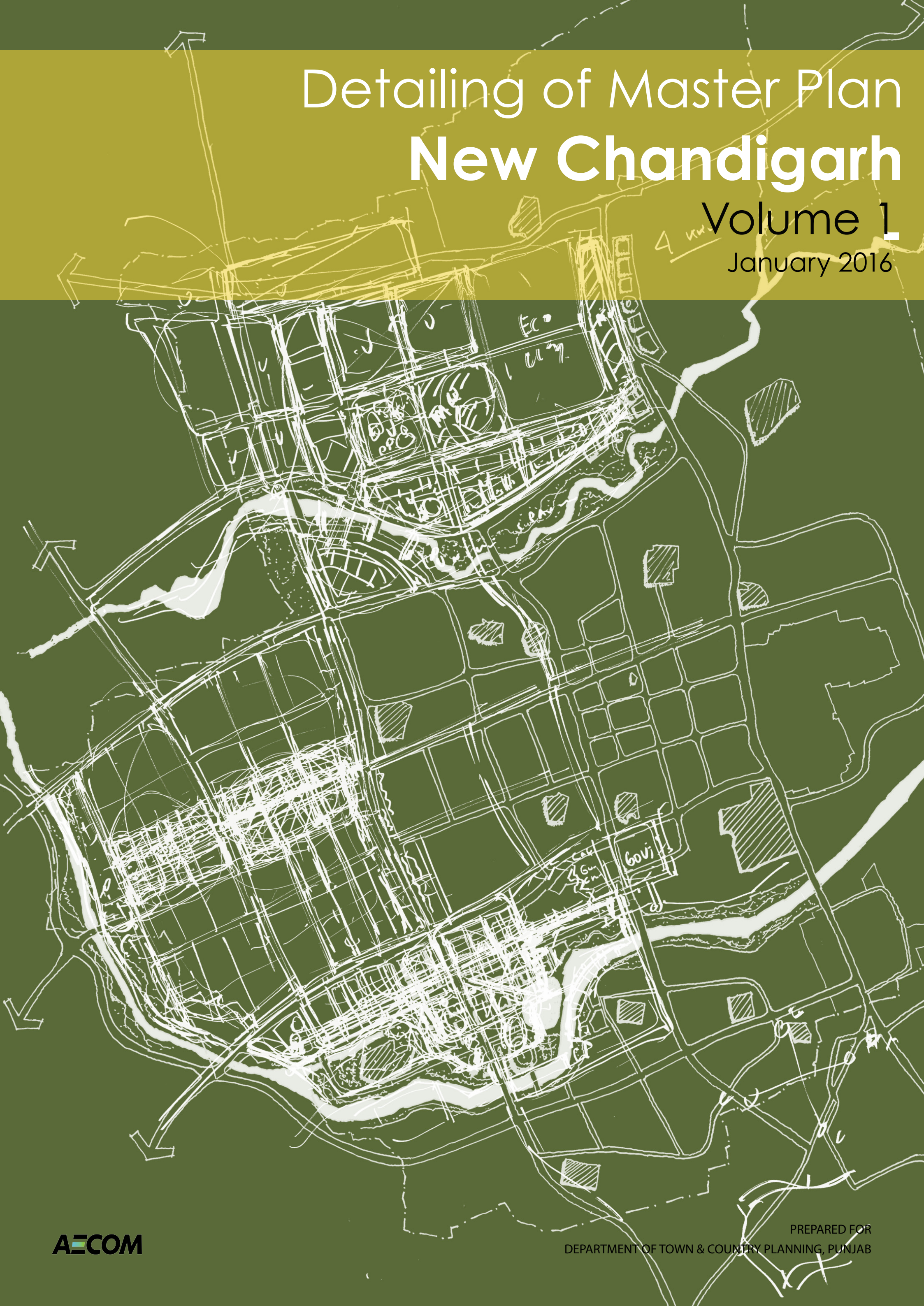


Detailing of Master Plan New Chandigarh

Volume 1

January 2016



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Detailing of Master Plan New Chandigarh

General & Limiting Conditions

This report represents the “Detailing of Master Plan for New Chandigarh” project. Every reasonable effort has been made to ensure that the data contained in this report are accurate as of the date of this study; however, factors exist that are outside the control of AECOM and that may affect the estimates and/or projections noted herein. This study is based on maps, data, satellite imagery, cadastral data etc. made available by Dept. of Town and Country planning, Govt. of Punjab and the GMADA. No responsibility is assumed for inaccuracies in reporting by the client, the client’s agent and representatives, or any other data source used in preparing or presenting this study.

This background research represented in the report is based on information that was available from the existing Notified Master Plan for New Chandigarh in year 2008. The final development program, design controls and other development parameters for the project have been recommended based on inputs received from client till April 2015.

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This study is qualified in its entirety by, and should be considered in light of, these limitations, conditions and considerations.

The report incorporates all changes communicated by Dept. of Town and Country planning post finalisation from objections and suggestions received after publishing the master plan for inviting Objections and Suggestions as per The Punjab Regional And Town Planning And Development Act, 1995.

Prepared for:

Department of Town & Country Planning, Punjab

PUDA Bhawan,
Sector 62, SAS Nagar
Punjab- 160062

Submitted by:

AECOM India Private Limited

9th Floor, Infinity Tower- 'C',
DLF Cybercity,
DLF Phase 2,
Gurgaon, 122002
India

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New Chandigarh

" City of unique experience,a place to live, work, play and celebrate. A connected city, with high quality public transport,pedestrian networks and public realm. A sustainable city that respects and celebrates its ecology and natural systems. A city that promotes diversity of uses as well as is a place for diverse user groups of ages, cultures and income groups etc. Together a city that has high quality of life, with places that enrich, uplift and inspire the human spirit."



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Image Source: AECOM

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01 Executive Summary



1. EXECUTIVE SUMMARY

Chandigarh and the surrounding areas of the Greater Mohali Region (GMR) will have considerable economic growth potential in the coming years. This economic growth will drive urban growth within the region, including the demand for residential accommodation, employment land, and all essential support services and utilities.

To address the expected urban growth the Greater Mohali Area Development Authority (GMADA) conceived of developing a new, independent and self-sustaining city to cater to this spillover of the projected growth of Chandigarh and Mohali over the next 20 years.

With this in mind, GMADA in 2007, appointed Jurong Consultants Private Ltd. Singapore to prepare a comprehensive master plan for the new township of Mullanpur.

Being in the vicinity of Chandigarh, the Mullanpur Local Planning Area (LPA) was renamed "New Chandigarh" by the Department of Town & Country Planning, Punjab on 20-02-2014¹.

New Chandigarh LPA is located in the north-eastern part of the GMADA region, south of the Shivalik range, adjacent to the existing urban areas of Chandigarh and Mohali, and at the northern "gateway" to the Greater Mohali Region.

Spread over an area of approximately 15,000 acres (6,000 ha), the majority of the LPA area is presently agricultural land, transitioning to urban uses as a consequence of the change of land use that occurred in 2009, and subsequent development licences. The area accommodates 33 village settlements scattered throughout, the largest of which is Mullanpur village with a population of around 6000 people.

A significant portion of the LPA (about 1,150 ha) adjoining the Shivaliks falls under the Punjab Land Preservation Act (PLPA), to safeguard the ecology & natural resource. This land was subsequently delisted with restrictions on land uses, and has been referred to as denotified PLPA land/ area in the report.

There is a restricted area of 140.8 ha that is dedicated for military use.

The area also features a number of brick kilns.

The Jayanti Devi Ki Rao, Patiala Ki Rao and Siswan River are the main rivulets which pass through New Chandigarh.

Bearing in mind the topography, which is relatively flat and generally suitable for urban development, and the constraints identified above, the LPA area is capable providing about 4,000 ha of buildable land for the new township and associated urban activities.

The LPA area is traversed by a number of existing regional roads, including MDR-B which runs through New Chandigarh to Chandigarh and Panchkula via Madhya Marg, and MDR-C which passes the northern area of New Chandigarh connecting Kurali and Sirhind to the west, and Baddi to the north.

The existing rivers and their margins have the potential to be enhanced to become prime aesthetic, and recreational assets for New Chandigarh. Proposed development controls seek to conserve these rivers, through recreational zones permitting minimal construction activity.

A 100 m buffer zone has been set aside around the perimeter of the Defense site as a no construction zone.

The subject master plan incorporates key elements of the Jurong plan – including the concept of an Education City, Medi City, and a mix of residential, commercial, research and development, and institutional uses.

A new City Centre has been identified as the principal employment, civic, cultural and commercial area.

Detailed development controls have been specified for all categories of land use to ensure a logical and sensitive growth for the township of New Chandigarh.

The LPA in its revised form and land uses has the potential to accommodate a community of up to 1.2 million people. With the above land use and master plan strategy and associated development controls in place, New Chandigarh has the potential to become a township that is in harmony with its environment and nature.

Due to its prime location, New Chandigarh is expected to attract the population of Chandigarh and Himachal Pradesh in the long term and establish itself as a significant, self-sustaining town offering world class facilities in the fields of Health, Research and Education.

¹) Change of name of Mullanpr LPA to New Chandigarh LPA vide Notification no. 1186-97-CTP(Pb)/SC-115-vol-2 dated 21st February, 2014



02 Introduction



// Project Understanding
// AECOM Vision
// Report Structure

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New Chandigarh

2. INTRODUCTION

2.1 PROJECT UNDERSTANDING

2.1.1 Project Background

The Greater Mohali Region under the jurisdiction of GMADA (Greater Mohali Area Development Authority) has been the subject of recent regional planning effort to plan for an urban area of 4.5 million people, building on the growth that has occurred in Chandigarh since its establishment, and the extension of its urban footprint into the surrounding areas within Punjab and Haryana.

As per the 2011 Census the Greater Mohali region had a population of approximately 1 million people, comprising 54.76% in urban areas, and 45.24% people in rural/ village areas.

The Greater Mohali Region includes the six Local Planning Areas of:

- Central SAS Nagar
- Dera Bassi
- Zirakpur
- Banur
- Kharar
- New Chandigarh (Mullanpur)²

Source: AECOM

2) Change of name of Mullanpr LPA to New Chandigarh LPA vide Notification no. 1186-97-CTP(Pb)/SC-115-vol-2 dated 21st February,2014

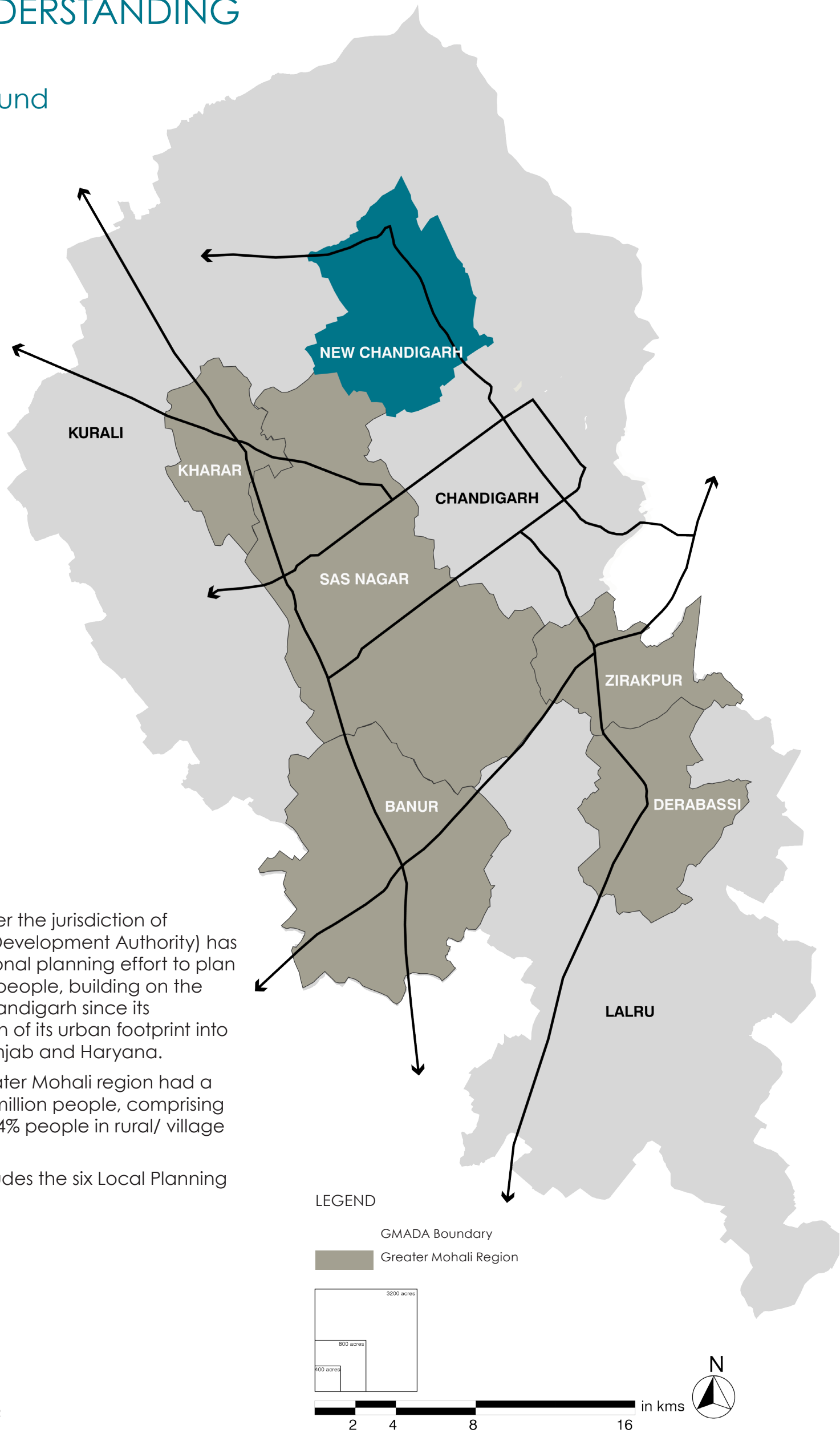


Fig.2-1 Greater Mohali Region & Chandigarh

In view of the growing urbanization and congestion of existing cities, GMADA conceived the idea of developing a new independent and self-sustaining city to cater to the projected growth of Chandigarh and Mohali over the next 20 years. GMADA mapped out a vision towards a city of excellence for the Greater Mohali Region guided by the following principles³ :

Preserving natural, unique, historical and open space resources to achieve a more wholesome, vibrant and sustainable lifestyle;

Introducing critical strategic economic growth initiatives including technology-knowledge business park corridors;

Promoting a comprehensive planned township that will enhance quality living, ensuring accessibility and managing overall growth

Jurong Consultants Pte Ltd., Singapore were appointed by GMADA in 2007, to develop a comprehensive regional plan for the entire Greater Mohali Region.

Within the aforesaid vision of the region, the proposed urban area of Mullanpur was envisaged as a distinctive and sustainable development that will enhance quality of living and manage the overall growth.

2.1.2 Existing Vision

The Master plan 2008 -2031, Mullanpur Local Planning Area by Jurong Consultants Pte Ltd. [notified u/s 70 (5) of The Punjab Regional and Town Planning and Development Act, 1995 vide notification no. 9664 CTP (Pb) SC-115 dated 12/16-12-2008.], envisaged the planning vision for Mullanpur LPA as a :

“low density country living, resort centre and northern gateway to GMADA”³

giving it a separate and distinctive direction from the other cities/ urban corridors within Greater Mohali.

The Notified Master plan Report³ identifies the following vision for Mullanpur LPA :

“Mullanpur is envisioned to rise as a distinctive and sustainable playground of the Greater Mohali Area. The existing rivers and their surrounding waterfronts will be enhanced to become prime physical assets of Mullanpur”

“Mullanpur will enjoy the distinction of being Punjab's first eco-town. Elements of eco-town vision for New Chandigarh include:

green structure

biological diversity

cultural and historic value of the built environment

ecocycles of renewable energy such as solar and wind, energy usage and low carbon impact development and low effluent discharge”³

Post notification of the Master plan for the LPA in 2008 , land parcels were allotted to a number of private and public developers like GMADA, Omaxe, DLF, Altus Space Builders, etc.

Being in vicinity of Chandigarh and proposed with a world class infrastructure, this Local Planning Area (LPA) was renamed “New Chandigarh”² in early 2014.

Subsequently the work for the development of the existing vision & detailing of the Master Plan for New Chandigarh, AECOM India Pvt. Ltd. were appointed as consultants by the Department of Town & Country Planning , Punjab in March 2014.

2.1.3 Scope of Work

The overall objective of this project, was to assist Deptt. of Town and Country Planning, Punjab with the implementation of the approved Master Plan for New Chandigarh consistent with the vision for the area.

In summary the scope of work included the following:

- Review the existing master plan for New Chandigarh, and recommend appropriate amendments with respect to land use and density;
- Consolidate all survey information related to the current cadastral, revenue maps, master plan and approved developments, to ensure their consistency;
- Review the approved development plans and recommend measures to achieve an appropriate level of integration of current and future development areas;
- Assess the infrastructure and servicing plans (transport, drinking water, sewerage/ waste water, storm water, and power), and recommend appropriate responses with planning and design alternatives;
- Prepare a landscape planning and design framework
- Prepare development controls and associated design guidelines

3) Mullanpur Local Planning Area, Greater Mohali Region Punjab, Master Plan Report, 2008-2031

2.2 AECOM Vision

The broad vision of AECOM , building on the existing vision of the LPA would be make New Chandigarh a

" City of unique experience,a place to live, work, play and celebrate. A connected city, with high quality public transport,pedestrian networks and public realm. A sustainable city that respects and celebrates its ecology and natural systems. A city that promotes diversity of uses as well as is a place for diverse user groups of ages, cultures and income groups etc. Together a city that has high quality of life, with places that enrich, uplift and inspire the human spirit."

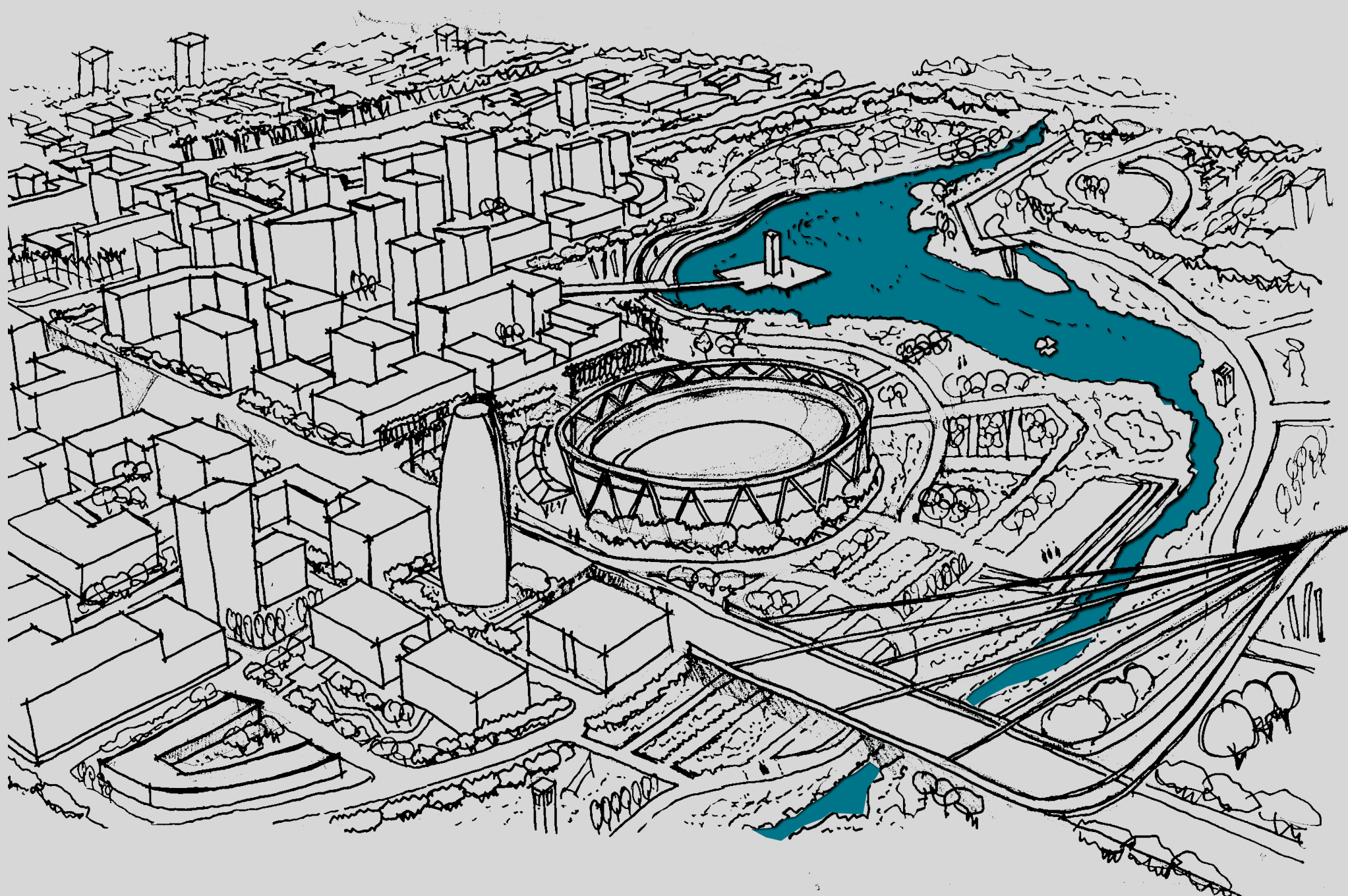


Fig.2-2 Artists Impression of the proposed City Centre development at New Chandigarh
Source: AECOM

2.3 Report Structure

There are 8 sections in the report. While **Section 01 & 02** dealt with Executive summary & Introduction respectively, the following chapters form the main body of the Master plan Report.

Section 03 discusses the regional context of New Chandigarh LPA. **Section 04** discusses the existing site conditions. **Section 05** explores the design principles & strategies of AECOM's for the planning of New Chandigarh LPA. While **Section 06** discusses the detailed planning and land use framework adopted for the Master Plan as well as the different land uses .In **Section 07** the details of development control regulations are discussed. **Section 08** comprises of the Annexure which contains the information of the presently notified Master plan for Mullanpur Local planning area,2008-31.

03

Regional Framework



// Introduction
// Locational Context
// GMR Regional Master plan
// Regional Connectivity
// Regional Landscape
Character

ਚੰਡੀਗੜ੍ਹ
New Chandigarh

3. REGIONAL FRAMEWORK

3.1 INTRODUCTION

New Chandigarh LPA lies in the state of Punjab and was planned within the purview of the overall vision of the Greater Mohali Region Plan 2008-2058. The Greater Mohali Region (GMR) is located towards the western periphery of Chandigarh, the joint state capital for the states of Punjab & Haryana, and one of the planned cities of India.

This section provides information on the larger region in which New Chandigarh LPA is located.

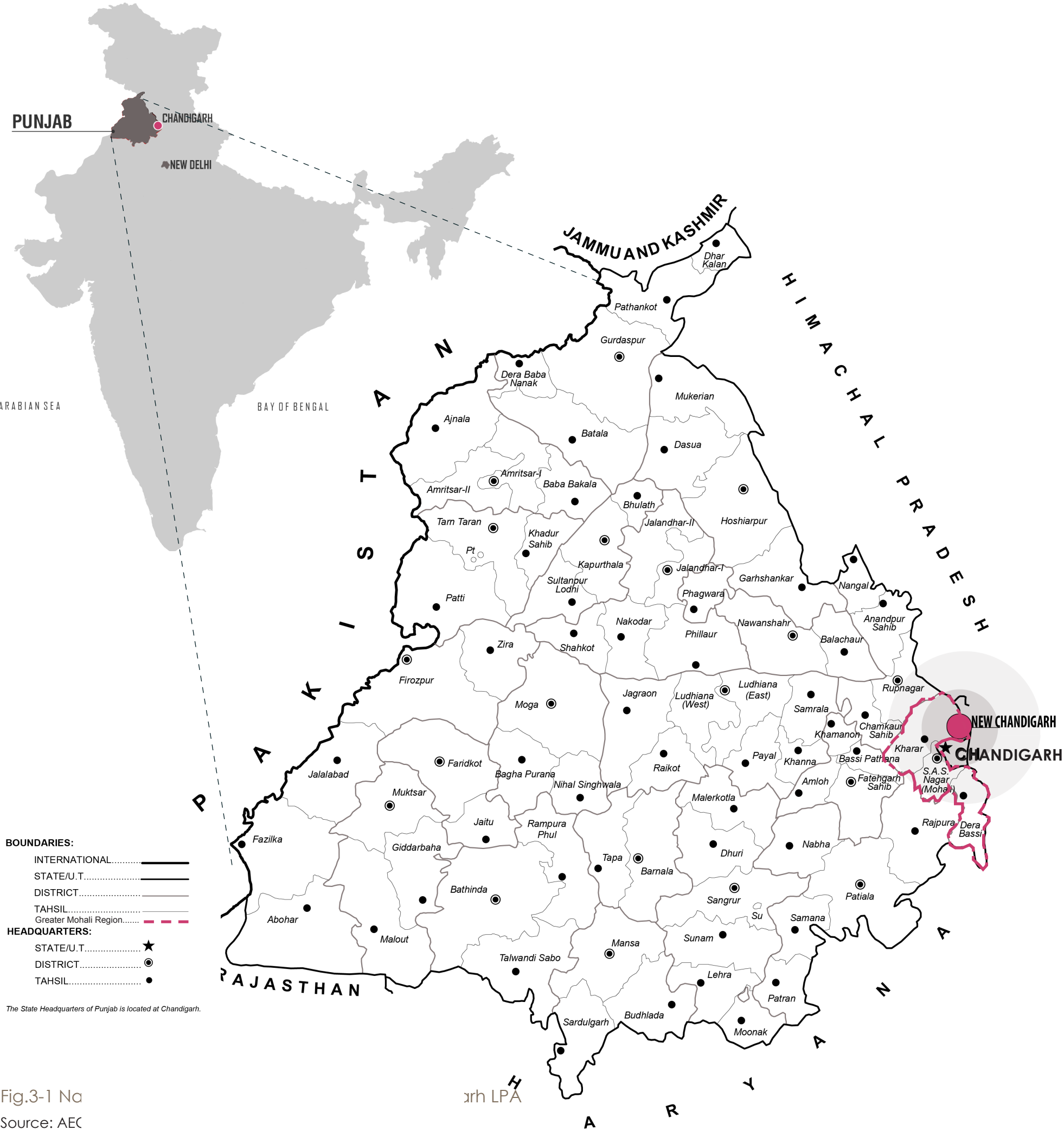


Fig.3-1 Na
Source: AEC

3.2 LOCATIONAL CONTEXT

The growth and development of Chandigarh has resulted in additional demand and exerted pressure on its services and utilities eventually giving rise to the development of Greater Mohali Region or District Sahibzada Ajit Singh Nagar (SAS Nagar) in the state of Punjab & Panchkula in Haryana.

The Greater Mohali Region (GMR) covers a geographical expanse of about 1190 sq.km. and is located towards the western periphery of Chandigarh in the state of Punjab. The entire region is divided into six local planning areas, namely, SAS Nagar, Zirakpur, Kharar, Mullanpur, Banur and Dera Bassi (refer Figure 3-2). The region holds a current population of about 0.7 million, about 60% of which is rural. A large proportion of the 40% urban population is concentrated in SAS Nagar and Zirakpur which have grown along the periphery of Chandigarh owing to development pressures from the capital city.

Traditionally, agriculture has been the prime economic activity in the region. However, the industrial and services sectors have been gaining importance in the past number of years. The industrial sector primarily consists of chemical and pharmaceutical manufacturing units. The services sector comprises the fast growing IT and tourism industries. The tourism industry is built around the historical resource base including religious buildings, heritage monuments, Chandigarh City, and the Mohali Cricket Stadium.

Real estate development, biotech industries, and agro processing have been identified as key potential future economic drivers for the region.⁴

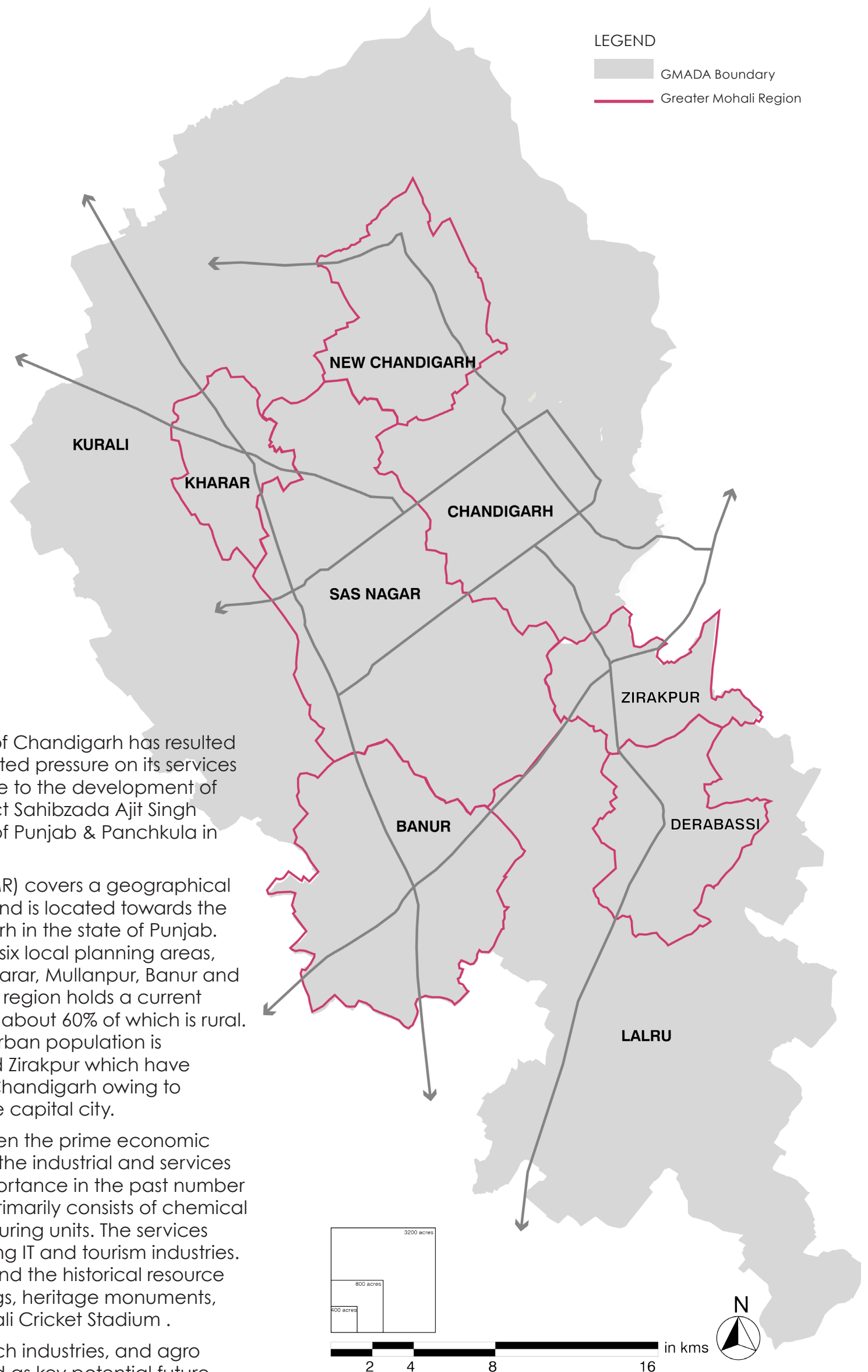


Fig. 3-2 Greater Mohali Region (GMR)

Source: AECOM

4) Regional Plan 2008-2058, Greater Mohali Region, Punjab

3.3 GMR REGIONAL MASTER PLAN

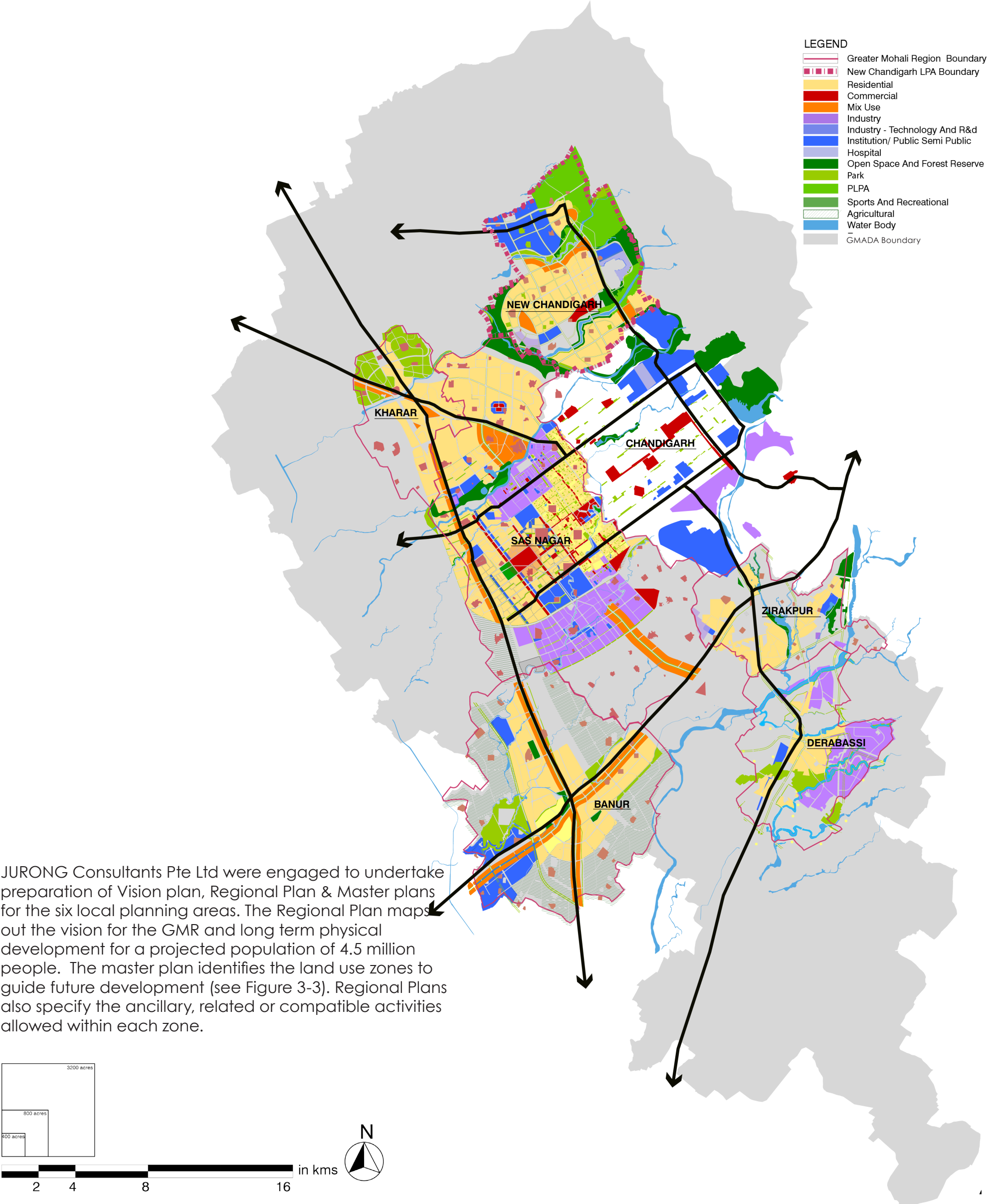


Fig.3-3 Greater Mohali Region (GMR) Regional Landuse Plan
Source: Dep'tt. Of Town & Country Planning, Punjab

Land use	Area (In Hectares)	Percentage
Urbanizable area	42,740	35.9
Industrial	2,478	2.1
Rural settlements	4,567	3.8
Agriculture area within LPA	18,483	15.5
Agriculture area outside LPA	24,990	21.0
Recreational	4,370	3.7
Forests	12,281	10.3
Water bodies	2,890	2.4
Transportation	4,885	4.1
Restricted development zone	1,351	1.1
Total	119,036	100.0

Table 3-1 GMR - Land use Distribution

Land use	Area (In Hectares)	Percentage
Residential	22065	52%
Commercial	4654	11%
Industrial	6914	16%
Institutional	5213	12%
Recreation & Open Space	3894	9%
Total	42740	100%

Table 3-2 Greater Mohali Region- Urbanisable Area land use distribution

3.3.1 Residential Development

Approximately 53% of the Greater Mohali Region is proposed for residential development. Several private developers are acquiring land in this region for residential development.

