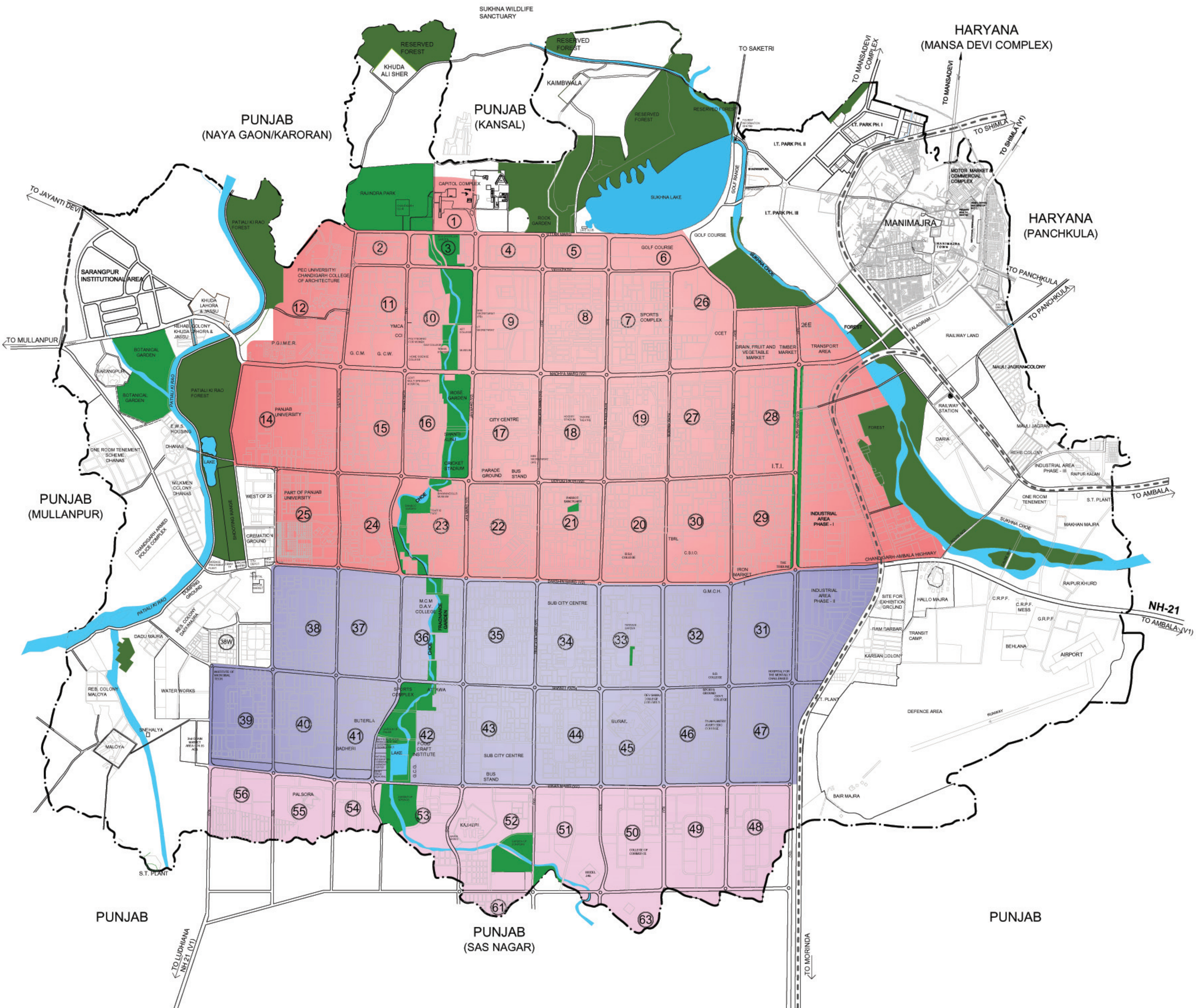


CHIEF ARCHITECT	SENIOR TOWN PLANNER
DIVISIONAL TOWN PLANNER	ASSISTANT TOWN PLANNER
DRAWN BY:	CHECKED BY:

SCALE : 1 CM : 200 M T S .

DRG. NO.	JOB NO.	DATED
EXISTING FILLING CUM SERVICE STATION		

DEPARTMENT OF URBAN PLANNING
CHANDIGARH ADMN.



CHIEF ARCHITECT	SENIOR TOWN PLANNER
DIVISIONAL TOWN PLANNER	ASSISTANT TOWN PLANNER
DRAWN BY:	CHECKED BY:
SCALE : 1C M : 200 M T S .	
DRG. NO.	JOB NO.
	DATED

PHASING PLAN
OF CHANDIGARH

DEPARTMENT OF
URBAN PLANNING
CHANDIGARH ADMN.



POLICE STATION



CHIEF ARCHITECT	SENIOR TOWN PLANNER
DIVISIONAL TOWN PLANNER	ASSISTANT TOWN PLANNER
DRAWN BY:	CHECKED BY:
SCALE : 1C M : 200 M T S .	
DRG. NO.	JOB NO.
	DATED

SECTORS IN WHICH
POLICE STATIONS
ARE LOCATED

DEPARTMENT OF URBAN PLANNING
CHANDIGARH ADMN.



- PRIMARY SCHOOL ●
- HIGH/SR. SEC. SCHOOL ●
- DISPENSARY ●



CHIEF ARCHITECT SENIOR TOWN PLANNER

DIVISIONAL TOWN PLANNER ASSISTANT TOWN PLANNER

OFFICE OF THE SENIOR TOWN PLANNER,
U.T., CHANDIGARH

DRAWN BY: CHECKED BY:

SCALE : 1 CM : 200 M T S .

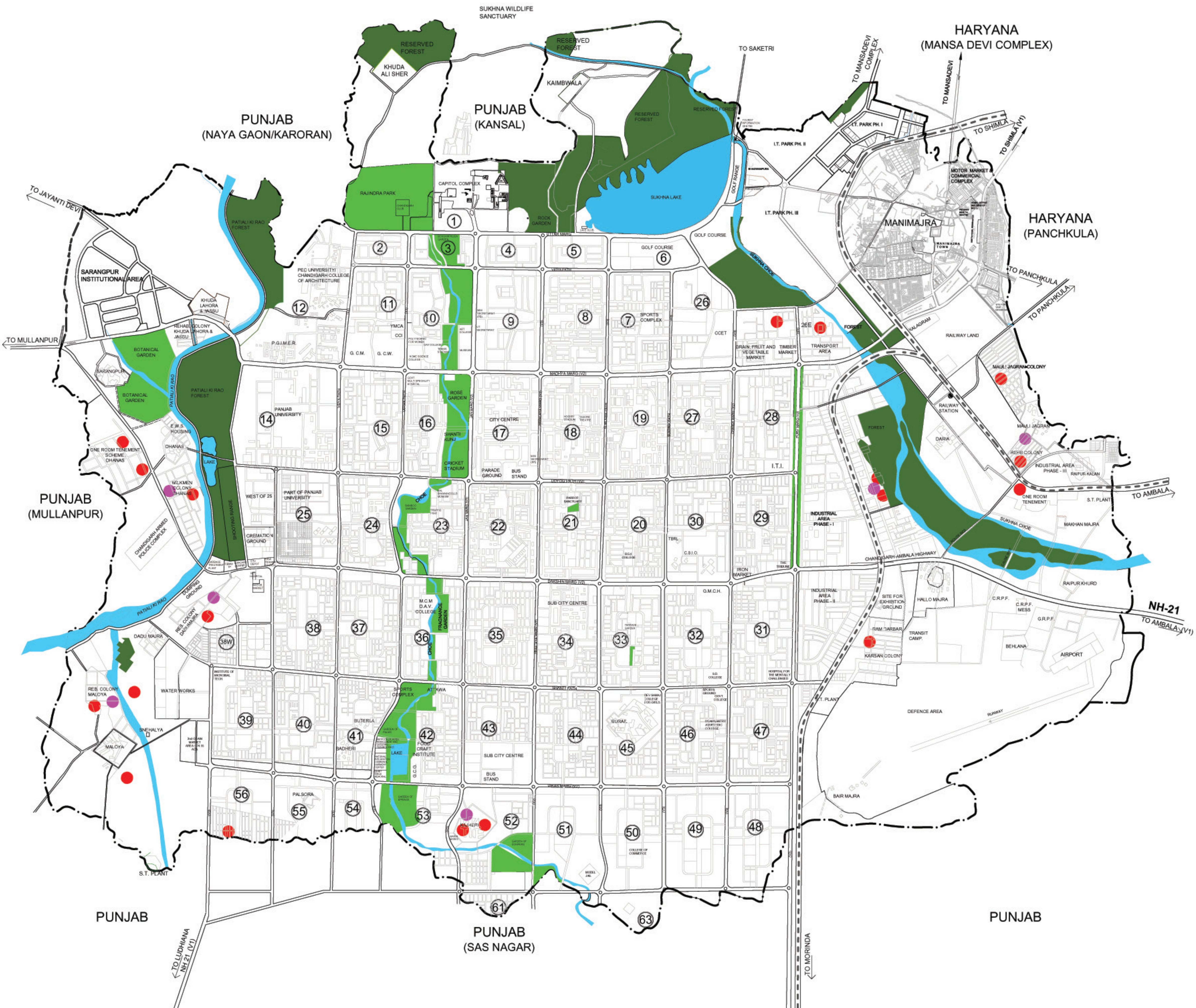
DRG. NO. JOB NO. DATED

EXISTING EDUCATIONAL & HEALTH FACILITIES IN REHAB.COLONIES.

DEPARTMENT OF URBAN PLANNING
CHANDIGARH ADMN.



COMMUNITY CENTRE/
JANJ GHAR ●
POLICE POST/STATION ●



CHIEF ARCHITECT SENIOR TOWN PLANNER

DIVISIONAL TOWN PLANNER ASSISTANT TOWN PLANNER

OFFICE OF THE SENIOR TOWN PLANNER,
U.T., CHANDIGARH

DRAWN BY: CHECKED BY:

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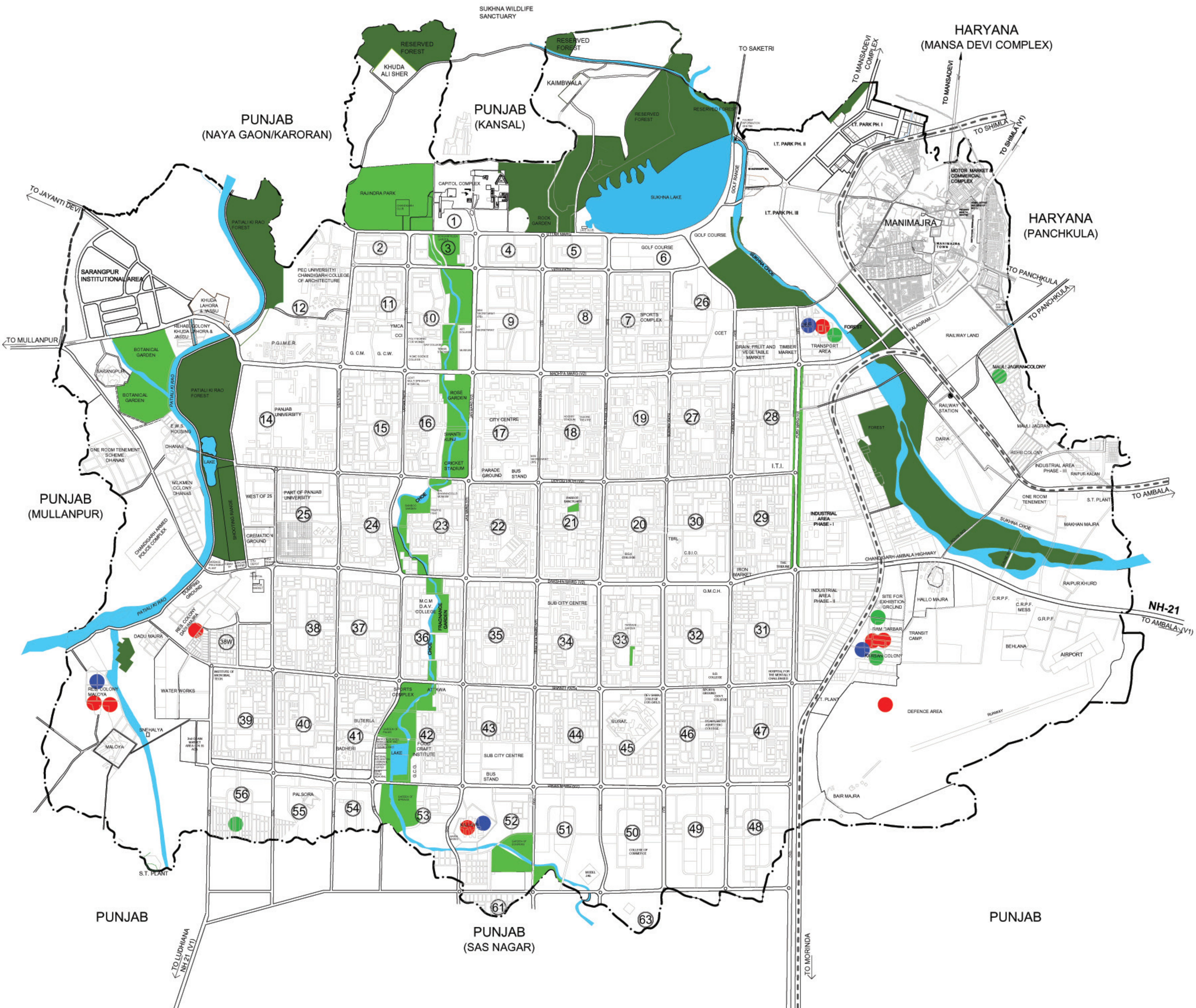
DRG. NO. JOB NO. DATED

EXISTING COMMUNITY FACILITIES IN REHABILITATION COLONIES

DEPARTMENT OF URBAN PLANNING
CHANDIGARH ADMN.



- MANDIR ●
- GURUDWARA ●
- CHURCH ●
- MOSQUE ●



CHIEF ARCHITECT	SENIOR TOWN PLANNER
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DIVISIONAL TOWN PLANNER	ASSISTANT TOWN PLANNER
-------------------------	------------------------

OFFICE OF THE SENIOR TOWN PLANNER,
U.T., CHANDIGARH

DRAWN BY:	CHECKED BY:
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SCALE : 1C M : 200 M T S .

DRG. NO.	JOB NO.	DATED
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**PLACES OF WORSHIP
IN REHABILITATION
COLONIES**

DEPARTMENT OF URBAN PLANNING
CHANDIGARH ADMN.



REHABILITATION COLONIES



CHIEF ARCHITECT SENIOR TOWN PLANNER

DIVISIONAL TOWN PLANNER ASSISTANT TOWN PLANNER

DRAWN BY: CHECKED BY:

SCALE : 1C M : 200 M T S .

DRG. NO. JOB NO. DATED

EXISTING REHABILITATION COLONIES

DEPARTMENT OF
URBAN PLANNING
CHANDIGARH ADMN.



MANDIR	●	67	} 106
GURUDWARA	●	28	
CHURCH	●	8	
MOSQUE	●	3	



CHIEF ARCHITECT SENIOR TOWN PLANNER

DIVISIONAL TOWN PLANNER ASSISTANT TOWN PLANNER

DRAWN BY: CHECKED BY:

SCALE : 1C M : 200 M T S .

DRG. NO. JOB NO. DATED

EXISTING
PLACES OF WORSHIP

DEPARTMENT OF
URBAN PLANNING
CHANDIGARH ADMN.



CHIEF ARCHITECT	SENIOR TOWN PLANNER
DIVISIONAL TOWN PLANNER	ASSISTANT TOWN PLANNER
DRAWN BY:	CHECKED BY:
SCALE : 1 C M : 200 M T S .	
DRG. NO.	JOB NO.
	DATED

POCKETS PROPOSED
FOR RE-UTILIZATION

DEPARTMENT OF URBAN PLANNING
CHANDIGARH ADMN.



EXISTING SAMPARK CENTRE ●
PROPOSED SAMPARK CENTRE ●



CHIEF ARCHITECT	SENIOR TOWN PLANNER
DIVISIONAL TOWN PLANNER	ASSISTANT TOWN PLANNER
DRAWN BY:	CHECKED BY:
SCALE : 1C M : 200 M T S .	
DRG. NO.	JOB NO. DATED

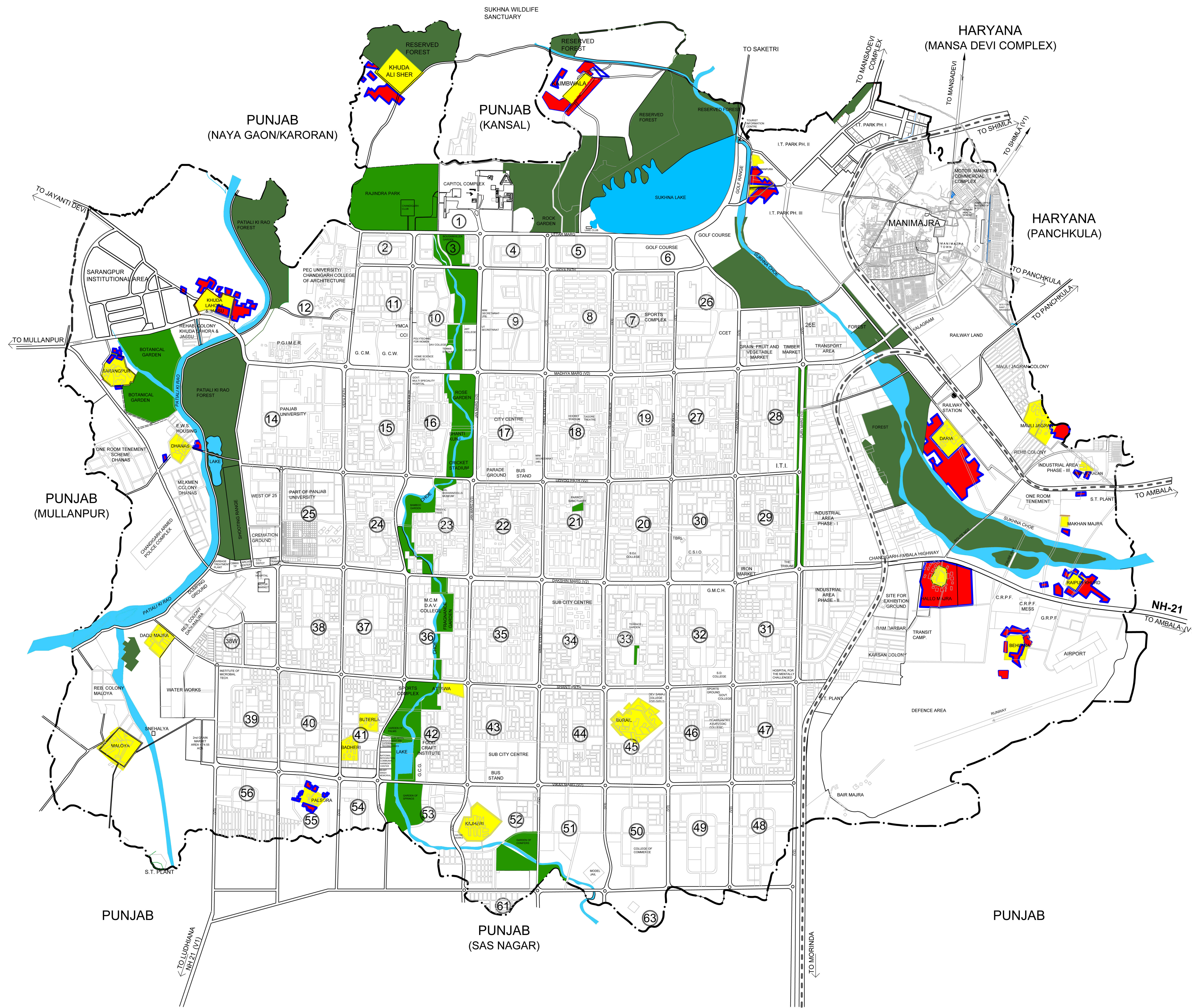
EXISTING AND PROPOSED SAMPARK CENTRES.

DEPARTMENT OF
URBAN PLANNING
CHANDIGARH ADMN.



DETAIL OF LAND USE :

- VILLAGE BOUNDARY
- CONSTRUCTION BEYOND LAL DORA SUBJECT TO DETAILED PHYSICAL SURVEY AS PER SITE



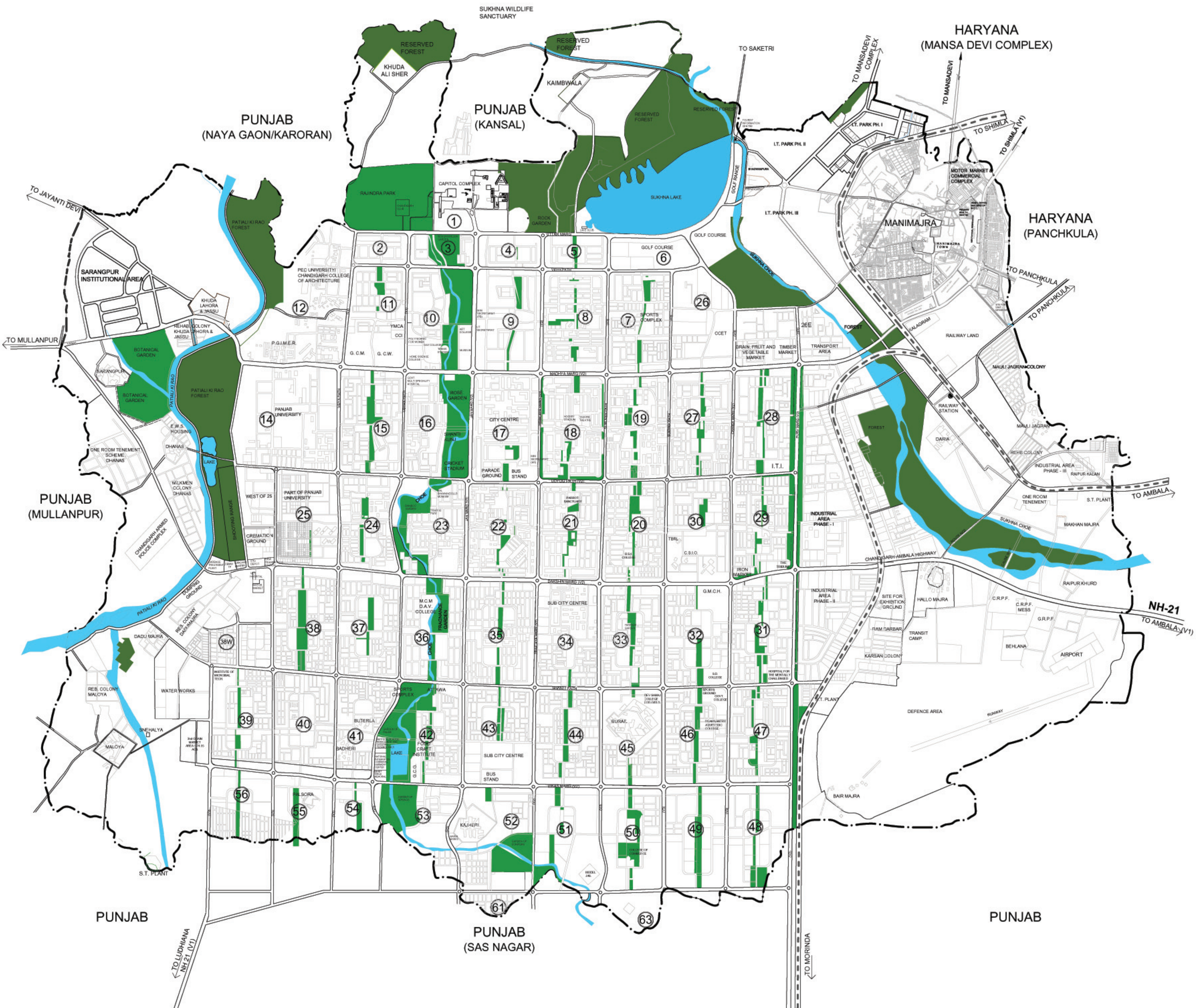
CHIEF ARCHITECT	SENIOR TOWN PLANNER	
DIVISIONAL TOWN PLANNER	ASSISTANT TOWN PLANNER	
DRAWN BY:	CHECKED BY:	
SCALE : 1 C M : 200 M T S .		
DRG. No.	JOB No.	DATED

GUIDE MAP SHOWING
CONSTRUCTION BEYOND
LAL DORA

DEPARTMENT OF
URBAN PLANNING
CHANDIGARH ADMN.