Developments within the Greater Mohali Region include projects by DLF, Emaar, Country Colonisers, and Unitech.

3.3.2 Commercial Development

Commercial activities are presently concentrated in Chandigarh and Mohali districts. In the proposed master plan knowledge based business parks & mixed use corridors are proposed away from the city centers which will potentially become the future growth centers of the region.

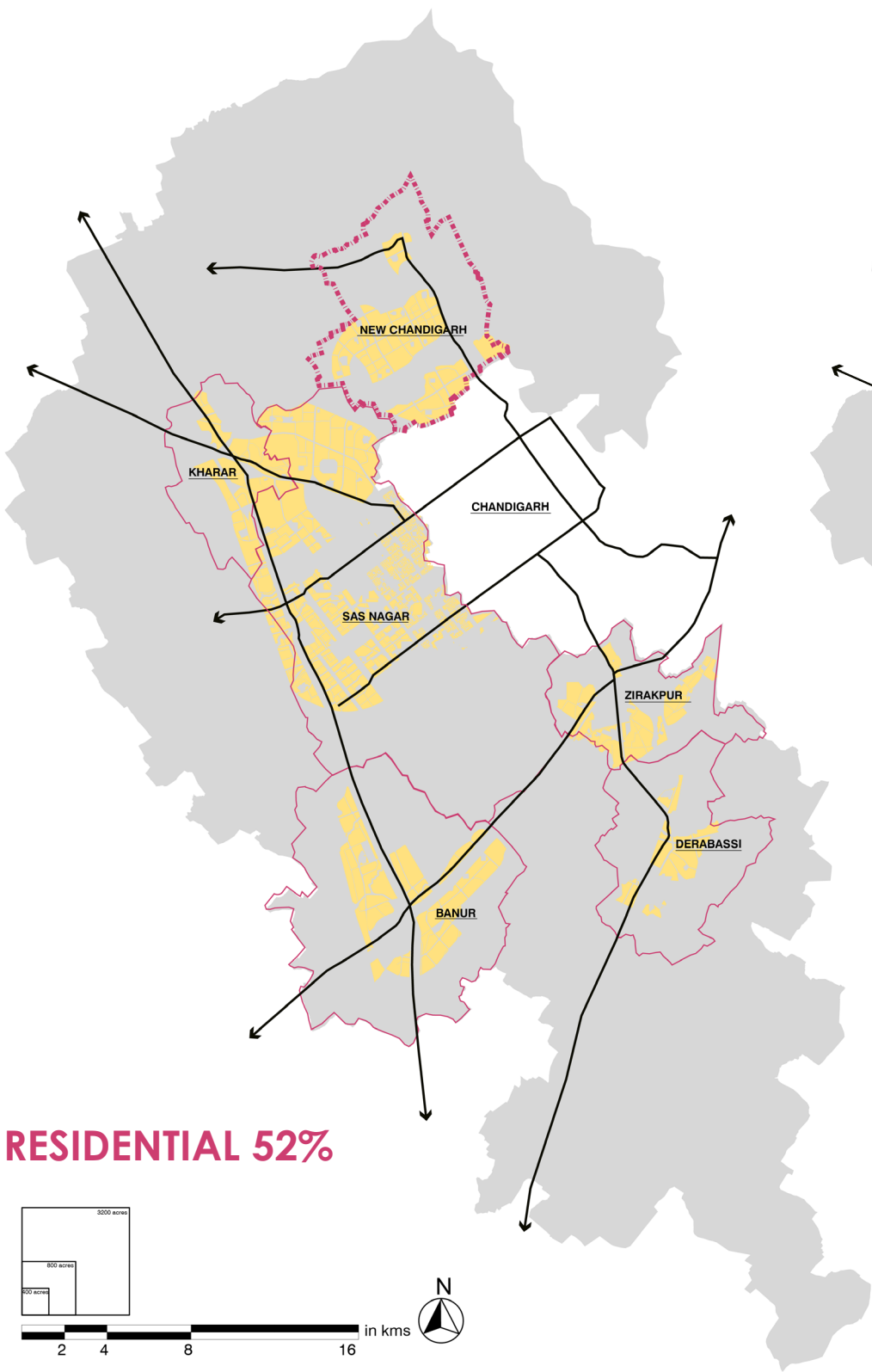


Fig. 3-4 Proposed Residential development within GMR

Source: Regional Plan 2008-2058, Greater Mohali Region, Punjab

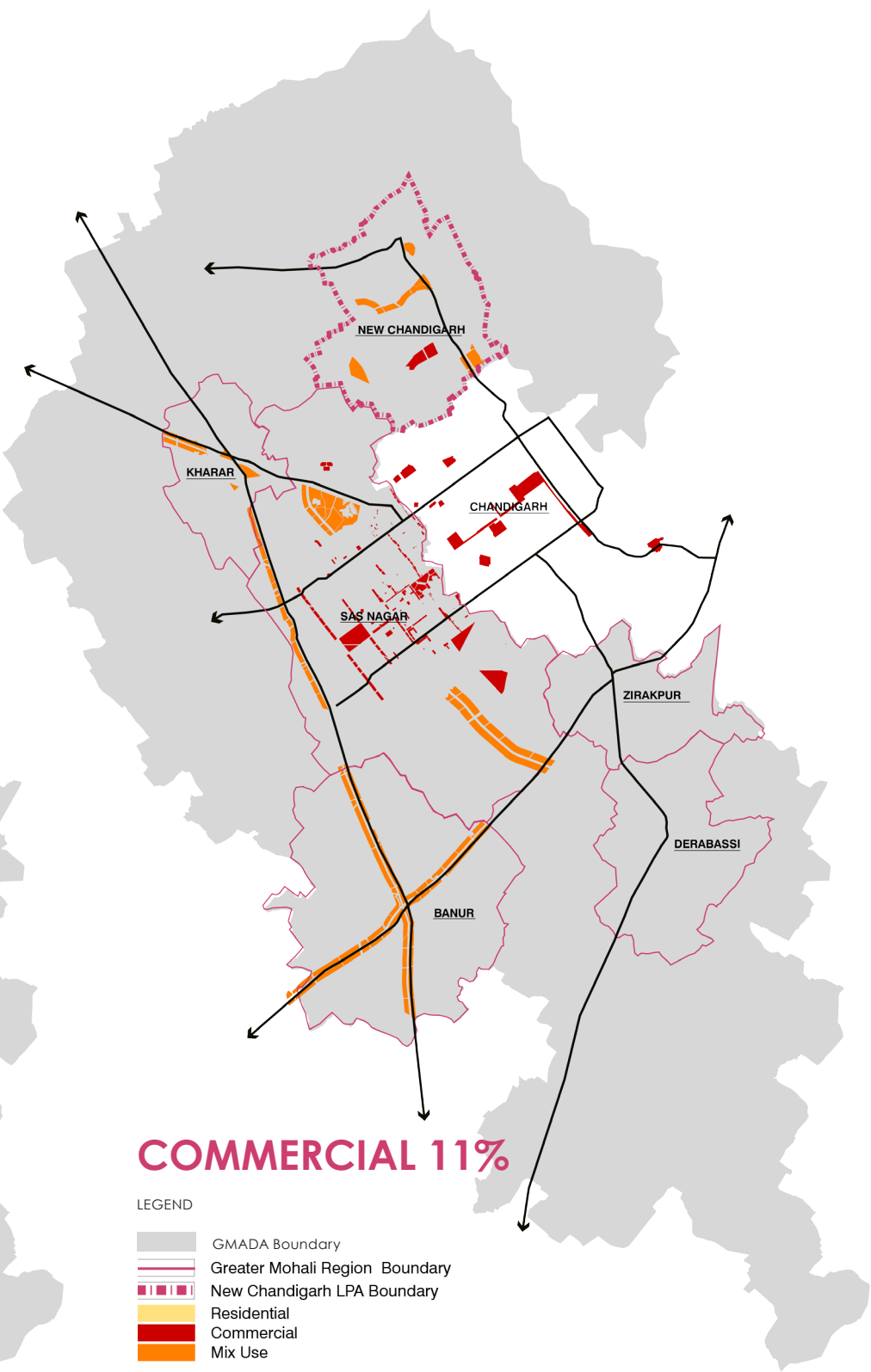


Fig. 3-5 Proposed Commercial development within GMR

3.3.3 Institutional/Health Development

GMADA has a major impetus on developing the region as a hub for knowledge based industry. The GMR master plan earmarks more than 5000 Hectares of land for institutional purposes. Currently the education institutions around Banur have programmes with established international institutions. These reputed international institutions are given incentives to locate their campuses to further develop Banur as an educational hub.

In Mohali, a Knowledge City on 453 acres in Sector-81 is also being developed. Renowned educational institutions such as IISER, Institution of Nano Technology, NABI and Multi-National Corporations (MNCs) have shown interest in expanding their activities in the State by setting up campuses here. Recently, a campus of the Indian School of Business was set up. The Fortis Hospital in Sector 62, Mohali has established itself as a world renowned medical center.

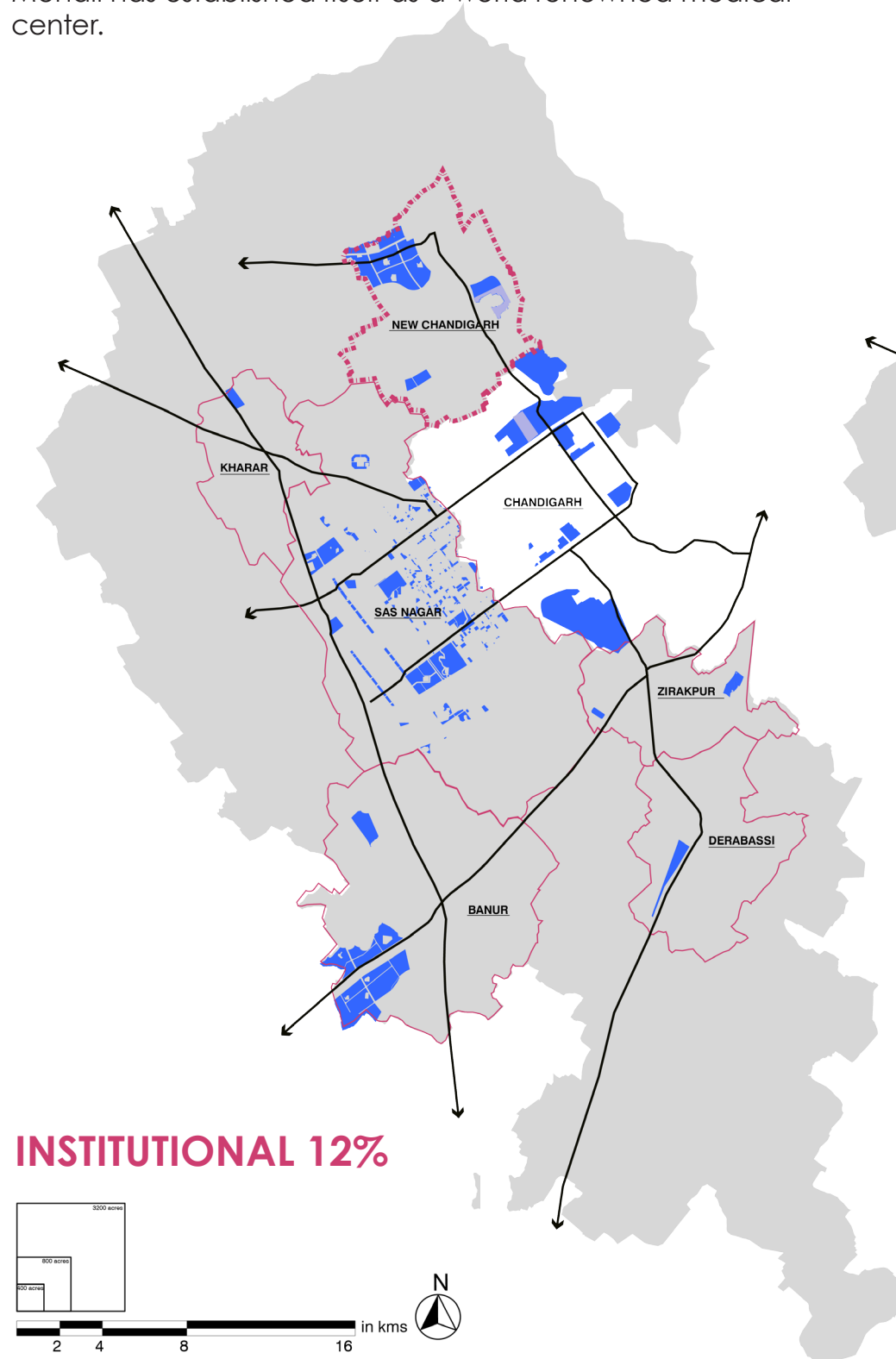


Fig. 3-6 Proposed Institutional development within GMR
Source: Regional Plan 2008-2058, Greater Mohali Region, Punjab

3.3.4 Industrial Development

The industrial activities in this region have been developing for over five decades during which substantial structural changes have taken place within the regional economy.

A number of manufacturing industrial land uses are being converted into Special Economic Zones (SEZ's) and Research and Development (R&D) centers. Zirakpur has been established as a manufacturing hub.

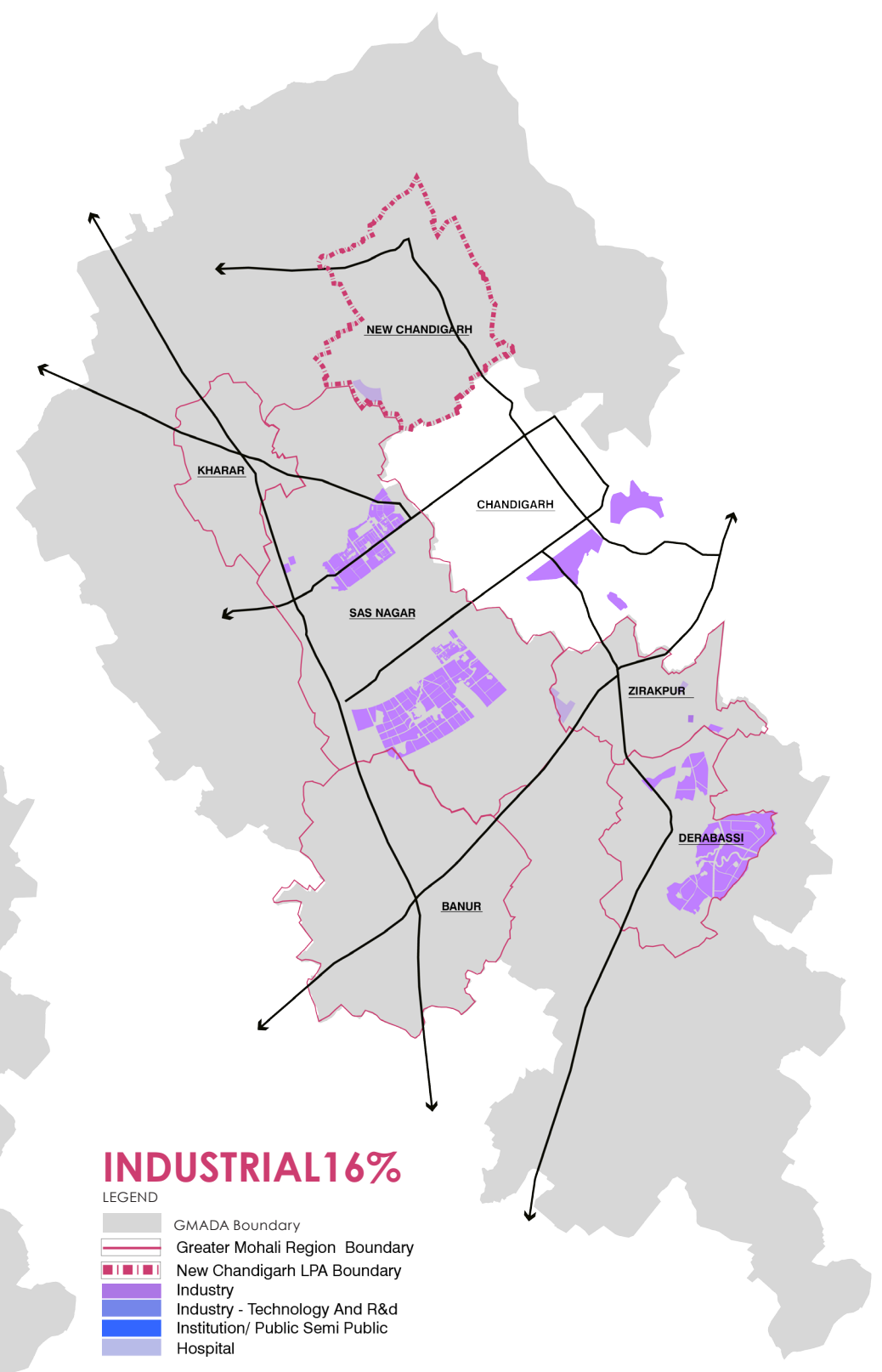


Fig. 3-7 Proposed Industrial development within GMR

3.4 REGIONAL CONNECTIVITY

3.4.1 Road, Rail & Air Connectivity

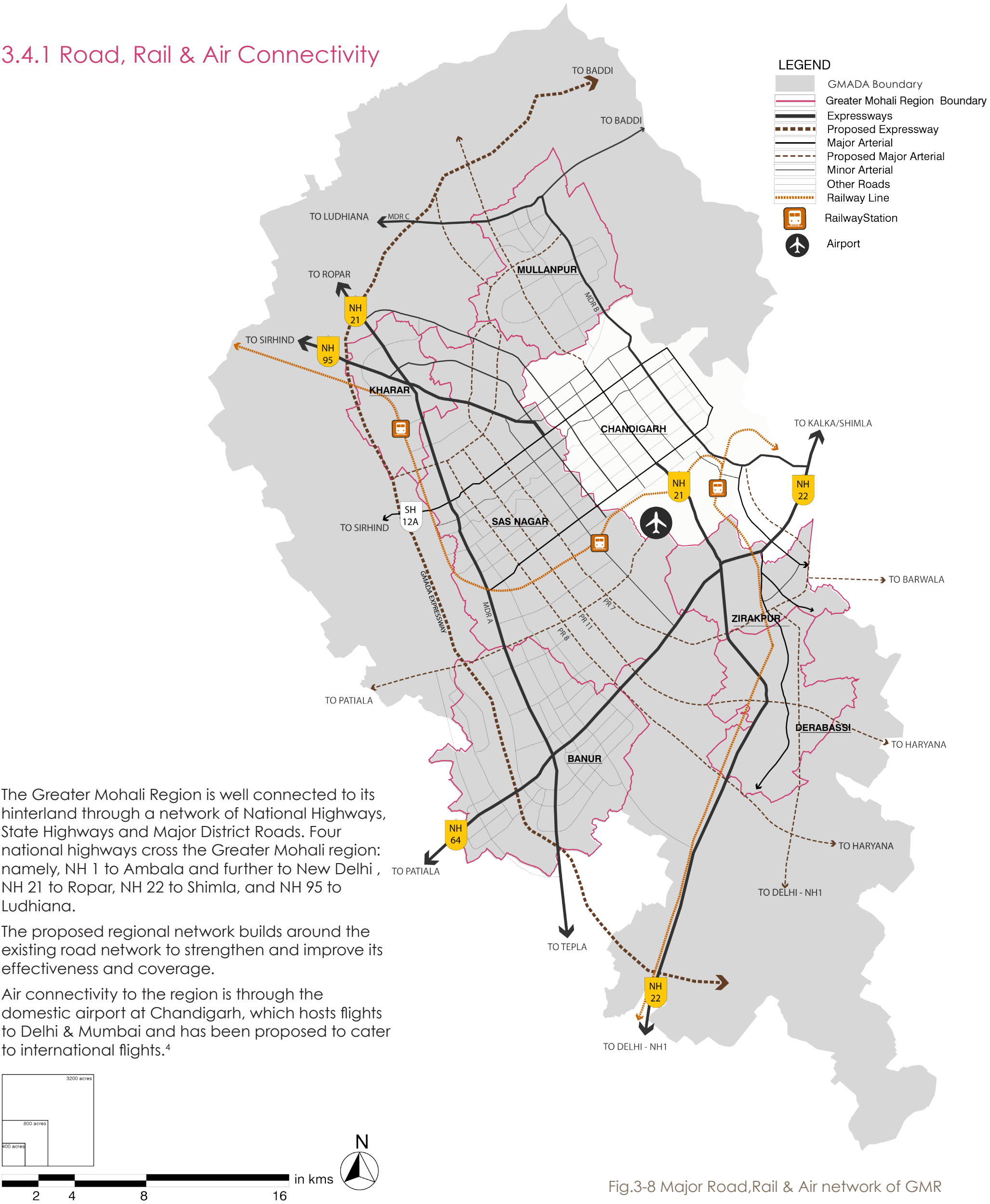


Fig.3-8 Major Road,Rail & Air network of GMR

Source: Regional Plan 2008-2058, Greater Mohali Region, Punjab

3.4.2 Mass Rapid Transit - Proposed Chandigarh Metro

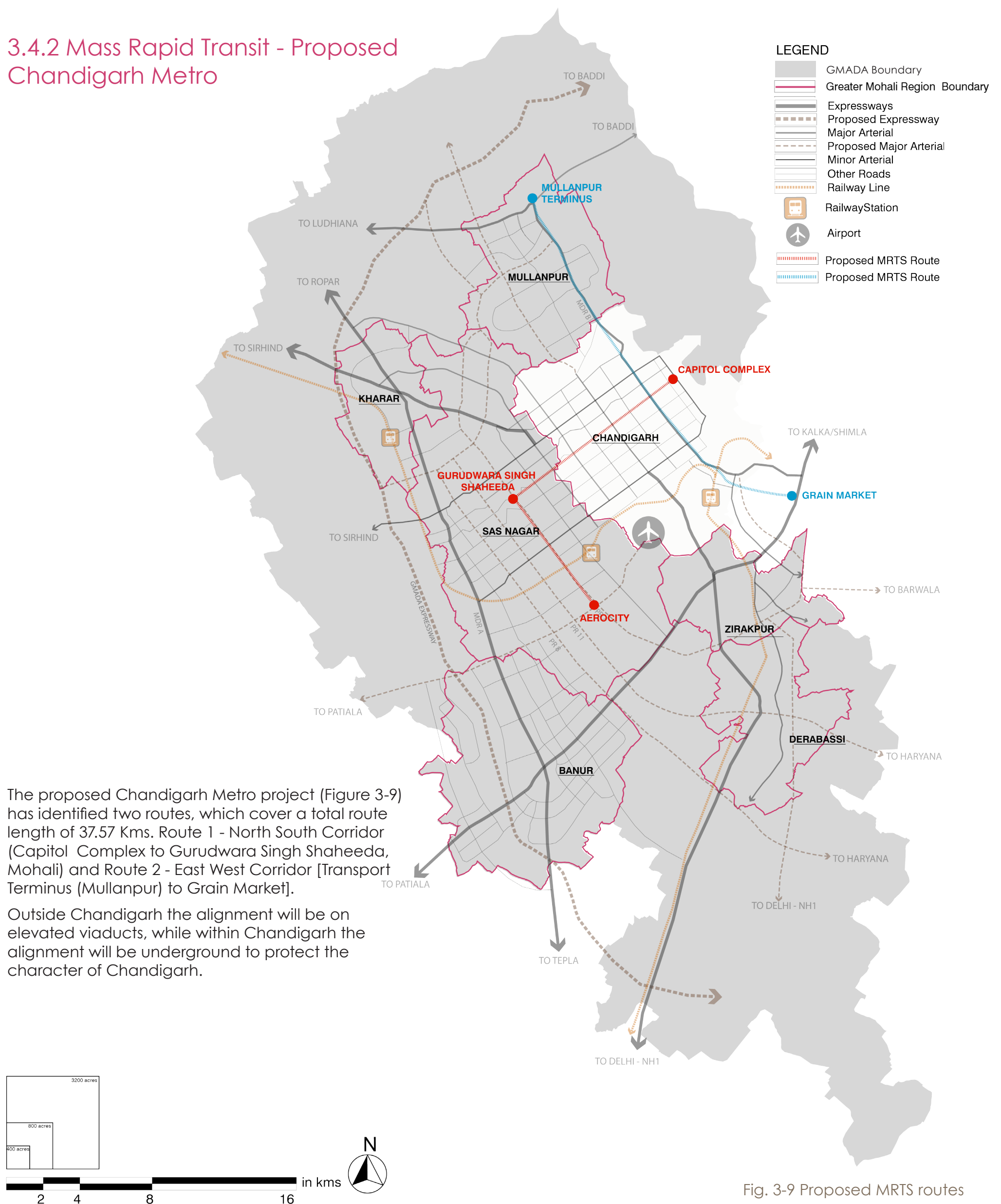


Fig. 3-9 Proposed MRTS routes

Source: <http://chandigarhmetro.com/chandigarh-metro-map/>

3.5 REGIONAL LANDSCAPE CHARACTER

3.5.1 Topography & Hydrology

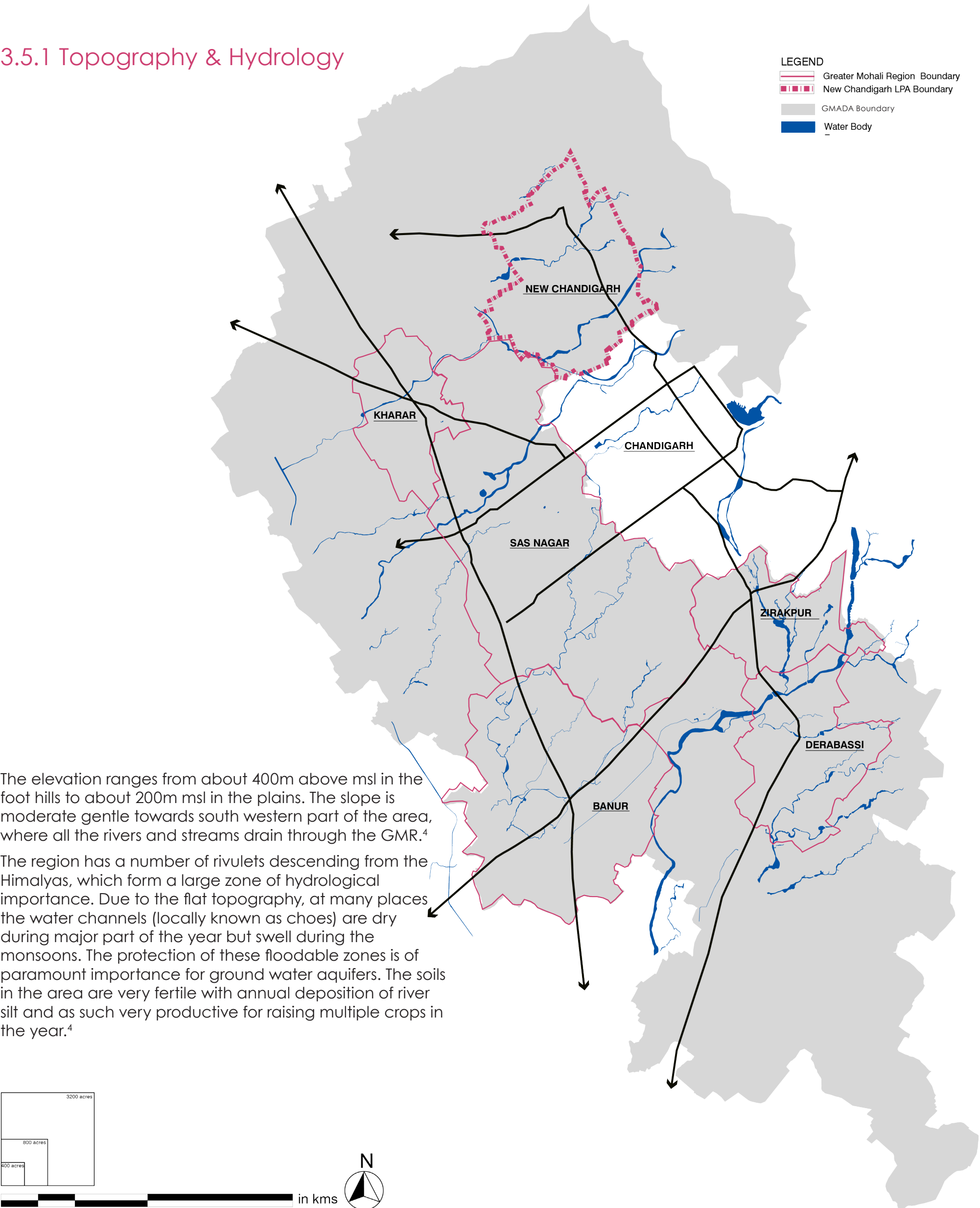


Fig. 3-10 Water bodies in GMR

Source: Regional Plan 2008-2058, Greater Mohali Region, Punjab

One seasonal stream, the Patiala ki Rao, lies on the western side of Chandigarh city and another, the Sukhna Choe, on the eastern side. A third, smaller seasonal stream flows through the center of Chandigarh. The area along this streambed has been turned into a series of public gardens called the “Leisure Valley”.

The intricate hydrology network in this region, consists of rivers carrying the upland rainwater. These descend onto the flat plains and meander through the land. There are 3 main seasonal rivulets coming from Chhoti Badi Nangal namely Siswan River, Jayanti Devi ki Rao and Patiala ki Rao (Figure 3-11).

3.5.2 Farmlands

Punjab is the state with the maximum number of individual landholdings for cultivation within India, at an average size of about 3.95 ha. The average size of farm landholding in India is about 1.23ha ⁵.

Crops traditionally grown in the region around Mullanpur include wheat, cotton, rice, pearl millet, maize, barley, and mustard seed.

A rich agricultural texture featuring highly productive farmlands - 'India's bread basket' - and small village settlements are distributed across the wider region.

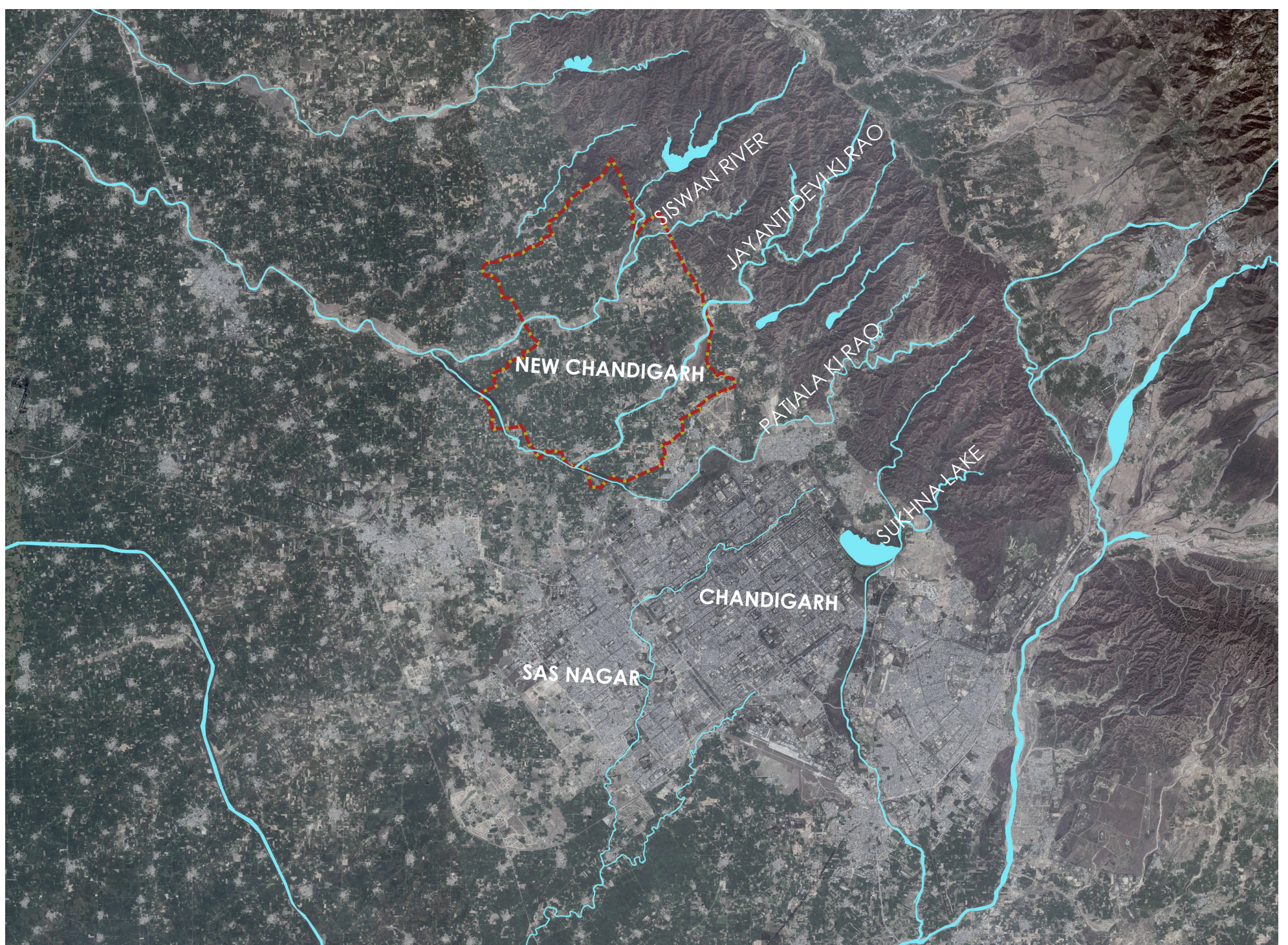


Fig. 3-11 Major water bodies , agricultural lands in vicinity of New Chandigarh LPA

Source: Regional Plan 2008-2058, Greater Mohali Region, Punjab

⁵) Council of Innovative Research (<http://cirworld.com/index.php/ijmit/article/viewFile/32MIT897/pdf>)

04 Existing Site



// Introduction
// Existing Village Settlements
// Connectivity
// Other existing features
// PLPA area
// Topography & Soil Type
// Hydrology & Ground water
// Approved developments

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New Chandigarh

4.0 EXISTING SITE

4.1 INTRODUCTION

New Chandigarh LPA is located in the north east of GMADA region abutting Chandigarh and Mohali, acting as the northern gateway to the Greater Mohali Region and is near the industrial town of Baddi in Himachal Pradesh. Spread over an area of approximately 15,000 acres (6000 ha), presently it has agricultural pastures and village abadis scattered throughout the area.

This section provides a detailed description of the existing site conditions within the New Chandigarh LPA, along with the opportunity & challenges they provide and strategies to integrate them.

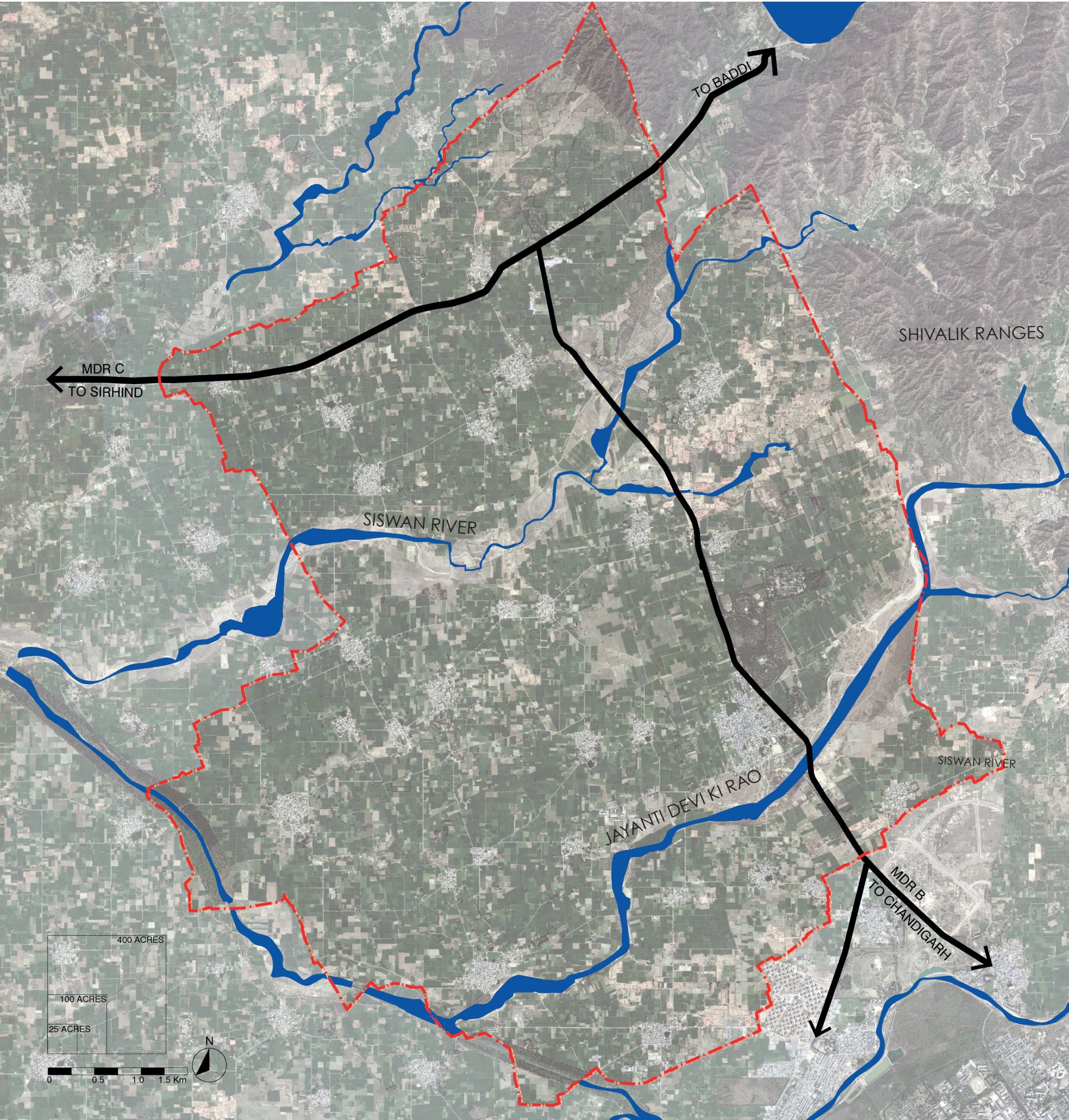


Fig.4-1 New Chandigarh LPA Boundary and physical features on satellite imagery
Source: AECOM

4.2 EXISTING VILLAGE SETTLEMENTS

The New Chandigarh LPA comprises 33 revenue villages (Fig. 4-2), which along with the village abadi area and agricultural fields forms an area of 6109 Ha ⁶(Section 6,Table 6-2).

As per 2011 census the villages accommodate 6,424 households, and a population of 34,295 (Section 6,Table 6-2). The size of these villages varies considerably from 23 people (Devi Nagar) to over 6,000 people in villages like Mullanpur. Most of these villages have a modest

Over the years, since the notification of Master plan for Mullanpur Local planning area (2008-31)⁷ in the year 2008, the village abadis have grown in extent beyond their designated boundaries(Fig 4-3), which has to be taken into consideration while detailing the master plan as it will affect the land use & development parcelization.

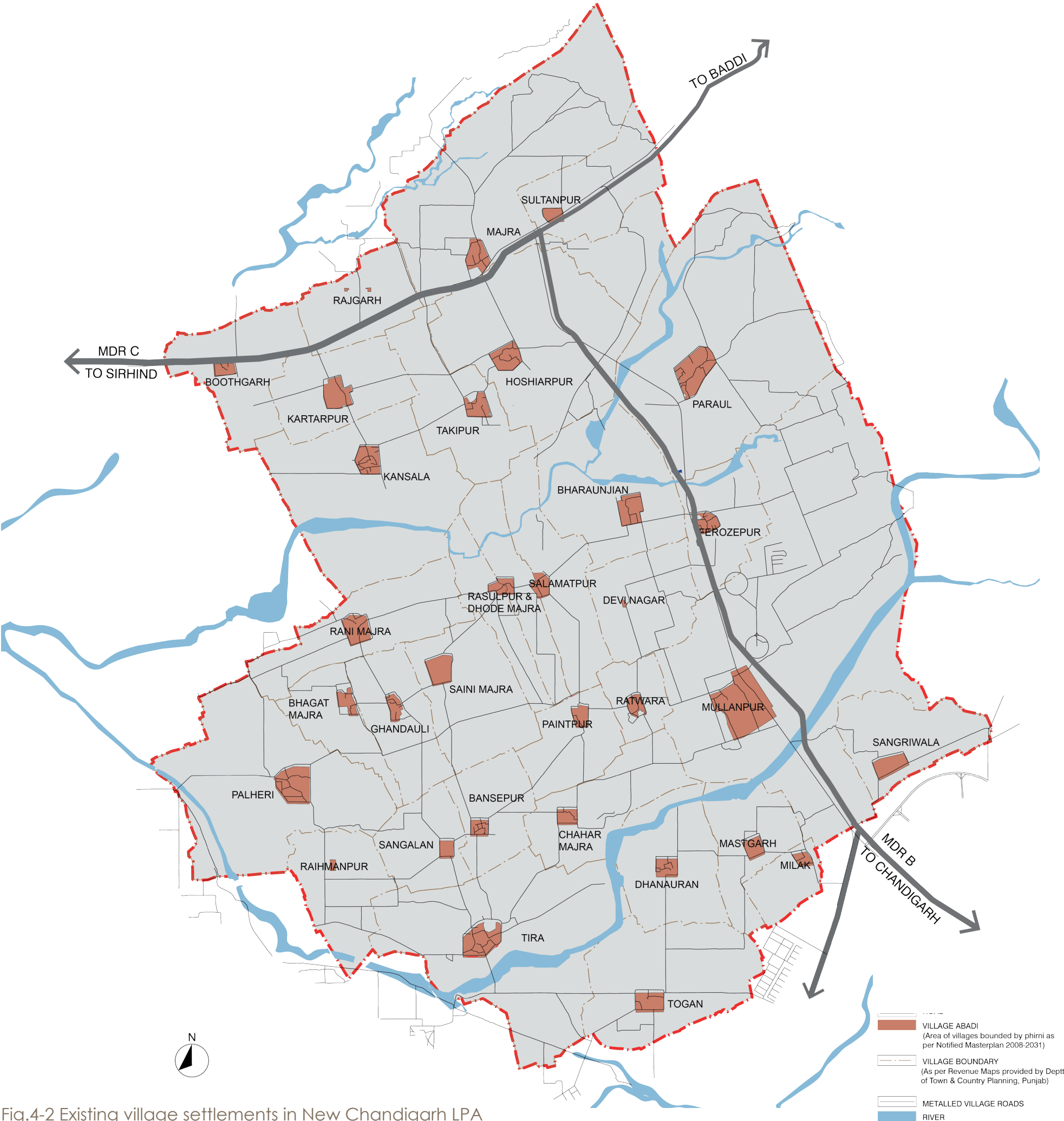


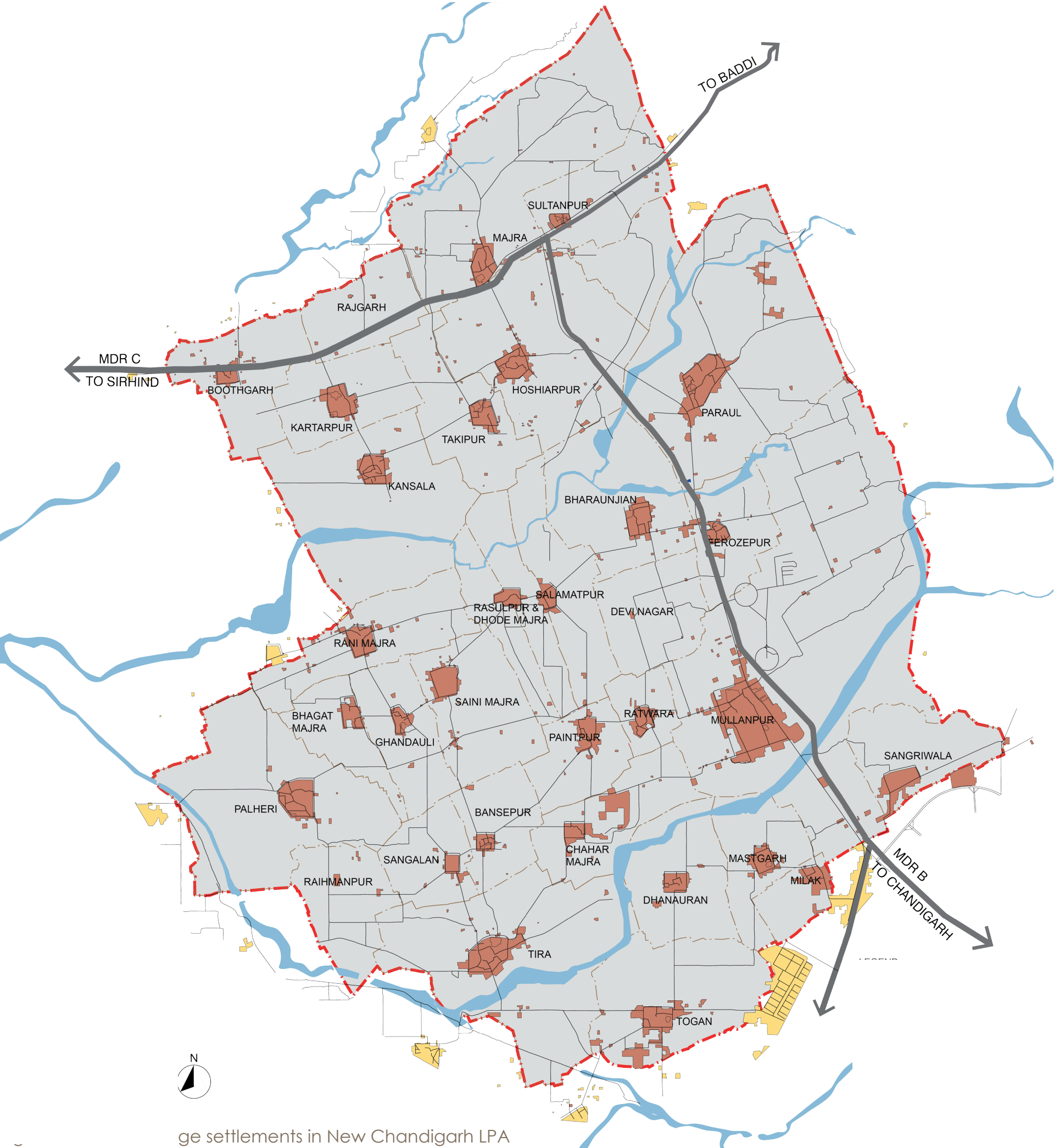
Fig.4-2 Existing village settlements in New Chandigarh LPA

Source: AECOM

⁶) Notified Area under New Chandigarh LPA as provided Department of Town & Country Planning, Punjab

⁷)Mullanpur Local Planning Area, Greater Mohali Region Punjab, Master Plan Report, 2008-2031 [notified u/s 70 (5) of The Punjab Regional and Town Planning and Development Act,1995 vide notification no. 9664 CTP (Pb) SC-115 dated12/16-12-2008.]

The proposed master plan should integrate these existing village abadis in the urban fabric by providing access as well as suitable land uses around them and also prevent further encroachment by these villages.



ge settlements in New Chandigarh LPA



Fig.4-4 Character of existing Village settlements



Fig.4-5 Village abadi & water ponds

Source: AECOM

4.3 CONNECTIVITY

Currently the major access to New Chandigarh is through Major District Road (MDR-B) which is an extension of Madhya Marg in Chandigarh connecting Chandigarh and Mullanpur, traversing the northern part of the site, and MDR C, from Kurali in the south, and traversing the western part of the site towards Baddi. Strengthening & retrofitting these roads can further improve the connectivity to New Chandigarh.

The proposed MRTS connectivity from Chandigarh can also act as a major growth driver for the city.

Access to the villages on-site is generally through narrow, single-lane frequently unpaved village roads, which needs to be considered carefully while planning of new areas.



Fig. 4-6 On - going construction of MDR -B



Fig. 4-7 Condition of existing access roads to village settlements

Source: AECOM

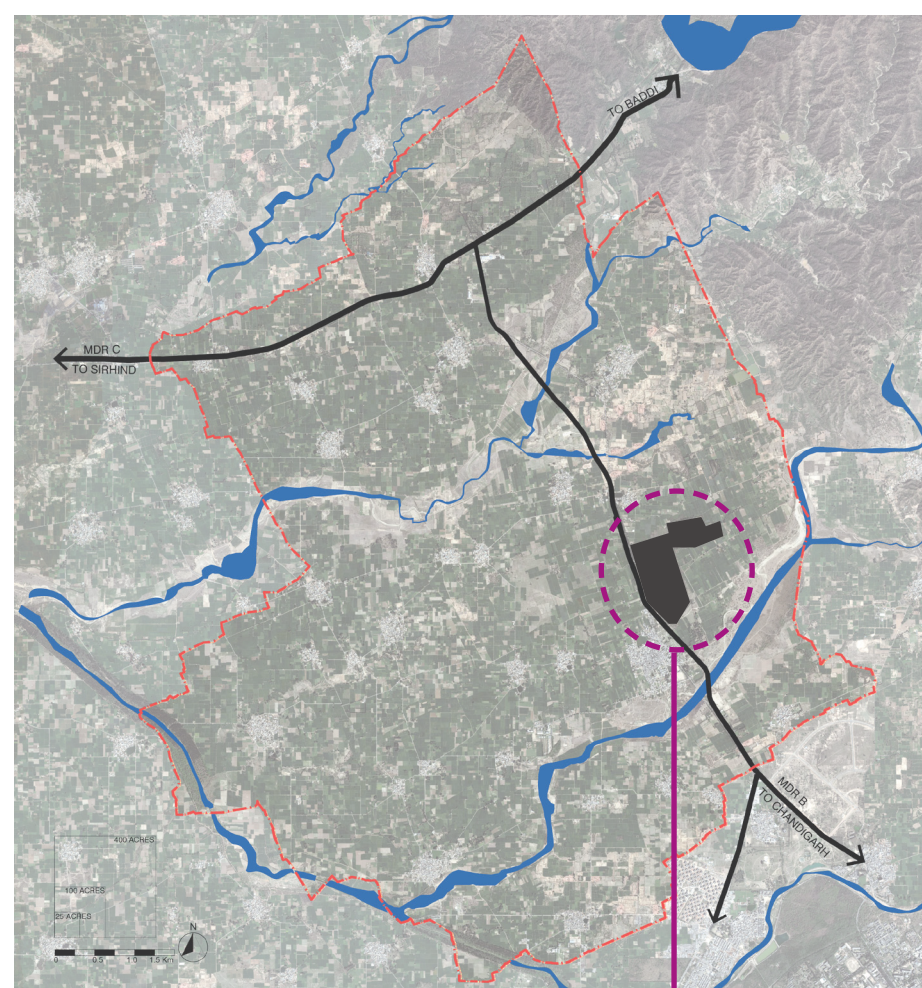
4.4 OTHER EXISTING FEATURES

As the site area had existing habitations, it subsequently has social infrastructure related to these such as existing village schools, religious sites, cremation sites etc. The new master plan should incorporate these sites as these have social value to the inhabitants.

The site also features a number of brick kilns, which were suggested to be moved out of the LPA in the notified Master plan⁷.

Along the MDR-B towards the northern boundary of the site is an existing educational institution.

The site has an existing area being used for defense related activities (Air Force Stations) of approximately 80 Ha., to the north of MDR-B. Under the Gazette of India (dated March 3rd, 2007 / Phalguna 12, 1928), the Works of Defence Act, 1903, states that land development restrictions must necessarily be imposed in the vicinity of the Indian Air Force Stations and Installations. There shall be no building or structure constructed, created or erected (including trees) within the limits of 100 meters from the crest of the outer parapet of Indian Air Force Stations and Installations.



Existing Airforce station

Fig. 4-8 Existing site used for defence related uses



Fig. 4-9 Existing educational institution at MDR-B

Source: AECOM



Fig. 4-10 Religious site near existing village abadi



Fig. 4-11 Existing Brick kilns

Source: AECOM

4.5 PLPA AREA

Parts of precincts near the hills are rich in natural resource and comprise of forests, agriculturally suitable fertile lands, water resources, as well as vulnerable areas with highly erodible soil. To safeguard these areas the state has imposed the Punjab Land Preservation Act (PLPA) legislation of 1900 as published in the Punjab Government Gazette, dated 3rd December, 1999 .

The provisions of the act impose certain temporary regulations, restrictions or prohibitions with regard to clearing, breaking and cultivation of land, quarrying of stones, burning of lime, or collection or removal of any forest produce, the admission , herding , pasturing , retention of any cattle etc. as contained in the schedule of the Punjab Govt. Notification No. 39/15/99-Ft-III/15852 dated 4th November 1999 for a period of 20 years.⁸

The present Notified Master plan ⁷ refer Fig. 4-11, shows the areas designated under the PLPA within the New Chandigarh LPA.

However, in compliance of the orders of the Supreme Court of India, the Ministry of Environment & Forests , Government of India, approved the de-listing of PLPA, 1900 from the list of forest areas for bona fide agricultural use and other livelihood needs subject to the following conditions ⁶:

- 1)The State Government shall ensure that no commercial activity is permitted on such de-listed land;
- 2)The de-listed land shall be used only for bona fide use of agriculture and for sustaining the livelihood of people / owner of land.

Figure 4-13, shows the status of notified and de- listed PLPA land, presently under the New Chandigarh LPA.



Fig. 4-12 Land under PLPA notification(Notified Master plan)

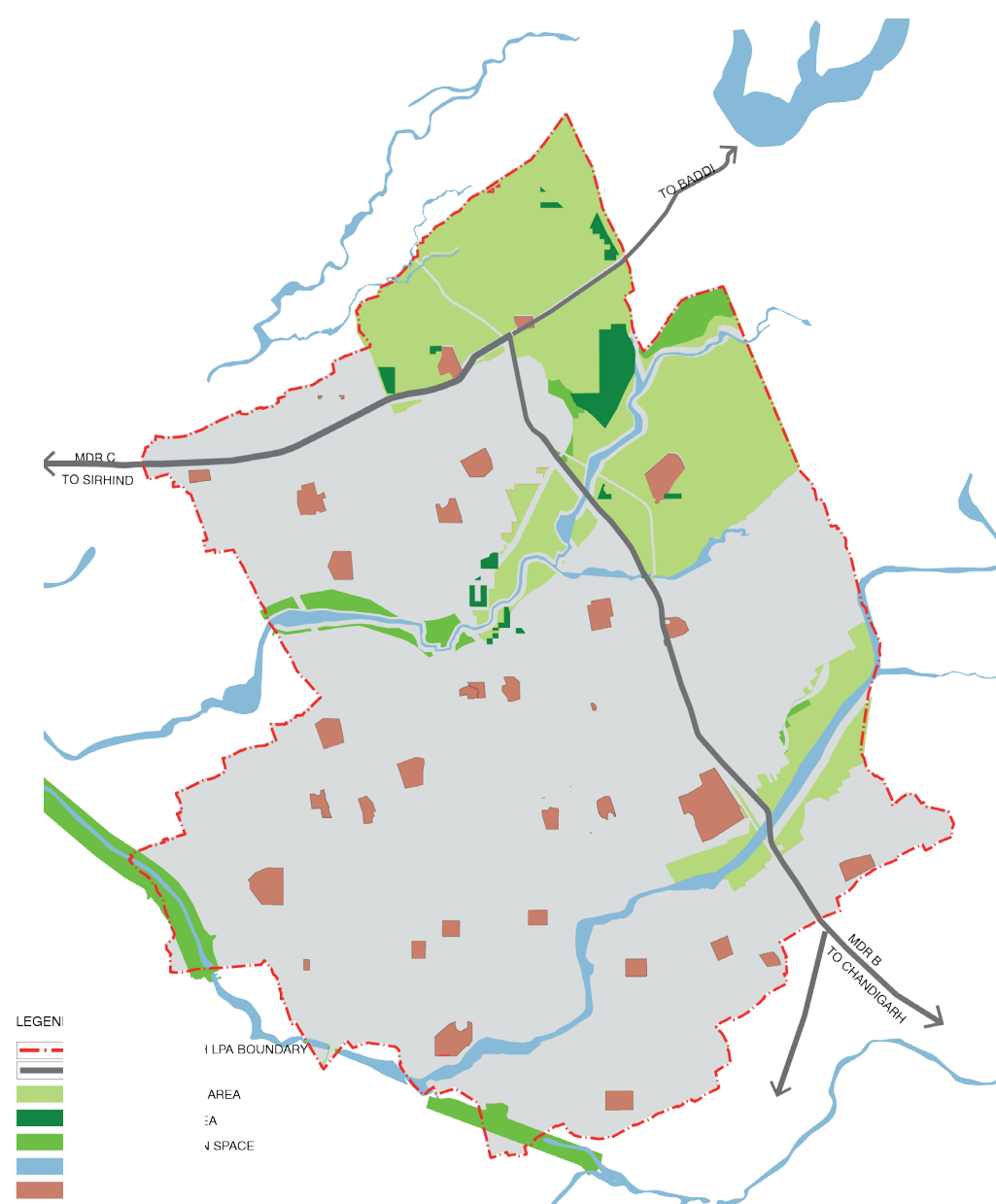


Fig. 4-13 Land under PLPA notification(notified & de-listed)

8) Notification No. 39/578/05-Ft.3/6955 of Department of Forests & Wildlife Preservation(Forest Branch), Government Of Punjab , dated 10.09.2010

4.6 TOPOGRAPHY & SOIL TYPE

The immediate context of the site comprises the foothills of the Shivalik Range which serve as a significant biosphere and punctuate the skyline to the north of Chandigarh. A 1250 km range leading to the Himalayas, the Shivaliks frame the north eastern edge of the New Chandigarh LPA (Fig. 4-14). This provides a remarkable setting for the new city and opportunity of developing the city and nature in an integrated manner, following the legacy of Chandigarh.

The area of New Chandigarh LPA is mostly flat to very gentle slopes (ranging from 320 metres to about 360 metres elevation), with the exception of the area within the foothills of the Shivaliks, which rises abruptly from the flat plains adjacent, making it largely suitable for large scale urban development.

The predominant soil type found in the region is category 021 (soil of Piedmont plains: typic ustochrepts/ udic ustochrepts) .



Fig. 4-14 Shivalik Foothills & agricultural fields

Source: AECOM



4.7 HYDROLOGY & GROUND WATER

The major rivulets that pass through the New Chandigarh LPA are Siswan River, Jayanti Devi ki Rao (Fig. 4-15).

The catchments of the rivulets covering New Chandigarh extend into the Shivalik Hills. These are seasonal rivers and run mostly dry through the year apart from the monsoons and further the upstream construction of dams (Jayanti Devi Dam , Siswan Dam) has reduced the flows in these rivers flowing through New Chandigarh. This makes it difficult to develop areas as waterfront developments or water side public spaces & leisure activity zones without impounding water in artificial reservoirs/lakes.

These dams are currently serving as irrigation source for agricultural purposes. However, when the agricultural land is converted into developed urban land, the surplus water from these dams could be used for meeting the total water demand of the area.

Currently the average ground water table in the area is 4 meters below ground level and fluctuates with monsoons and non monsoon seasons. ⁴

Fig. 4-15 Existing water body on site

Source: AECOM



4.8 Approved developments

Post the notification of the master plan ⁷ in 2009, many private and public sector developments have come up on the LPA site.

Developers such as DLF, GMADA, Omaxe, Altus space builders , Innovative Housing Infra pvt. ltd. are major developers already active in this area. The proposed developments majorly comprise of residential plotted housing, group housing, and supporting commercial, educational and social infrastructure.

The new master plan framework should incorporate these already planned developments , in terms of physical planning and infrastructure demand, so as to achieve an integrated development.