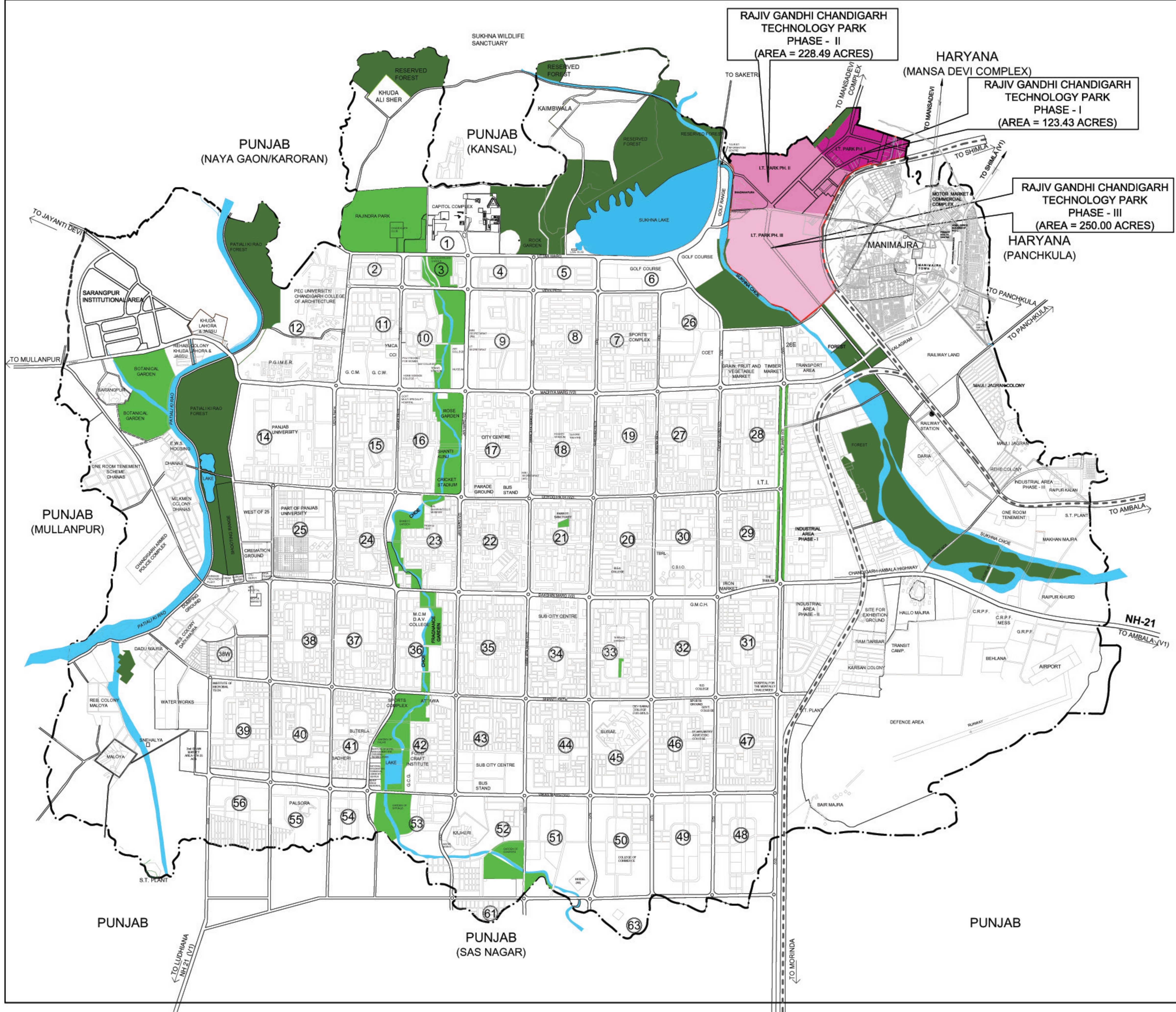
- OPEN SPACES
- FOREST AREAS



CHEIF ARCHITECT	SENIOR TOWN PLANNER
DIVISIONAL TOWN PLANNER	ASSISTANT TOWN PLANNER
DRAWN BY:	CHECKED BY:
SCALE : 1C M : 200 M T S .	
DRG. NO.	JOB NO.
	DATED

**GREEN SPACES &
FOREST AREAS**

DEPARTMENT OF
URBAN PLANNING
CHANDIGARH ADMN.



RAJIV GANDHI CHANDIGARH
TECHNOLOGY PARK
PHASE - II
(AREA = 228.49 ACRES)

HARYANA
(MANSA DEVI COMPLEX)
RAJIV GANDHI CHANDIGARH
TECHNOLOGY PARK
PHASE - I
(AREA = 123.43 ACRES)

RAJIV GANDHI CHANDIGARH
TECHNOLOGY PARK
PHASE - III
(AREA = 250.00 ACRES)
HARYANA
(PANCHKULA)

CHIEF ARCHITECT SENIOR TOWN PLANNER

DIVISIONAL TOWN PLANNER ASSISTANT TOWN PLANNER

DRAWN BY: CHECKED BY:

SCALE : 1 CM : 200 M T S .

DRG. NO. JOB NO. DATED

LOCATION OF
I.T. PARK

DEPARTMENT OF URBAN PLANNING
CHANDIGARH ADMN.



LEGEND:

- TYPE OF ROADS
- V-1 Fast roads
 - V-2 Arterial roads
 - V-3 Sector dividing roads
 - V-4 Shopping streets
 - V-5 Sector circulation. (internal)
 - V-6 Access roads
 - V-7 Foot paths and cycle tracks.
 - BUS STAND
 - RAILWAY STATION
 - AIRPORT



CHIEF ARCHITECT	SENIOR TOWN PLANNER
DIVISIONAL TOWN PLANNER	ASSISTANT TOWN PLANNER
DRAWN BY:	CHECKED BY:
SCALE : 1 C M : 200 M T S .	
DRG. NO.	JOB NO.
	DATED

ROAD NETWORK AND TERMINALS

DEPARTMENT OF URBAN PLANNING
CHANDIGARH ADMN.



DETAIL OF LAND USE :

UN-AUTHORISED COLONIES

S.NO.	DESCRIPTION	UNITS
1	KALYAN COLONY	81
2	KUMHAR COLONY	1610
3	SHAHPUR COLONY	235
4	RAJIV COLONY	422
5	GURU SAGAR COLONY	156
6	L.B.S. COLONY	784
7	NEHRU COLONY	987
8	PANDIT COLONY	475
9	KULDIP COLONY	184
10	MAZDOOR COLONY	173
11	COLONY NO. 5	6420
12	AMBEDKAR COLONY	515
13	KABARI COLONY	44
14	SANJAY COLONY	392
15	COLONY NO. 4	3953
16	S.B.S. COLONY	1237
17	MADRASI COLONY	3408
18	JANTA COLONY	1063

(AS PER 2006 BIOMETRIC SURVEY)

CHIEF ARCHITECT SENIOR TOWN PLANNER

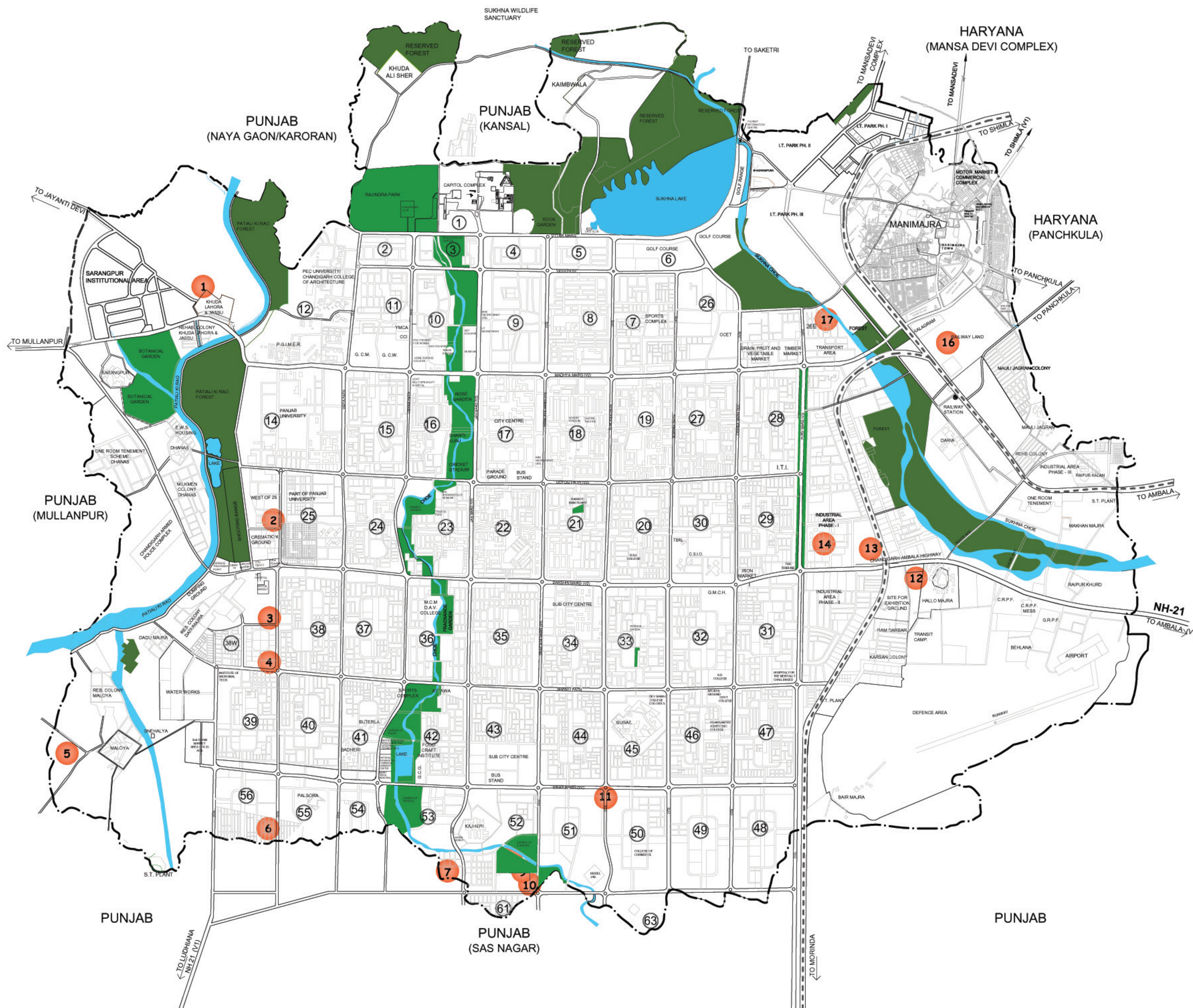
DIVISIONAL TOWN PLANNER ASSISTANT TOWN PLANNER

DRAWN BY: CHECKED BY:

SCALE : 1C M : 200 M T S .

DRG. NO. JOB NO. DATED

LOCATION OF UN-AUTHORISED COLONIES



DEPARTMENT OF URBAN PLANNING
CHANDIGARH ADMN.



DETAIL OF LAND USE :

- RE-CREATIONAL ORGANISED OPEN SPACE/ SPORTS COMPLEX
- AGRICULTURE
- FOREST
- VACANT LAND



CHIEF ARCHITECT SENIOR TOWN PLANNER

DIVISIONAL TOWN PLANNER ASSISTANT TOWN PLANNER

DRAWN BY: CHECKED BY:

SCALE : 1 CM : 200 M T S .

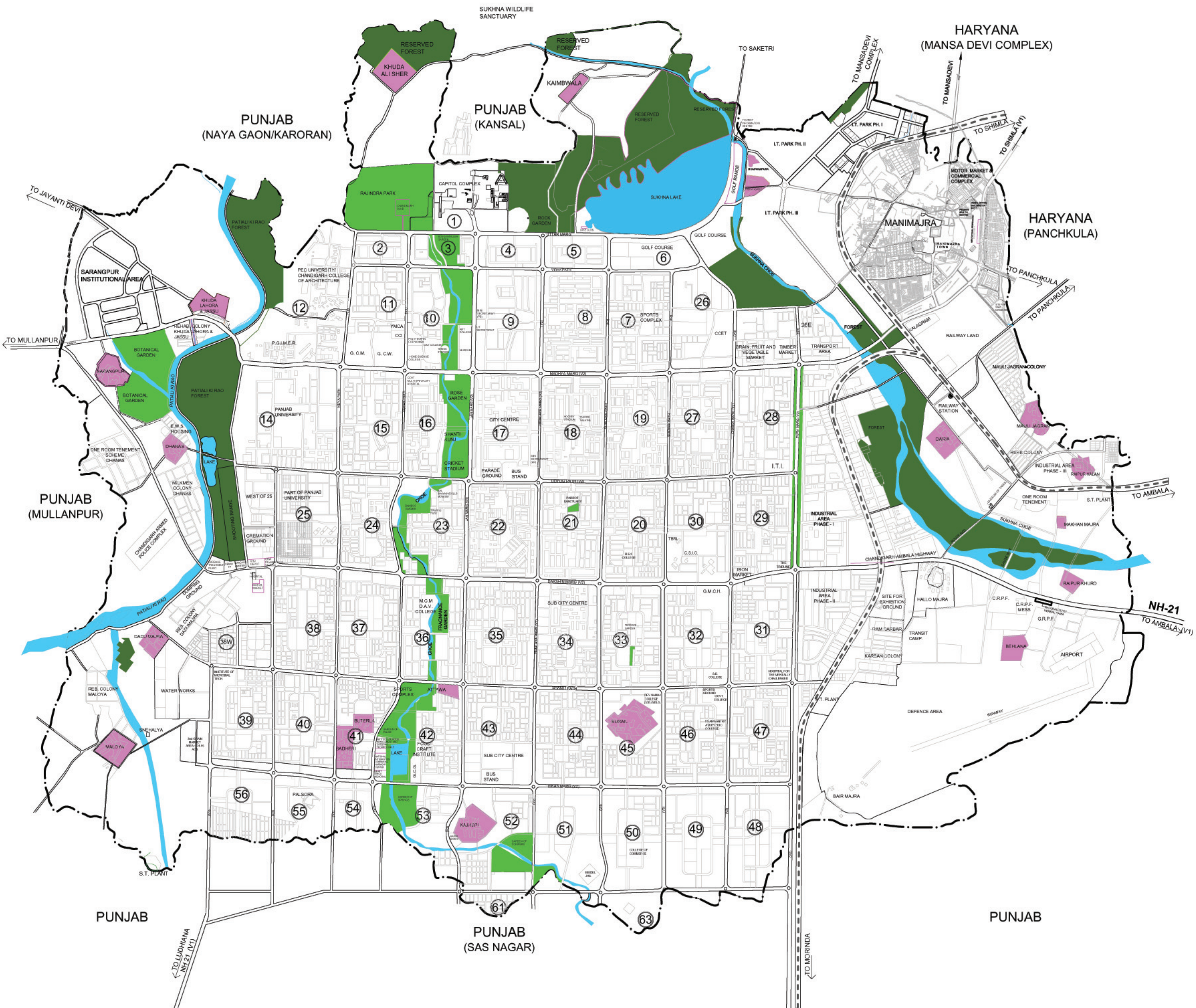
DRG. NO. JOB NO. DATED

VACANT POCKETS AND AGRICULTURAL AREAS

DEPARTMENT OF URBAN PLANNING
CHANDIGARH ADMN.



VILLAGES





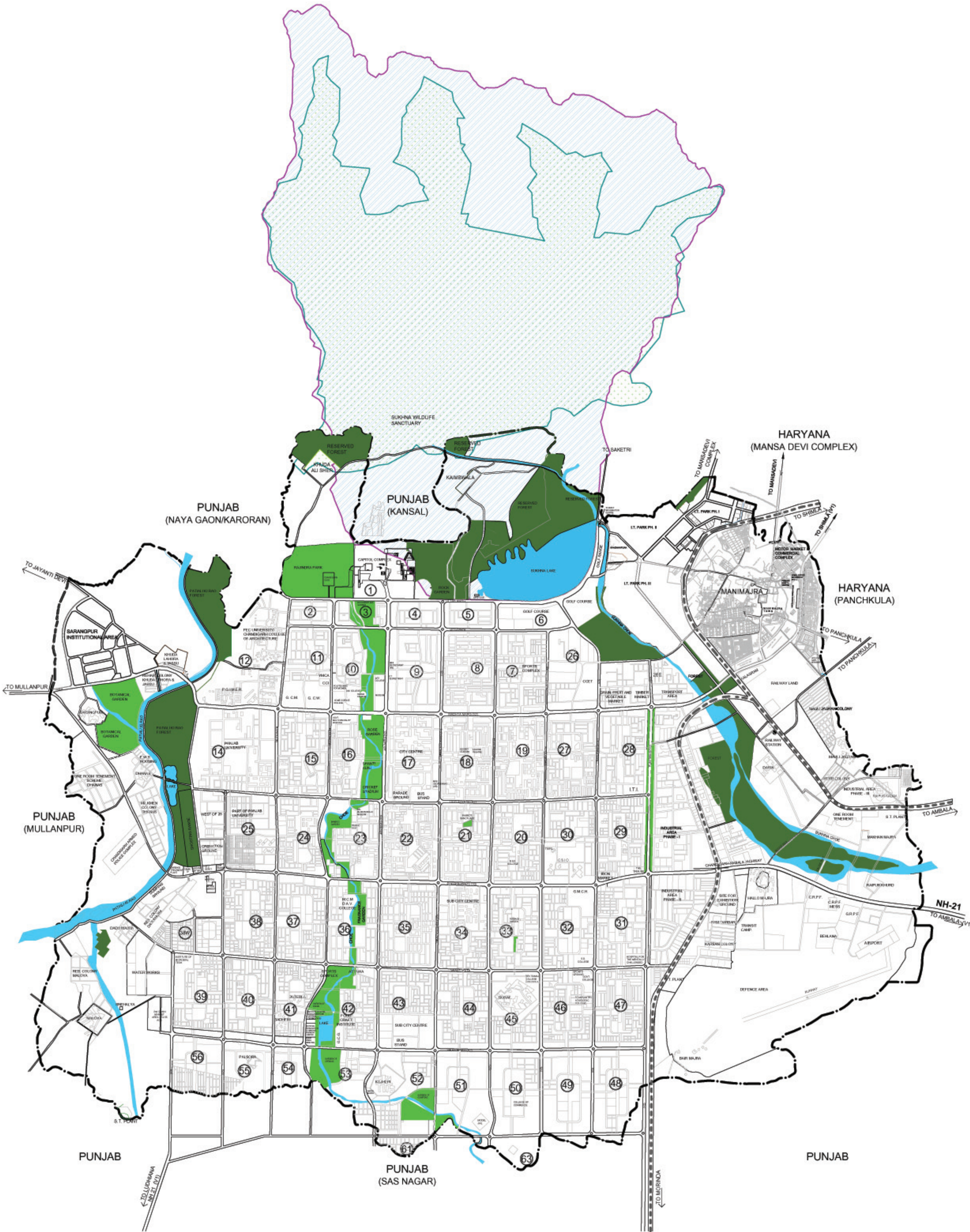
CHIEF ARCHITECT	SENIOR TOWN PLANNER
DIVISIONAL TOWN PLANNER	ASSISTANT TOWN PLANNER
DRAWN BY:	CHECKED BY:
SCALE : 1 C M : 200 M T S .	
DRG. NO.	JOB NO.
	DATED

LOCATION OF VILLAGES

DEPARTMENT OF
URBAN PLANNING
CHANDIGARH ADMN.



 SUKHNA WILDLIFE
SANCTUARY
 SUKHNA CATCHMENT
AREA



CHIEF ARCHITECT SENIOR TOWN PLANNER

DIVISIONAL TOWN PLANNER ASSISTANT TOWN PLANNER

DRAWN BY: CHECKED BY:

SCALE : 1 CM : 200 MT S.

DRG. NO. JOB NO. DATED

**SUKHNA WILDLIFE
SANCTUARY &
CATCHMENT AREA**

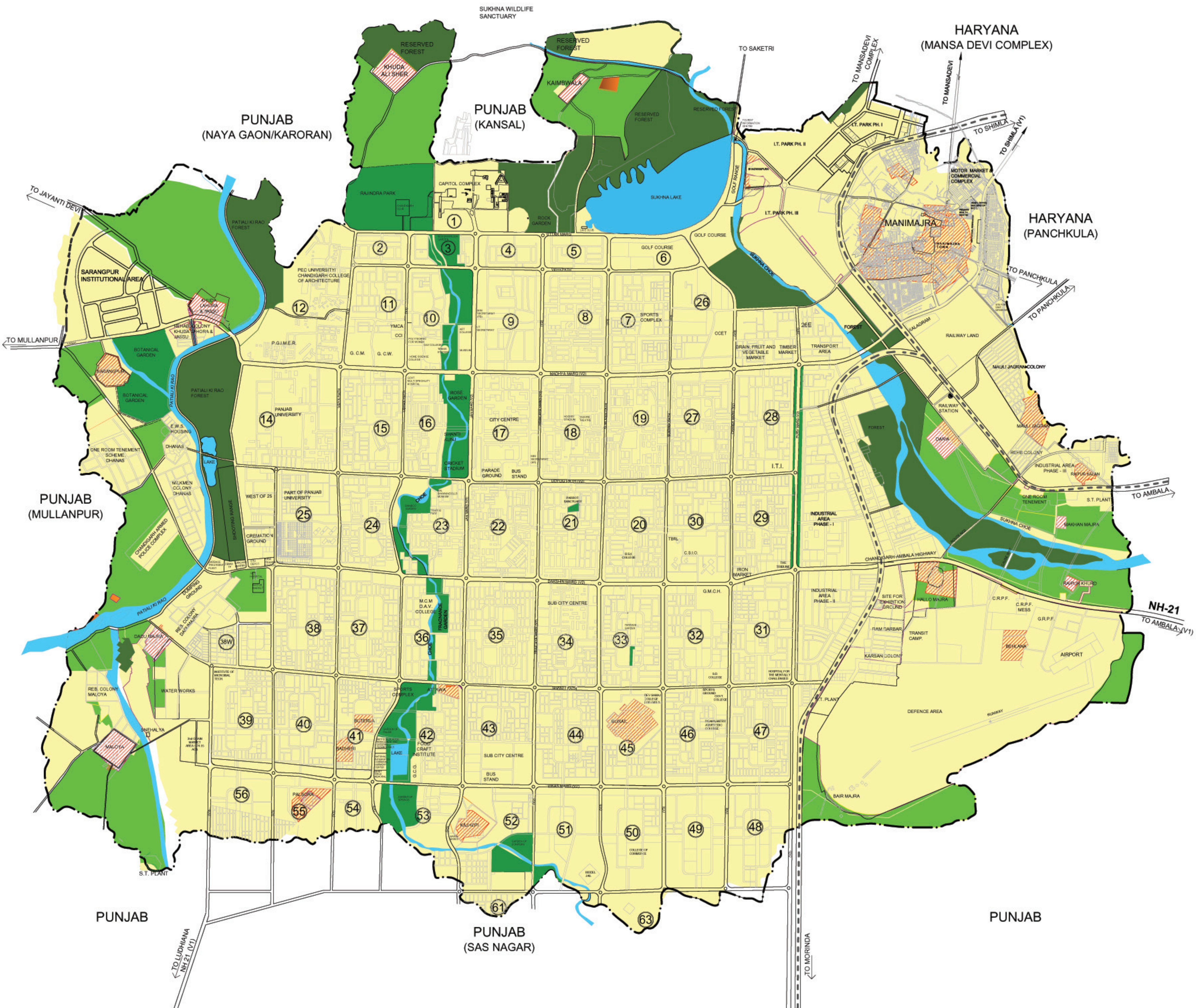
DEPARTMENT OF URBAN PLANNING
CHANDIGARH ADMN.



STATUS OF LAND

DETAIL OF LAND

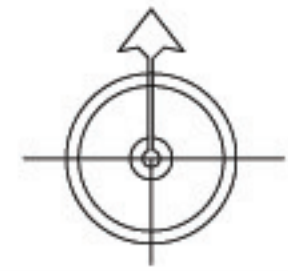
- ACQUIRED LAND
- UN-ACQUIRED AREA
- LAND UNDER ACQUISITION PROCESS
- EXEMPTED LAND



CHIEF ARCHITECT	SENIOR TOWN PLANNER
DIVISIONAL TOWN PLANNER	ASSISTANT TOWN PLANNER
DRAWN BY:	CHECKED BY:
SCALE : 1C M : 200 M T S .	
DRG. NO.	JOB NO. DATED

ACQUISITION PLAN
OF CHANDIGARH

**DEPARTMENT OF
URBAN PLANNING
CHANDIGARH ADMN.**



AREA STATEMENT

I.T. PARK, PHASE-I
TOTAL AREA - 123.43 ACS

LAND USE	AREA (ACS)	%AGE
I.T PLOTS	64.401 ACS	52.17
COMMERCIAL PLOTS	5.127 ACS	4.16
UTILITY PLOTS	7.19 ACS	5.82
RESERVED PLOTS	1.01 ACS	0.83
GREEN / OPEN SPACES	19.07 ACS	15.45
ROADS / PARKING	26.632 ACS	21.57

I.T. PARK, PHASE-II
TOTAL AREA - 228.49 ACS

LAND USE	AREA (ACS)	%AGE
I.T HABITAT (AREA TRANSFERRED TO C.H.B)	123.79 ACS (FROM C.L. OF EXISTING ROADS)	
I.T ZONE (FROM C.L. OF EXISTING ROADS)	104.70 ACS	100
• I.T PLOTS	62.40 ACS	52.46
• UTILITY PLOTS (EXISTING)	13.65 ACS	13.04
• GREEN / OPEN SPACES	7.17 ACS	6.85
• ROADS / PARKING	21.48 ACS	16.88

I.T. PARK, PHASE-III TOTAL AREA - 272.00 ACS

CHIEF ARCHITECT SENIOR TOWN PLANNER

DIVISIONAL TOWN PLANNER ASSISTANT TOWN PLANNER

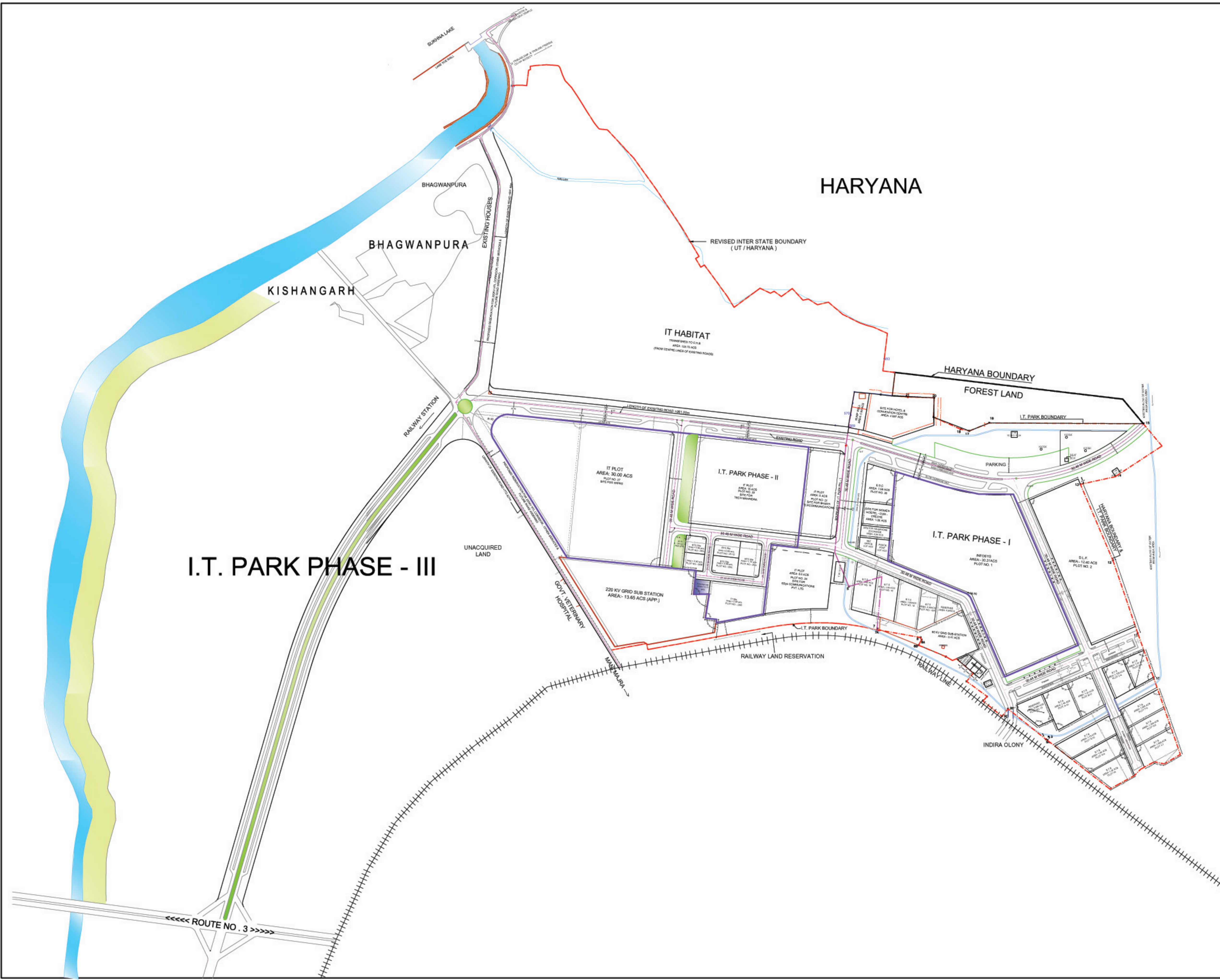
OFFICE OF THE
SENIOR TOWN PLANNER,
U.T., CHANDIGARH

DRAWN BY: CHECKED BY:

SCALE : 1C M : 40 M T S .

DRG. NO. JOB NO. DATED

**RAJIV GANDHI CHANDIGARH
TECHNOLOGY PARK, PH. I , II & III**



HARYANA

I.T. PARK PHASE - III

KISHANGARH

BHAGWANPURA

IT HABITAT
TRANSFERRED TO CHB
AREA - 123.79 ACS
(FROM CENTRAL LINE OF EXISTING ROADS)

HARYANA BOUNDARY
FOREST LAND

I.T. PARK PHASE - I

I.T. PARK PHASE - II

UNACQUIRED LAND

GOVT. VETERINARY HOSPITAL

RAILWAY LAND RESERVATION

INDIRA COLONY

ROUTE NO. 3

RAILWAY STATION

SURONA LAKE

BHAGWANPURA

REVISED INTER STATE BOUNDARY
(UT / HARYANA)

EXISTING HOUSES

UNACQUIRED LAND

GOVT. VETERINARY HOSPITAL

RAILWAY LAND RESERVATION

INDIRA COLONY

ROUTE NO. 3

RAILWAY STATION

SURONA LAKE

BHAGWANPURA

REVISED INTER STATE BOUNDARY
(UT / HARYANA)

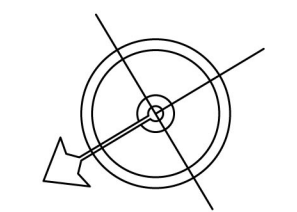
EXISTING HOUSES

UNACQUIRED LAND

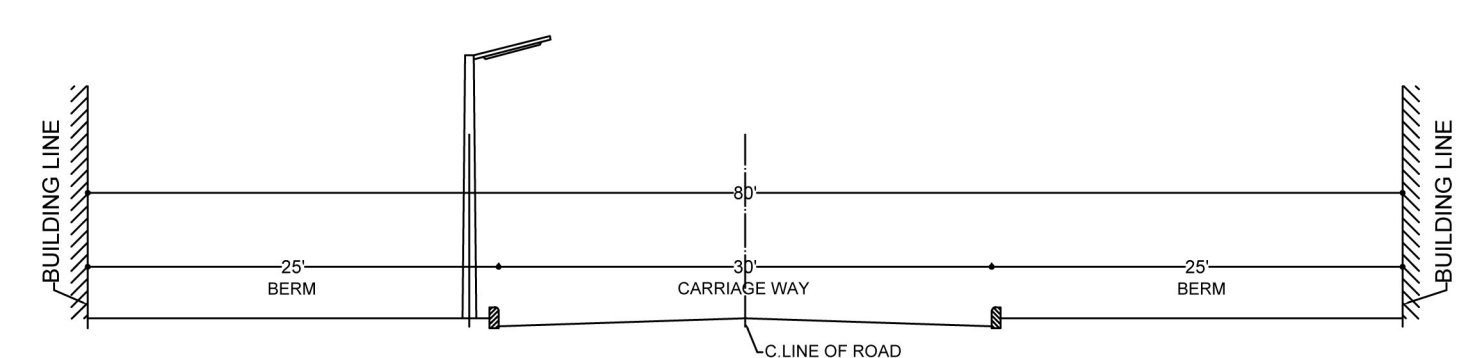
GOVT. VETERINARY HOSPITAL

RAILWAY LAND RESERVATION

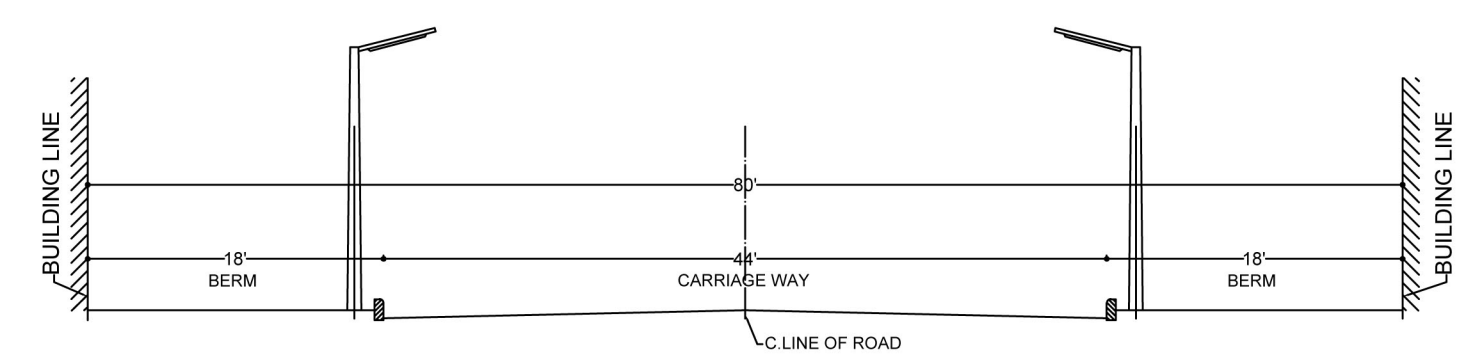
INDIRA COLONY



LEGEND



EXISTING CROSS-SECTION OF 80'-0" WIDE ROAD

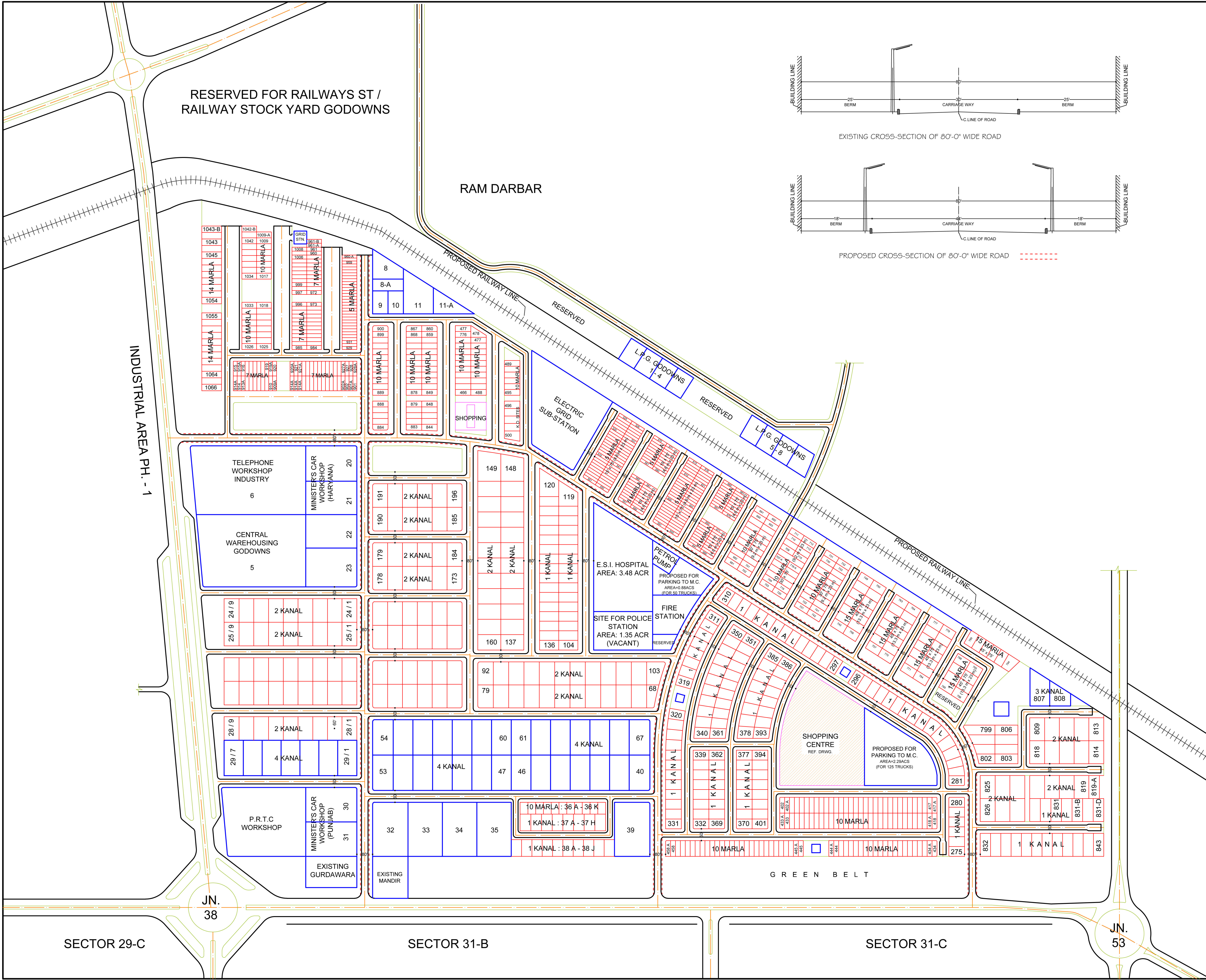


PROPOSED CROSS-SECTION OF 80'-0" WIDE ROAD

RESERVED FOR RAILWAYS ST /
RAILWAY STOCK YARD GODOWNS

RAM DARBAR

INDUSTRIAL AREA PH. - 1



CHIEF ARCHITECT SENIOR TOWN PLANNER

DIVISIONAL TOWN PLANNER ASSISTANT TOWN PLANNER

DRAWN BY: CHECKED BY:

SCALE : 220 FEET TO AN INCH.

DRG. NO. JOB NO. DATED

LAYOUT PLAN OF
INDUSTRIAL AREA
PHASE II CHANDIGARH

SECTOR 29-C

SECTOR 31-B

SECTOR 31-C

JN.
38

JN.
53



LEGEND



DIVISIONAL TOWN PLANNER ASSISTANT TOWN PLANNER

DRAWN BY: CHECKED BY:

SCALE : 320 FEET TO AN INCH.

DRG. NO. JOB NO. DATED

LAYOUT PLAN OF
INDUSTRIAL AREA
PART A & B
CHANDIGARH

H I M A C H A L

P R A D E S H

TOWN & COUNTRY PLANNING ORGANISATION, MIN. OF W.&H., GOVERNMENT OF INDIA



LEGEND

ROADS	
	1 ST ORDER R1
	2 ND ORDER R2
	3 RD ORDER R3
	4 TH ORDER R4

RAILWAYS	
	EXISTING RAILWAY LINE
	PROPOSED RAILWAY LINE
	AIR PORT
	SPECIAL AREAS
	WATER BODIES
	URBAN CORRIDORS
	CHANDIGARH URBAN COMPLEX
	REGIONAL / SUB REGIONAL TOWNS
	GROWTH CENTRES / SUB GROWTH CENTRES

AGRICULTURAL DEVELOPMENT	
	AREA OF HIGHER LEVEL OF AGRICULTURAL DEVELOPMENT
	AREA OF AVERAGE LEVEL OF AGRICULTURAL DEVELOPMENT
	AREA OF LOWER LEVEL OF AGRICULTURAL DEVELOPMENT

BOUNDARIES	
	CHANDIGARH URBAN COMPLEX
	I.S.C.R
	STATES
	UNION TERRITORY
	DISTRICT
	BLOCK

POPULATION	
	50,000
	40,000
	25,000
	15,000
	10,000
	2,000
	0

NOTE:-
 1. 5 TH & 6 TH ORDER ROADS AND FOCAL VILLAGES TO BE DETERMINE AFTER DETAILED SURVEY AT SUB-REGIONAL LEVEL BY RESPECTIVE STATE.
 2) THE STATES BOUNDARIES INDICATED THE PLAN ARE DIAGRAMMATIC.

CHIEF PLANNER & CONVENER OF W.G.A.