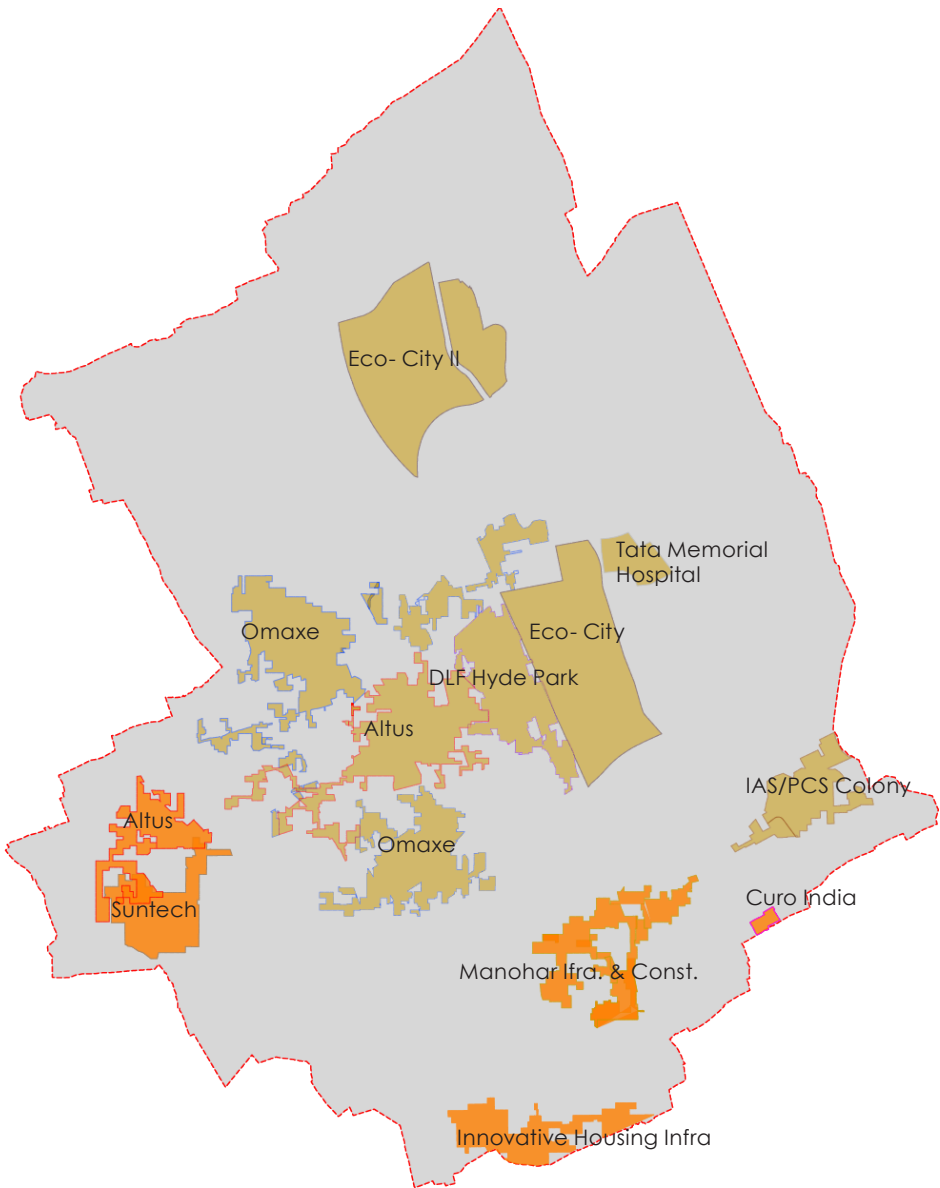
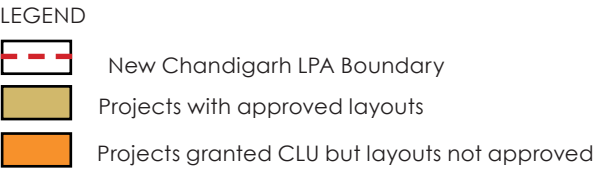


Fig. 4-16 Approved projects in New Chandigarh LPA



Fig. 4-17 Upcoming low rise development by Omaxe builders on site

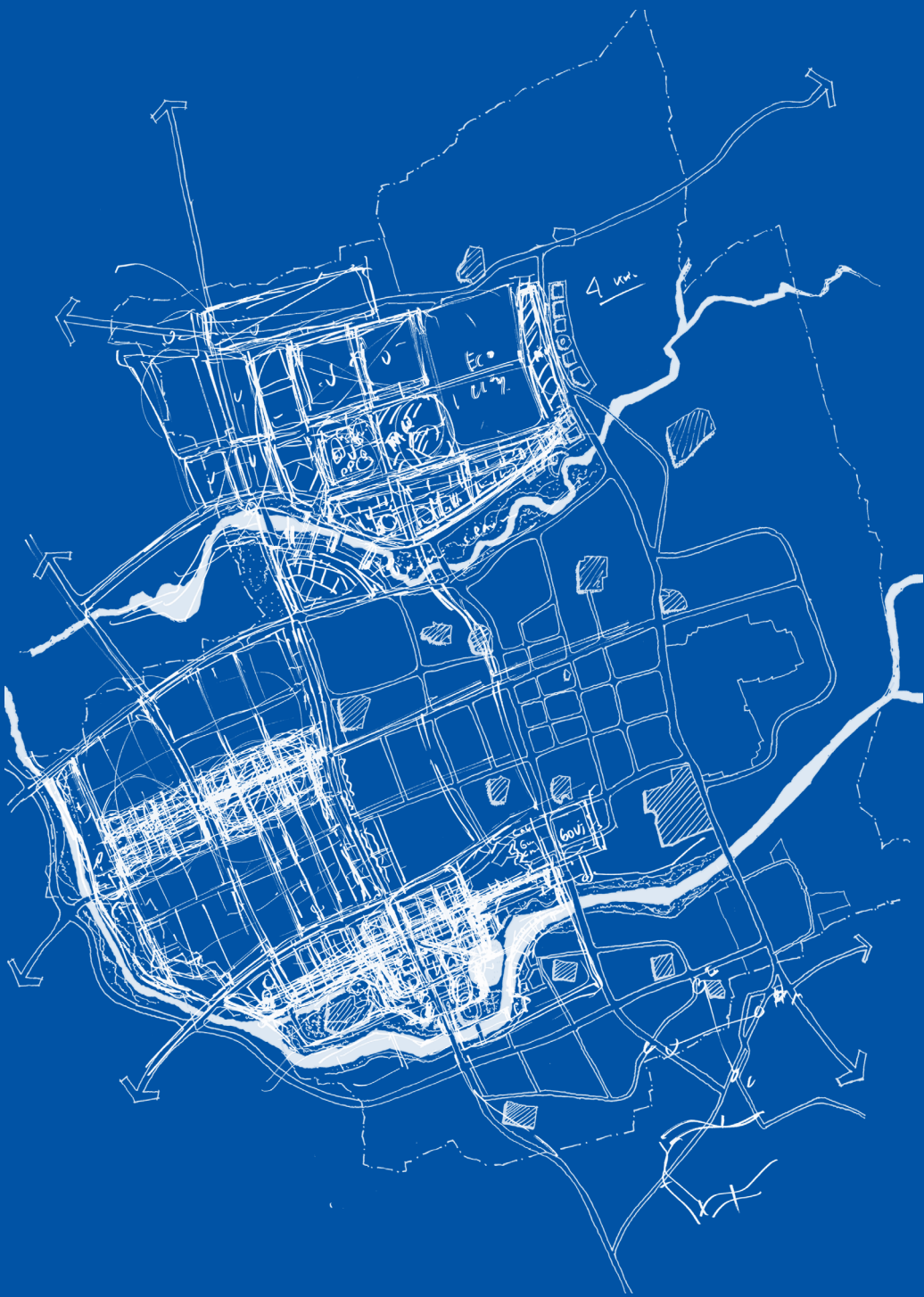
Source: AECOM



Fig. 4-18 Upcoming high rise commercial development on site
Source: AECOM

05

Design Principles



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// Introduction
// Strategies

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New Chandigarh

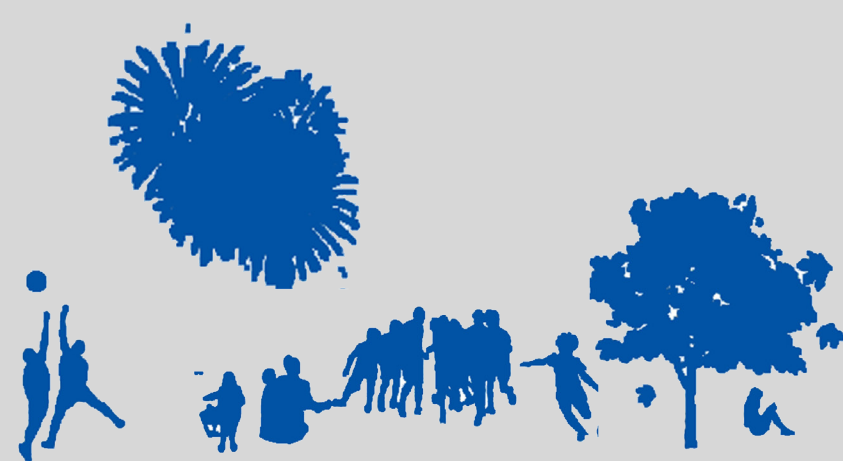
5. DESIGN PRINCIPLES

5.1 INTRODUCTION

Building on the vision for New Chandigarh LPA, set by GMADA, AECOM adopted a set of design principles for the master planning of the city :

DIVERSE CITY

- Create a city of diverse districts & destinations, which gives opportunities to live, work, plan & learn.
- Promote distinct character identity to neighbourhoods, that enables a unique sense of place .
- Create opportunities, by mixing several uses to accommodate for a range of lifestyles.
- Create identity of the city through unique activity areas like the city centre, waterfront,education city, medi-city etc.



DESTINATION CITY

- Capitalise on the existing unique natural landscape & rivers to create a regional level destination of entertainment & recreation .
- Promote the city as employment node in the region, providing range of options through work areas, educational , medical & research precincts etc.
- Create a city image with iconic structures/ buildings like work districts, stadiums, riverfront recreation areas etc.



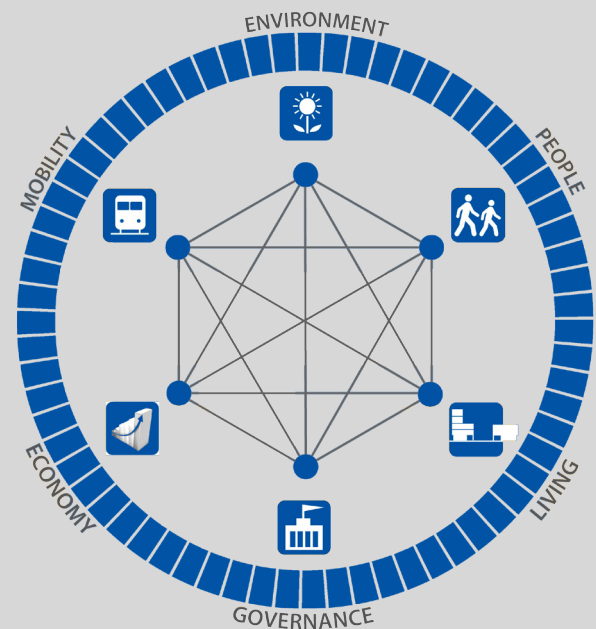
GREEN CITY

- Preserve & enhance the ecology of the area.
- Create an integrated blue & green loop of rivers and open spaces that run through the entire city and link key areas.
- Promote pedestrian & bike trails to connect the city.



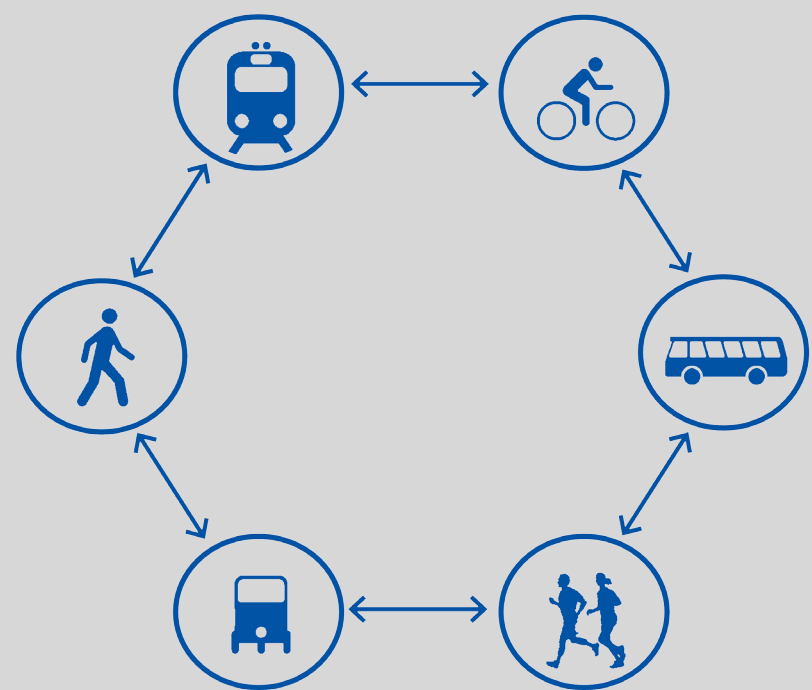
SMART CITY

- Create a city that promotes efficient , cost effective & intelligent Physical infrastructure.
- City that creates Social infrastructure to develop human & social capital through its institutions .
- Create a city that attracts investments & economic opportunities.
- City that is inclusive & involves public participation & transparent governance in decision making process.



CONNECTED CITY

- Implement comprehensive transit network that links key areas & land uses of the city.
- Promote a transit oriented city
- Promote multiple options of public transportation
- Promote mixed land use districts
- Incorporate pedestrian friendly street scape and landscape
- Provide day-to-day needs within a walkable distance of housing areas & neighbourhoods.



LOW CARBON IMPACT CITY

- Reduce energy & water demand in buildings and open spaces
- Utilize renewable energy
- Incorporate surface based storm water management system
- Incorporate green roofs and wind towers to reduce urban heat island effect
- Implement Solar water heating and rain water harvesting at individual plot level.



create **DIVERSE** districts & destinations....

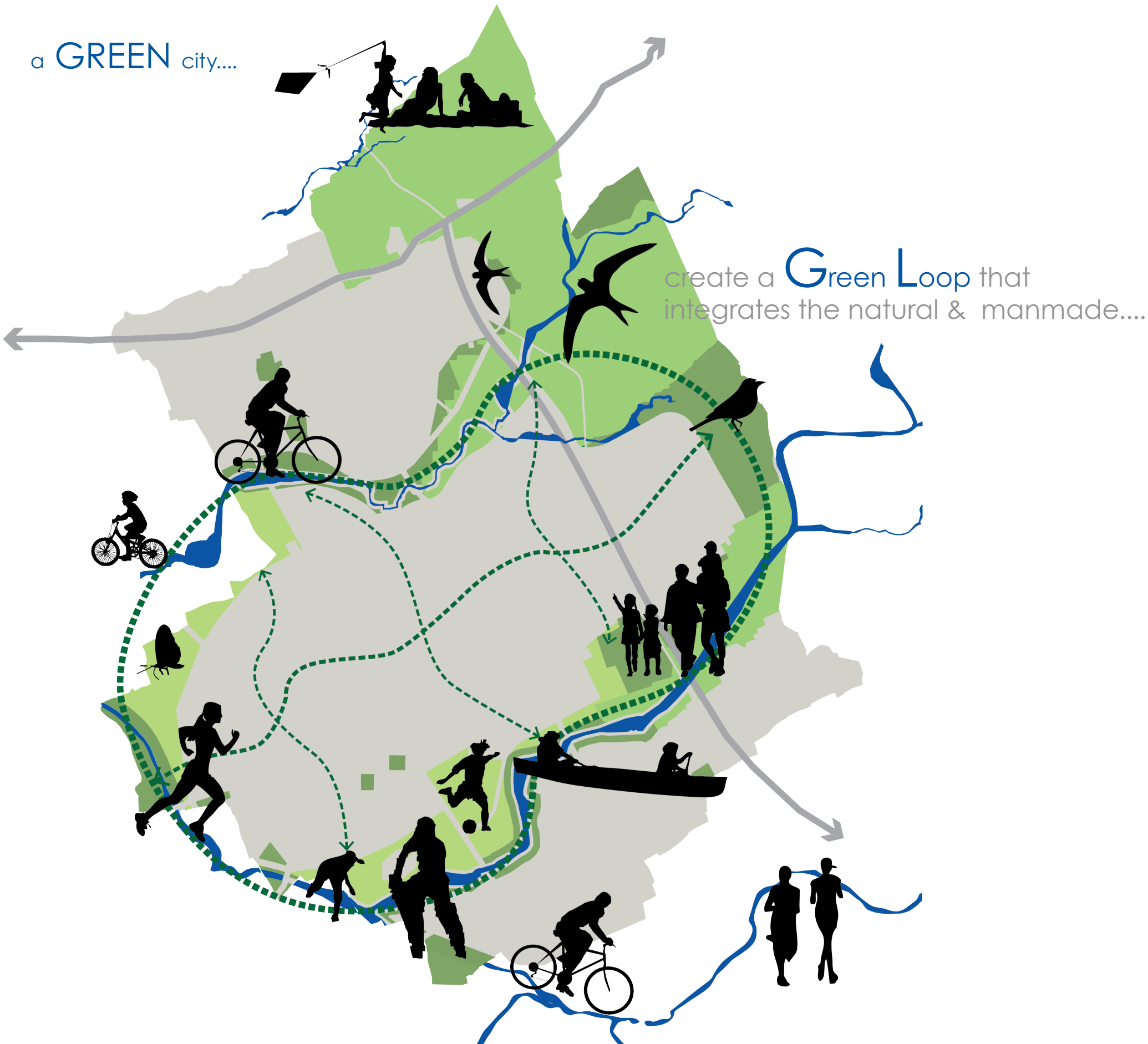


a city to **Live, WORK, Play**
& **Learn**.....

α DESTINATION city....



Source: AECOM



PLANNED ACTIVITIES IN OPEN SPACES

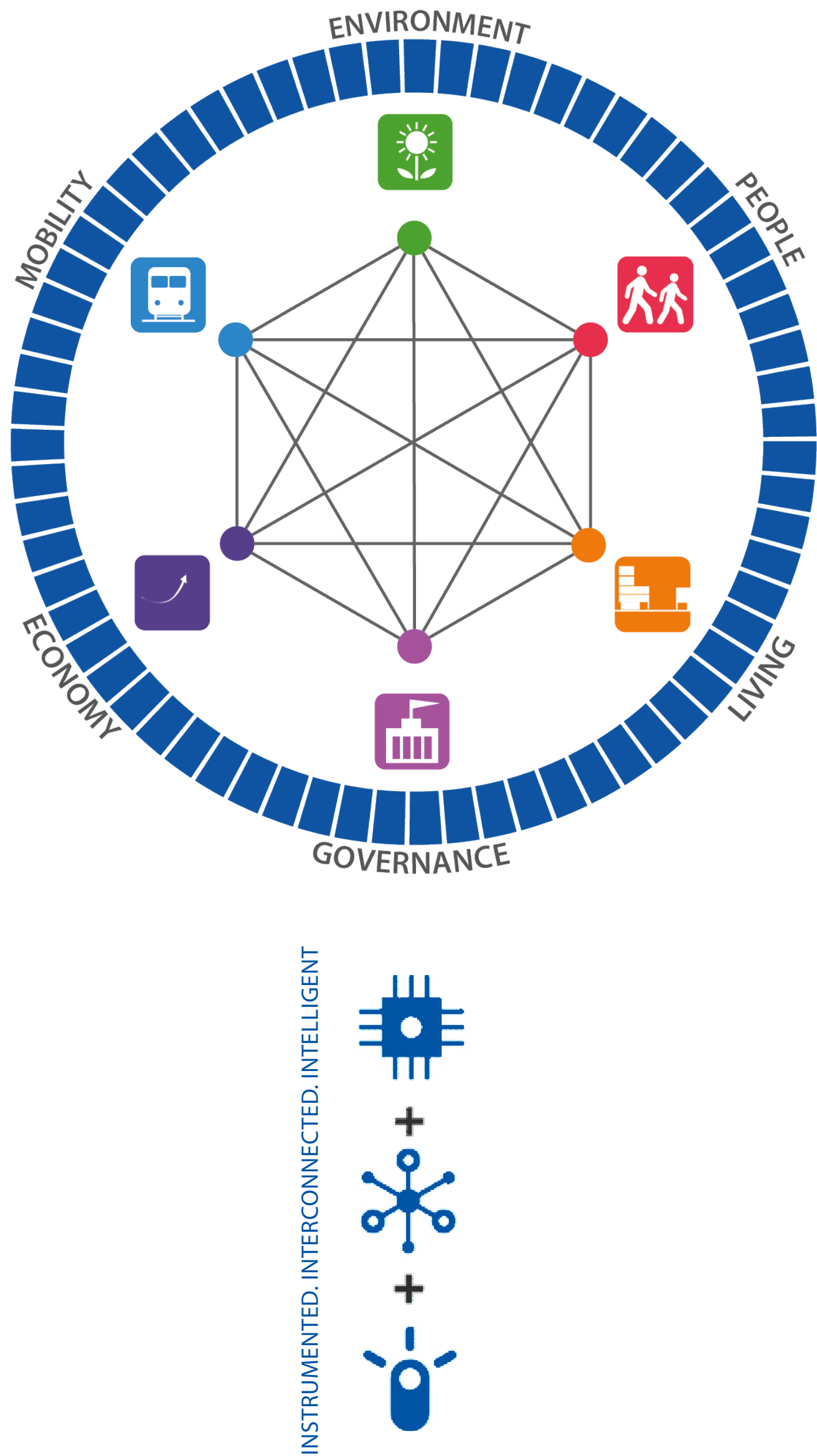


Source: AECOM

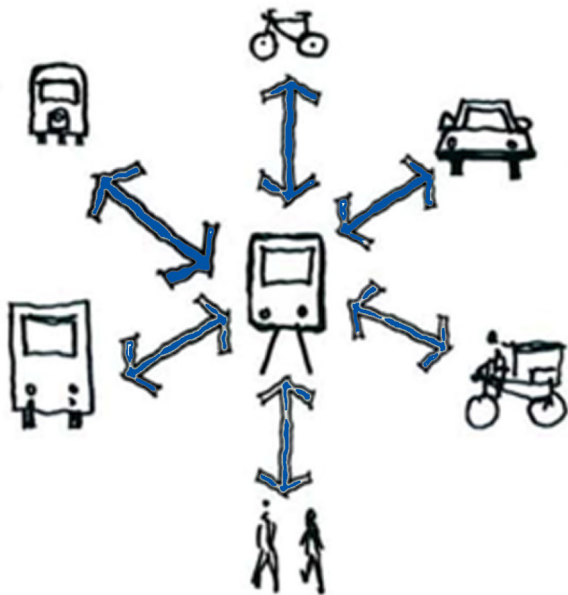
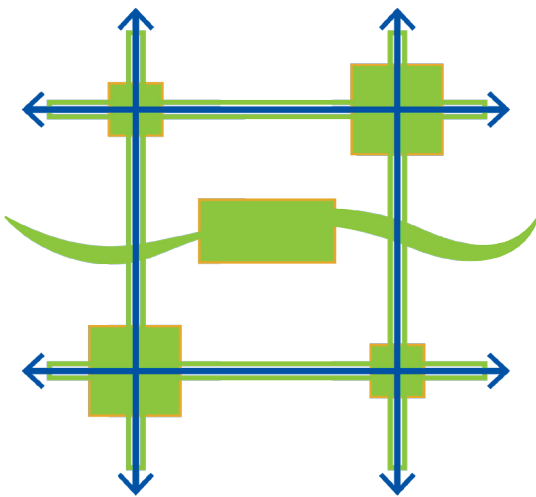
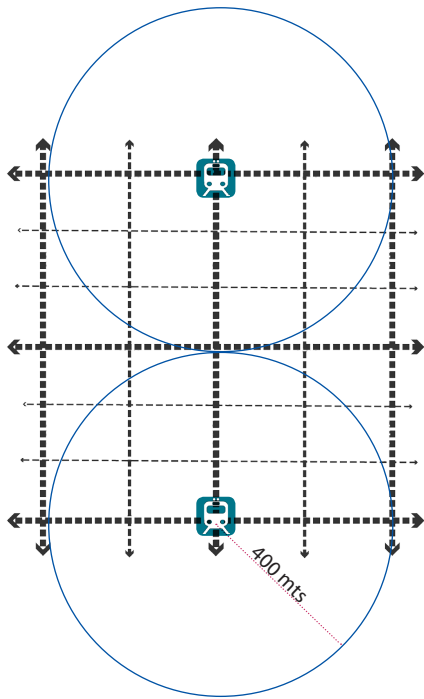
CELEBRATE THE LANDSCAPE



a SMART city....



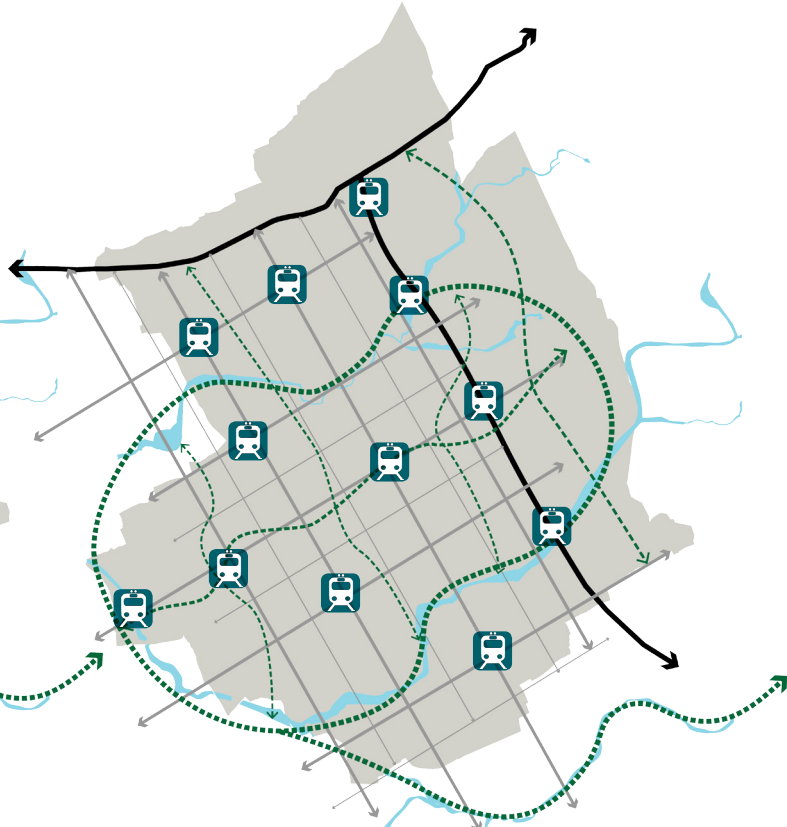
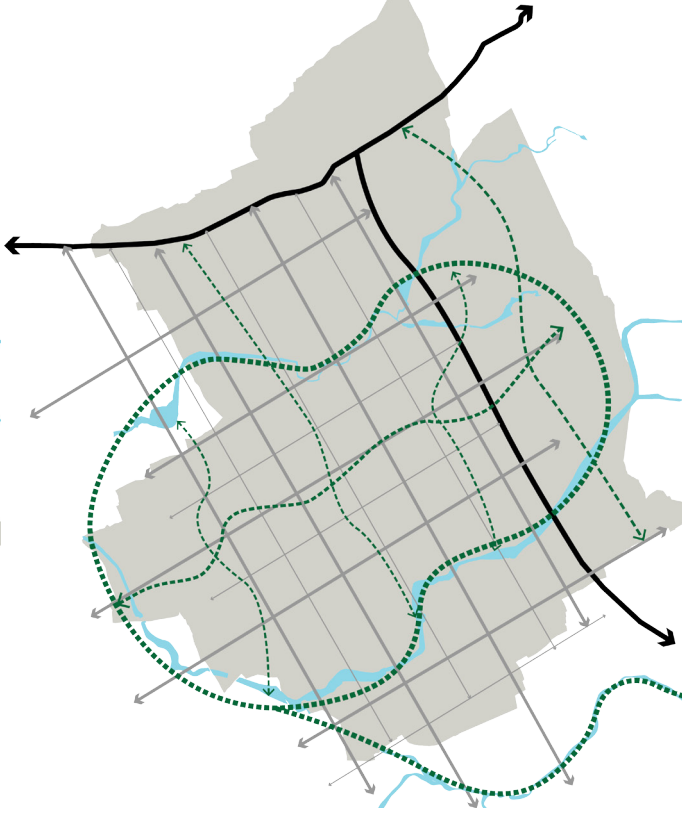
a CONNECTED city....



CONNECTED STREETS

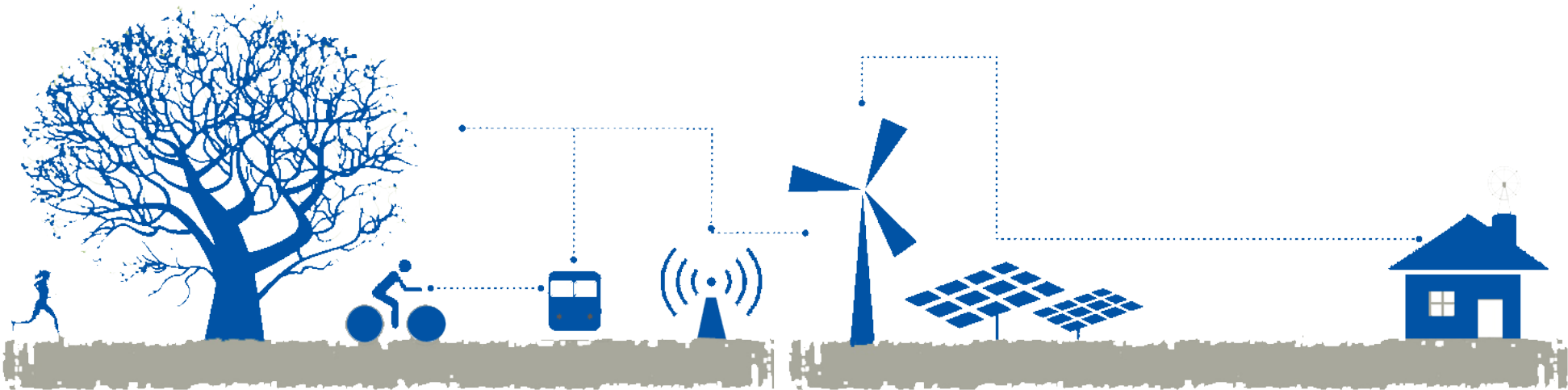
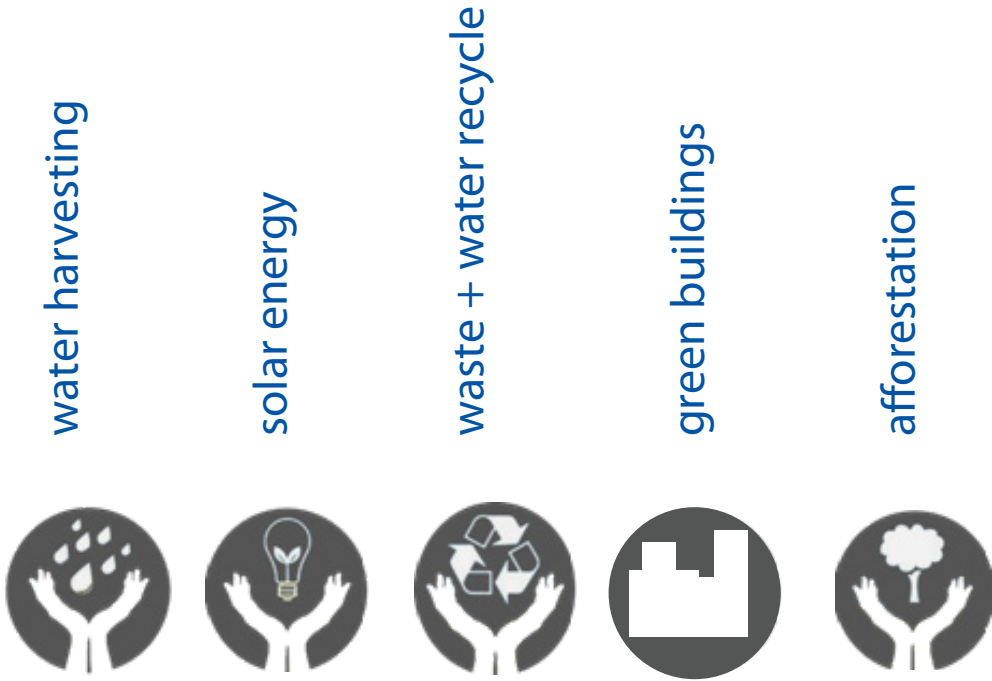
CONNECTED GREENS

CONNECTED PUBLIC TRANSPORT



Source: AECOM

α LOW CARBON IMPACT city....



Source: AECOM

06

Landuse Framework



// Introduction
// Land use Distribution
// Detailed land use as per
revised Master plan

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New Chandigarh

6. LAND USE FRAMEWORK

6.1 INTRODUCTION

The following chapter gives details of land use distribution for New Chandigarh at Master Plan level.

The proposed plan is based on the present notified Land use plan for New Chandigarh in year 2008⁷. Changes have been recommended in consultation with Department of Town and Country planning, Govt. of Punjab. All existing encumbrances at site including the approved township projects and other issues like extension of village settlement areas and development policies of Govt. of Punjab have duly been considered in the revised land use plan.

The objective of development of an Eco town - which is self-supporting, self-contained and well-designed new community for people to live, work and enjoy the pleasant surroundings - as per the notified plan⁷ (Refer Annexure) is given due importance while recommending a range of appropriate changes in the land use plan.

The total area notified as Local Planning Area (LPA) for New Chandigarh is 6,109 hectares with key land uses as Residential, Mixed Use, Education and Health. Other supporting land uses include, City Centre, Commercial and Green & Recreational areas. There are no manufacturing industries proposed as per the notified master plan⁷ and proposed revised land use plan (Fig 6-1).