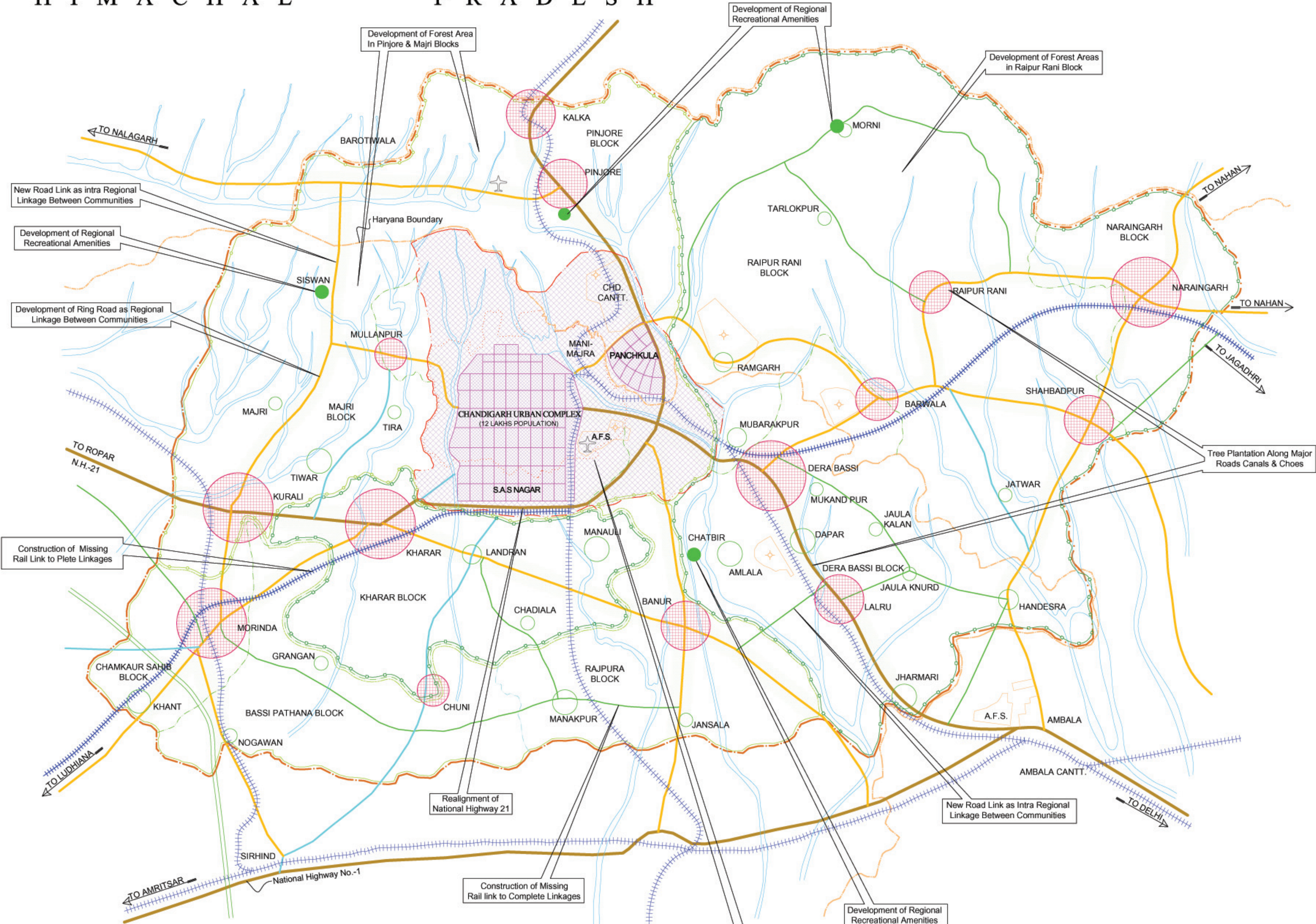
TOWN & COUNTRY PLANNER HEAD REGIONAL PLAN UNIT

SCALE :-

DRAWN BY _____ CHECKED BY _____

JOB NO. _____ DRG. NO. _____ DATED _____

STRUCTURE PLAN 2001

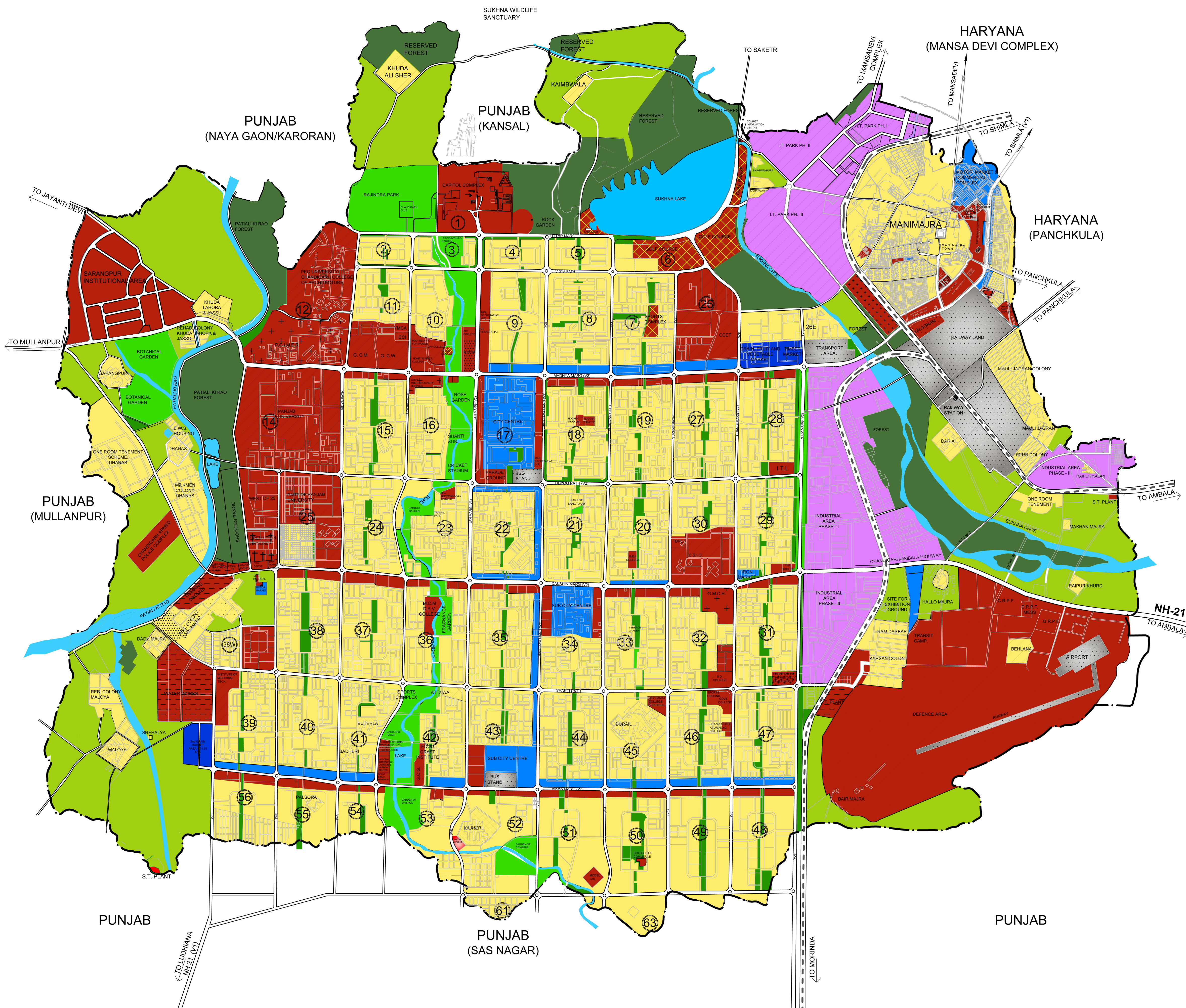


PUNJAB STATE

HARYANA STATE

INTER STATE CHANDIGARH REGION

DEPARTMENT OF URBAN PLANNING
CHANDIGARH ADMN.



DETAIL OF LAND USE :

RESIDENTIAL	
URBAN VILLAGES	
VILLAGES IN PERIPHERY	
COMMERCIAL	
WHOLESALE	
INDUSTRIAL	
I.T. PARK	
PUBLIC/ SEMI PUBLIC	
INSTITUTIONAL	
EDUCATIONAL	
HEALTH FACILITIES	
SPORTS FACILITIES	
CREMATION GROUND	
CULTURAL FACILITIES	
PUBLIC UTILITIES	
GREEN / OPEN SPACES :	
ORGANISED OPEN SPACE	
FOREST	
AGRICULTURE	
TRAFFIC AND TRANSPORTATION :	
TRANSPORTATION NODES	
ROADS	
RAILWAY LINE	
WATER BODIES	

CHIEF ARCHITECT	SENIOR TOWN PLANNER	
DIVISIONAL TOWN PLANNER	ASSISTANT TOWN PLANNER	
DRAWN BY:	CHECKED BY:	
SCALE : 1 C M : 200 M T S .		
DRG. NO.	JOB NO.	DATED

**EXISTING LAND USE
PLAN OF CHANDIGARH**

DEPARTMENT OF URBAN PLANNING CHANDIGARH ADMN.



LEGEND

- RESIDENTIAL
- COMMERCIAL
- PUBLIC BUILDING/AMENITIES
- RECREATIONAL
- OPEN SPACES
- RESERVED
- ROAD
- RAILWAY
- WATER BODIES
- NOTIFIED AREA BOUNDARY
- INDUSTRIAL

NOTE:
THIS DRAWING SUPERCEDES THE PREVIOUS DRAWING NO. 46 OF JOB NO. 72 DATED 2-1-1990

-Sd-	-Sd-
CHIEF ARCHITECT	SENIOR TOWN PLANNER
-Sd-	-Sd-
DIVISNL TOWN PLANNER	ASSTT. TOWN PLANNER

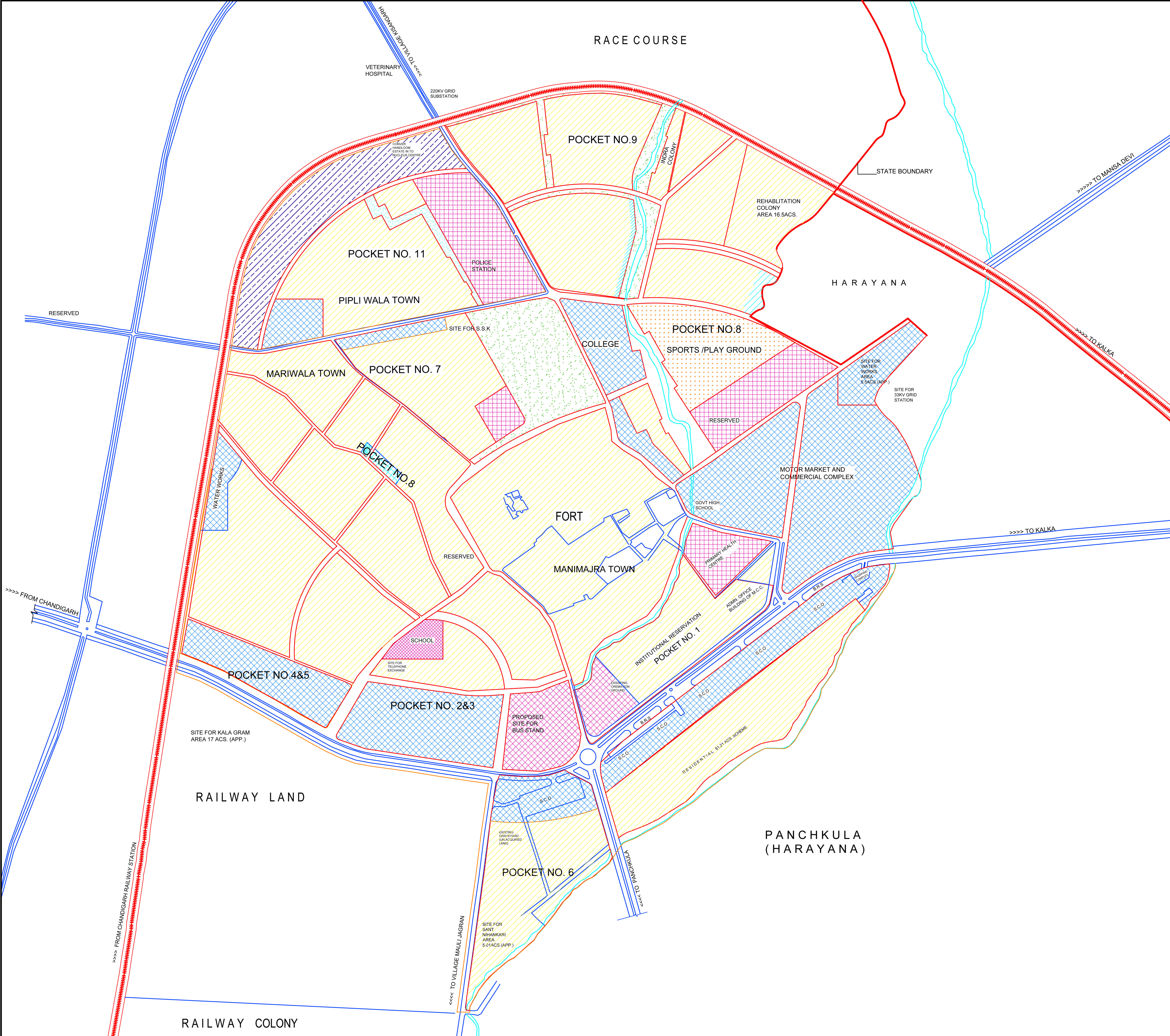
OFFICE OF THE SENIOR TOWN PLANNER, U.T., CHANDIGARH

-Sd- DRAWN BY :	-Sd- CHECKED BY :
--------------------	----------------------

SCALE : 330 FEET TO AN INCH.

DRG. NO.: 81	JOB NO.: 77	DATED:17-01-70
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LAND USE PLAN
MANIMAJRA



DEPARTMENT OF URBAN PLANNING CHANDIGARH ADMN.



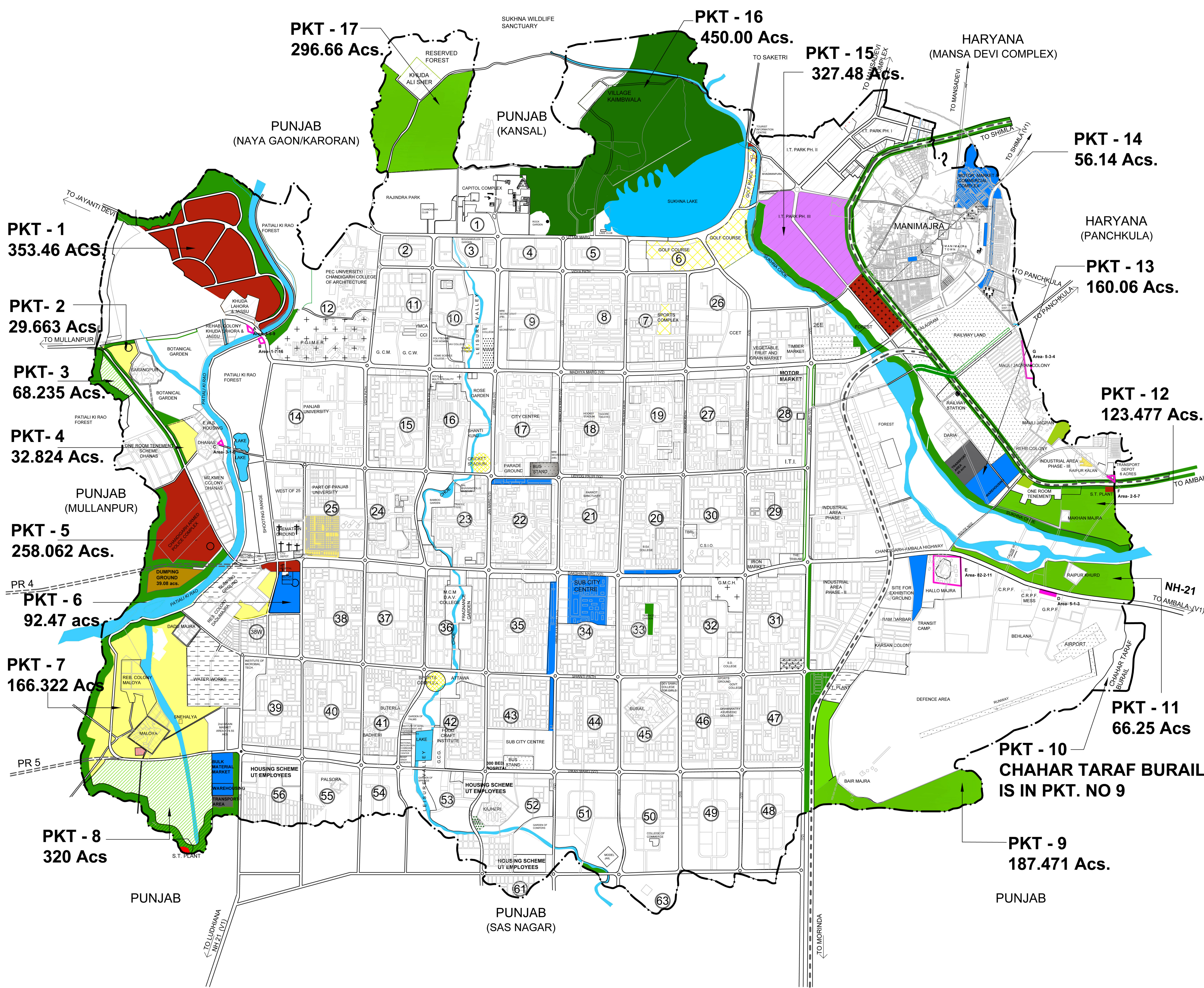
DETAIL OF LAND USE :

RESIDENTIAL	
URBAN VILLAGES	
VILLAGES IN PERIPHERY	
COMMERCIAL	
WHOLESALE	
INDUSTRIAL	
I.T. PARK	
PUBLIC/ SEMI PUBLIC	
INSTITUTIONAL	
HEALTH FACILITIES	
GREEN / OPEN SPACES :	
ORGANISED OPEN SPACE	
FOREST	
AGRICULTURE	
TRAFFIC AND TRANSPORTATION :	
TRANSPORTATION NODES	
ROADS	
RAILWAY LINE	
WATER BODIES	

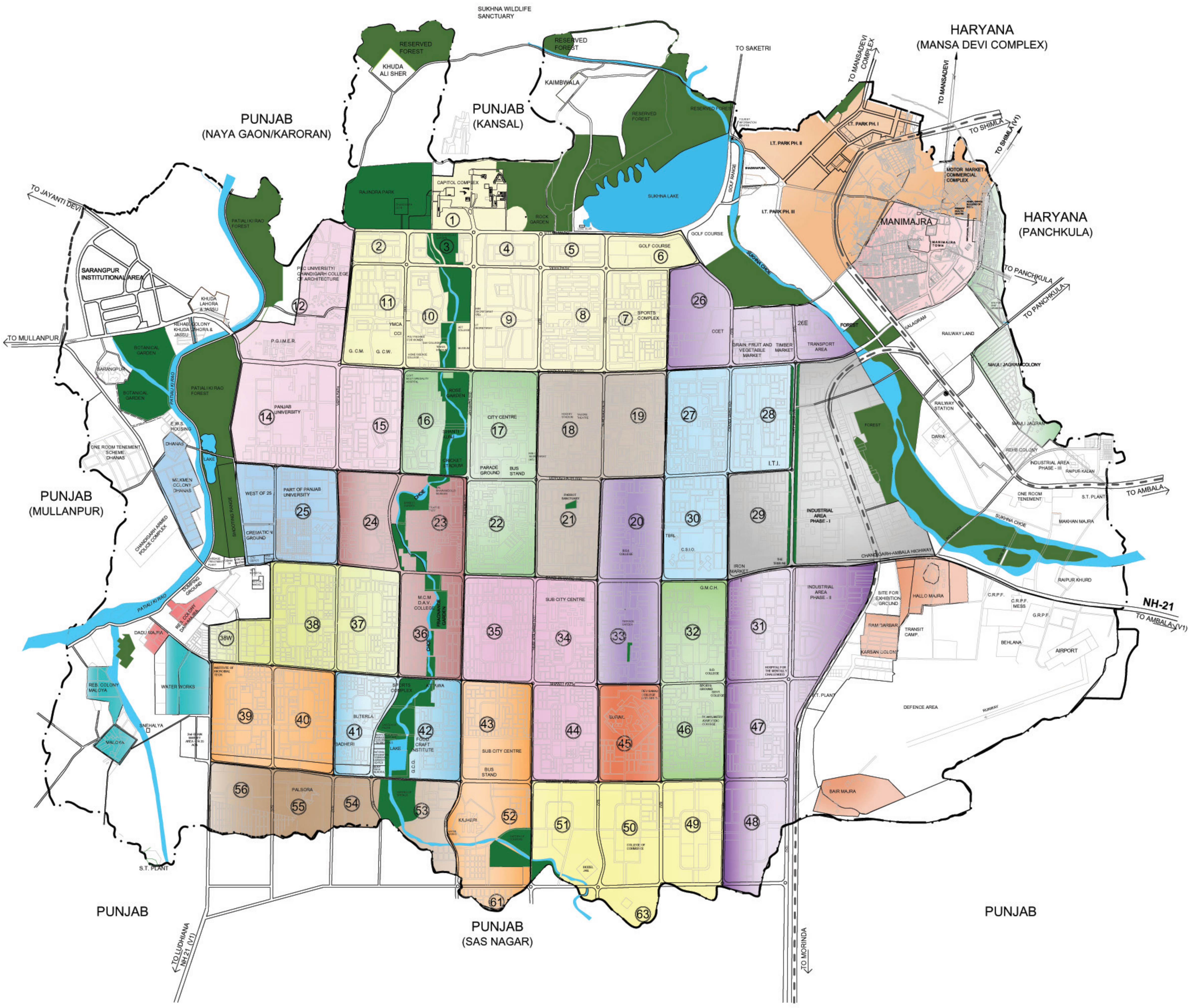
LAND USE OF PERIPHERAL POCKETS

CHIEF ARCHITECT	SENIOR TOWN PLANNER	
DIVISIONAL TOWN PLANNER	ASSISTANT TOWN PLANNER	
DRAWN BY:	CHECKED BY:	
SCALE : 1 CM = 200 M T S.		
DRG. NO.	JOB NO.	DATED

PERSPECTIVE PLAN OF CHANDIGARH 2031



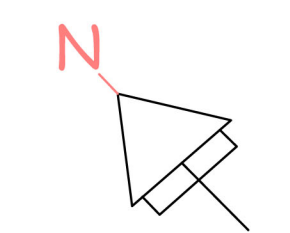
DEPARTMENT OF URBAN PLANNING
CHANDIGARH ADMN.



CHIEF ARCHITECT	SENIOR TOWN PLANNER
DIVISIONAL TOWN PLANNER	ASSISTANT TOWN PLANNER
DRAWN BY:	CHECKED BY:
SCALE : 1C M : 200 M T S .	
DRG. NO.	JOB NO.
DATED	

STATUS OF DIFFERENT
WARDS OF MUNICIPAL
CORPORATION

CHANDIGARH PROJECT



PERIPHERY DEVELOPMENT PLAN

1. THE UNDERMENTIONED RESTRICTIONS ARE ISSUED OR CHANGE IN THE USE OF THE LAND OTHER THAN THAT PERMISSIBLE IN THE LAND USE TABLE BELOW IN COLUMN 3 SHALL BE PERMITTED WITHIN CONTROLLED AREA BY THICK CHAIN DOTTED SHOWN ON THE PLAN, EXCEPT THOSE AREAS WHICH HAVE BEEN EXEMPTED FROM THE PROVISIONS OF THE PERIPHERY CONTROL ACT 1952 & IT SUBSEQUENT NOTIFICATION"
2. NO DEVELOPMENT, ERECTION, RE-ERECTION OR CHANGE IN THE USE OF THE LAND OTHER THAN THAT PERMISSIBLE IN THE LAND USE TABLE BELOW IN COLUMN 3 SHALL BE PERMITTED WITHIN CONTROLLED AREA BY THICK CHAIN DOTTED SHOWN ON THE PLAN, EXCEPT THOSE AREAS WHICH HAVE BEEN EXEMPTED FROM THE PROVISIONS OF THE PERIPHERY CONTROL ACT 1952 & IT SUBSEQUENT NOTIFICATION"

1	2	3
NOTATION	LAND USE	USES FOR WHICH PERMISSION MAY BE GRANTED.
	CHANDIGARH TOWN & ITS EXTENTIONS.	DEVELOPMENT AS PER OF CAPITAL PROJECT AUTHORITY.
	AGRICULTURAL AND AFFORESTATION ZONE.	AGRICULTURE FRUIT AND VEGETABLES FARMING AND AFFORESTATIONS OR ANY OTHER CONSTRUCTION SUBSERVIENT TO IT AND APPROVED BY THE DEPUTY COMMISSIONER.
	OR	ROADS, RAILWAY FOR COMMUNICATION FACILITIES AND DEVELOPMENT SUBSERVIENT TO THE
	OR	
	BRICK FIELD ZONE.	FOR BRICK FIELDS, LIME KILN AND OTHER EXTRACTION OPERATION.
	SPECIAL PROJECT.	AS PER ORDERS AND RESTRICTIONS IMPOSED BY THE GOVERNMENT.

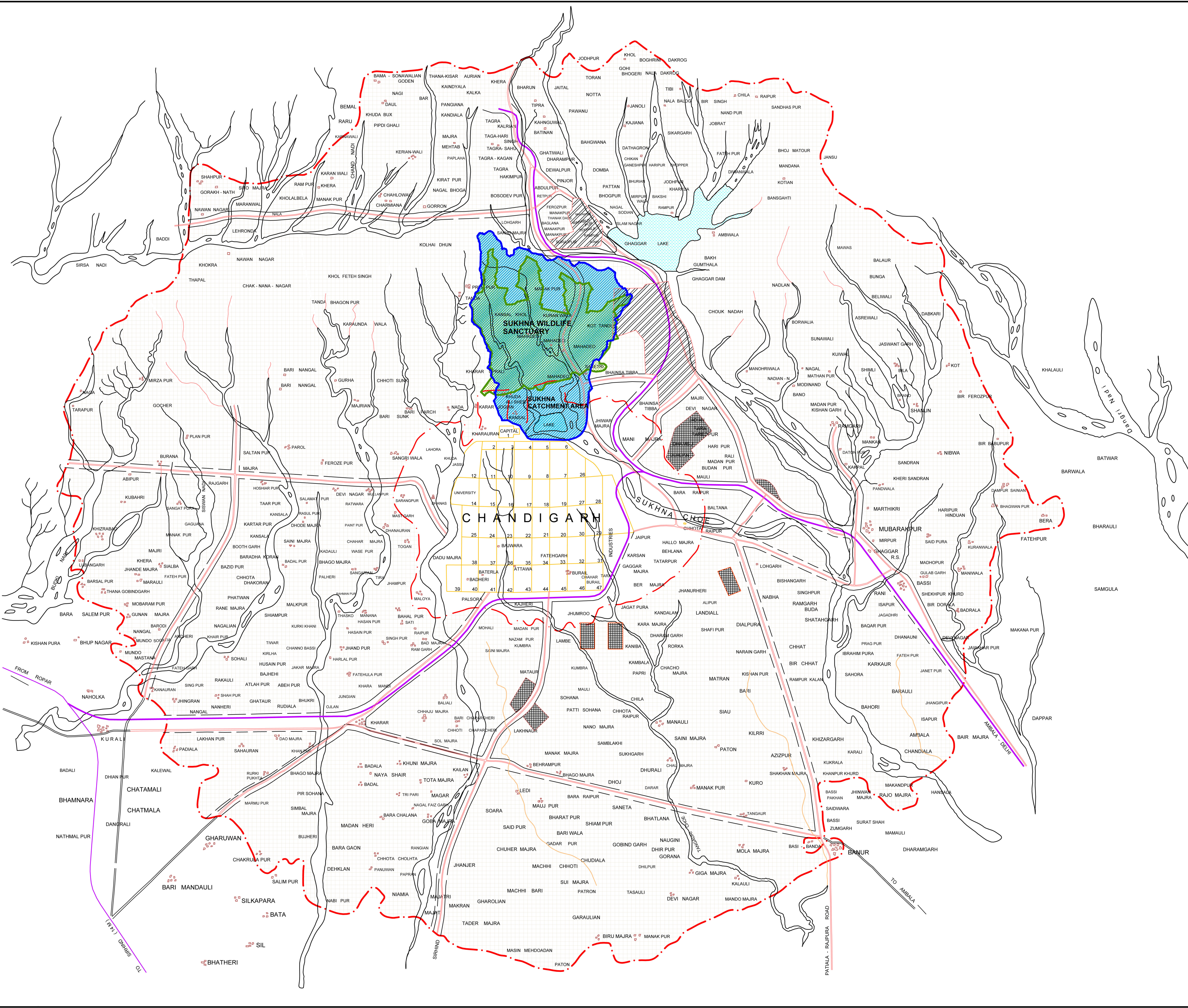
3. (A) NO BUILDING SHALL BE CONSTRUCTED OR USED FOR COMMERCIAL OR INDUSTRIAL PURPOSES WITHIN THE CONTROLLED AREA, PROVIDED THAT NOTHING HERE SHALL APPLY TO COMMERCIAL OR INDUSTRIAL CONCERNS WHICH CATER PRIMARILY TO THE NEEDS OF THE RESIDENTS OF THE VILLAGE AND ARE SITUATED IN THE ABADI AREA, OTHER THAN THOSE IN THE RESTRICTED ZONE AND WHICH ARE NOT GOVERNED BY THE INDIAN FACTORY ACT.
- (B) NO STRUCTURE WHATSOEVER SHALL BE ERCTED OUTSIDE THE ABADI AREA FOR ANY HUMAN HABITATION OTHER THAN PERMITTED UNDER COLUMN 3 OF CLAUSE 2 ABOVE.
- (C) NO EXCAVATION FOR THE INSTALLATION OF TUBEWELL OR OPEN WELLS WITH A STAINER THEREIN EVEN THOUGH SUBSERVIENT TO AGRICULTURE SHALL BE MADE EXCEPT WITH THE EXPRESS WRITTEN PERMISSION OF THE DEPUTY COMMISSIONER, OR AN OFFICER APPOINTED ON HIS BEHALF.
4. EXCEPT OPERATIONS PERMITTED UNDER SECTION 15 OF THE PERIPHERY CONTROL ACT 1952, NO BUILDING SHALL BE ERCTED OR EXCAVATION MADE OR EXTENDED WITHIN 300 FEET ON EITHER SIDE OF THE ROAD BOUNDARY THIS SHALL HOWEVER EXEMPT OPERATION IN CONNECTION WITH DEVELOPMENT OF ROAD, RAILWAY OR CAPITAL PROJECT AUTHORITIES.
5. NO EXISTING BUILDING SHALL BE CONVERTED TO BE USED FOR RESTAURANT OR HOTEL OR FOR ANY OTHER COMMERCIAL USE WITHIN THE CONTROLLED AREA.

SUKHNIA WILDLIFE SANCTUARY
 SUKHNIA CATCHMENT AREA

DRAWN: _____ CHECKED: _____ ATP

SCALE :- ONE INCH TO A MILE.
 AINA MITTAL DRAWN: _____ CHECKED: _____ DATED: _____
 DRAWING NO. :- 20 JOB NO. :- 2

PERIPHERY PLAN OF CHANDIGARH SHOWING SUKHNIA CATCHMENT AREA AND WILDLIFE SANCTUARY








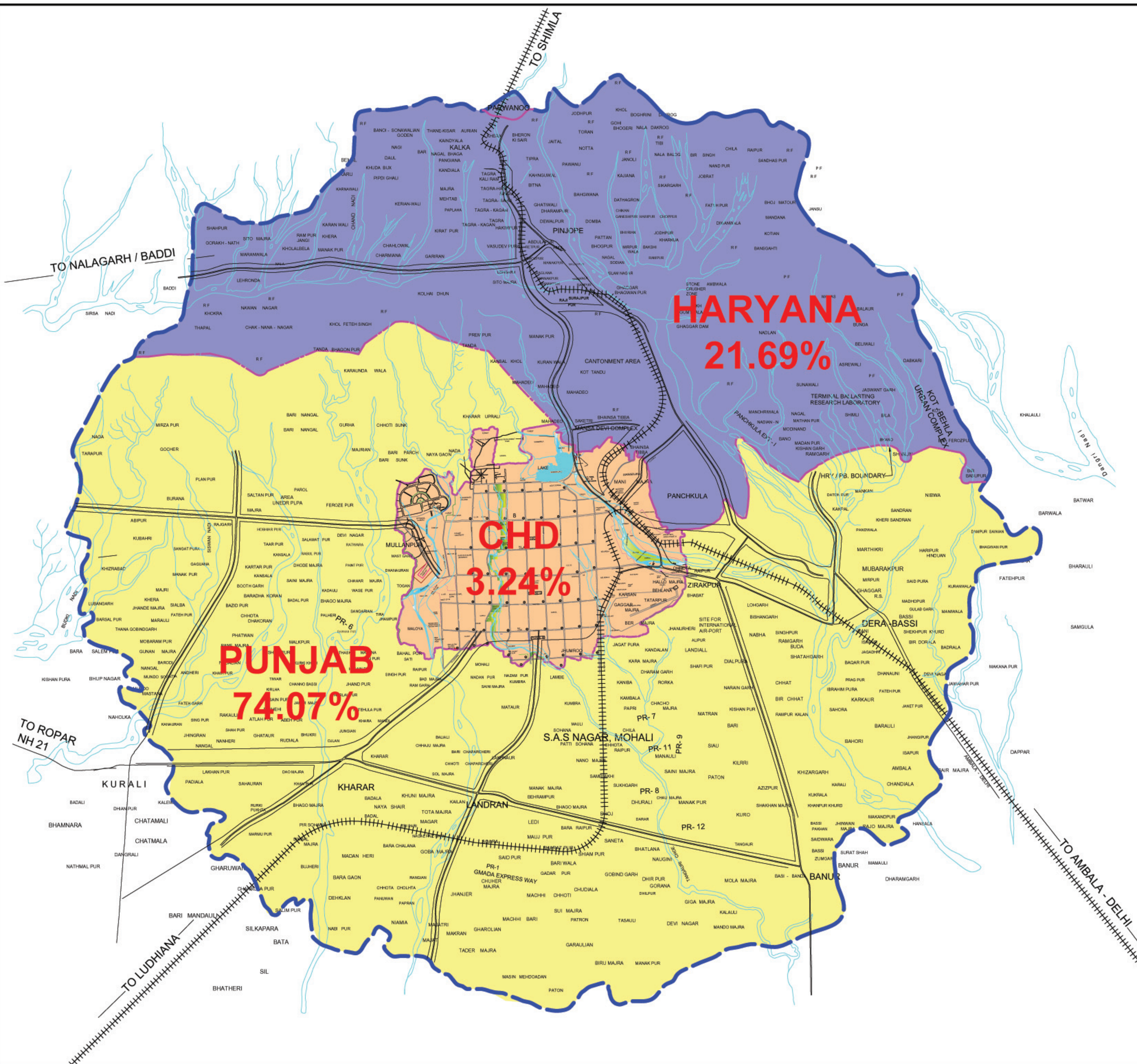
DEPARTMENT OF
URBAN PLANNING
CHANDIGARH ADMN.



GENERAL NOTES :

Legend :

- PERIPHERY BOUNDARY 
- U.T. / STATE BOUNDARY 
- WATER BODY 
- RAILWAY LINE 
- NATIONAL HIGHWAY 



CHIEF ARCHITECT SENIOR TOWN PLANNER

DIVISIONAL TOWN PLANNER ASSISTANT TOWN PLANNER

OFFICE OF THE
SENIOR TOWN PLANNER,
U.T., CHANDIGARH

DRAWN BY: CHECKED BY:

DRG. NO. JOB NO. DATED

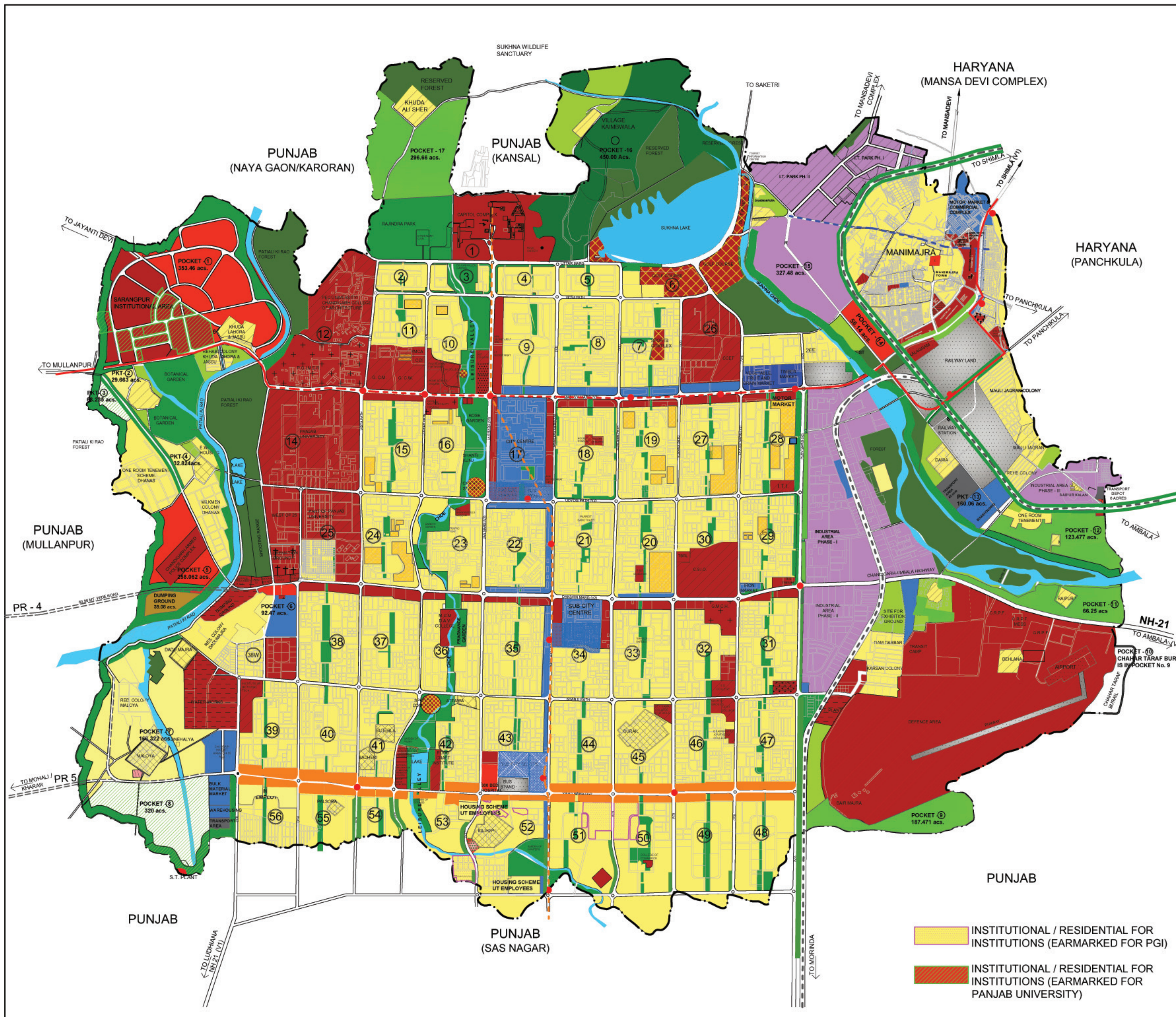
**SUB-DIVISION OF PERIPHERY
CONTROLLED AREA
(16 KM PERIPHERY BOUNDARY)**

DEPARTMENT OF URBAN PLANNING
CHANDIGARH ADMN.



DETAIL OF LAND USE :

RESIDENTIAL	
URBAN VILLAGES	
VILLAGES IN PERIPHERY	
COMMERCIAL	
WHOLESALE	
INDUSTRIAL	
I.T. PARK	
PUBLIC/ SEMI PUBLIC	
INSTITUTIONAL	
EDUCATIONAL	
HEALTH FACILITIES	
SPORTS FACILITIES	
CREMATION GROUND	
CULTURAL FACILITIES	
PUBLIC UTILITIES	
MIXED LAND USE	
GREEN / OPEN SPACES :	
ORGANISED OPEN SPACE	
FOREST	
AGRICULTURE	
TRAFFIC AND TRANSPORTATION :	
TRANSPORTATION NODES	
ROADS	
RAILWAY LINE	
WATER BODIES	

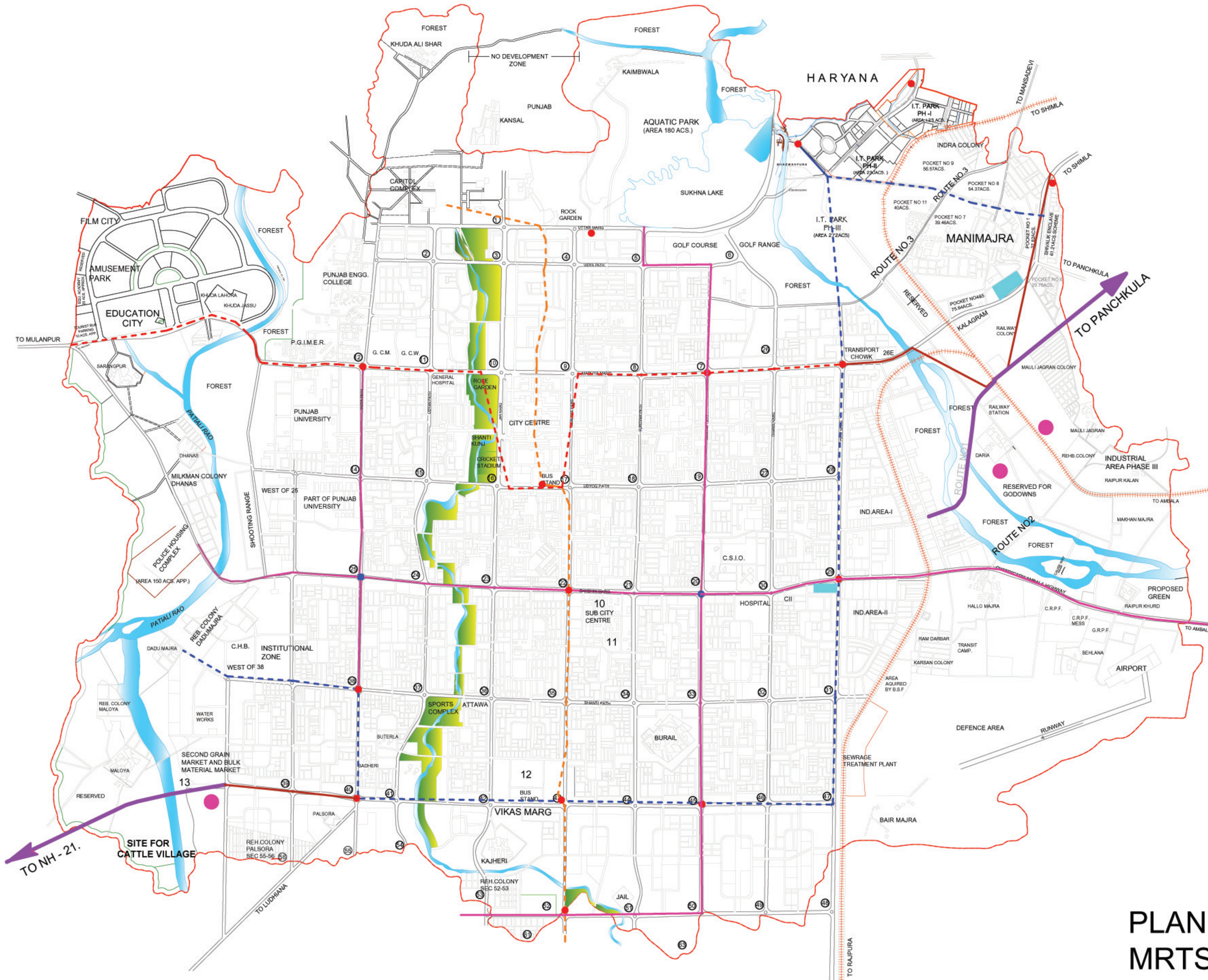


INSTITUTIONAL / RESIDENTIAL FOR INSTITUTIONS (EARMARKED FOR PGU)

INSTITUTIONAL / RESIDENTIAL FOR INSTITUTIONS (EARMARKED FOR PANJAB UNIVERSITY)

CHIEF ARCHITECT	SENIOR TOWN PLANNER
DIVISIONAL TOWN PLANNER	ASSISTANT TOWN PLANNER
DRAWN BY:	CHECKED BY:
SCALE : 1C M : 200 M T S .	
DRG. NO.	JOB NO.
DATED	

PERSPECTIVE PLAN OF CHANDIGARH 2031



- - - - - Under ground route.
- - - - - Surface level route.



CORRIDORS AS SUGGESTED BY RITES LIMITED IN U.T. AREA :

CORRIDOR - 1 (Madhya Marg) - - - - -
 SARANGPUR - PGI - GOVT. COLLEGE - GENERAL HOSPITAL SEC 16 - SECTOR -17- 8 - 7- 26 - TRANSPORT CHOWK - RAILWAY STATION - MANIMAJRA - MANSA DEVI COMPLEX - I.T. PARK.

CORRIDOR - 2 - - - - -
 (CAPITOL COMPLEX TO MOHALI)
 HR.-PB. SECTT.-ROCK GARDEN - MLA HOSTEL -UT. SECTT. - HOTEL TAJ - PARADE GROUND - ISBT SEC 17 - SUB-CITY CENTRE SEC. 34 - ISBT SEC 43 -SECTOR 52 - MOHALI

CORRIDOR - 3 - - - - -
 (I. T. PARK TO DADUMAJRA)
 I.T.PARK - KISHANGARH - TRANSPORT CHOWK - PURV MARG - VIKAS MARG - VIDYA PATH - SHANTI PATH - DADUMAJRA.

PROPOSED MAJOR INTERCHANGE POINT : ● ●

PROPOSED BUS TERMINALS : ▭

PROPOSED INTEGRATED FRIEGHT COMPLEX : ●

PLAN SHOWING MRTS, BRT CORRIDORS & ADDITIONAL LINKS.



CHIEF ARCHITECT SENIOR TOWN PLANNER

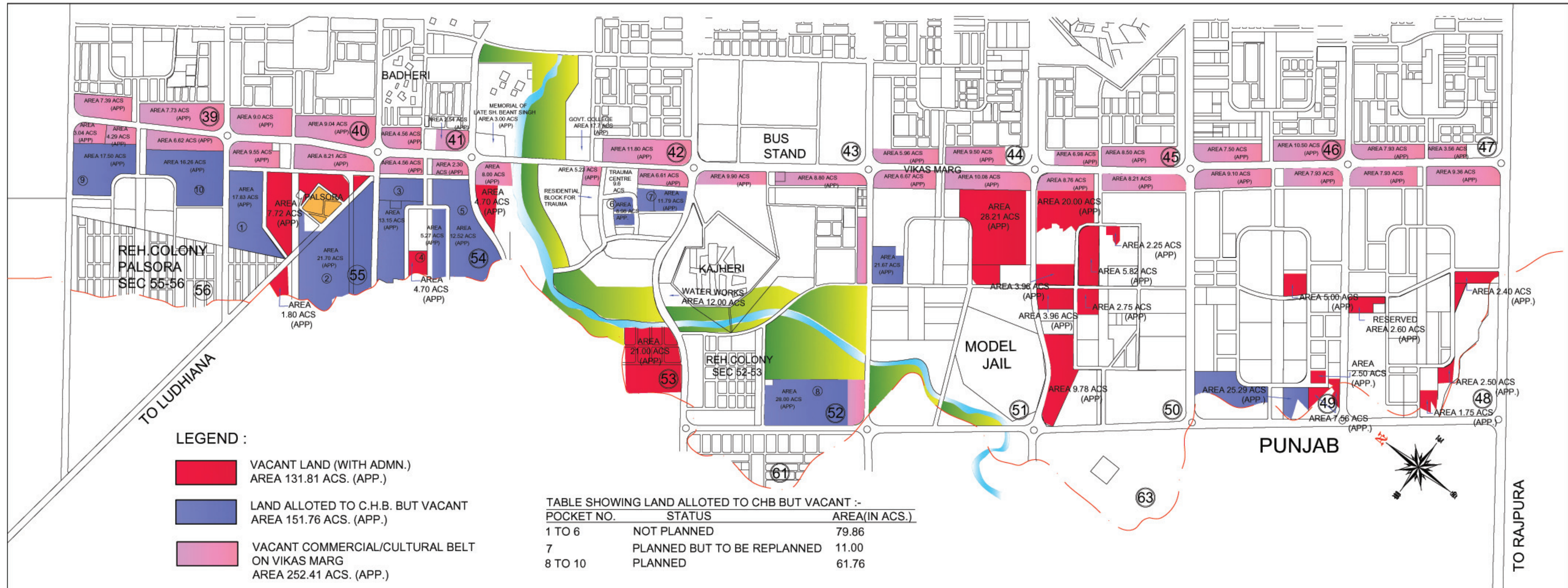
DIVISIONAL TOWN PLANNER ASSISTANT TOWN PLANNER

DRAWN BY: CHECKED BY:

SCALE : 1 CM : 200 M T.S.