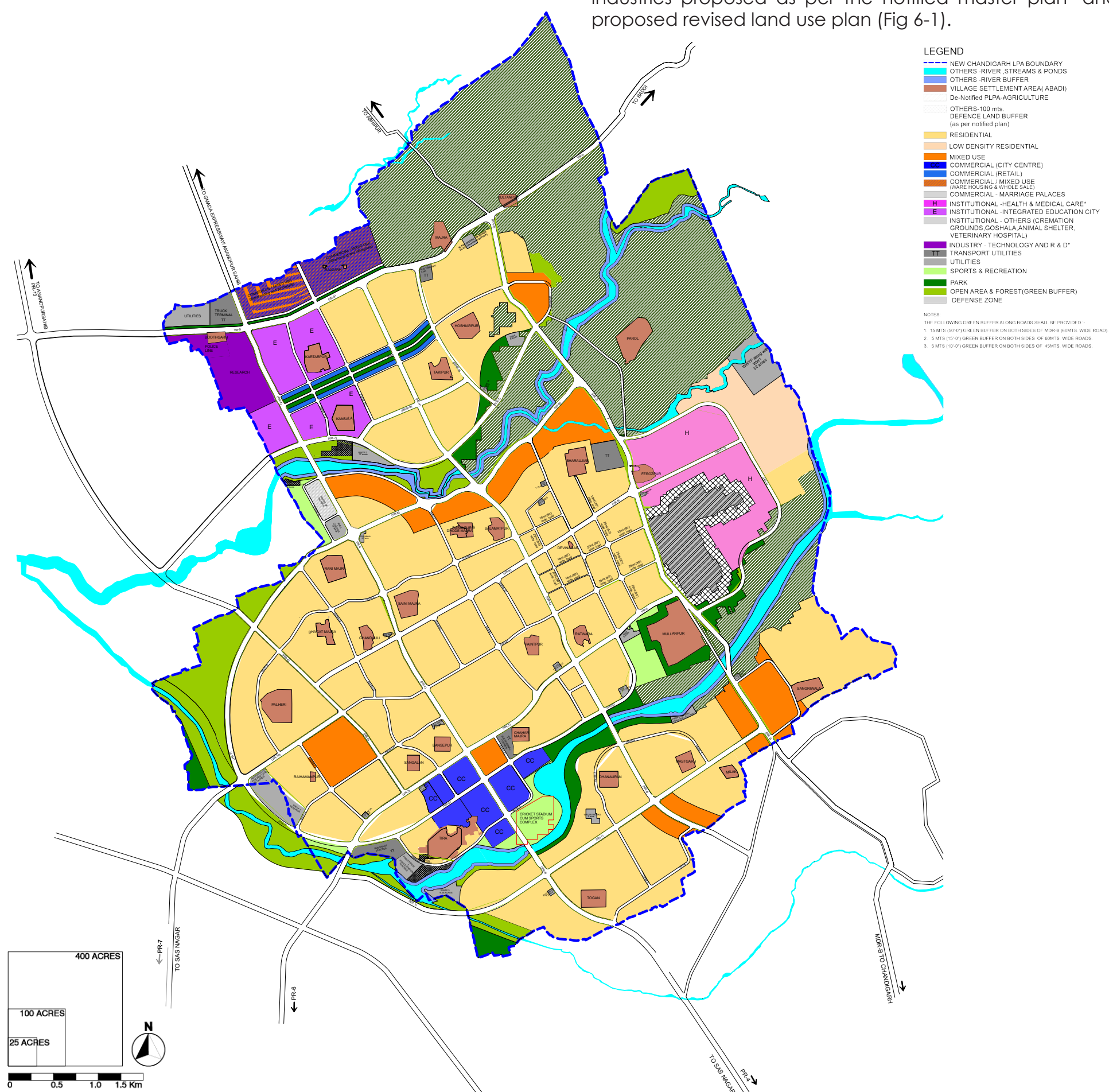


Fig.6-1 Revised Master plan New Chandigarh LPA

Source: AECOM

7)Mullanpur Local Planning Area, Greater Mohali Region Punjab, Master Plan Report, 2008-2031 [notified u/s 70 (5) of The Punjab Regional and Town Planning and Development Act,1995 vide notification no. 9664 CTP (Pb) SC-115 dated 12/16-12-2008.]

6.2 LAND USE DISTRIBUTION

Land Use	Area in Ha	Percentage
Residential	2288.54	37.46%
Mixed Use	280.98	4.60%
Commercial- City Centre	84.16	1.38%
Commercial- Retail	19.94	0.33%
Commercial- Wholesale/ Warehouse	81.22	1.33%
Commercial- Marriage Palace	9.87	0.16%
Institutional- Education City	116.38	1.91%
Institutional- Medi City	140.86	2.31%
Institutional- Research and Development	61.04	1.00%
Institutional- Others (Cremation grounds,Goshala, Animal shelters, Veterinary hospital)	11.82	0.19%
Recreational	157.54	2.58%
Parks	149.79	2.45%
De Notified PLPA- Agriculture	1,185.89	19.41%
Forest and Open Space	197.58	3.23%
Village Settlement Area (Abadi)	207.25	3.39%
Roads	576.89	9.44%
Defence Zone	79.92	1.31%
Transportation	40.51	0.66%
Utilities	91.20	1.49%
Other (River, Riverine buffer, Defence buffer)	327.84	5.37%
Total	6,109.18	100.00%

Table 6-1 Proposed land use distribution for New Chandigarh LPA

Note :

* The land use of the area shown in this Master Plan, but falling outside Local Planning Area boundary of New Chandigarh on South West of New Chandigarh will form part of Master Plan S.A.S. Nagar and Master plan S.A.S. nagar shall be deemed to be amended to this extent. (Refer fig.6-1a).

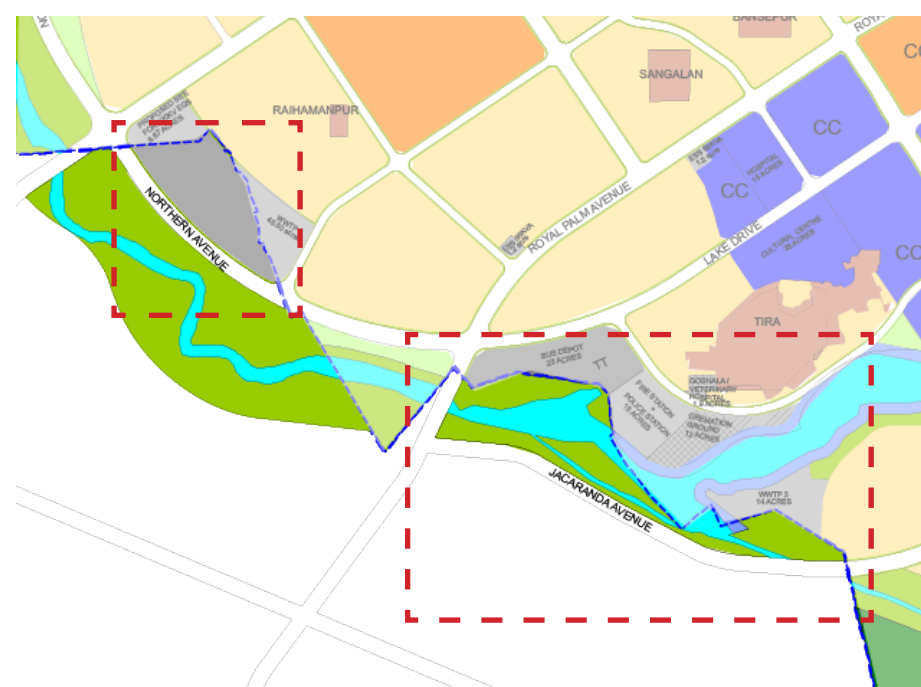


Fig.6-1a Land use of Area outside New Chandigarh LPA

Source: AECOM

6.3 RESIDENTIAL

The prime objective for development of New Chandigarh is to provide new self-sustaining residential areas to support the growth of Chandigarh and the Greater Mohali Region.

Out of total land area proposed for development, 37.5% of the area is proposed for residential development with plotted and group housing permitted as per approved Development Controls. The majority of residential areas within the master plan have residential projects approved and under construction. These projects have been approved under the New Township Policy of Govt. Of Punjab wherein the minimum area required for township is 100 Acres.

The residential zone is divided into 3 Zones: **Zone 1** comprises areas wherein the projects under township policy are already approved; **Zone 2** is primarily land parcels wherein the projects are yet to be approved & **Zone 3** a low density area at the foothills of the Shivalik ranges on the northern side of the site.

Due to an increase in demand for affordable housing and giving due consideration to Govt. Of Punjab initiatives to promote affordable housing, it is proposed to increase the population densities within New Chandigarh Development. Zone 1 is proposed to have a gross density of 150 people per acre (75 dwellings per hectare), while Zone 2 is proposed to accommodate a density of 200 people per acre (100 dwellings per hectare). The Zone 3 is proposed at a fairly low density of 30 ppa (15 dwellings per hectare). For the purpose of population computation the density will be applicable on total project area.

The projects already approved and where licenses have been granted, will not be allowed any increase in density. These projects will continue to be developed as per approved drawings and with pre-approved density norms.

The housing typology proposed is a mix of Plotted and Group Housing. Every Township project with a minimum area of 100 Acres will be allowed to develop a maximum of 20% of the gross area for Group Housing.

Both public sector and private developers can undertake township development within the designated residential zone as per the Policies of Govt. Of Punjab, and in accordance with this Master Plan.

The total residential population including the expected residents within the Education City and Medi city areas is estimated to be close to 1 million residents.

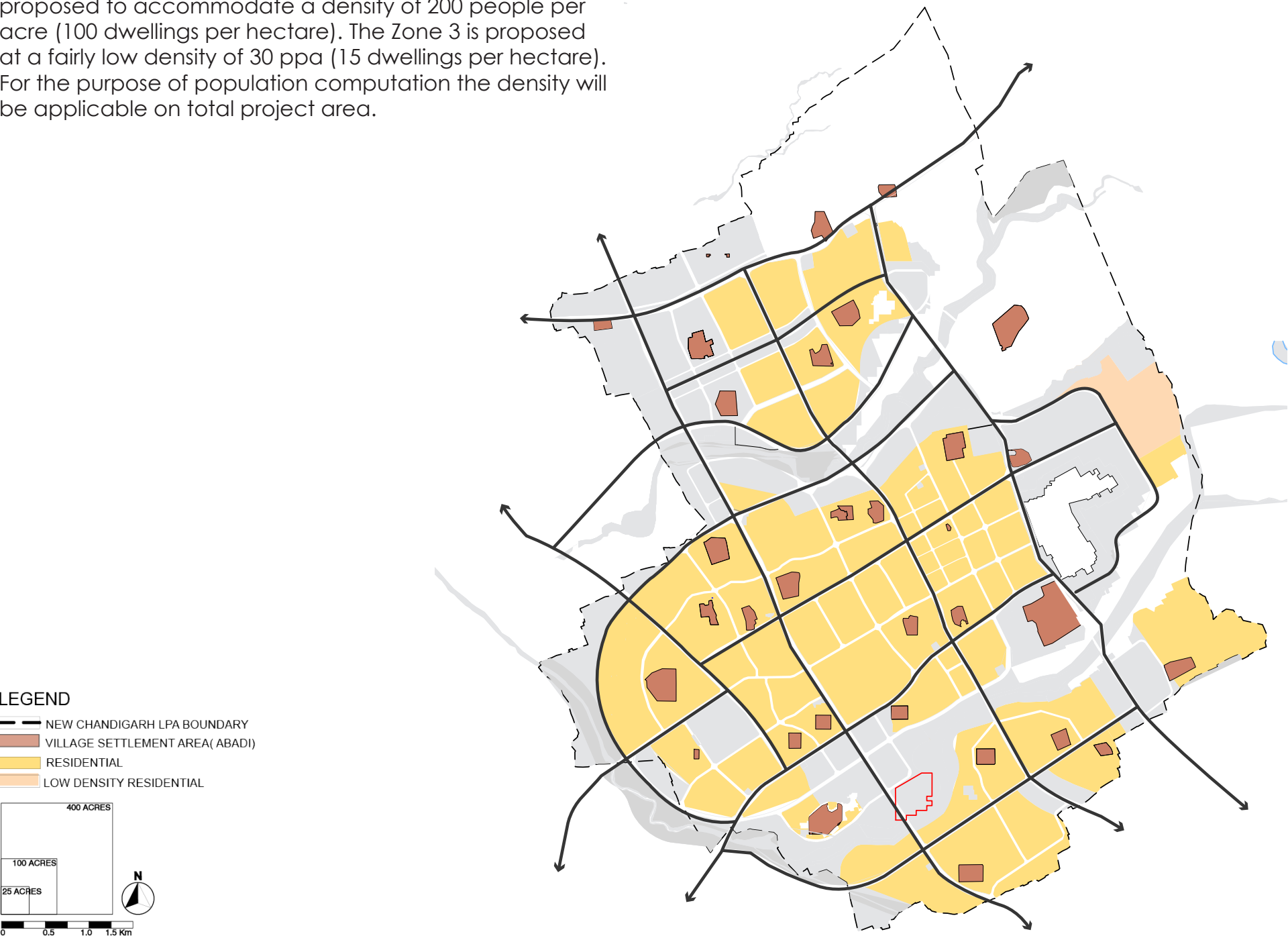


Fig. 6-2 Proposed residential area in New Chandigarh LPA
Source: AECOM

6.4 MIXED USE

The mixed use development areas are planned to provide a variety of retail, entertainment, accommodation and convenience shopping for residents, workers and visitors. The mixed use areas have been planned to help with realizing the concept of “Walk to Work” for smart city development.

The main mixed use parcels are located along the southern side of the Siswan River, and the MDR-B arterial road. These are places that are encouraged to be pedestrian-oriented and of higher density development. The provision of adjacent and connected parks, open space and recreation trails are vital to the livability and vibrancy of these places.

A second level of mixed use nodes are located along PR-4, within the City Centre precinct, north-east of MDR-B, eastern entry point to the site from Central boulevard and in the south-western portion of the LPA area, within planned residential development areas.

These mixed use centres will be the most intense, providing a wider catchment radius of at least 1 km.

The Mixed Use area along the southern bank of the Siswan River is designed to promote a waterfront urban edge. While the majority of the parcels within this site area are already developed or under construction for Residential use, it is thus proposed to promote more of commercial/ retail project within the designated mixed use area which in return will create ample job opportunities to make the development self-sustainable.

The area designated for mixed use at the southern/ Chandigarh end of MDR-B will help in attracting a mix of residential and commercial activities which is well served by MDR-B. This parcel once developed will serve both New Chandigarh population as well as Chandigarh population, with substantial passing traffic along MDR-B.

The area within the south-western portion of the LPA is centrally located within a residential zone. This parcel is along an arterial road connecting the GMADA area with New Chandigarh. Similarly, at the Central boulevard another mixed use area is proposed. Both these will support both the local population and a wider catchment extending into the GMADA area due to the regional road connectivity.

The City Centre area is proposed to be developed by GMADA. In order to encourage early development of the City Centre and to off-set the cost of developing the City Centre, a parcel of land is designated for mixed use to promote private investor development. The layout plan for the City Centre will include this mixed use parcel. Development approval for this parcel should be contingent on its consistency with the layout plan for City Centre area along with the mixed use area.

Other smaller mixed use areas are distributed throughout the LPA to provide an even coverage in terms of commercial/ retail catchments. Focal points and key activity zones will be created within these mixed use development sectors to orient and relate uses to different needs and customers.



Fig. 6-3 Proposed Mixed use area in New Chandigarh LPA
Source: AECOM

6.5 COMMERCIAL

6.5.1 City Centre

An area of approximately **100 Ha** (including the mixed use parcel) has been demarcated in the New Chandigarh Master Plan for development of a City Centre.

The Notified Master Plan (notification no. 9664 CTP (Pb) SC-115 dated 12/16-12-2008) has proposed a “Civic Centre” south of an arterial road connecting PR-4 and MDR-B. This location may not be appropriate for development of a Civic Centre.

The revised master plan proposes to shift the Civic Centre along PR-4 and proposes to develop it as a mixed use City Centre in a centrally-located and highly accessible position with regard to both New Chandigarh and Chandigarh.

It is proposed to create an artificial lake on the concept of Sukhana Lake over an area of 50 Ha, South of the Jayanti ki Rao River, adjacent to the City Centre.

The proposed City Centre will be located North of the lake and adjoining the proposed new regional cricket and sports stadium.

The City Centre and adjoining lake and sports precincts are visualized as a pedestrian friendly space with a potential to accommodate a mix of regionally-important uses – Commercial office and retail, Cultural Centre, Public Buildings (including library and Government offices), City Park (part of recreational land use), City Hospital, Bus Terminal, and other related activities. A parcel from City Centre (approx. 12 Ha.) is also proposed to be developed as mixed use district which may also have high rise residential development.

The City Centre other than the mixed use parcel is proposed to be developed by GMADA. The city centre will be the major economic/ employment and activity district for New Chandigarh and will house all major Government Offices and commercial establishments. The site is also along the arterial road (PR-4) connecting Chandigarh and New Chandigarh and provisions have been made for accommodating a metro line in future along PR-4. City Centre detail design should accommodate a metro station within the development towards the mixed use parcel.

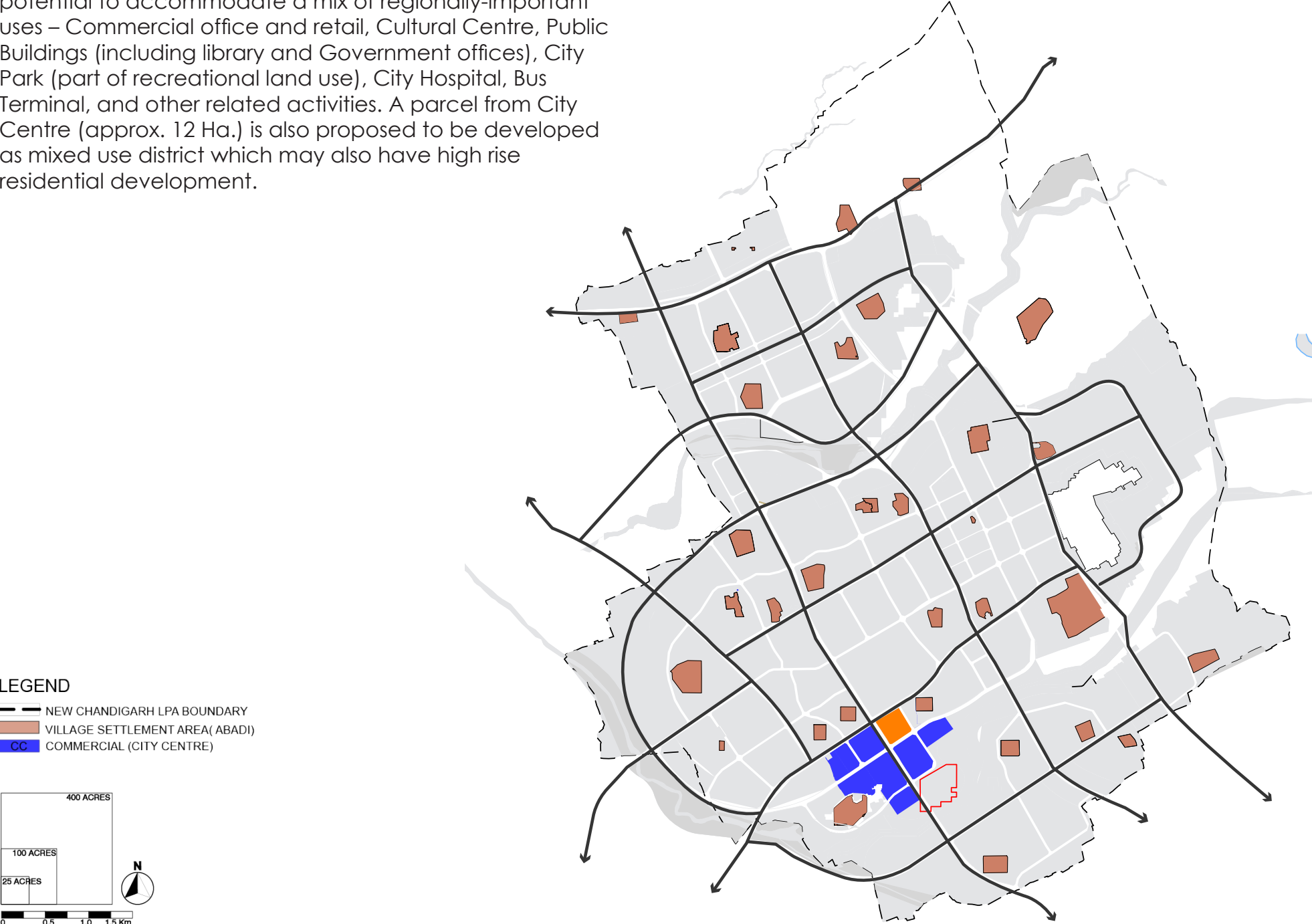


Fig. 6-4 Proposed City Centre in New Chandigarh LPA
Source: AECOM

Hospital: One 500 bed City hospital is proposed to be developed over an area of 6 Ha. within the City Centre. This is proposed to be a government hospital providing all medical services a government hospital is scheduled to provide.

Bus Terminal: The City Centre site will be the major work centre in New Chandigarh, attracting both resident and migrant employment. The availability of a well-located and accessible public transport hub will be important to the success of the City Centre. It is thus proposed to locate a site for Interstate Bus Terminus (Bus Terminal) within the City Centre. A site of approximately 4.4 Ha. has been reserved north of the City Centre alongside the village settlement of Chahar Majra.

Cultural Centre: In the rich spectrum of cultural heritage within Punjab, the need of incubating and nurturing art and artists is well established.

To meet this continued need a 10 Ha. site within the City Centre has been reserved for an integrated arts and cultural centre.

This Centre will focus on the preservation and promotion of the various genres of art and culture of Punjab and India. It will be a cultural destination not only for New Chandigarh but for the entire Region. The Centre will help in organising year-round cultural activities, seminars, workshops, dance and music recitals, theatre shows, and publication of books on art & culture. Live performances of indigenous folk singers, dancers and other events will facilitate young artisans to showcase their talent and also help in making the New Chandigarh City Centre a destination place within the region.

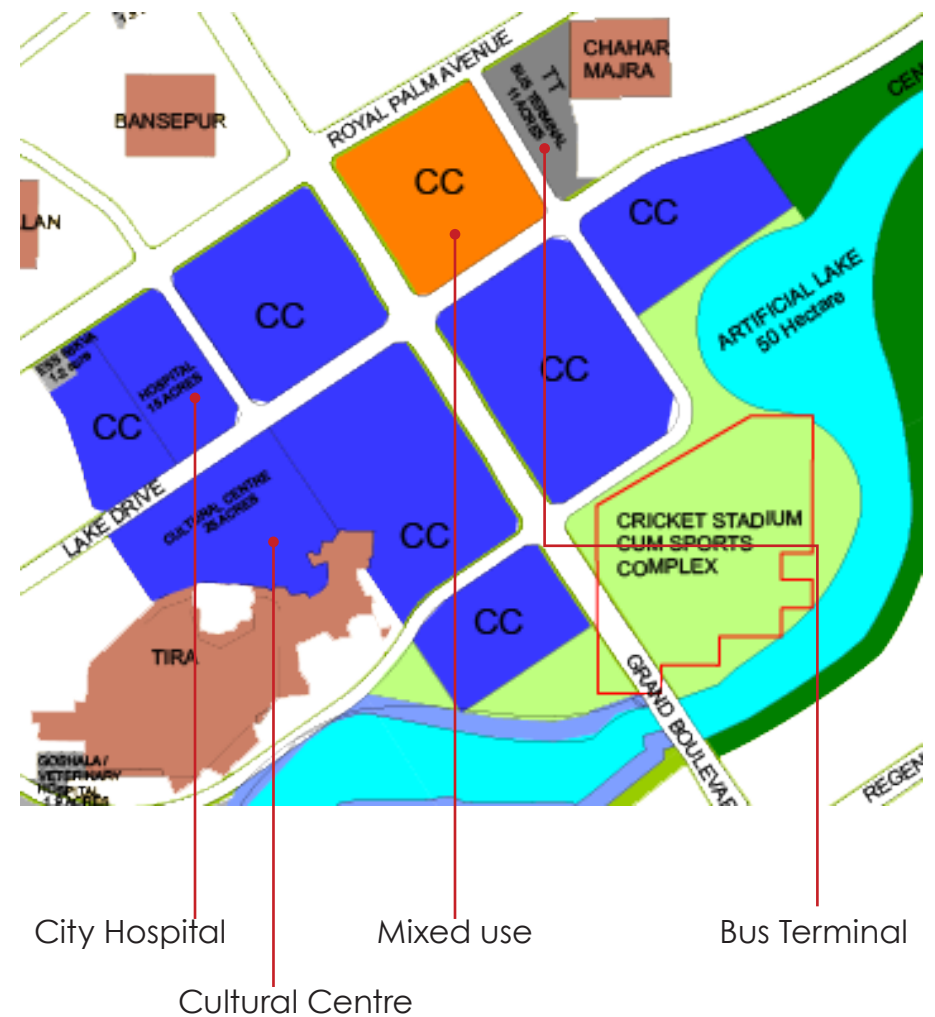


Fig. 6-5 Land use distribution of City Centre Area



Fig. 6-6 The City centre is envisioned as a dense urban centre
Source: AECOM



Fig. 6-7 View of proposed City Centre in New Chandigarh
Source: AECOM



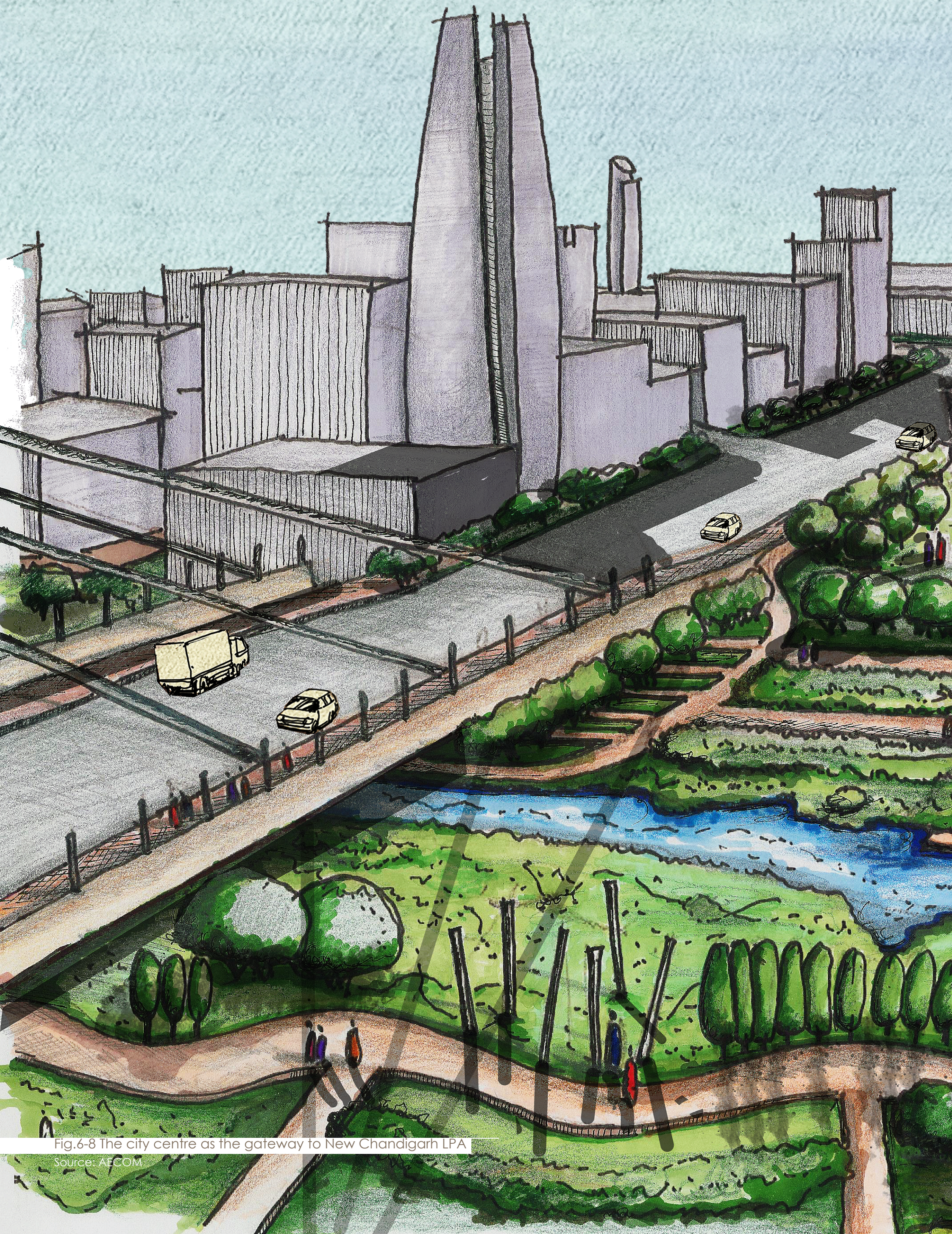
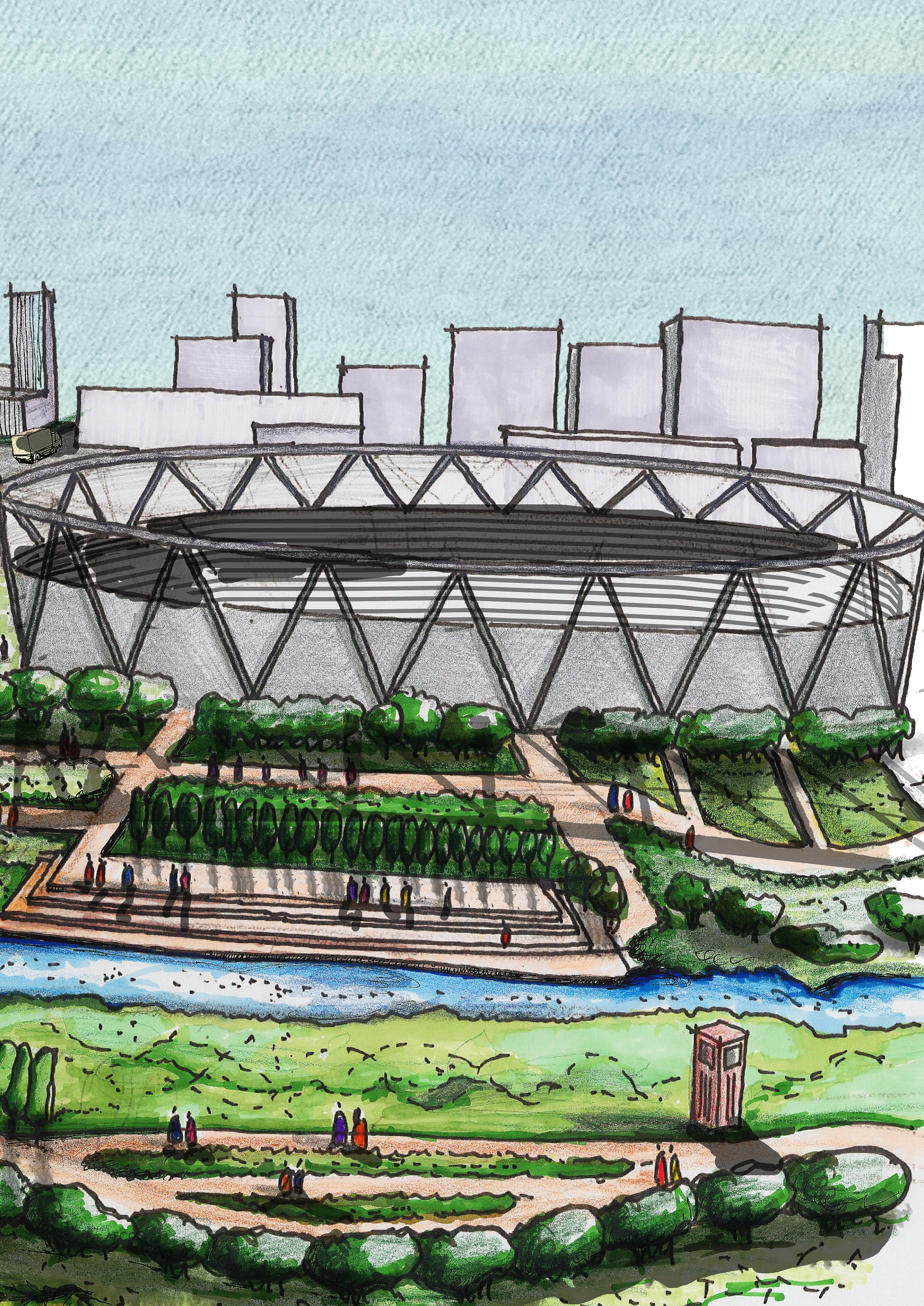


Fig.6-8 The city centre as the gateway to New Chandigarh LPA

Source: AECOM



6.5.2 Retail

Retail outlets will be an integral part of all township projects to be developed by the Public or Private sectors.

The permissible commercial area for each project will be in accordance with Development Control Regulation.

Apart from permissible commercial uses within each township project, VR-8 (named “Orchard Avenue”) is proposed to be developed as central commercial retail “shopping street” for New Chandigarh.

Approximately 20 Ha. area along this street is proposed for commercial retail activities. The commercial area will have a 50 mts green corridor in front along VR-8 on either side being located centrally to the Education City, the vision is to develop this street as a pedestrian friendly, retail commercial center for the community containing uses such as specialty cafeterias, shops, hotel and motel services, restaurants and corporate offices. The area will also serve as the cultural and heritage centre of the community and together with the green belt along the street fronting commercial area will include, performance art areas, food kiosks, landscape pavilions, children play areas, bike trail, jogging track etc.

The area along with the green corridor is proposed to be developed by GMADA. A detailed layout plan should be prepared by GMADA along with detailed design guidelines and development controls for this zone.



Fig. 6-9 Proposed Retail areas in New Chandigarh LPA
Source: AECOM

6.5.3 Commercial/ Mixed use
(Warehousing & Wholesale)

Commercial/Mixed use (warehousing and wholesale) areas have been located on the western periphery of New Chandigarh, towards the northern part of VR9 (Baddi-Kurali Road). This area of approximately 64 Ha is along the major transit corridor connecting Chandigarh and New Chandigarh with the rest of Punjab.