DRG. NO. JOB NO. DATED

PLAN SHOWING VACANT
POCKETS IN PHASE III
VIKAS MARG

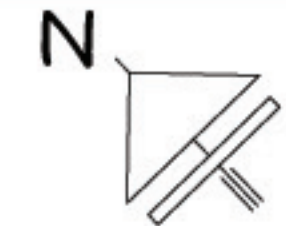


LEGEND :

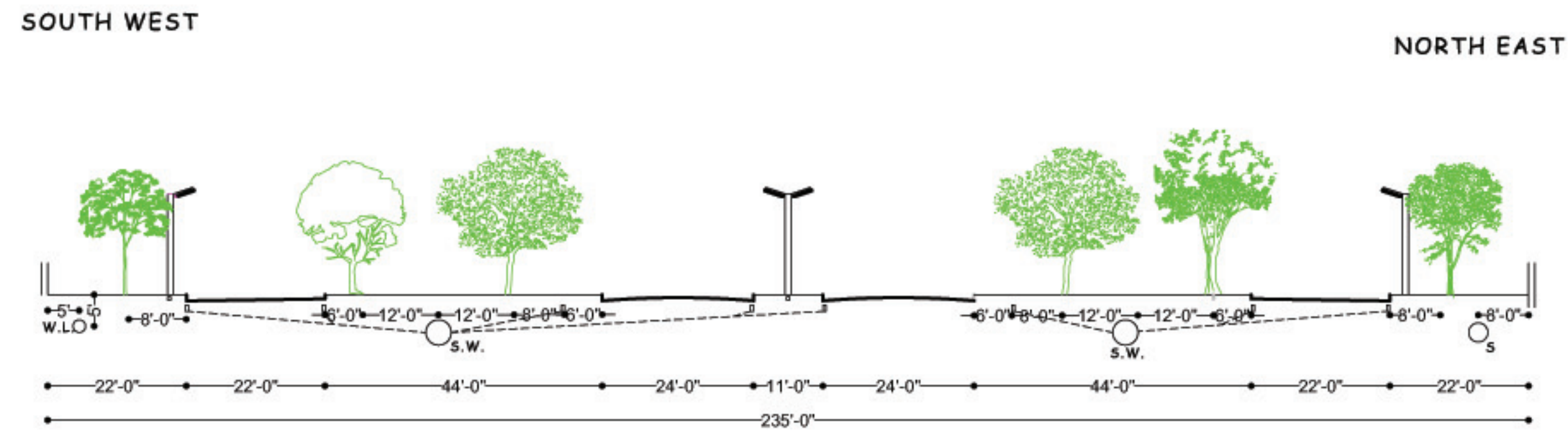
- VACANT LAND (WITH ADMN.)
AREA 131.81 ACS. (APP.)
- LAND ALLOTTED TO C.H.B. BUT VACANT
AREA 151.76 ACS. (APP.)
- VACANT COMMERCIAL/CULTURAL BELT
ON VIKAS MARG
AREA 252.41 ACS. (APP.)

TABLE SHOWING LAND ALLOTTED TO CHB BUT VACANT :-

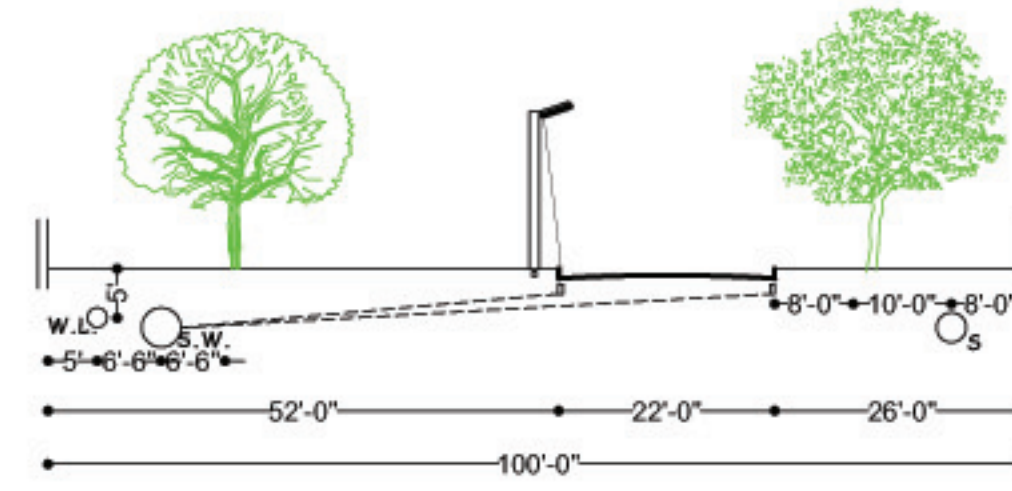
POCKET NO.	STATUS	AREA(IN ACS.)
1 TO 6	NOT PLANNED	79.86
7	PLANNED BUT TO BE REPLANNED	11.00
8 TO 10	PLANNED	61.76



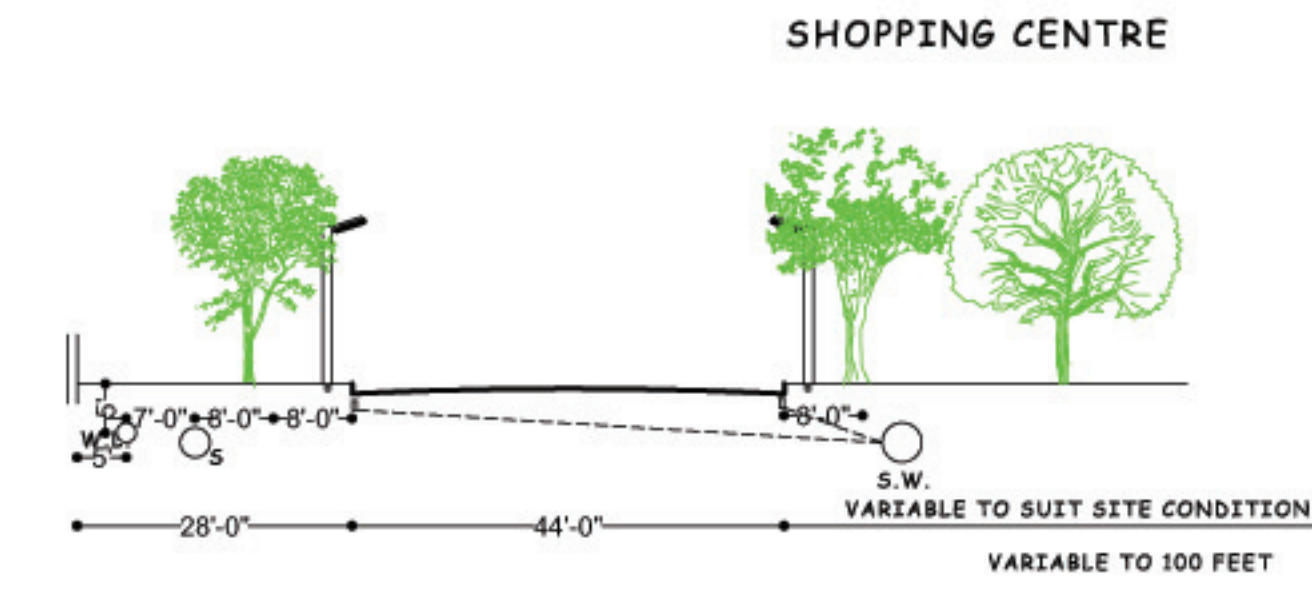
- LEGEND**
- W.L. WATER LINE
 - S.W. STORM WATER DRAINAGE LINE
 - S. SEWER LINE
 - GULI TRAP
 - UNDER GROUND CABLE LINE



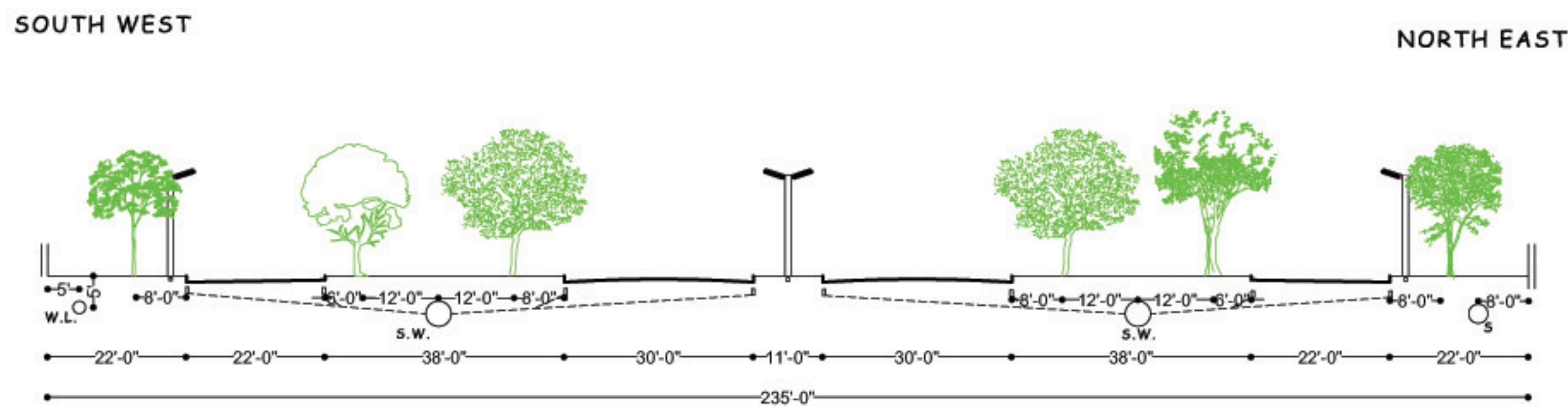
V-2 SOUTH FIRST STAGE (SUPERCEDED DRG. NO. 50 OF JOB NO. 3)



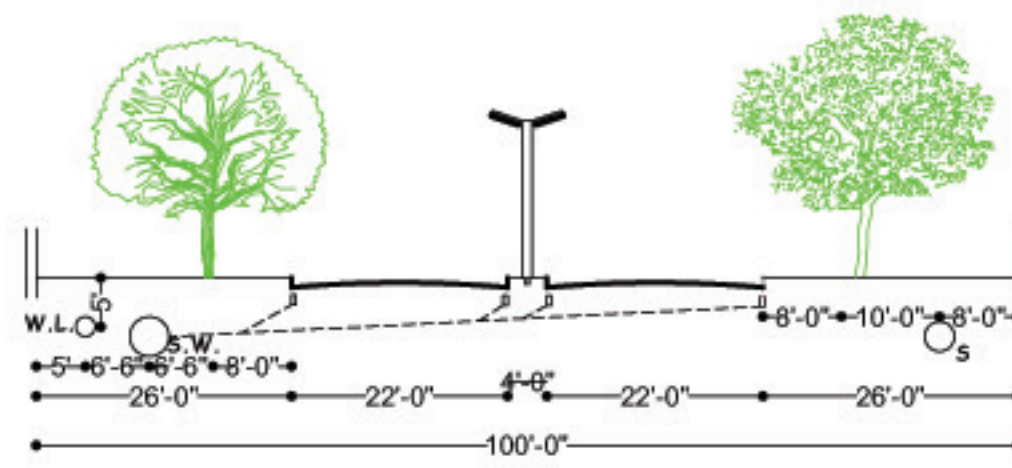
V-3 FIRST STAGE (YET TO BE CONSTRUCTED)



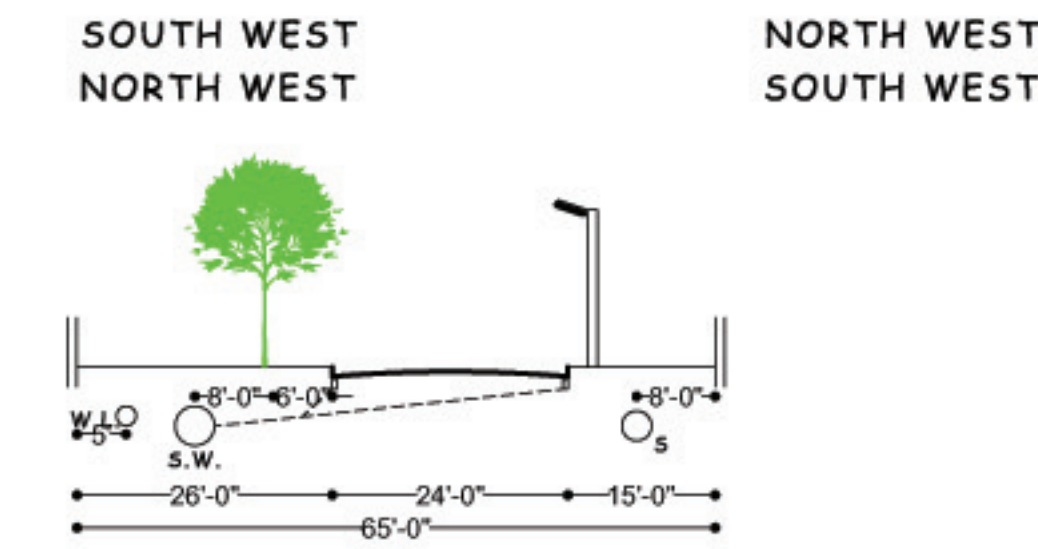
V-4 ULTIMATE



V-2 ULTIMATE (SUPERCEDED DRG. NO. 50 OF JOB NO. 3)



V-3 ULTIMATE (YET TO BE CONSTRUCTED)



V-5 ULTIMATE

NOTE:- THE ROADS WHICH RUN IN VERTICAL DIRECTION SHOULD BE PLANTED ON THE WESTERN SIDE AND ROADS WHICH ARE HORIZONTAL SHOULD BE PLANTED ON THE SOUTH-WESTERN-SIDE, SERVICES SHOULD BE LAID ON THE OPPOSITE SIDE.

NOTE:- THE ULTIMATE SECTION OF V3 ROAD SHALL BE 44'-0" WITHOUT CENTRAL VERGE AS DECIDED BY THE CHIEF ENGINEER VIDE HIS NO. C-31(17)(6) W-3169 /6958 DTD.31-8-1982.

NOTE:- THIS DRAWING IS COMPUTERISED REPRODUCTION OF ORIGINAL DRG. NO. 23 JOB NO. 3 DATED 28.11.68 AND PREPARED ON DT. 26.03.2010

PREPARED BY _____ CHECKED BY _____ A.T.P.

SD/-

CHIEF ARCHITECT

SD/- SD/-

CHIEF ARCHITECT SENIOR TOWN PLANNER

SD/- SD/-

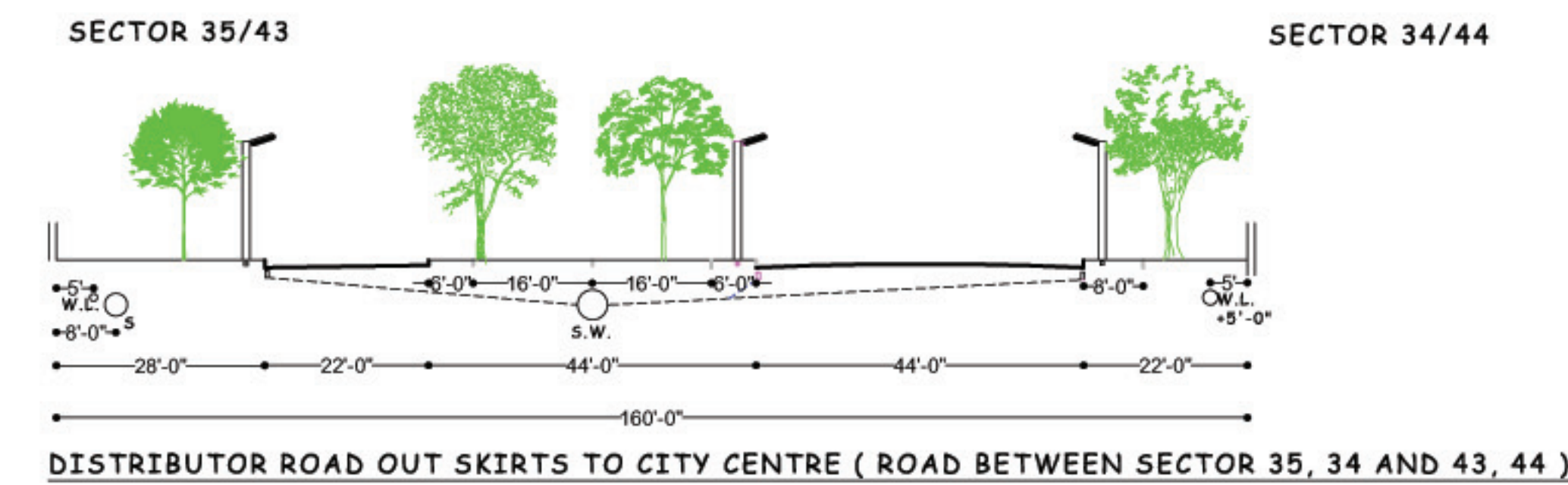
ASSISTANT TOWN PLANNER DIVISIONAL TOWN PLANNER

SCALE : 1 INCH = 20 FEET

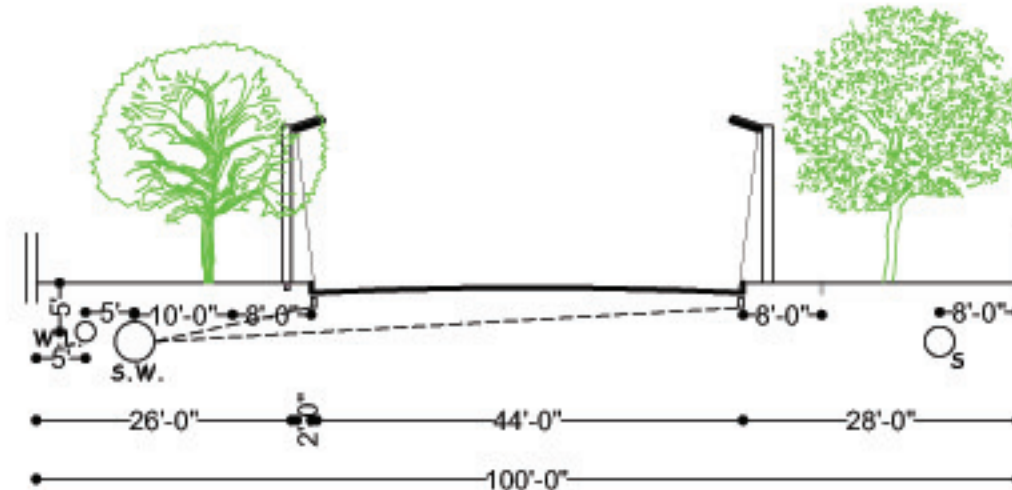
DRAWN BY: SD/- CHECKED BY: SD/-

DRG. NO. 23 JOB NO. 3 DATED : 28.11.68

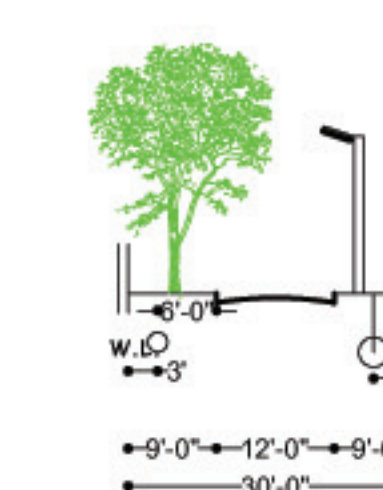
ROAD SECTIONS 2ND
PHASE DEVELOPMENT



DISTRIBUTOR ROAD OUT SKIRTS TO CITY CENTRE (ROAD BETWEEN SECTOR 35, 34 AND 43, 44)

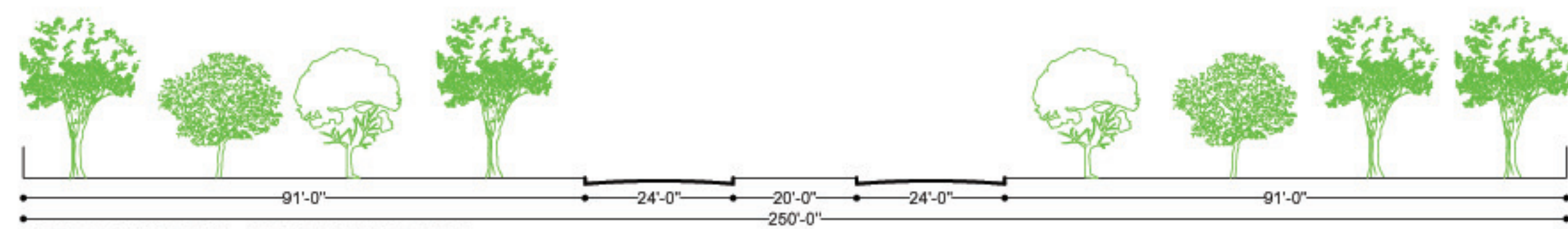


V-3 ULTIMATE (ALREADY CONSTRUCTED)

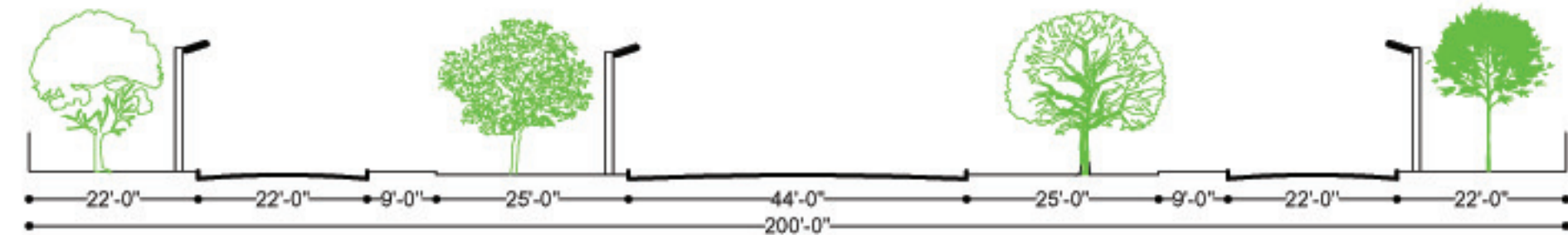


V-6

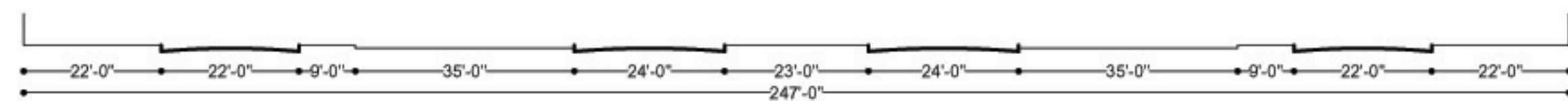
NOTE:-
1. THE ROADS WHICH RUN IN VERTICAL DIRECTION SHOULD BE PLANTED ON THE WESTERN SIDE AND HORIZONTAL ONES BE PLANTED ON THE SOUTH-WESTERN-SIDE, SERVICES SHOULD BE LAID ON THE OPPOSITE SIDE.
2. ON ROAD SIDE PLANTATION SHALL BE DONE ALONG THE V-6 ROADS, WHENEVER IT MAY BE CONSIDERED NECESSARY TO LAY THE S.W. DRAIN.



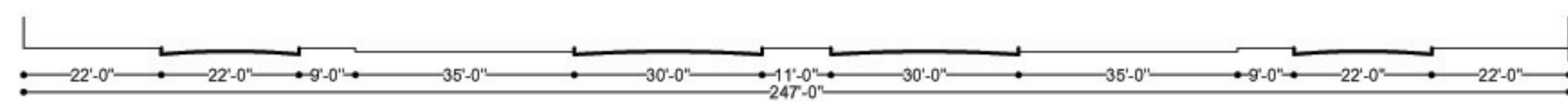
APPROACH ROAD TO CHANDIGARH



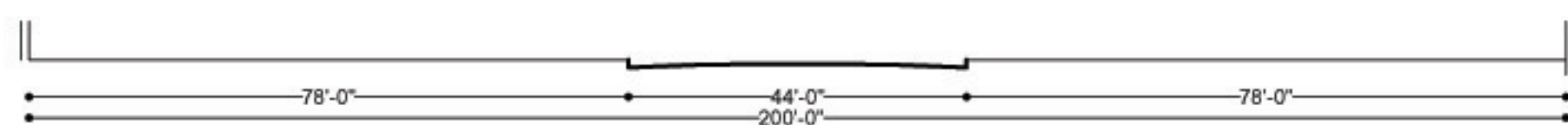
CENTRAL AVENUE (V2 STATION)



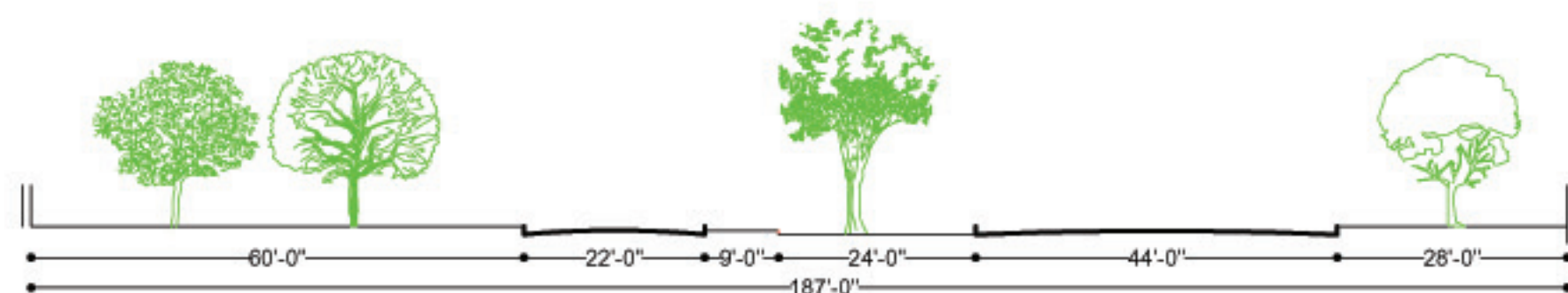
SOUTHERN AVENUE (V2 SOUTH)



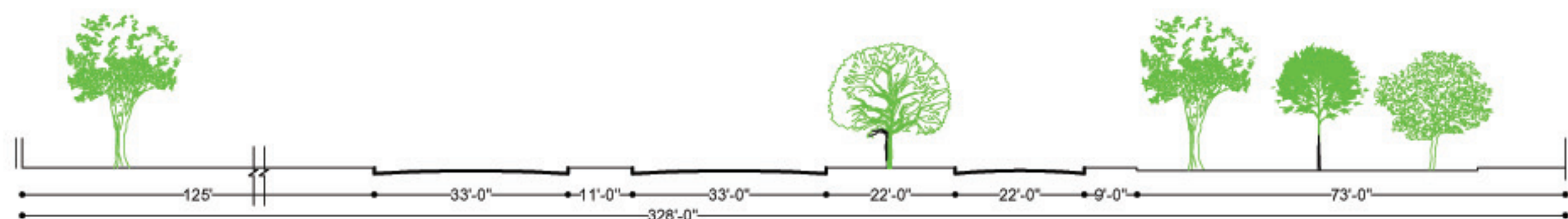
SOUTHERN AVENUE (V2 SOUTH)



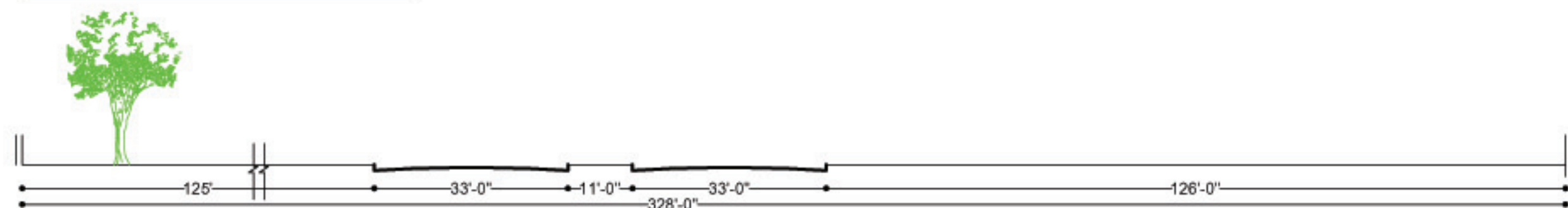
CENTRAL AVENUE (V2 UNIVERSITY)



DISTRIBUTOR ROAD OUTSKIRTS TO CITY CENTRE



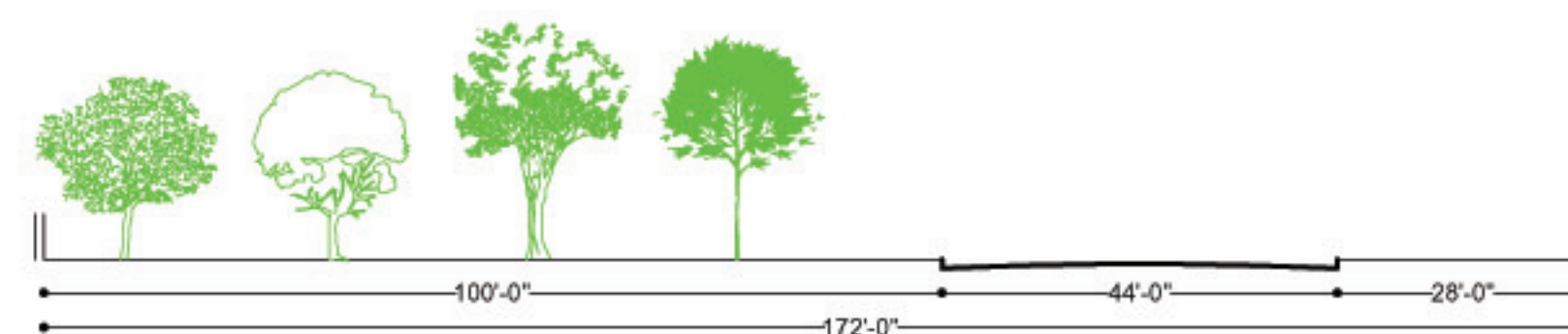
CAPITAL AVENUE (V2 CAPITOL)



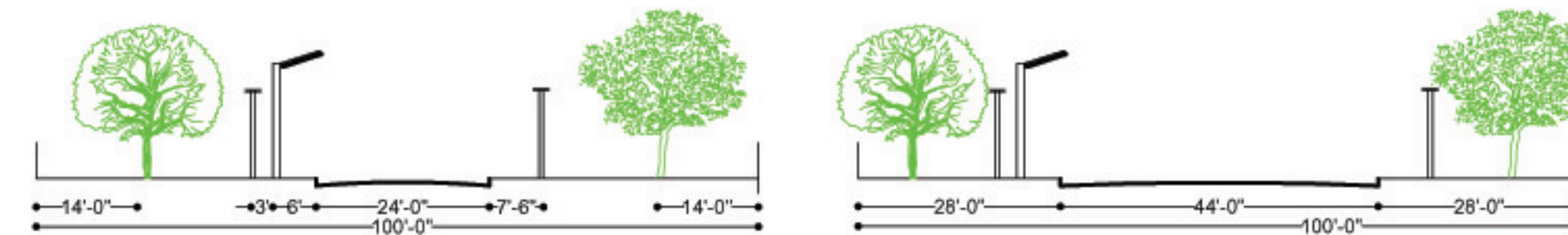
CAPITAL AVENUE (V2 CAPITOL)



REVISED CROSS SECTION NORTHERN AVENUE V3



NORTHERN AVENUE V3

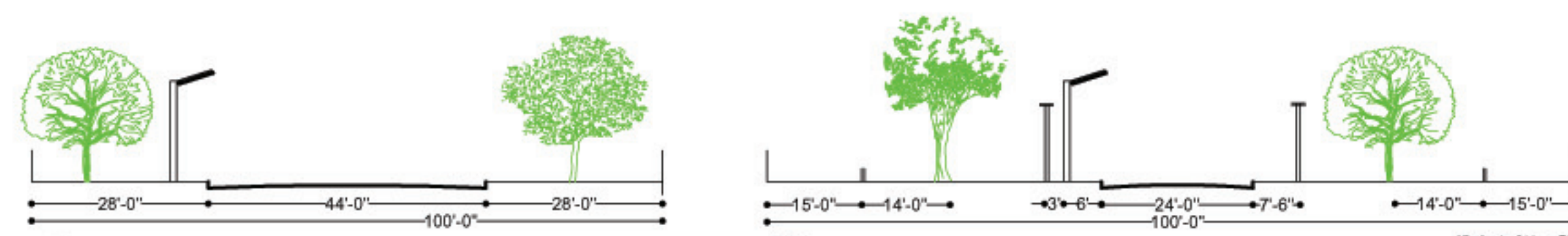


VERTICAL V3

(FIRST PHASE)

HORIZONTAL V3

(ULTIMATE)

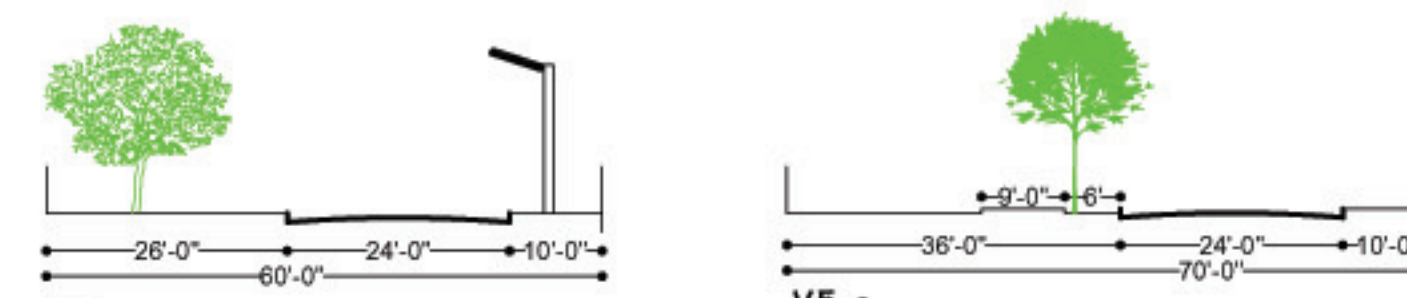


VERTICAL V3

(ULTIMATE)

V3

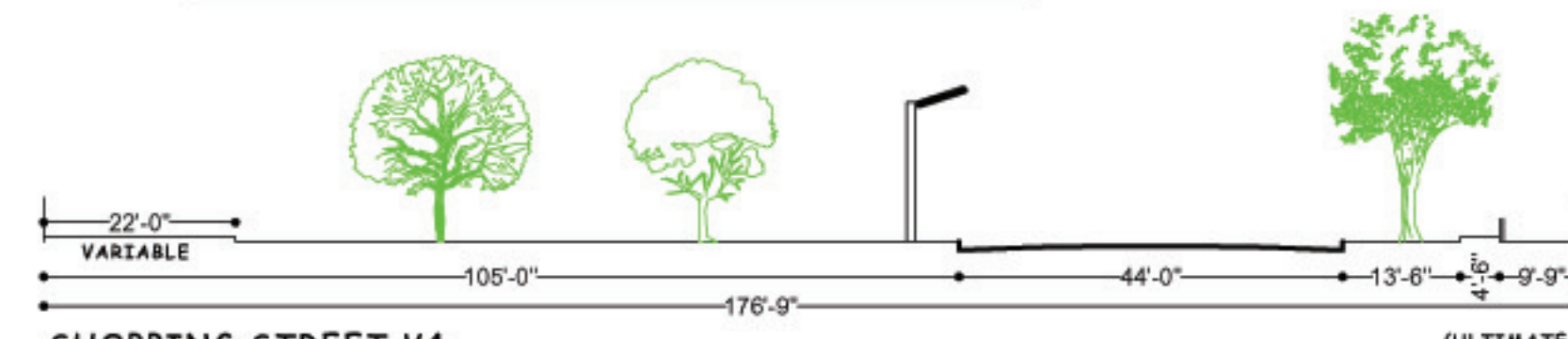
(FIRST PHASE)



V5

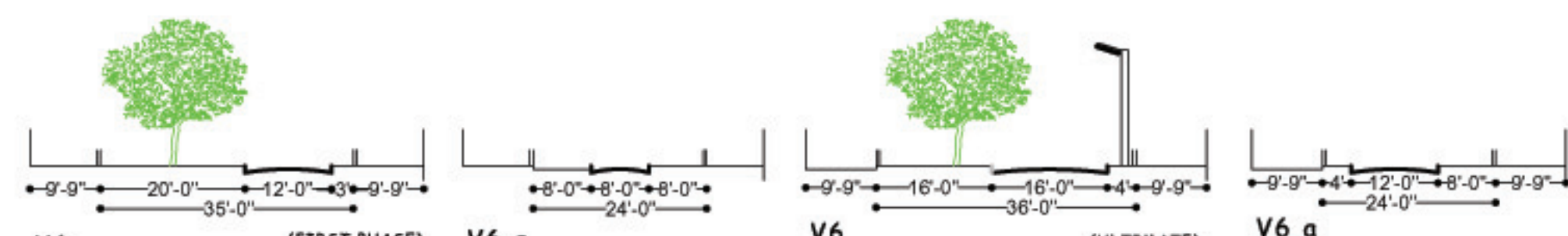
V5 a

SECTOR CIRCULATION ROADS



SHOPPING STREET V4

(ULTIMATE)



V6

(FIRST PHASE)

V6 a

V6

(ULTIMATE)

V6 a

ACCESS ROAD DWELLING



V8 b.c.

FOOT PATH
CUM CYCLE TRACK

FAST CYCLE
TRACK

NOTE:-
THIS DRAWING IS THE COMPUTERISED
REPRODUCTION OF ORIGINAL DRG. NO. 20, JOB NO. 3
DATED 22.02.66 AND PREPARED DT. ON 26.03.2010

(Manoj Kumar)
PREPARED BY CHECKED BY A.T.P.

SD/-

CHIEF ARCHITECT

SD/-

CHIEF ARCHITECT

SD/-

SENIOR TOWN PLANNER

SD/-

ASSISTANT TOWN PLANNER

SD/-

DIVISIONAL TOWN PLANNER

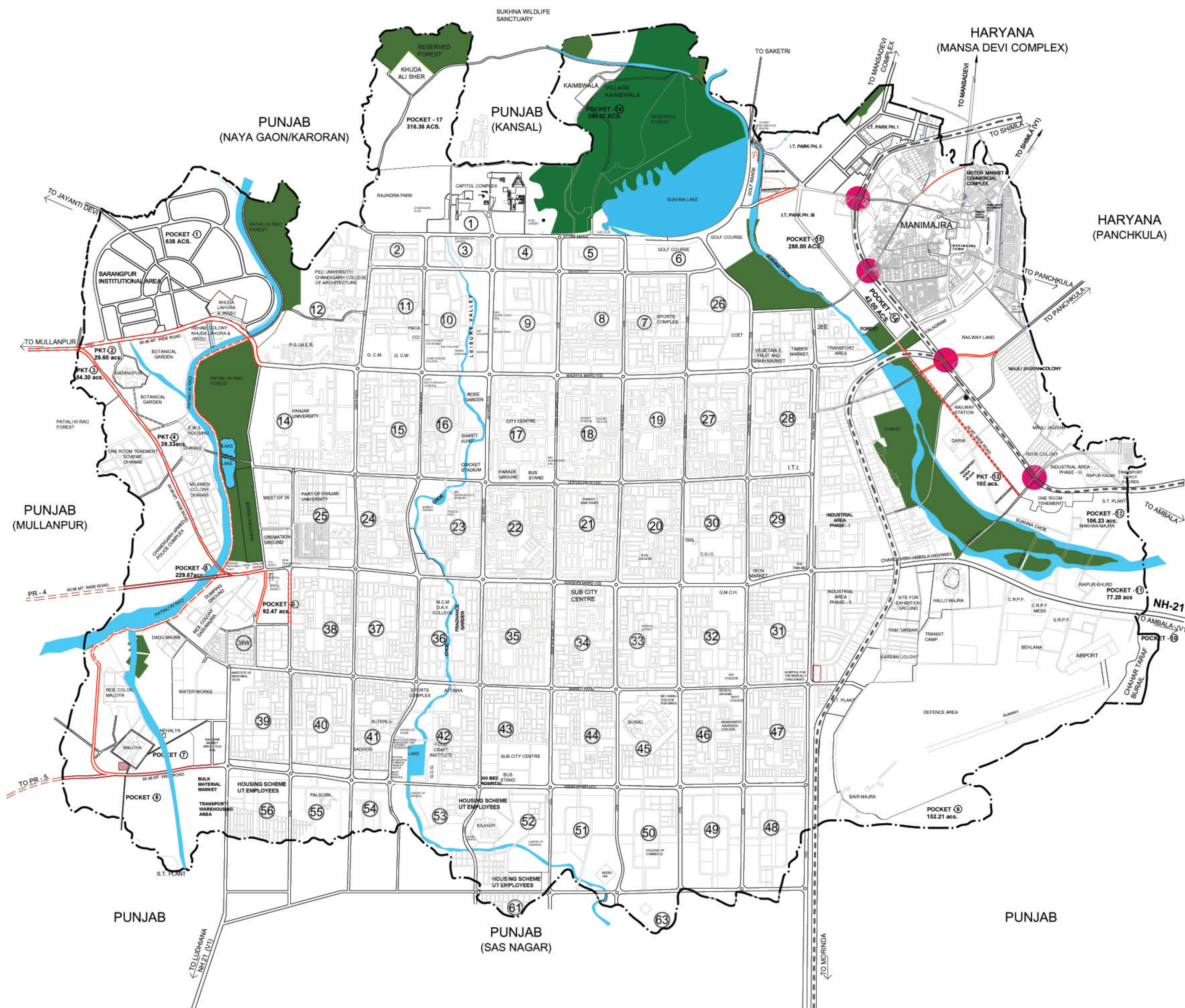
SCALE : 1 INCH = 20 FEET

DRAWN BY : SD/- CHECKED BY : SD/-

DRG. NO. 20 JOB NO. 3 DATED : 28.11.68

ROAD SECTIONS 1st
PHASE DEVELOPMENT

DEPARTMENT OF
URBAN PLANNING
CHANDIGARH ADMN.



RECOMMENDATIONS OF MASTER PLAN
COMMITTEE

- PROPOSED RUB ●
- STRENGTHING OF ROAD - - -
- NEW LINKS(60.96M WIDE ROAD) ———
- NEW LINKS(30.48M WIDE ROAD) - - -

DRAWN BY:	CHECKED BY:	
SCALE : 1 C M : 200 M T S .		
DRG. NO.	JOB NO.	DATED

PLAN SHOWING PROPOSALS
OF NEW ROAD LINKS

DEPARTMENT OF
URBAN PLANNING
CHANDIGARH ADMN.



RECOMENDATIONS OF RITES

BRTS CORRIDORS

CORRIDOR - 1 :
CAP COMPLEX/DHANAS TO ZIRAKPUR VIA
DAKSHIN MARG

CORRIDOR - 2 :
SUKHNA LAKE TO SECTOR 49 VIA SUKHNA PATH
& WEST WARDS VIA V3 ROAD BETWEEN
CHANDIGARH AND PUNJAB BOUNDARY &
TERMINATE AT KHARAR PUNJAB.

CORRIDOR - 3 :
PGI (MADHYA MARG) TO VIKAS MARG VIA
PASCHIM MARG & WEST WARDS UPTO MALOYA IN
U.T. AND TERMINATE IN MOHALI PUNJAB.