The site is suitable for movement of heavy commercial vehicles without disturbing the internal traffic and transportation network of the city. A 100 mts wide strip along VR-9 is proposed for commercial activities like car showrooms, big box retail, mega home stores. The area to the rear of the commercial strip is proposed for wholesale and warehousing. As a specialised use catering to entire city of new Chandigarh, this area should be developed and managed by GMADA. Proximity of a truck terminal in the vicinity would increase the efficiency of this area.



Fig.6-10 Proposed Warehousing / Wholesale area in New Chandigarh
Source: AECOM

6.5.4 Marriage Palaces

Apart from banqueting facilities within future hotels and resorts, a dedicated area of approximately 10 ha. is reserved for Marriage places or venues to the west of PR-4 and South of the Siswan River. This area will be open for development by the private sector as per the Policies of Govt of Punjab.



Fig.6-11 Proposed Marriage Palaces in New Chandigarh LPA
Source: AECOM

6.6 INSTITUTIONAL

6.6.1 Education City

An area of approximately 117 Ha within the New Chandigarh LPA is reserved for development of an Education City, which is conceived as an integrated hub of Technical Education with the objective of attracting a number of the world's top institutions.

Fully developed, Education City will give a significant boost to the region's education sector as well as provide ample direct and indirect employment opportunities.

Education City will have residential and commercial component (proposed along the Orchard Avenue , that bisects the Education city into two halves) along with the institutional areas. The commercial areas along with the expansive green spaces add to the vitality of the education campuses & provide the much needed public space to the city.

Research & development, although are proposed as different land uses, but are proposed as an extension to the education campuses .

The development shall be in accordance with the GMADA policy on development of Education Cities in the State of Punjab.



Fig. 6-12 Proposed Education city in New Chandigarh LPA
Source: AECOM



Fig.6-13 Artists impression of retail areas, parks & public space at Orchard avenue

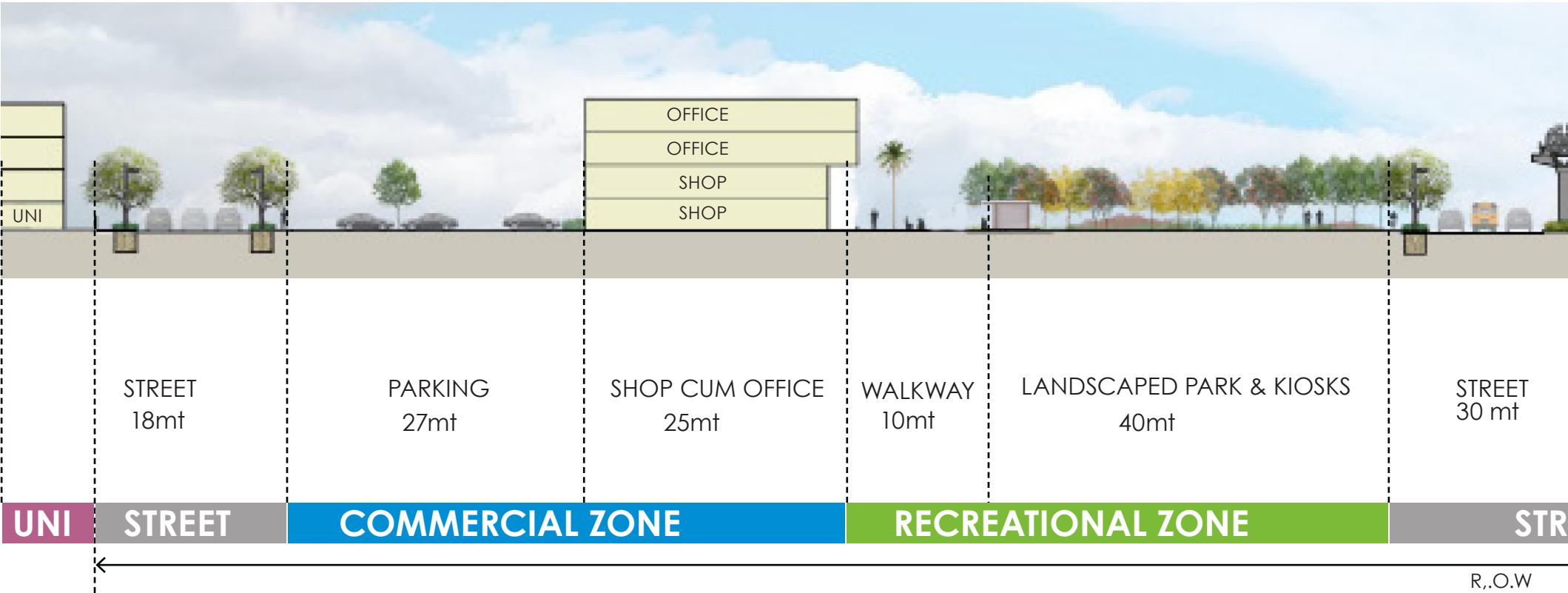
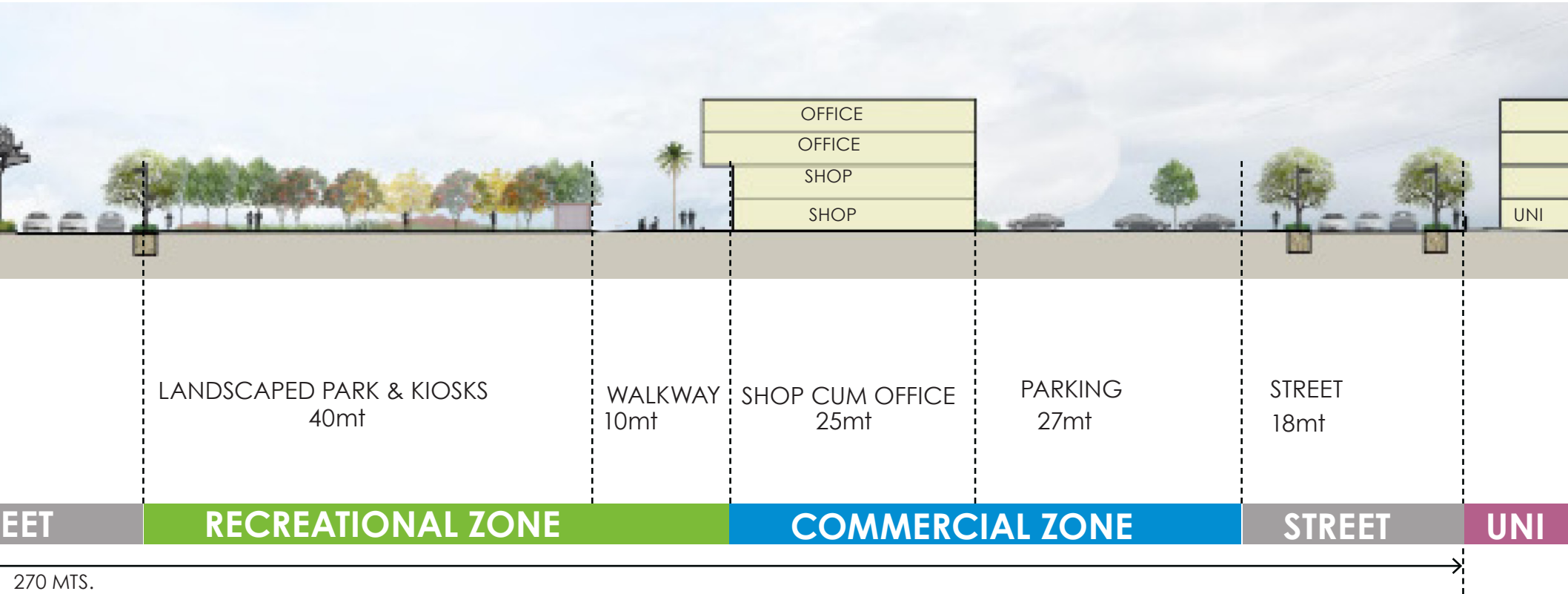


Fig.6-14 Proposed section of Orchard Avenue & Retail areas through Education City

Source: AECOM



6.6.2 Research & Development

The area identified for Research and Development (R&D) in the notified plan (notification no. 9664 CTP (Pb) SC-115 dated 12/16-12-2008) was towards the southern end of the LPA area.

In order to have more synergies with compatible uses, it is proposed to shift this area near in Education City, along PR-4 and VR-9.

Locating this use along the major transit corridors will facilitate movement of residents as well as the migrant working population from the rest of Punjab and Chandigarh to site. From a traffic management perspective, congestion is anticipated to be minimized as traffic to the R&D area is segregated from 'domestic' traffic. An area of about 61 Ha has been reserved in the Master Plan of New Chandigarh for this purpose.

The area is proposed to house value-added kinds of development in the form of Science Park, Business Park and R&D Parks. Target industries include IT, knowledge industry and medical-related R&D. This will also promote backward and forward linkages between R&D, Medi City and Education City.

An area of approx. 11 ha. within this land use is also reserved for Police line in New Chandigarh. The reserved parcel is along VR-9. This site can also be used for a Police Training Academy and Research& Analysis related to police and securities and other civil defence departments.



Fig.6-15 Proposed Research & Development area in New Chandigarh LPA
Source: AECOM

6.6.3 Medi City

The location of Medi City is retained as per the previously notified master plan (notification no. 9664 CTP (Pb) SC-115 dated 12/16-12-2008). The site is proposed for development of high end medical institutions and associated support uses. The entire development will be undertaken by GMADA as per the Medi City policy of Govt. Of Punjab.

The Medi City site of approximately 140 ha offers the potential for a medical community complete with specialty hospital, outpatient facilities, pre and post-operative care, rehabilitation and long-term care facilities, hospice and diagnostic laboratories, health care commercial services with emphasis on nutrition, wellness and fitness.

It aims to provide a unique health care environment for the sick as well as the healthy and to provide a catalyst for Greater Mohali's medical tourism potential. The health village is planned to be home to medical, dental, nursing and allied health schools.

Its location takes advantage of New Chandigarh's scenic landscape and extensive leisure and recreation potential, to provide quality health care and fitness services and an integrated centre of excellence for clinical and wellness services, medical education and research.

Medi City also allows a mix of residential and retail support uses, in accordance with the notified policies of Govt. Of Punjab as amended from time to time.

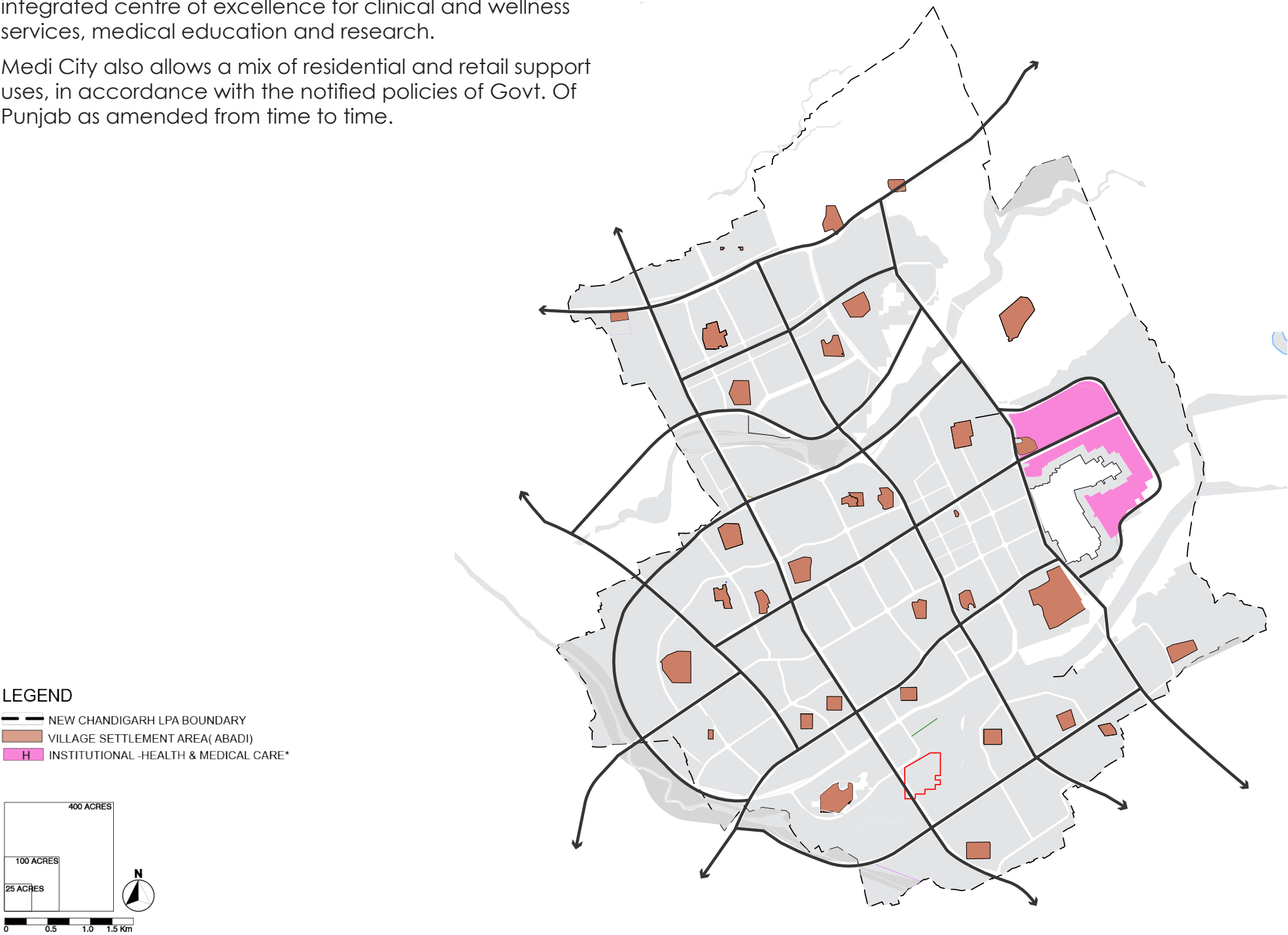


Fig.6-16 Proposed Medicity in New Chandigarh LPA
Source: AECOM

6.6.4 Other Institutional Uses

Other institutional uses proposed for public purposes within New Chandigarh LPA include Cremation Grounds, Cow Shed (Goshala/ Veterinary Hospital), and animal shelter.

Two common cremation grounds with an area of around 4.8 ha (12 acres each) are proposed near the villages Tira and Kansala respectively. These can be further planned to accommodate the requirements of the resident populations for all religions within New Chandigarh.

There are approximately 40,000 villagers living within New Chandigarh in existing village settlements. Most of the residents of these villages own cattle and this practice will continue as it is part of the local culture. It is essential to consider the location for a cow shed / veterinary hospital at this stage and accommodate a suitable facility near to the village settlements. For this purpose 2 sites have been identified near the villages of Tira and Kansala - approximately 0.76 ha (1.9 acres) and 1.2 ha (3 acres) respectively. The site near Kansala can also accommodate an animal shelter.



Fig.6-17 Proposed Research & Development area in New Chandigarh LPA
Source: AECOM

6.7 OPEN & GREEN SPACES

The area proposed under Open and Green category including the area under De-notified PLPA is approximately 35% of New Chandigarh LPA. This is consistent with the area in the notified master plan (notification no. 9664 CTP (Pb) SC-115 dated 12/16-12-2008).

Open and Green areas include Recreation areas, parks, forest, open areas, rivers and riverine buffers. The Chapter on the Landscape framework describes the proposed Open and Green areas in further detail.

Note :

* The land use of the area shown in this Master Plan, but falling outside Local Planning Area boundary of New Chandigarh on south west of New Chandigarh will form part of Master Plan S.A.S.Nagar and Master Plan S.A.S.Nagar shall be deemed to be amended to this extent.



Fig.6-18 Proposed green space network in New Chandigarh LPA
Source: AECOM

6.7.1 Recreational

This category of open and green is intended to provide quality recreational space within New Chandigarh LPA. The proposed recreational areas can be developed as Golf Courses, Stadiums, Polo Grounds, Stud farms or for any other sports/ recreational related activity.

Subjected to approval from the Government of Punjab and other relevant authorities, the de-notified PLPA land in the foothills of Shivalik along river Jayanti Devi ki Rao may be explored for development of a Golf Course. The present provisions do not permit any kind of commercial activity within the PLPA area hence the change of 'use permissible' within de-notified PLPA land needs to be approved by Govt. of Punjab prior to identifying and developing any Golf Course in the area. Golf Course as a sports/ recreational activity is generally accessed by a limited segment of society; hence the site which is on the periphery of the LPA serves as ideal location for a Golf Course. The proposed Golf Course will also act as green transition area between the Shivaliks and New Chandigarh.

Another major recreation site is proposed in the south-west of the LPA area. It is suitable for recreational activities which are aimed at a broader cross-section of the future New Chandigarh community, and should comprise active sports complexes, and multi-purpose open playgrounds . Race course etc.

The Punjab Cricket Association (PCA) has acquired land on PR-4, immediately to the south of the City Centre which will house an international level cricket stadium and other sports-related activities. The amount of peak hourly traffic generated by Stadium during specific sporting events can be well managed through network of arterial roads planned around it.



Fig.6-20 Golf course proposed at the foothills of Shivaliks



Fig.6-19 Proposed Recreational areas in New Chandigarh LPA
Source: AECOM

6.7.2 Parks

Park areas are proposed to be developed in the middle of development, which can be easily accessed by the public.

The main “Central Park/ City Park” is proposed to next to City Centre with an active water front. This City Park will be on either side of the Jayanti ki Rao and is planned to be the most active and vibrant open and green area within New Chandigarh.

Other areas reserved for city level parks are to the west of River Siswan along proposed Education City and Eco City-II.



Fig.6-22 City level Open space along the river



Fig.6-21 Proposed Parks in New Chandigarh LPA
Source: AECOM

6.7.3 De- Notified PLPA Areas

The areas which as per notified master plan (notification no. 9664 CTP (Pb) SC-115 dated 12/16-12-2008) were earlier reserved under PLPA (Punjab Land Preservation Act, 1990) category have been De Notified vide Govt. of Punjab, Department of Forest & Wild Life Preservation (Forest Branch) Notification No. 39/578/05-Ft.3/6955 dated 10.09.2010. The area now is categorised under land use "De-Notified PLPA- Agriculture". The land use restrictions within this area as per the notification are:

1. No Commercial Activities are permitted
2. The land shall be used for bona fide agriculture and for sustaining the livelihood of the people/ owner of the land
3. If inadvertently, any notified or otherwise forest areas are found to have been included in the present list of areas being considered for de-listing, such areas shall not be deemed to have been de-listed from the list of forest areas of the state.



Fig.6-23 De-notified PLPA lands in New Chandigarh LPA

Source: AECOM

6.7.4 Forest,Open Space & other green

Green areas along the rivers as per the land use plan are envisaged to bring a pervasive garden ambience and more entertainment, leisure and recreation activities and development to New Chandigarh.

The concept of “Gardens by the Rivers” will complement the necklace of new play spaces that have been planned around the rivers and the edge of New Chandigarh. This green loop can be developed as the key attraction for New Chandigarh. Activities like bike trails, picnic spots, food courts, small sports, and camping sites can be planned and developed within this green loop.

The roadside green which is generally maintained by the Forest Department are also proposed to be developed based on themes as per the Landscape Framework Chapter. Roads within each zone will have landscape theme comprising plantation, street furniture, hardscape and signage.

The width of roadside green buffers proposed on either sides along the major roads are as follows :

- a. MDR-B- **15 mts.**(either side excluding the R.O.W)
- b. 60 mts. wide roads- **5mts.**(either side excluding the R.O.W)
- c.45 mts. wide roads - **5mts.**(either side excluding the R.O.W)



Fig.6-24 Forests & proposed Open spaces In New Chandigrah LPA
Source: AECOM

6.8 Village Settlements

There are 33 villages notified as part of New Chandigarh LPA. Corresponding to each village, there is a village settlement (Abadi) area within the proposed LPA land use plan. Each village settlement is bounded by peripheral roads (Phirni/ Lal dora) within which the settlement is to be confined.

For all legal purposes, the area within the Phirni is considered as the official area of the village settlement. The population residing within each settlement and projected population shall be serviced by the overall infrastructure plan for New Chandigarh. The approximate area under village settlements within New Chandigarh is 207 ha. Any extension beyond the Phirni non conforming to the proposed land use of the Master plan will be considered as non Conforming land use.



Fig. 6-25 Existing village settlements in New Chandigarh LPA
Source: AECOM

Name	Character	Area (Hectares)	Households	Population	Males	Female	Working Population
Sangriwala	Rural	121	88	575	305	270	164
Milak	Rural	48	209	1059	572	487	257
Mastgarh	Rural	104	142	836	449	387	359
Dhanauran	Rural	145	95	553	293	260	108
Togan	Rural	209	518	2609	1385	1224	920
Tira	Rural	374	486	2599	1361	1238	846
Chahar Majra	Rural	134	84	503	273	230	139
Paintpur	Rural	90	174	969	535	434	363
Bansepur	Rural	90	66	337	168	169	117
Sangalan	Rural	86	82	433	229	204	279
Raihamanpur	Rural	115	12	71	36	35	24
Palheri	Rural	323	214	1351	739	612	406
Bhagat Majra	Rural	78	79	526	281	245	161
Ghandauli	Rural	109	185	893	473	420	312
Saini Majra	Rural	153	260	1299	703	596	364
Dhode Majra	Rural	72	28	146	79	67	60
Rasulpur	Rural	87	52	302	162	140	84
Salamatpur	Rural	134	83	458	250	208	170
Ratwara	Rural	51	78	491	248	243	205
Devi Nagar	Rural	117	4	23	15	8	7
Bharaunjan	Rural	204	229	1252	668	584	606
Ferozepur Banger	Rural	103	142	879	483	396	419
Paraul	Rural	470	489	2632	1375	1257	1118
Hoshiarpur	Rural	304	311	1482	784	698	555
Sultanpur	Rural	122	57	254	133	121	74
Majra	Rural	471	222	1310	686	624	392
Rajgarh	Rural	99	4	26	13	13	9
Mullanpur	Rural	849	1234	6165	3256	2909	40
Boothgarh	Rural	133	126	618	348	270	229
Kartarpur	Rural	119	165	933	495	438	293
Takipur	Rural	139	120	589	320	269	186
Kansala	Rural	306	189	1062	588	474	361
Rani Majra	Rural	150	197	1060	564	496	331
	TOTAL	6109 Ha.	6424	34295	18269	16026	

Table 6-2 Data of 33 Existing Villages

6.9 Utilities

For success of any city, infrastructure planning is the most critical issue that needs to be addressed judiciously.

For New Chandigarh, a detailed trunk infrastructure plan has been worked up, and land parcels are reserved for the required infrastructure, including water treatment plant (WTP), sewage treatment plant (STP), pumping rooms, storage reservoirs/ water works, electricity sub stations, fire station, etc.

An area of approximately 1.5% out of the total LPA area is reserved for Utilities within New Chandigarh. The details for each utility is described in the Infrastructure section of this report.

Note :

* The land use of the area shown in this Master Plan, but falling outside Local Planning Area boundary of New Chandigarh on south west of New Chandigarh will form part of Master Plan S.A.S.Nagar and Master Plan S.A.S.Nagar shall be deemed to be amended to this extent..



Fig. 6-26 Proposed utilities In New Chandigrah LPA
Source: AECOM

6.10 Roads & Transportation

A total of approximately 10% of the land area of New Chandigarh is reserved for Master Plan roads. This includes sector roads and other Arterial roads which are essential for planned development of New Chandigarh. Another 0.7 % is reserved for transport utilities such as Bus Depot, Bus Terminal, Metro Depot cum transport terminal, and truck terminal. The sites for each have been reserved considering the overall transport network for the City.

A Bus Terminal (11 Ha.) developed as part of City Centre will be the main terminal for all Interstate bus traffic. A terminal proposed near the Education City on VR-9 is a secondary terminal (3 Ha.) supporting the migrant population of Education City which primarily will include students and staff commuting from nearby places.

A truck terminal is proposed on the junction of PR-4 and VR-9. This location will avoid conflict with city traffic and commercial traffic (cargo). This location also supports the commercial warehousing zone which is proposed on the adjoining land parcel. Approximately 11 Ha. of land is reserved for the truck terminal.

In addition, a Bus Depot over an area of 9.2 ha (23 acres) is proposed south of LPA boundary near the village of Tira. This will serve as the central maintenance and parking depot for Transport Department.

The transport terminal proposed on MDR-B opposite to the Medi city has been retained as per the notified master plan (notification no. 9664 CTP (Pb) SC-115 dated 12/16-12-2008). This will also be the depot for the future metro proposed to connect New Chandigarh with Chandigarh and SAS Nagar.



Fig. 6-27 Proposed transport related utilities in New Chandigarh LPA
Source: AECOM

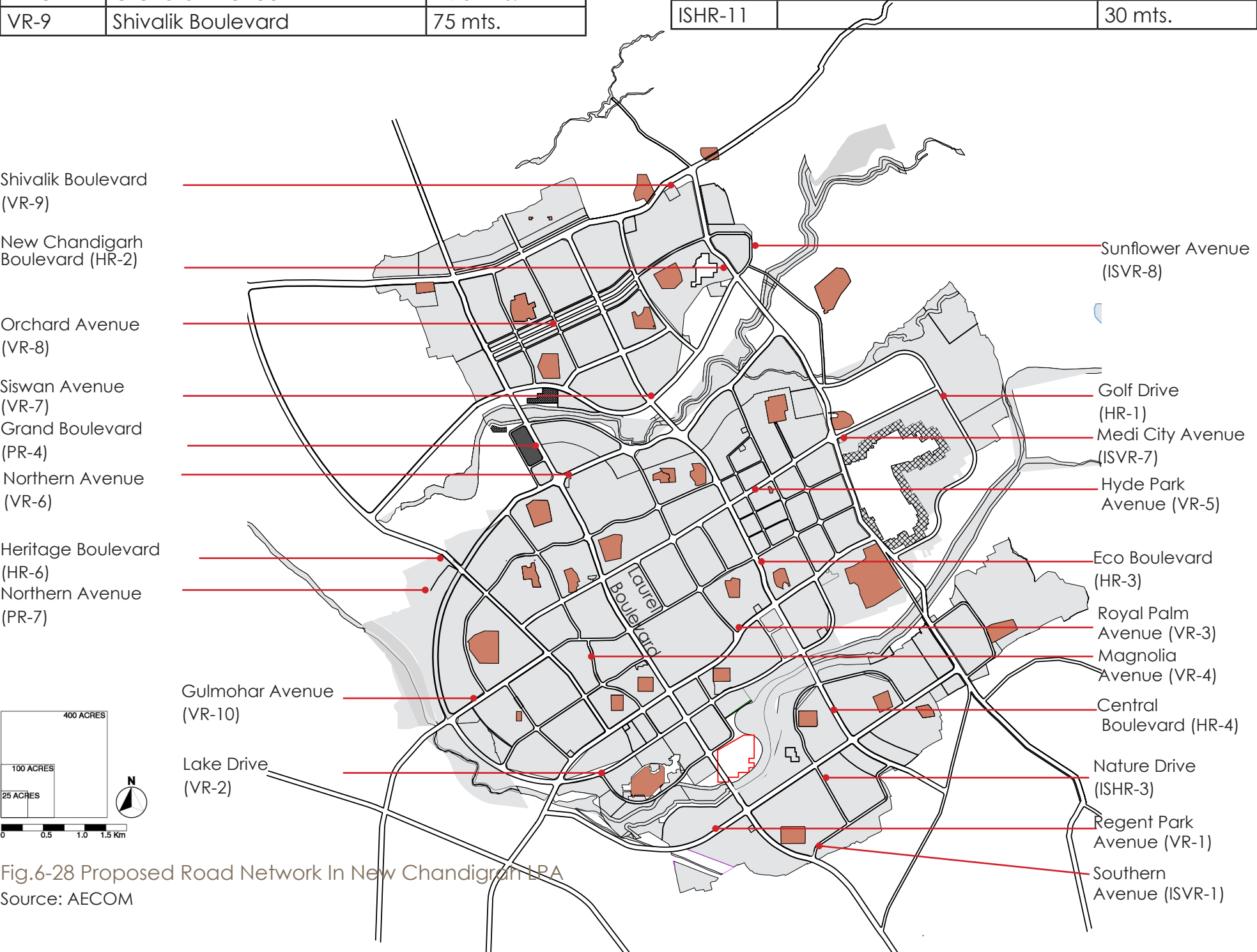
SECTOR ROADS

Road Name	PROPOSED ROAD NAME	Proposed Road width
HR-2	New Chandigarh Boulevard	60 mts.
HR-4	Central Boulevard	60 mts.
HR-7	Northern Avenue	60 mts.
VR-1	Regent Park Avenue	60 mts.
VR-3	Royal Palm Avenue	60 mts.
VR-6	Northern Avenue	60 mts.
VR-7	Siswan Avenue	60 mts.
VR-10	Gulmohar Avenue	60 mts.
PR-4	Grand Boulevard	60 mts.
PR-7	Northern Avenue	60 mts.
ISVR-9	Campus Drive	60 mts.
HR-6	Heritage Boulevard	60 mts.
HR-1	Golf Drive	45 mts.
VR-2	Lake Drive	45 mts.
ISVR-7	Medi City Avenue	45 mts.
ISHR-9		45 mts.

MASTER PLAN ROADS

Road Name	Proposed Road Name	Proposed Road width
VR-8	Orchard Avenue	270 mts.
VR-9	Shivalik Boulevard	75 mts.

Road Name	PROPOSED ROAD NAME	Proposed Road width
VR-5	Hyde park Avenue	58 mts.
VR-4	Magnolia Avenue	30 mts.
ISVR-8	Sunflower Avenue	30 mts.
HR-5	Laurel boulevard	30 mts.
ISVR-1	Southern Avenue	30 mts.
ISVR-2	Nature Drive	30 mts.
ISVR-3		30 mts.
ISVR-4		30 mts.
ISVR-5		30 mts.
ISVR-6		30 mts.
ISHR -1	Nature Drive	30 mts.
ISHR-3	Nature Drive	30 mts.
ISHR-2		30 mts.
ISHR-4		30 mts.
ISHR-5		30 mts.
ISHR-6		30 mts.
ISHR-7		30 mts.
HR-3	Eco Boulevard	28 mts.
ISHR-8		24 mts.
ISHR-10		30 mts
ISHR-11		30 mts.



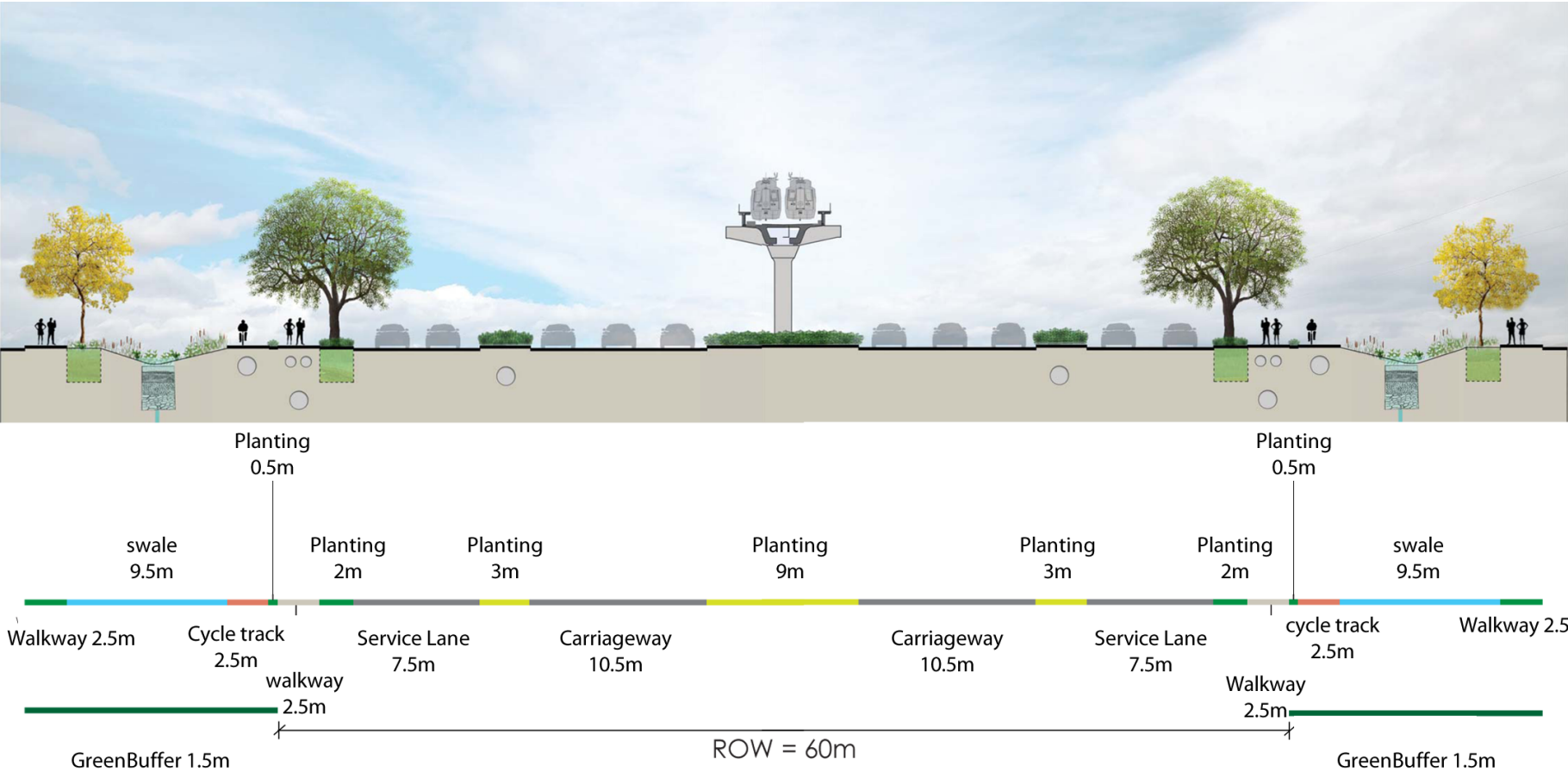


Fig.6-29 Proposed Typical Section 60 mts. ROW HR-2 (New Chandigarh Boulevard)

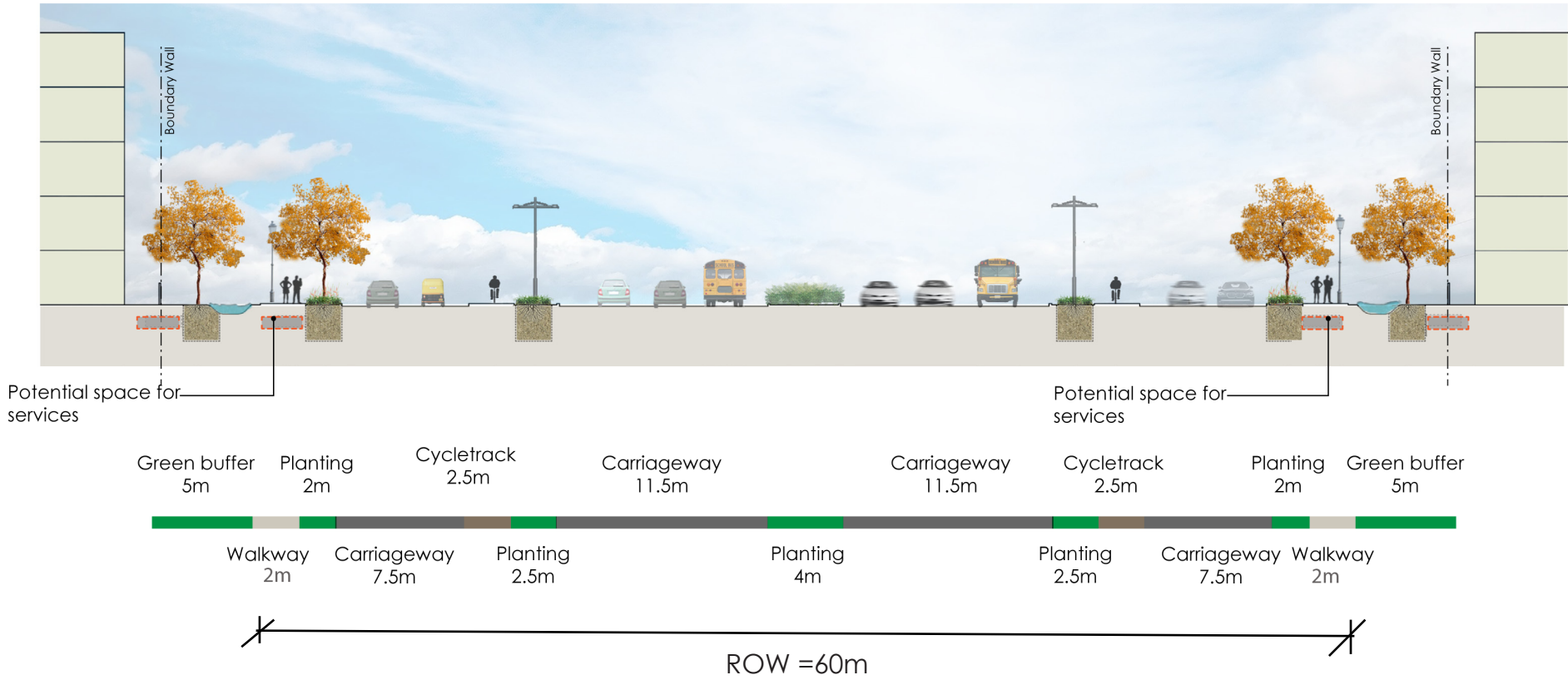


Fig.6-30 Proposed Typical Section 60 mts. ROW Road

Source: AECOM

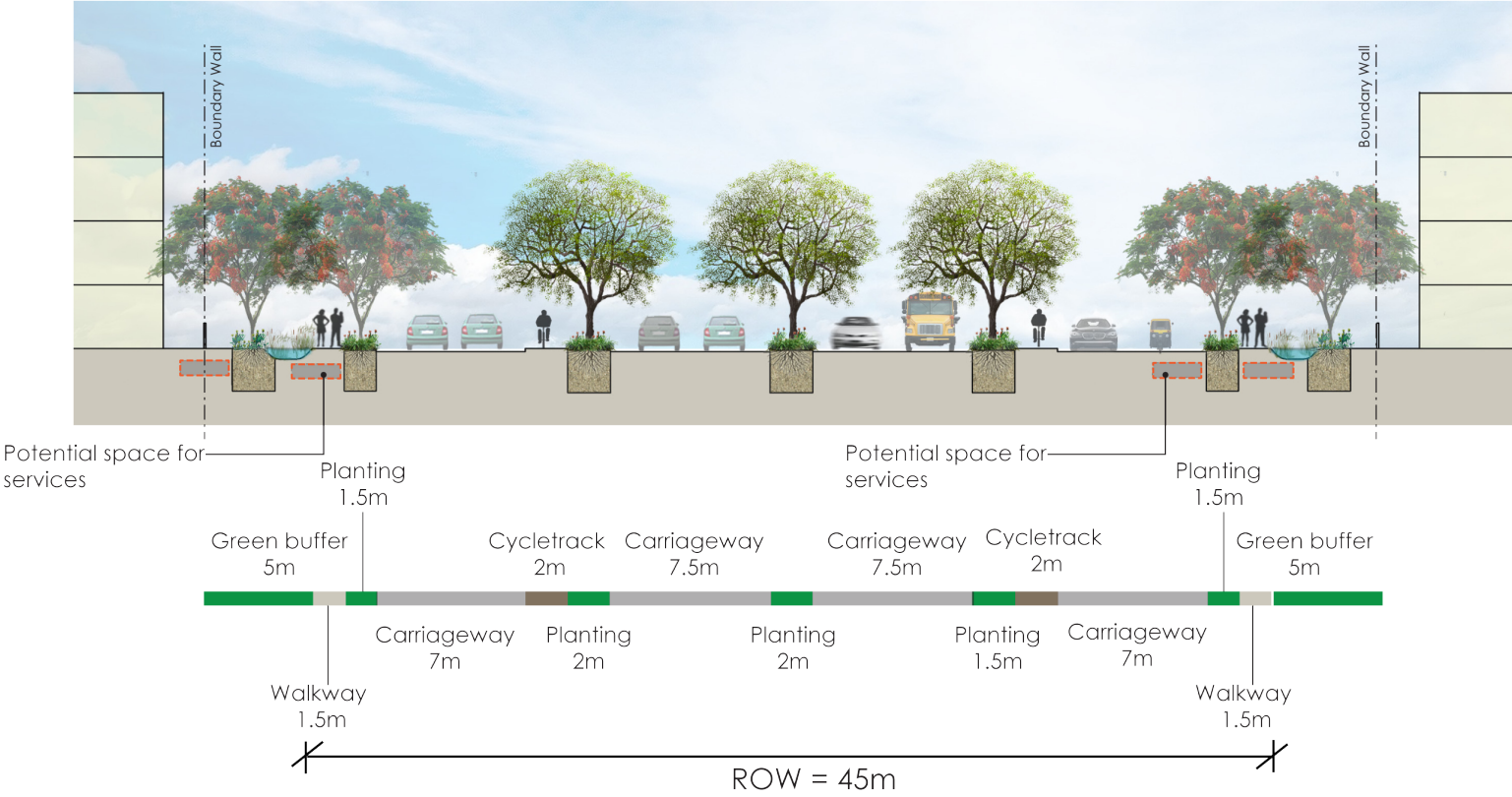


Fig.6-31 Proposed Typical Section 45 mts. ROW Road

Source: AECOM

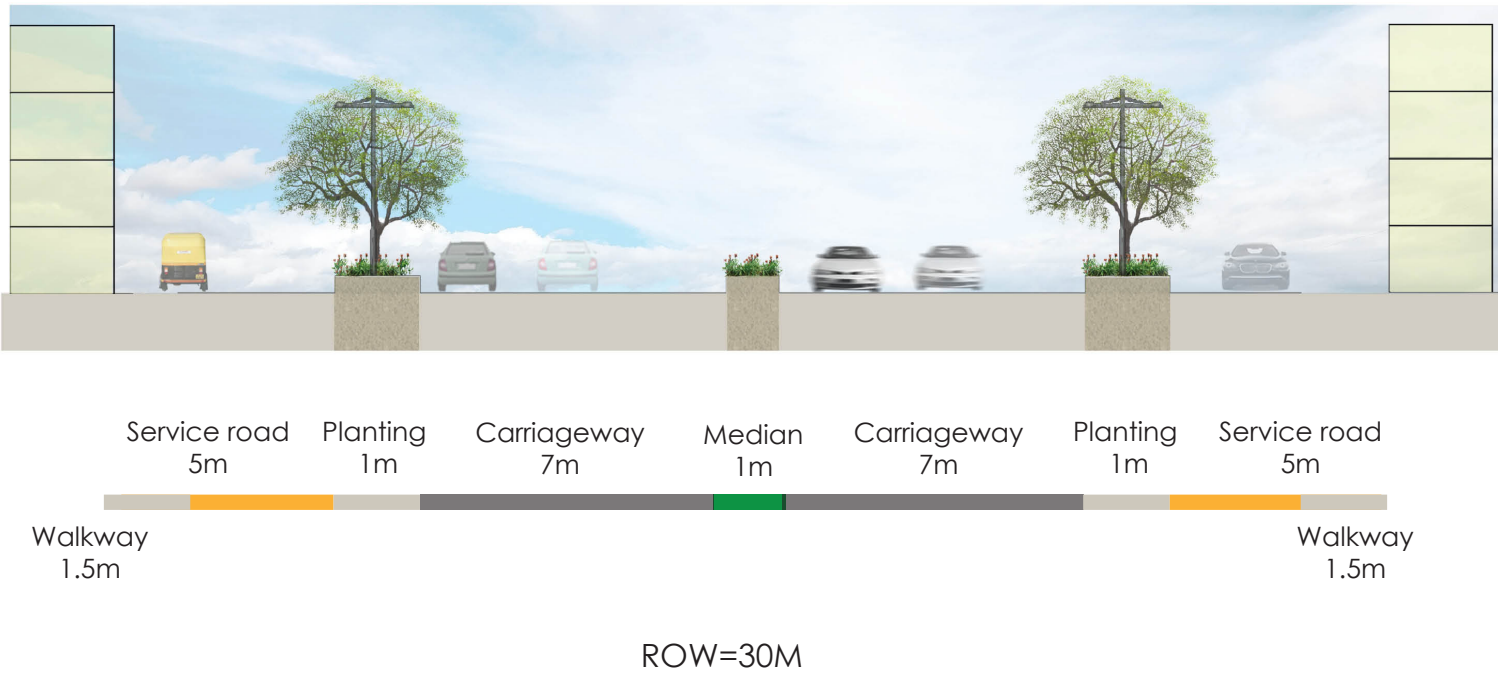


Fig.6-32 Proposed Typical Section 30 mts. ROW Road

Source: Department of Town & Country Planning, Punjab

6.11 Defence Zone

There is an existing Defence area within the new Chandigarh LPA on MDR-B. The area is retained as per the notified master plan (notification no. 9664 CTP (Pb) SC-115 dated 12/16-12-2008). Approximately 80 Ha. of land falls within this category.



Fig.6-33 Defence Zone in New Chandigarh LPA

Source: AECOM

6.12 Other Use

This category of land use includes all other uses including Defence buffer zone, area under rivers and area under riverine buffer.

The area under the Defence buffer zone is a no construction zone.

The river including the riverine buffer zone is as per the notified master plan (notification no. 9664 CTP (Pb) SC-115 dated 12/16-12-2008) which will be developed as per the landscape framework Chapter and Open and Green strategy for New Chandigarh.

A total of approx. 330 ha. falls within this category of land use.

6.13 Population

The total projected population for New Chandigarh based on the densities as proposed in Chapter 7 of this report is estimated to be 1 - 1.2 million. This includes residing population within Residential areas, Mixed use areas, Medi city and Education city. There is a considerable increase from the previously projected population in the notified master plan. This is majorly attributed to increase in density and residential areas.



Fig 6.34 Forests & proposed Open sapces In New Chandigrah LPA
Source: AECOM



07

Development Control Regulations



// Introduction
// New Chandigarh- Sectors
// Residential- Zone1
// Residential- Zone 2
// Residential- Public/ Semi
Public Amenities
// Medicity - Zone 1
// Education City- Zone1
// City Centre - Zone 2
// Sports Complex - Zone 2
// EWS Housing Strategy
// Zonal Controls

ਚੰਡੀਗੜ੍ਹ
New Chandigarh

7. DEVELOPMENT CONTROL REGULATIONS

7.1 INTRODUCTION

The New Chandigarh LPA has been planned to cater to an ultimate population of approximately 10 lakh by the year 2058.

The gross residential population density applicable to the entire LPA is 170 ppa (people per acre). The entire LPA is divided into three broad density zones :

- Low (upto 30 ppa)
- Low Density Zone(upto 150 ppa)
- High Density Zone(200 ppa)

The low & medium density zone apart from residential areas consists of education city, Medicity, which are lower intensity uses while the high density zone applies to city centre area (planned with higher intensity uses such as commercial , retail etc.) apart from the newly planned residential areas.

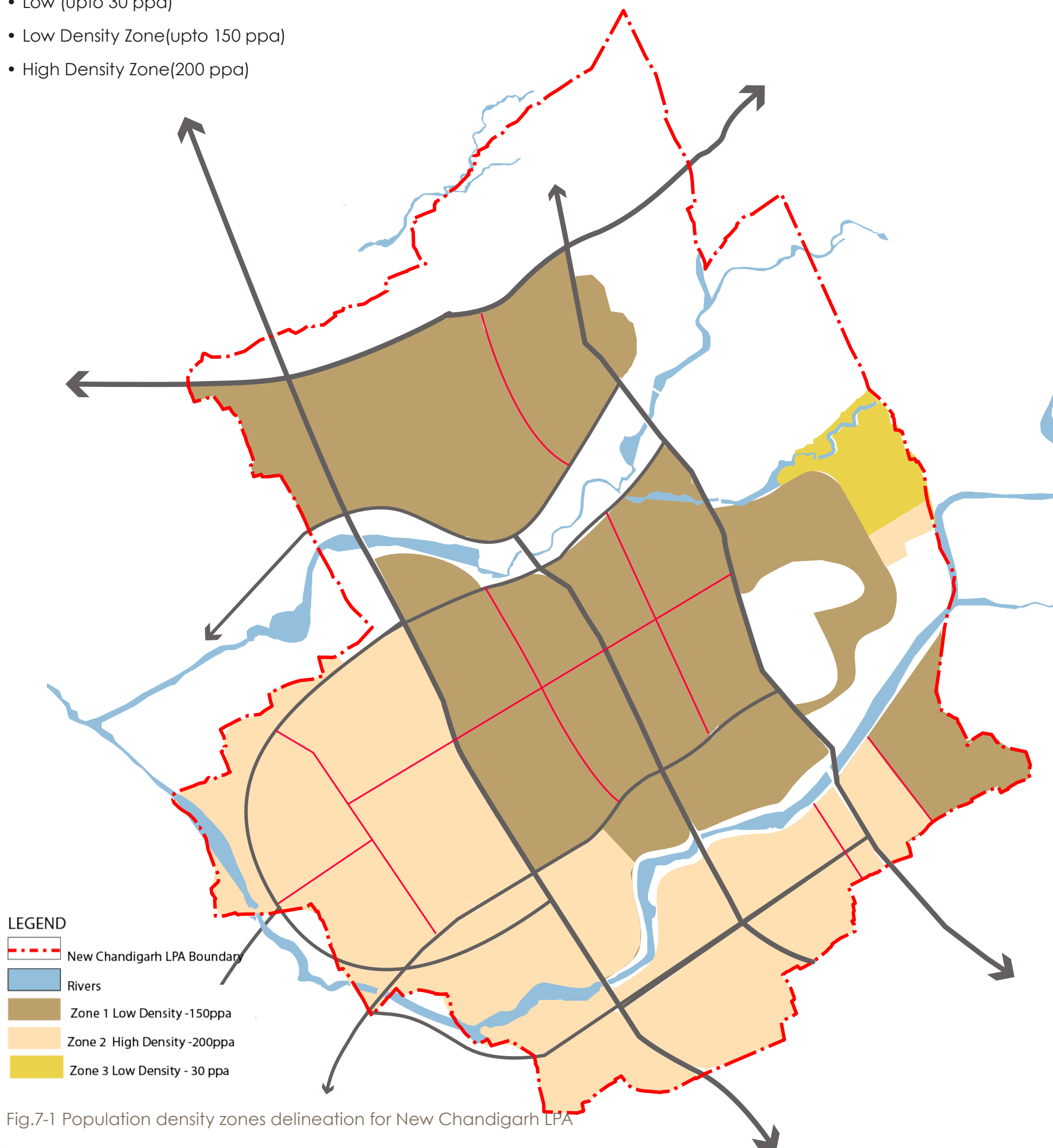


Fig.7-1 Population density zones delineation for New Chandigarh LPA

7.2 NEW CHANDIGARH - SECTORS

The New Chandigarh LPA has been planned into 20 distinct sectors. The minimum sector size adopted for the purpose of planning of a residential sector is 100 Ha.

Each residential sector has been planned as a self-sufficient unit having its own community level shops, schools, health centers and places of recreations .

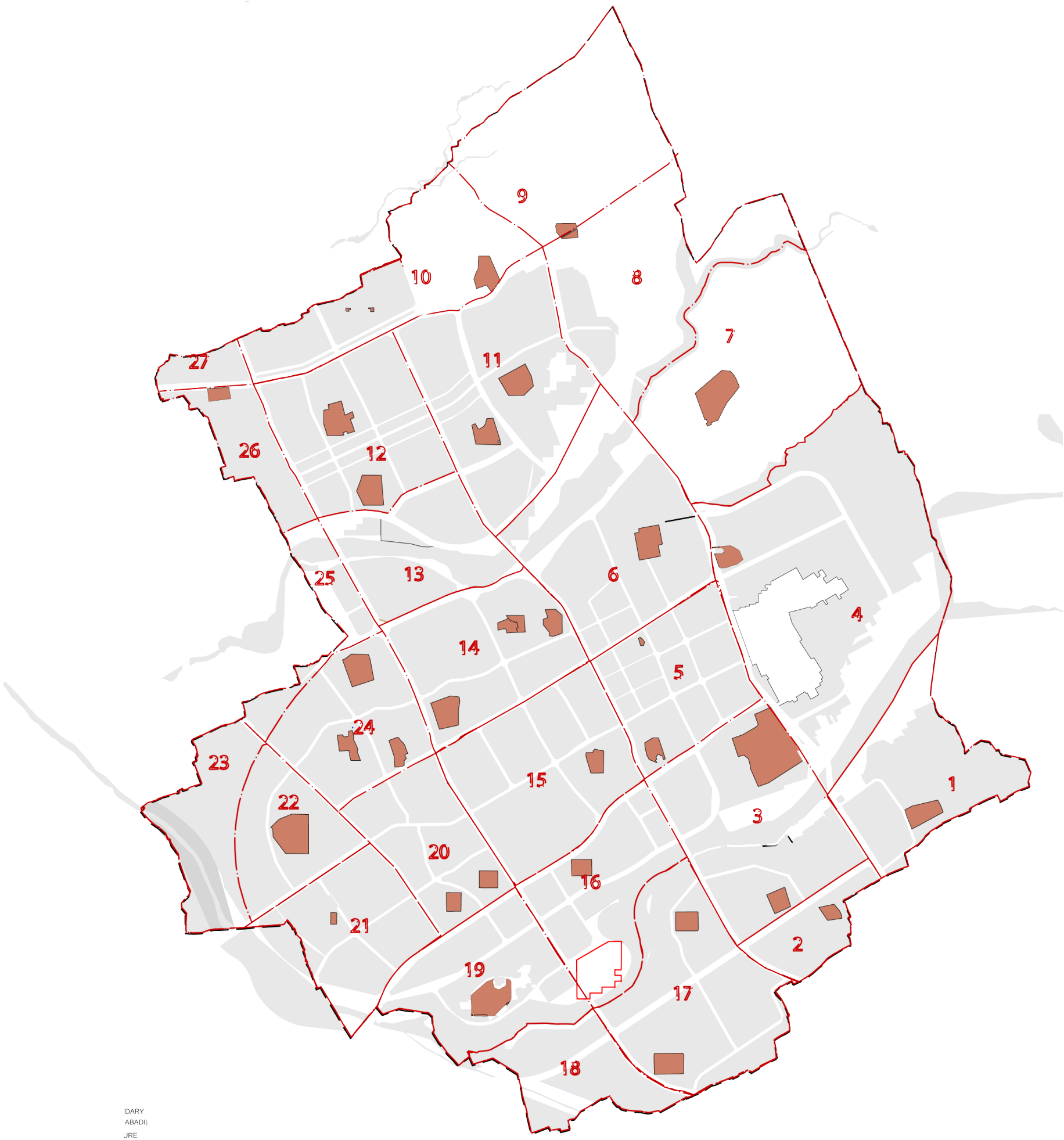


Fig. 7-2 Sector delineation for New Chandigarh LPA
Source: AECOM

7.3 RESIDENTIAL - ZONE 1

7.3.1 Delineation criteria

As on June 2014, the delineation criteria devised for the residential areas lying within Zone 1 were based upon the following :

- Majority of approved projects are in this zone
- On going construction at site
- Approximately 60% of area already licensed & approved
- Plots have been sold and allotted
- This area being close to the Shivalik mountains has been kept low density.

7.3.2 Proposed Density (PPA)

The total residential area lying in this zone is approximately 1100 Ha⁹, and planned with a gross density of 150 ppa.

The total area considered for the purpose of approximate population computation includes areas of existing village abadis, areas of approved projects and area for mixed use.

Density	Apartment Size	Density (PPA)
Gross *(Plotted)		150
Group Housing (net)**	>300 Sq.m.	250
	120-300 Sq.m.	450
	<120 Sq.m.	450

Table 7-1 Proposed Residential Density

* **GROSS DENSITY** is defined as Total Sector Population divided by Total Sector Area.

****NET DENSITY (Group Housing)** is defined as Total Residential Population within Group housing divided by Total Area reserved for Group Housing .

7.3.3 Density & Population of approved projects

Developer	Area (Ha.)	Population	Density (PPA Gross)
Omaxe	238	67,068	113
DLF	90	21,110	94
ECO City	162	46,770	116
IAS/PCS	52	10,806	83
TOTAL	542	1,45,754	108

Table 7-2 Population & Density in approved developments

Source: AECOM

9) Area is subjected to change depending upon final area available for development. The approximate population computation may vary depending on actual development in a sector.

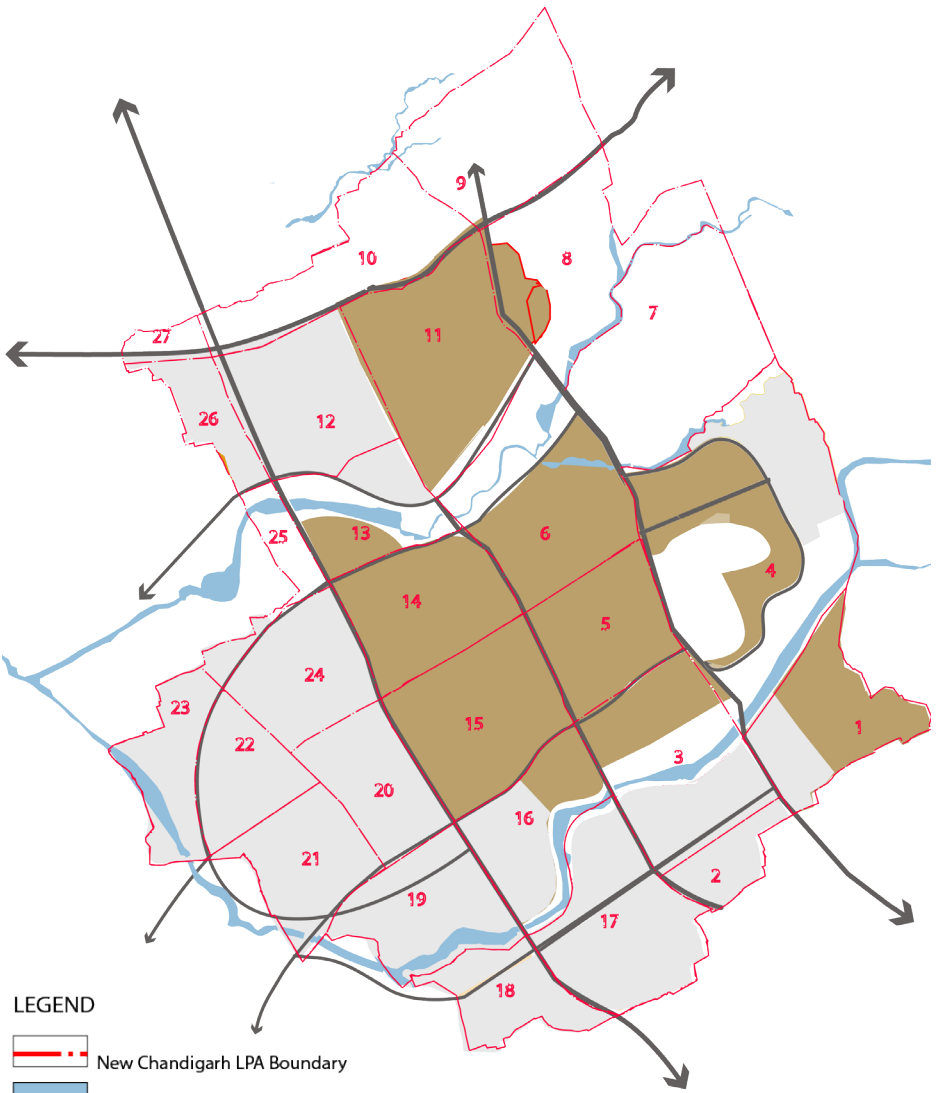


Fig. 7-3 Residential sectors within Zone 1

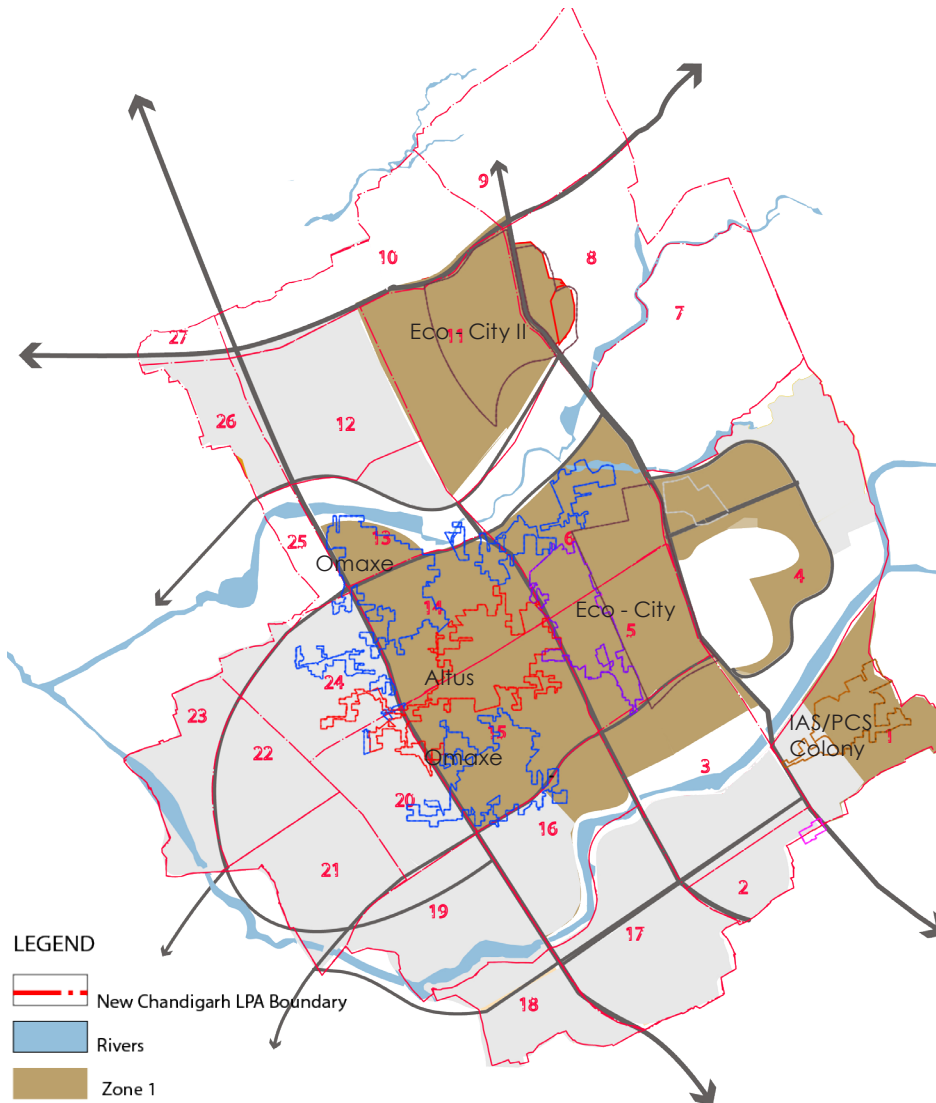


Fig. 7-4 Approved projects lying within Zone 1

7.3.4 Sector Distribution

The preferred minimum residential sector size has been considered as 100 Ha. For the purpose of calculation a sector is distributed in to two major uses :

- Group housing
- Plotted housing & other associated uses.

While 20% of the project area may be reserved for Group Housing, the rest 80% is dedicated to plotted housing & other associated uses (Table 7-3).

Land use	Percentage area
Plotted housing	50%
Commercial	5%
Public Semi Public , Utilities & roads *	34%
Green (free of FAR)	6%
Green (with FAR) [OPTIONAL]	5%

Table 7-3 Proposed land use distribution for plotted areas

* The road area for an ideal sector plan varies from 20-25%, while Utilities and Public/ Semi Public land use should be in accordance to the requirements as per population.

7.3.5 FAR & Ground Coverage (Residential)

FAR (Residential)	
Residential Group Housing	As per policy of Govt. of Punjab as amended from time to time.

Table 7-4 Proposed FAR for residential group housing

* Minimum width of access road for Group housing will be 24 mts.

7.3.6 Mixed Use

Parcel Size (minimum)	2 Ha.
Green Area (planned landscape parks and public areas)	40%
Ground Coverage	25%
Open Parking & Pavements	35%
Residential	Max 80% of the built up area
Commercial, Public, Semi Public and ancillary uses	Minimum 20% of the built up area

Warehousing/ Storage	1. Not as part of Residential or Public or Semi public use. 2. Building Controls shall be as per govt. policies /building rule as amended time to time.
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- All changes made in the master plan shall be incorporated in zonal plan and revenue plan.
- Changes made in the zonal plan as per attached files shall also be incorporated in revenue plans as well
- All plans which are part of the report should be amended as per the latest master plan and other maps to be updated if needed.
- Area if needed be changed in report may be calculated as per amended master plans

Table 7-5 Proposed development controls for mixed use areas within Zone 1

Permissible uses	Permissible area
Residential	Max 80% of total Built up area
Commercial, Public Semi Public and ancillary uses	Minimum 20% of total built up area

Table 7-6 Permissible uses within Mixed use

As a general guiding principle all mixed use development plots shall have uniform setbacks (front) along major road (access road).