BRT CORRIDOR

PROPOSED BUS TERMINALS :

PROPOSED MULTILEVEL
PARKING :

PROPOSED GRADE SEPARATION
AND GEOMETRIC IMPROVEMENT

PROPOSED GEOMETRIC
IMPROVEMENT

PROPOSED BUS DEPOT

PROPOSED I.F. COMPLEX

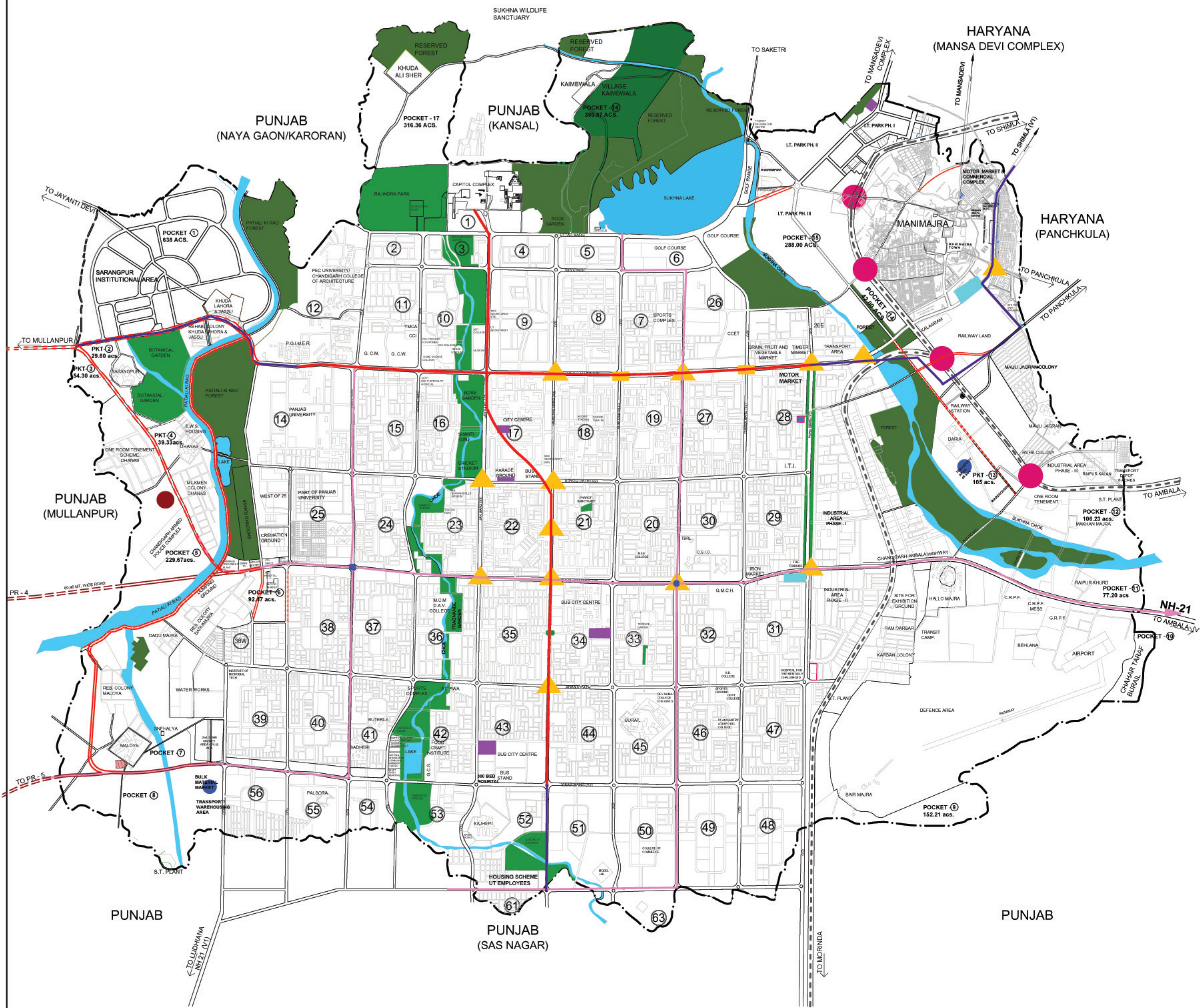
RECOMENDATIONS OF MASTER PLAN
COMMITTEE

PROPOSED RUB

STRENGTHING OF ROAD

NEW LINKS(60.96M WIDE ROAD)

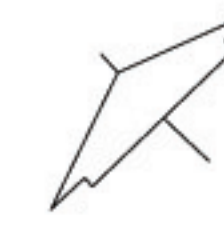
NEW LINKS(30.48M WIDE ROAD)



CHIEF ARCHITECT	SENIOR TOWN PLANNER
DIVISIONAL TOWN PLANNER	ASSISTANT TOWN PLANNER
DRAWN BY:	CHECKED BY:
SCALE : 1 C M : 200 M T S .	
DRG. NO.	JOB NO.
	DATED

PLAN SHOWING PROPOSALS
GIVEN BY RITES & MASTER
PLAN COMMITTEE

CHANDIGARH URBAN COMPLEX



LEGEND

- RESIDENTIAL
 - INDUSTRIAL
 - COMMERCIAL
 - COMMERCIAL CUM CULTURAL
 - ADMINISTRATIVE
 - MAJOR INSTITUTIONAL
 - MAJOR RECREATIONAL
 - DEFENCE AREA
 - ROADS
 - RAILWAY
 - DISPOSAL WORKS
 - PROTECTED FORESTS TO DEV. ZONE
 - RURAL ZONE
 - WATER BODIES
 - VILLAGES
 - STATE BOUNDARY
 - NATIONAL HIGHWAY
 - BULK MATERIAL MARKET
 - REGIONAL SUB REGIONAL BUS TERMINAL
 - C.U.C BOUNDARY
- A CHANDIGARH
 - B SAHIBZADA AJIT SINGH NAGAR (MOHALI)
 - C MANIMAJRA
 - D PANCHKULA
 - E H.M.T

SCALE : 2 INCHES TO A MILE
1 C.M. TO 317 METERS

NOTE:
THE STATE BOUNDARIES INDICATED ON THE PLAN ARE DIAGRAMATIC AND SUBJECT TO VERIFICATION FROM RESPECTIVE STATES

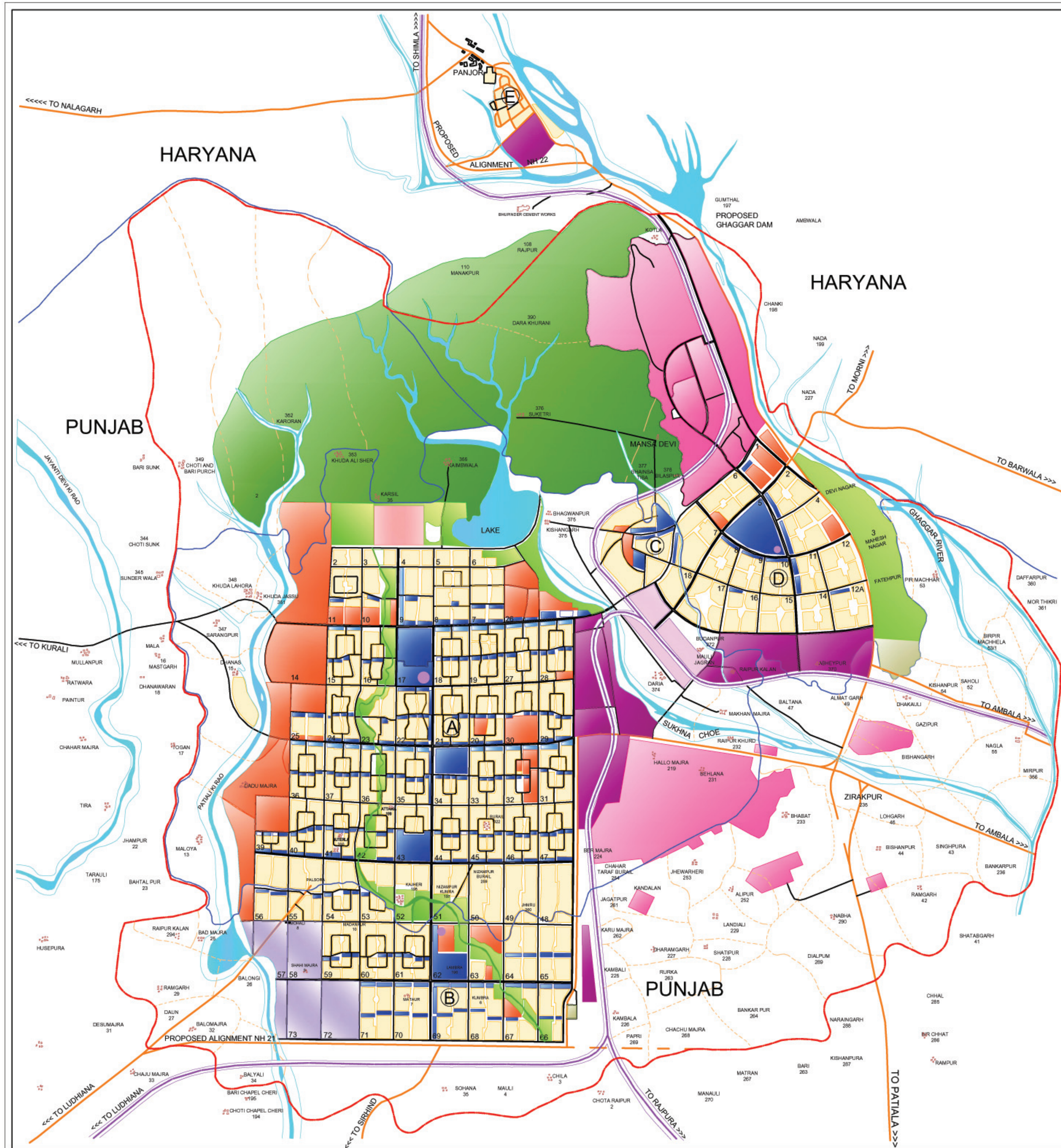
NOTE :
THIS DRAWING IS THE ORIGINAL TRACING OF DRG. NO. 6 JOB NO. W.R.II DT.11.3.79

TRACED BY _____ CHECKED BY _____ A.T.P.

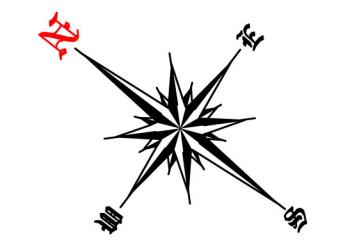
DRG.NO. 6 JOB NO. W.G.II DATED 11.3.79

STUDY PLAN WORKING GROUP NO.II

Sd/- S.G.NAGIA SENIOR TOWN PLANNER CHANDIGARH ADMINISTRATION CONVENOR WORKING GROUP NO. II	Sd/- M.N.SHARMA SENIOR TOWN PLANNER CHANDIGARH ADMINISTRATION CONVENOR WORKING GROUP NO. II
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DEPARTMENT OF
URBAN PLANNING
CHANDIGARH ADMN.



DETAIL OF LAND USE :

RESIDENTIAL	
URBAN VILLAGES	
VILLAGES IN PERIPHERY	
COMMERCIAL	
WHOLESALE	
INDUSTRIAL	
I.T. PARK	
PUBLIC/ SEMI PUBLIC	
INSTITUTIONAL	
HEALTH FACILITIES	
GREEN / OPEN SPACES :	
ORGANISED OPEN SPACE	
FOREST	
AGRICULTURE	
TRAFFIC AND TRANSPORTATION :	
TRANSPORTATION NODES	
ROADS	
RAILWAY LINE	
WATER BODIES	

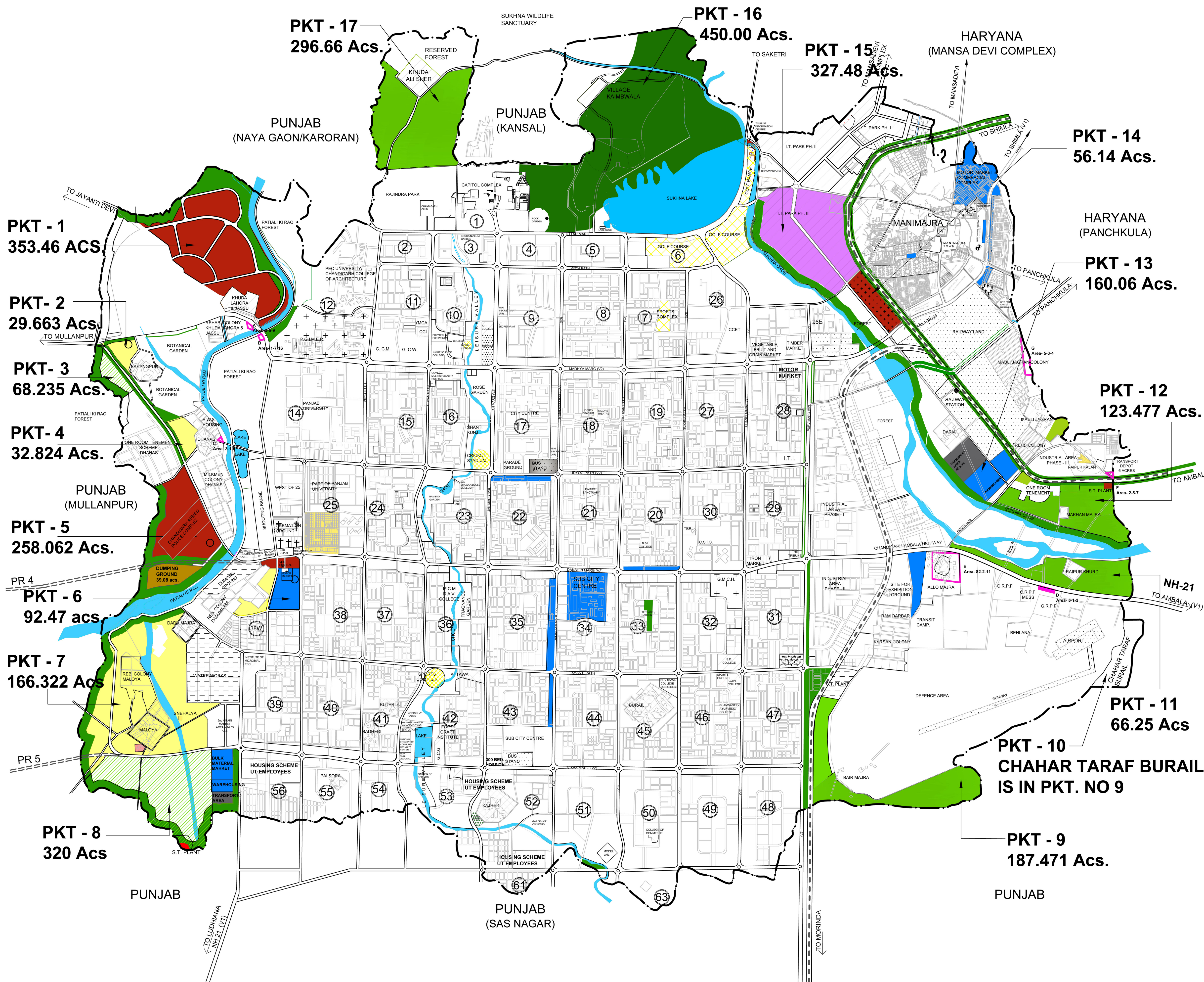
LAND USE OF PERIPHERAL POCKETS

CHIEF ARCHITECT	SENIOR TOWN PLANNER
DIVISIONAL TOWN PLANNER	ASSISTANT TOWN PLANNER
DRAWN BY:	CHECKED BY:

SCALE : 1 CM : 200 M T S .

DRG. NO.	JOB NO.	DATED
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PERSPECTIVE PLAN OF
CHANDIGARH 2031



DEPARTMENT OF URBAN PLANNING
CHANDIGARH ADMN.



DETAIL OF LAND USE :

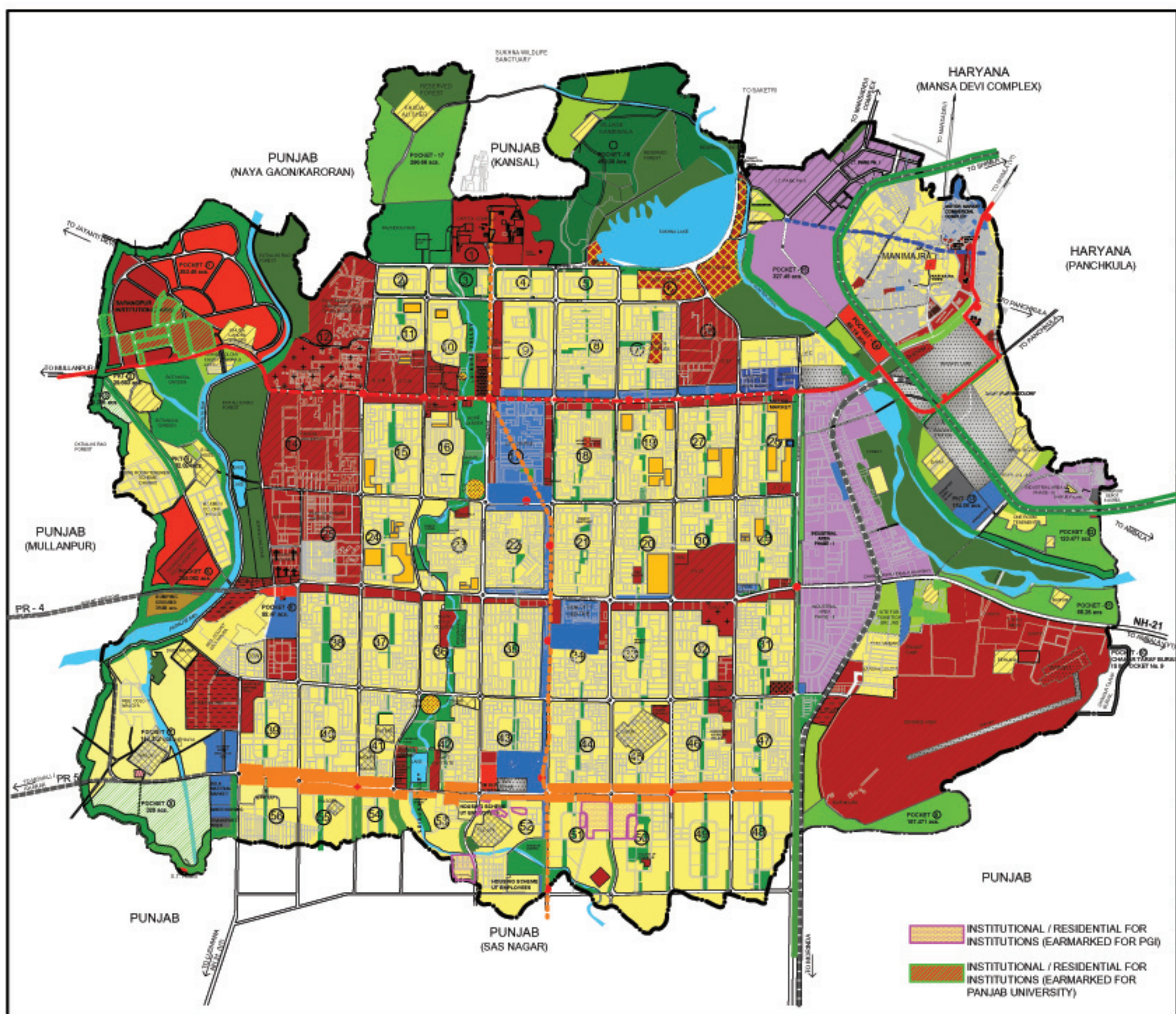
RESIDENTIAL	
URBAN VILLAGES	
VILLAGES IN PERIPHERY	
COMMERCIAL	
WHOLESALE	
INDUSTRIAL	
LT. PARK	
PUBLIC/ SEMI PUBLIC	
INSTITUTIONAL	
EDUCATIONAL	
HEALTH FACILITIES	
SPORTS FACILITIES	
CREMATION GROUND	
CULTURAL FACILITIES	
PUBLIC UTILITIES	
MIXED LAND USE	
GREEN / OPEN SPACES :	
ORGANISED OPEN SPACE	
FOREST	
AGRICULTURE	
TRAFFIC AND TRANSPORTATION :	
TRANSPORTATION MODES	
ROADS	
RAILWAY LINE	
WATER BODIES	

INSTITUTIONAL / RESIDENTIAL FOR INSTITUTIONS (EARMARKED FOR PGI)

INSTITUTIONAL / RESIDENTIAL FOR INSTITUTIONS (EARMARKED FOR PANJAB UNIVERSITY)

CHIEF ARCHITECT	SENIOR TOWN PLANNER	
DIVISIONAL TOWN PLANNER	ASSISTANT TOWN PLANNER	
DRAWN BY:	CHECKED BY:	
SCALE : 1 C M : 200 M T S .		
DRG. NO.	JOB NO.	DATED

PERSPECTIVE PLAN OF CHANDIGARH 2031



DEPARTMENT OF
URBAN PLANNING
CHANDIGARH ADMN.



RECOMENDATIONS OF RITES

BRTS CORRIDORS

CORRIDOR - 1 :
CAP COMPLEX/DHANAS TO ZIRAKPUR VIA
DAKSHIN MARG

CORRIDOR - 2 :
SUKHNA LAKE TO SECTOR 49 VIA SUKHNA PATH
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CHANDIGARH AND PUNJAB BOUNDARY &
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BRT CORRIDOR

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PROPOSED MULTILEVEL
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PROPOSED GRADE SEPARATION
AND GEOMETRIC IMPROVEMENT

PROPOSED GEOMETRIC
IMPROVEMENT

PROPOSED BUS DEPOT

PROPOSED I.F. COMPLEX

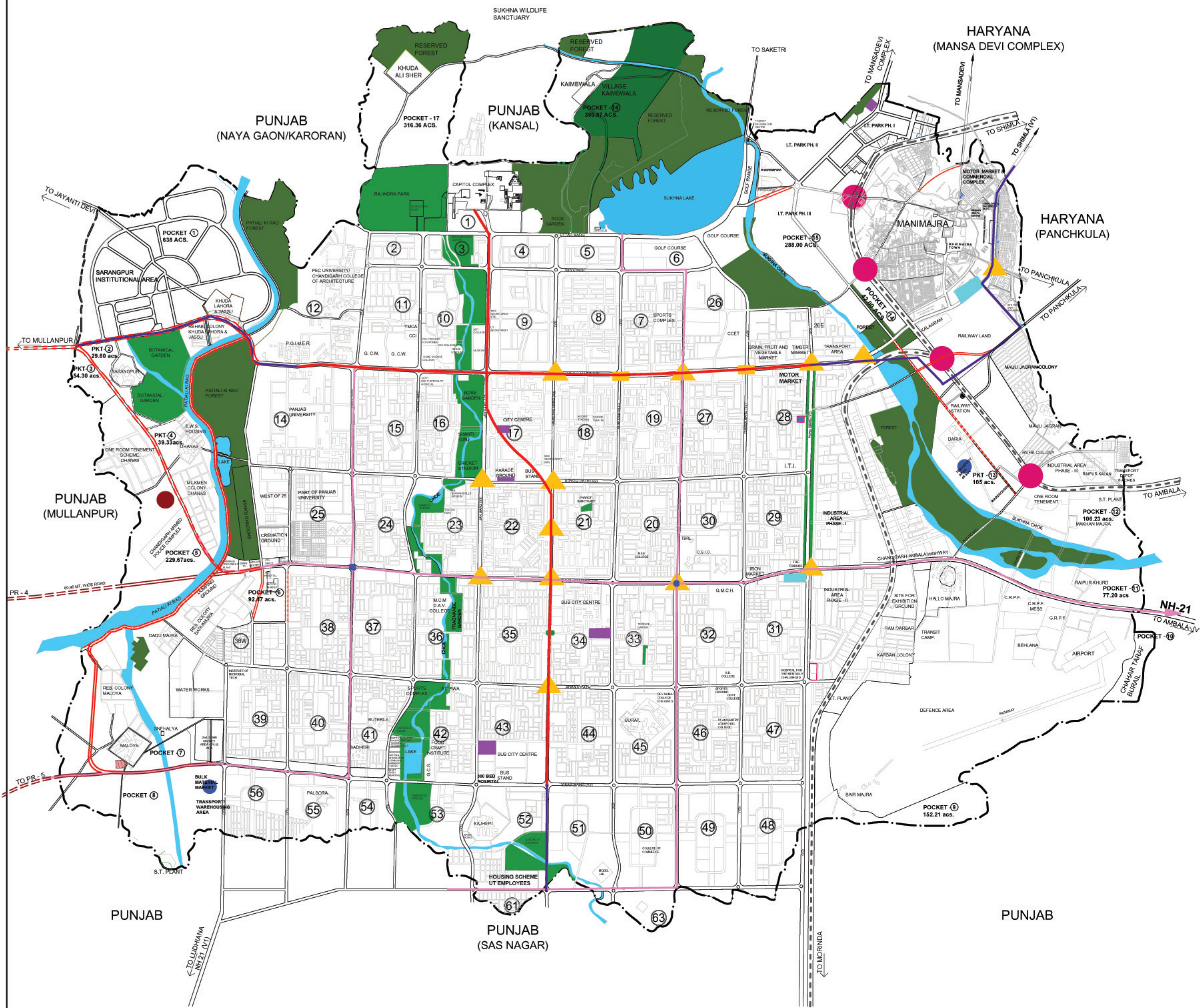
RECOMENDATIONS OF MASTER PLAN
COMMITTEE

PROPOSED RUB

STRENGTHING OF ROAD

NEW LINKS(60.96M WIDE ROAD)

NEW LINKS(30.48M WIDE ROAD)



CHIEF ARCHITECT	SENIOR TOWN PLANNER
DIVISIONAL TOWN PLANNER	ASSISTANT TOWN PLANNER
DRAWN BY:	CHECKED BY:
SCALE : 1 C M : 200 M T S .	
DRG. NO.	JOB NO.
	DATED

PLAN SHOWING PROPOSALS
GIVEN BY RITES & MASTER
PLAN COMMITTEE