7.3.7 Roads & Transportation

- Each Sector to have internal roads as per Zonal Plan.
- Minimum internal roads (access roads) for plots to be 12 mts.
- Minimum access road width for Group housing to be 24 mts.
- Minimum access road width for Schools to be 24 mts. and for colleges to be 30 mts
- All efforts to be considered to incorporate existing village roads and proposing widening to minimum standards.
- All existing village abadi peripheral road(village phirni) to be widened to 12 mts. and connected to main road network but should not open directly on main carriage way.
- Road formation levels once finalised, designed and constructed shall never be altered (reduced/ increased) during any future repair/ maintenance/ re- carpeting works.
- When possibility of widening or incorporation of village roads in not a feasible options, the roads to be acquired by Development authority to promote planned development

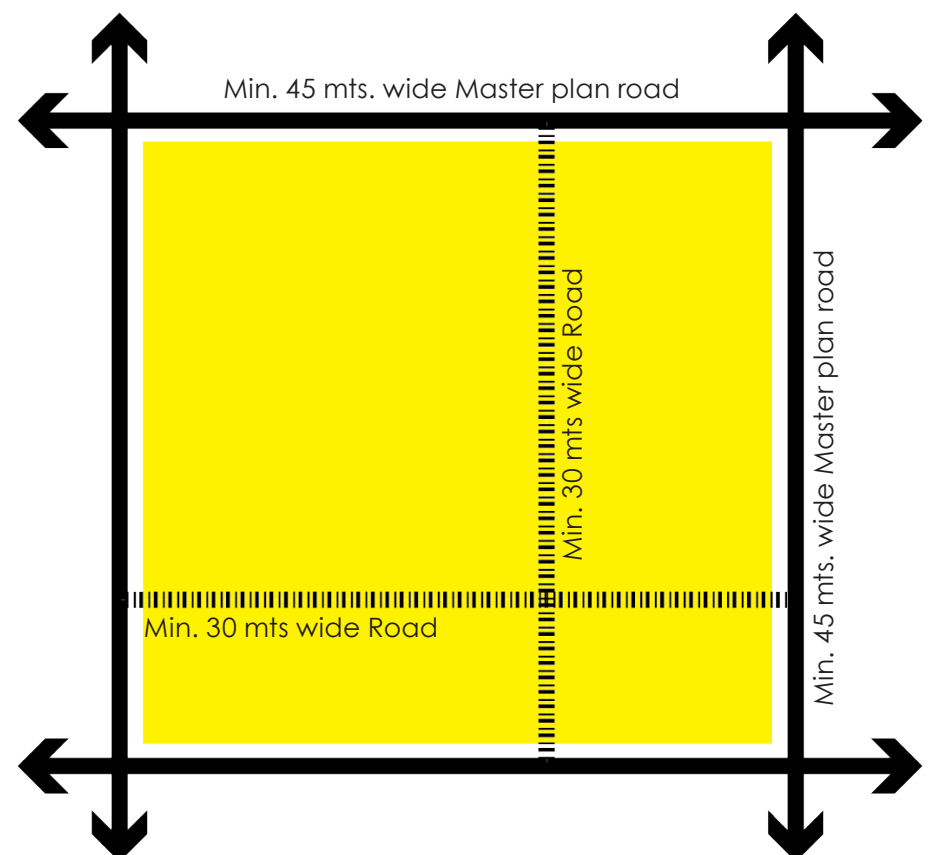


Fig. 7-5 Two roads of minimum 30 mts. through sectors

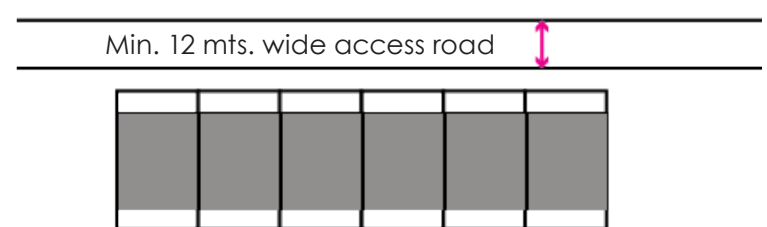


Fig. 7-6 Min. 12 mts. wide internal roads to plotted housing

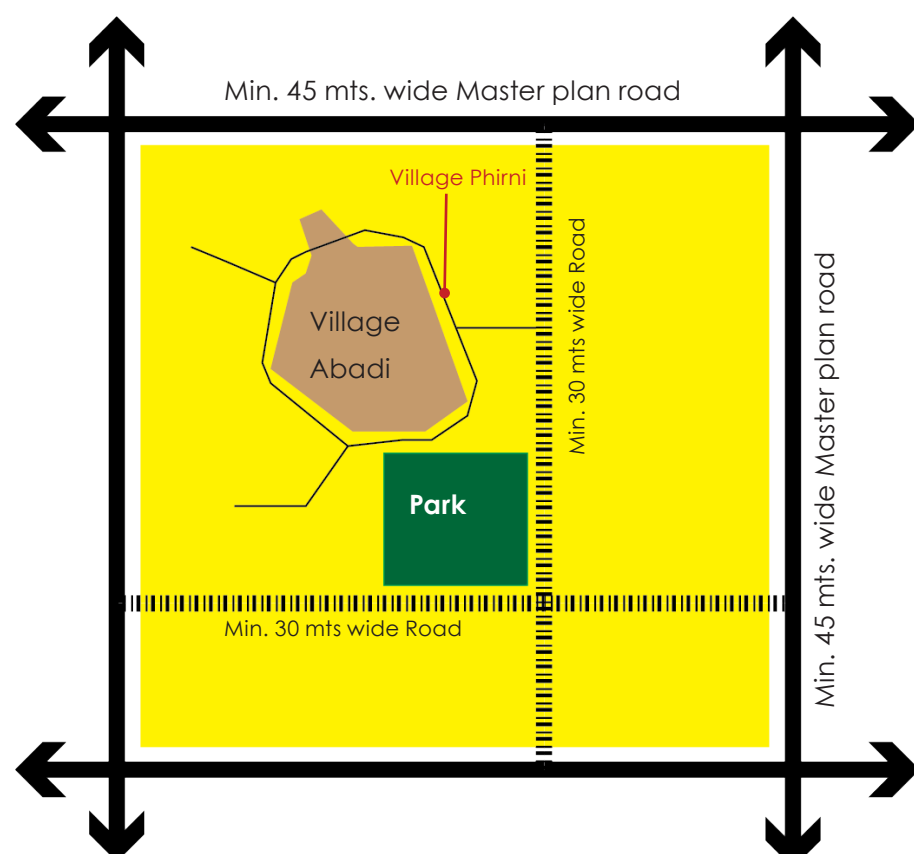


Fig.7-7 The Village phirni can be widened to 12 mts., but not opened directly on main carriageway

Source: AECOM

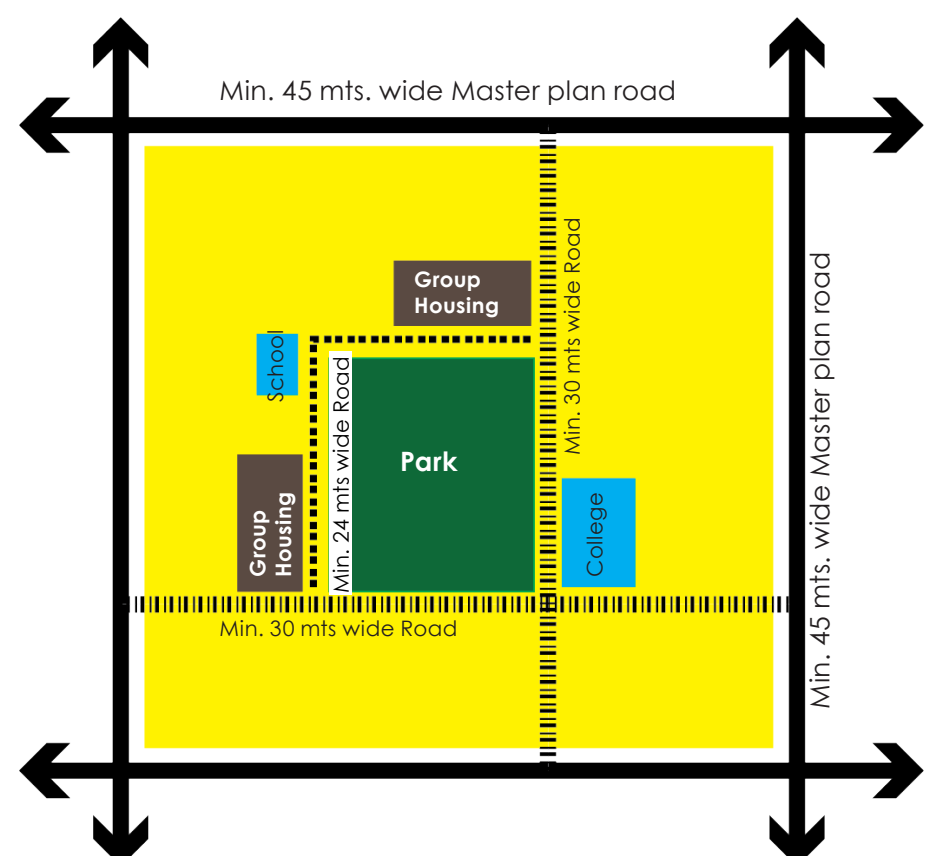


Fig.7-8 Min. access road widths to different uses in a residential sector

7.4 RESIDENTIAL - ZONE 2

7.4.1 Delineation criteria

As on June 2014, the delineation criteria devised for the residential areas lying within Zone 2 were based upon the following :

- Majority of areas yet to be approved projects are in this zone
- No construction at site
- This zone is along major transit corridors.

7.4.2 Proposed Density (PPA)

The total residential area lying within this zone is approximately 925 Ha¹⁰, and is planned with a gross density of 200 ppa.

The total area considered for the purpose of approximate population computation includes areas of existing village abadis, areas of approved projects and area for mixed

Density	Apartment Size	Density (PPA)
Gross *(Plotted)		200
Group Housing (net)**	>300 Sq.m.	250
	120-300 Sq.m.	300
	<120 Sq.m.	450

Table 7-7 Proposed Residential Density

* **GROSS DENSITY** is defined as Total Sector Population divided by Total Sector Area.

****NET DENSITY (Group Housing)** is defined as Total Residential Population within Group housing divided by Total Area reserved for Group Housing .

7.4.3 Sector Distribution

The preferred minimum residential sector size has been considered as 100 Ha. For the purpose of calculation a sector is distributed in to two major uses :

- Group housing
- Plotted housing & other associated uses.

While 20% of the project area may be reserved for Group Housing, the rest 80% is dedicated to plotted housing & other associated uses (Table 7-8).

Source: AECOM

10) Area is subjected to change depending upon final area available for development. The approximate population computation may vary depending on actual development in a sector.

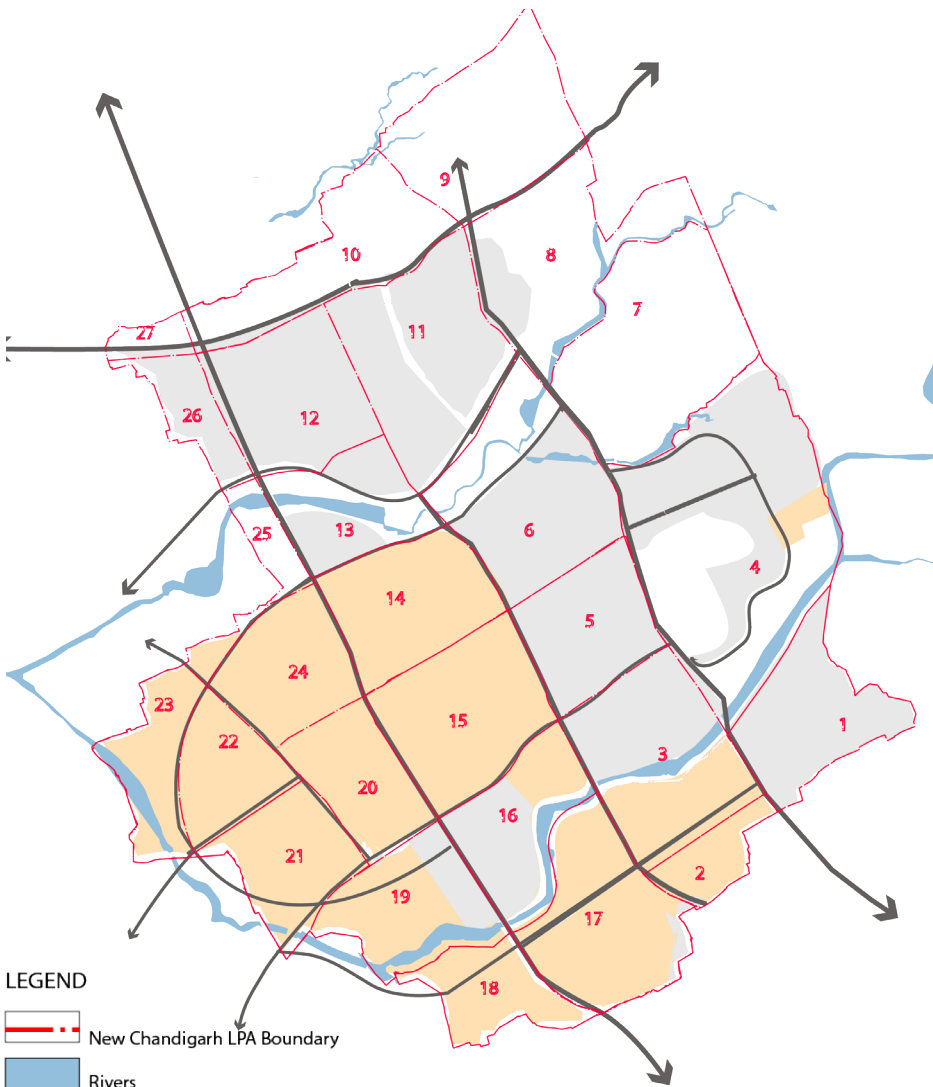


Fig. 7-9 Residential sectors within Zone 2

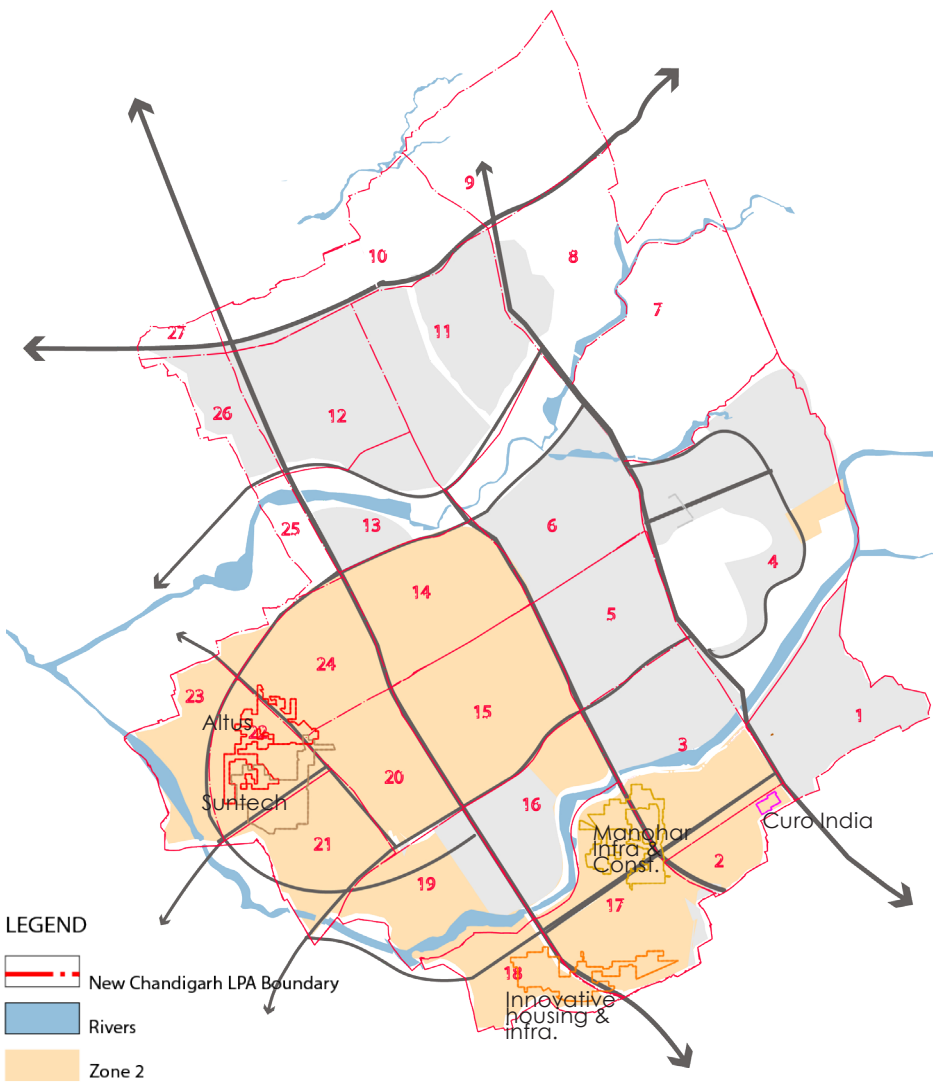


Fig. 7-10 Approved Projects in Zone 2

Land use	Percentage area
Plotted housing	50%
Commercial	5%
Public Semi Public , Utilities & roads *	34%
Green (free of FAR)	6%
Green (with FAR) [OPTIONAL]	5%

Table 7-8 Proposed land use distribution for plotted areas

* The road area for an ideal sector plan varies from 20-25%, while Utilities and Public/ Semi Public land use should be in accordance to the requirements as per population.

7.4.4 FAR & Ground Coverage (Residential)

FAR (Residential)	
Residential Group Housing	As per policy of Govt. of Punjab as amended from time to time.

Table 7-9 Proposed FAR for residential group housing

* Minimum width of access road for Group housing will be 24 mts.

7.4.5 Mixed Use

The associated development controls are as follows :

Parcel Size (minimum)	2 Ha.
Green Area (planned landscape parks and public areas)	40%
Ground Coverage	25%
Open Parking & Pavements	35%

Table 7-10 Proposed development controls for mixed use areas within Zone 2

Permissible uses	Permissible area
Residential	Max 80% of total Built up area
Commercial, Public Semi Public and ancillary uses	Minimum 20% of total built up area

Table 7-11 Permissible uses within Mixed use

As a general guiding principle all mixed use development plots shall have uniform setbacks (front) along major road (access road).

7.4.6 Roads & Transportation

- Each Sector to have internal roads as per Zonal Plan,
- Minimum internal roads (access roads) for plots to be 12 mts.
- Minimum access road width for Group housing to be 24 mts.
- Minimum access road width for Schools to be 24 mts. and for colleges to be 30 mts
- All efforts to be considered to incorporate existing village roads and proposing widening to minimum standards.
- All existing village abadi peripheral road(village phirni) to be widened to 12 mts. and connected to main road network but should not open directly on main carriage way.
- Road formation levels once finalised, designed and constructed shall never be altered (reduced/ increased) during any future repair/ maintenance/ re- carpeting works.
- When possibility of widening or incorporation of village roads in not a feasible options, the roads to be acquired by Development authority to promote planned development

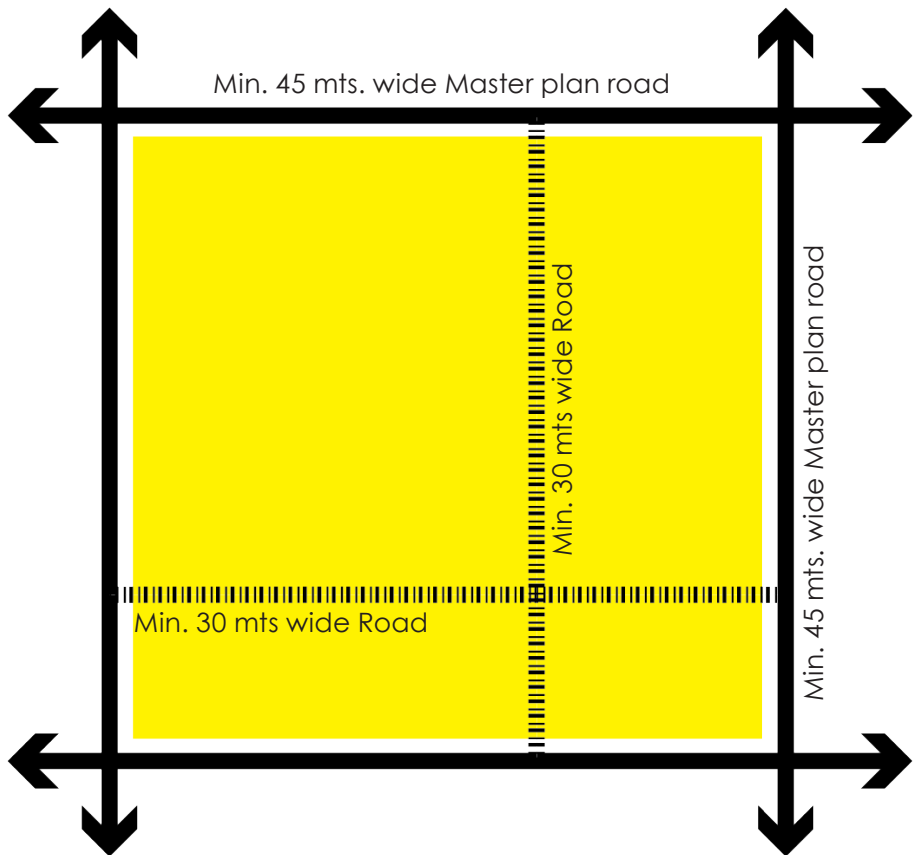


Fig.7-11 Two roads of minimum 30 mts. through sectors

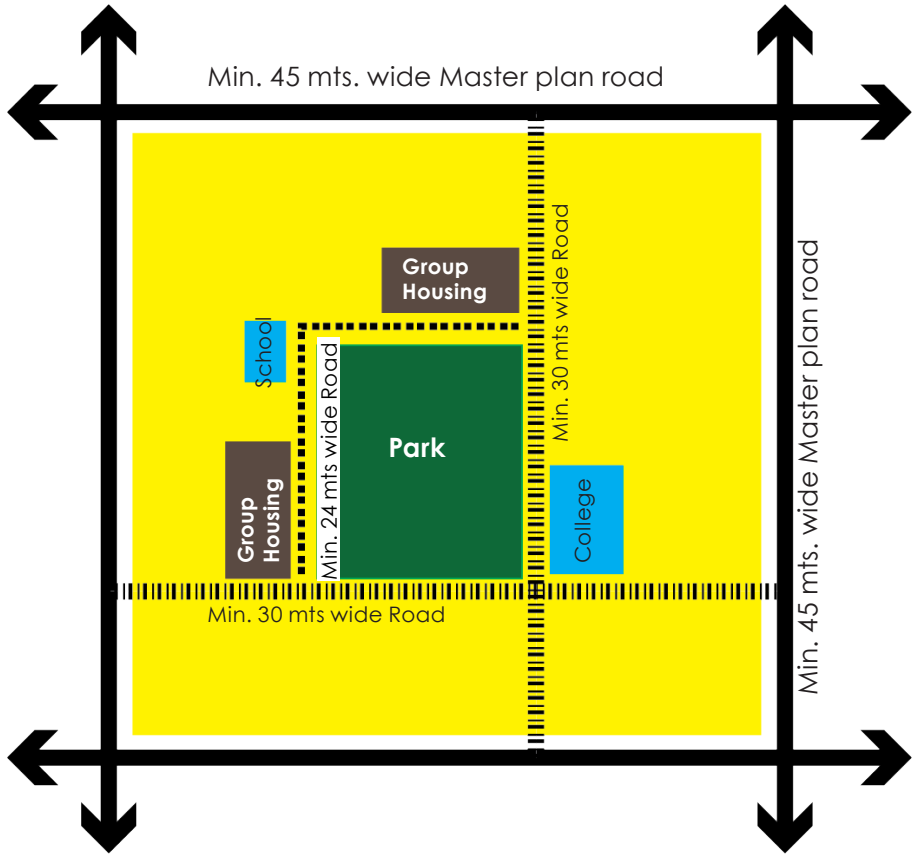


Fig.7-14 Min. access road widths to different uses in a residential sector

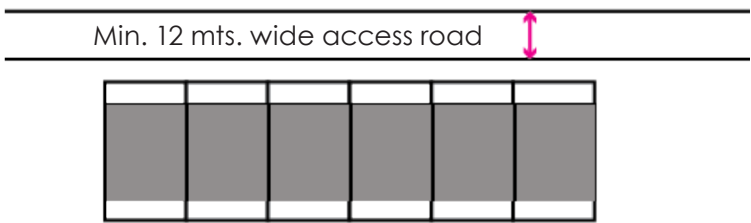


Fig.7-12 Min. 12 mts. wide internal roads to plotted housing

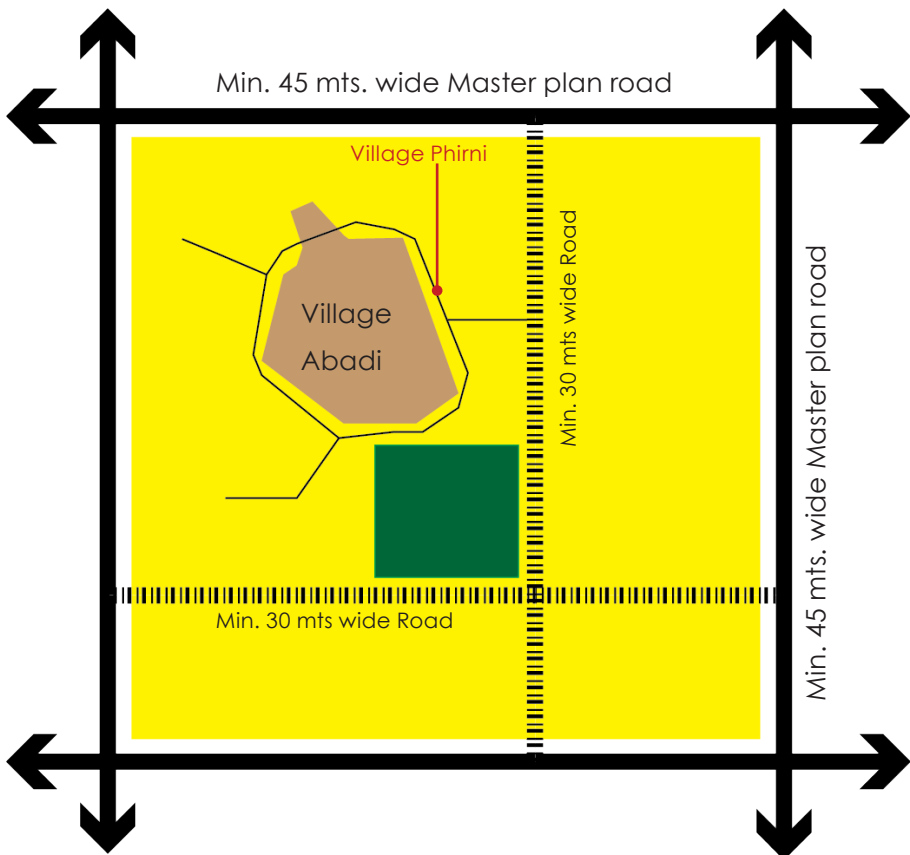


Fig. 7-13 The Village phirni can be widened to 12 mts., but not opened directly on main carriageway
Source: AECOM

7.5 RESIDENTIAL - ZONE 3

7.5.1 Delineation criteria

In order to preserve the ecological character and green areas towards the North of LPA in the foothills of Shivaliks, residential development with maximum density of 30 PPA. is proposed in the master plan.

An area of about 50 Acres to the north of Medicity abutting low density residential zone has been earmarked for development of high end residential apartments with maximum FAR of 1.2 and maximum ground coverage of 25%. The development of golf course adjoining the site along Golf drive road shall be cross subsidised from the revenue generated by the sale of apartments in this pocket.

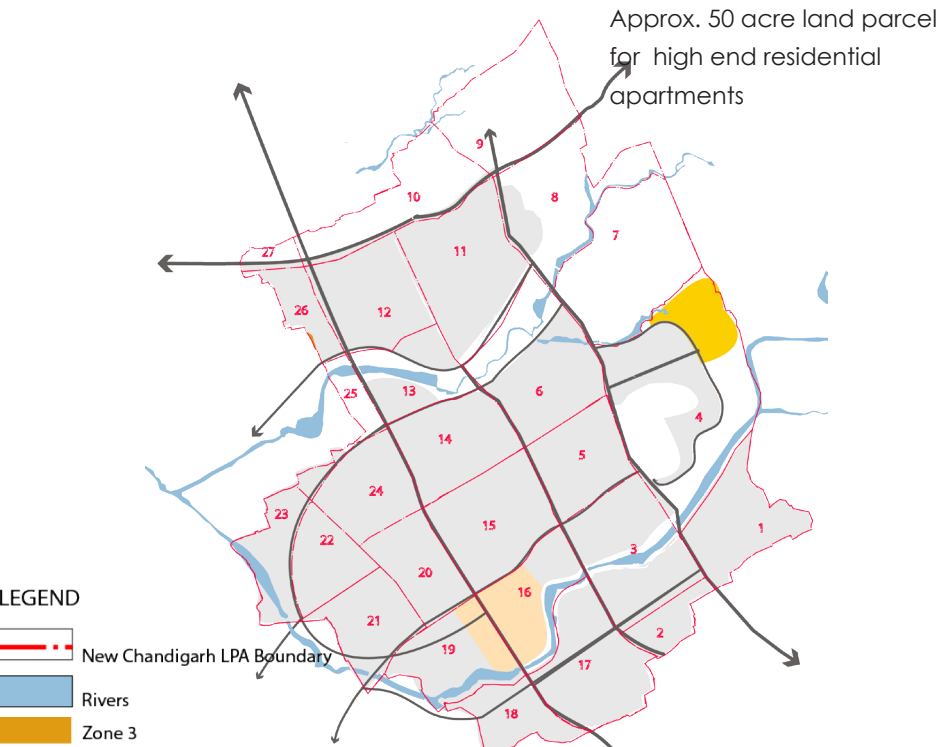


Fig. 7-14 a Residential sectors within Zone 3

7.6 RESIDENTIAL - PUBLIC/SEMI PUBLIC AMENITIES

7.6.1 Norms for distribution of Public /Semi public amenities

Apart from the policies/ notification of Govt. of Punjab amended from time to time, the general development controls for public / semi public amenities within New Chandigarh LPA are as follows:

Social Infrastructure (PSP)	upto 15,000 Population			15,000-30,000 Population			30,000-50,000 Population			>1,00,000 Population		
	Area (Ha.)	No. of Facility	Total area (Ha.)	Area (Ha.)	No of Facility	Total area (Ha.)	Area (Ha.)	No of Facility	Total area (Ha.)	Area (Ha.)	No of Facility	Total area (Ha.)
Nursery/ Pre- primary/ Creche	0.10	3.00	0.30	0.10	6.00	0.60	0.10	8.00	0.80	0.10	16.00	1.60
Primary School	0.50	1.00	0.50	-	1.00	-	-	-	-	-	-	-
Integrated School	2.00	1.00	2.00	2.00	2.00	3.00	2.00	3.00	6.00	3.00	4.00	12.00
College	-	-	-	-	-	-	-	-	-	6.00	1.00	6.00
Dispensary*	0.15	1.00	0.20	0.15	2.00	0.20	-	-	-	-	-	-
Health centre*	-	-	-	-	-	-	0.60	1.00	0.60	0.60	2.00	1.20
Poly Clinic*	-	-	-	-	-	-	-	-	-	-	1.00	-
Community centre	0.60	1.00	0.60	0.60	2.00	1.20	1.00	1.00	1.00	1.00	2.00	2.00
Religious site	0.10	1.00	0.10	0.10	1.00	0.10	0.10	2.00	0.20	0.10	4.00	0.40
Police Post	0.05	1.00	0.05	0.05	1.00	0.05	0.05	1.00	0.05	0.05	1.00	0.05
Police Station	-	-	-	-	-	-	-	-	-	1.00	1.00	1.00
Sub-Post Office	-	-	-	0.01	1.00	0.01	0.01	1.00	0.01	0.01	2.00	0.02
Public Building	-	-	-	-	-	-	-	-	-	1.00	1.00	1.00
Fire Station	-	-	-	-	-	-	-	-	-	1.00	1.00	1.00
Disaster Management Centre	-	-	-	-	-	-	-	-	-	2.00	1.00	2.00

Table 7-12 Public /Semi Public amenities distribution as per population

Notes :

- Integrated School to be permitted only along 24 mts wide road.
 - Schools to have provision of minimum 20 Bus (46 seated) parking within premises. No buses shall be permitted to park on street.
 - For all other building controls the policy of Govt of Punjab as amended from time to time need to be adhered.
- For incremental population above the threshold limit the guidelines of Town and Country Planning, Govt of Punjab shall prevail.
 - Colleges to be permitted only along 30 mts wide road.
 - Fire station to be along minimum 24 mts wide road

7.6.2 Site location criteria for schools
(Higher Secondary Schools)

GUIDING PRINCIPLES

- Access road to be minimum 24 mts
- Area of the site shall be as per table 7-12.
- Each School site either wraps an existing village or creates a buffer between existing village and future developments

- Schools will be catchment of approx 600- 800mt. radius (5 to 10 minutes walking distance from each other.

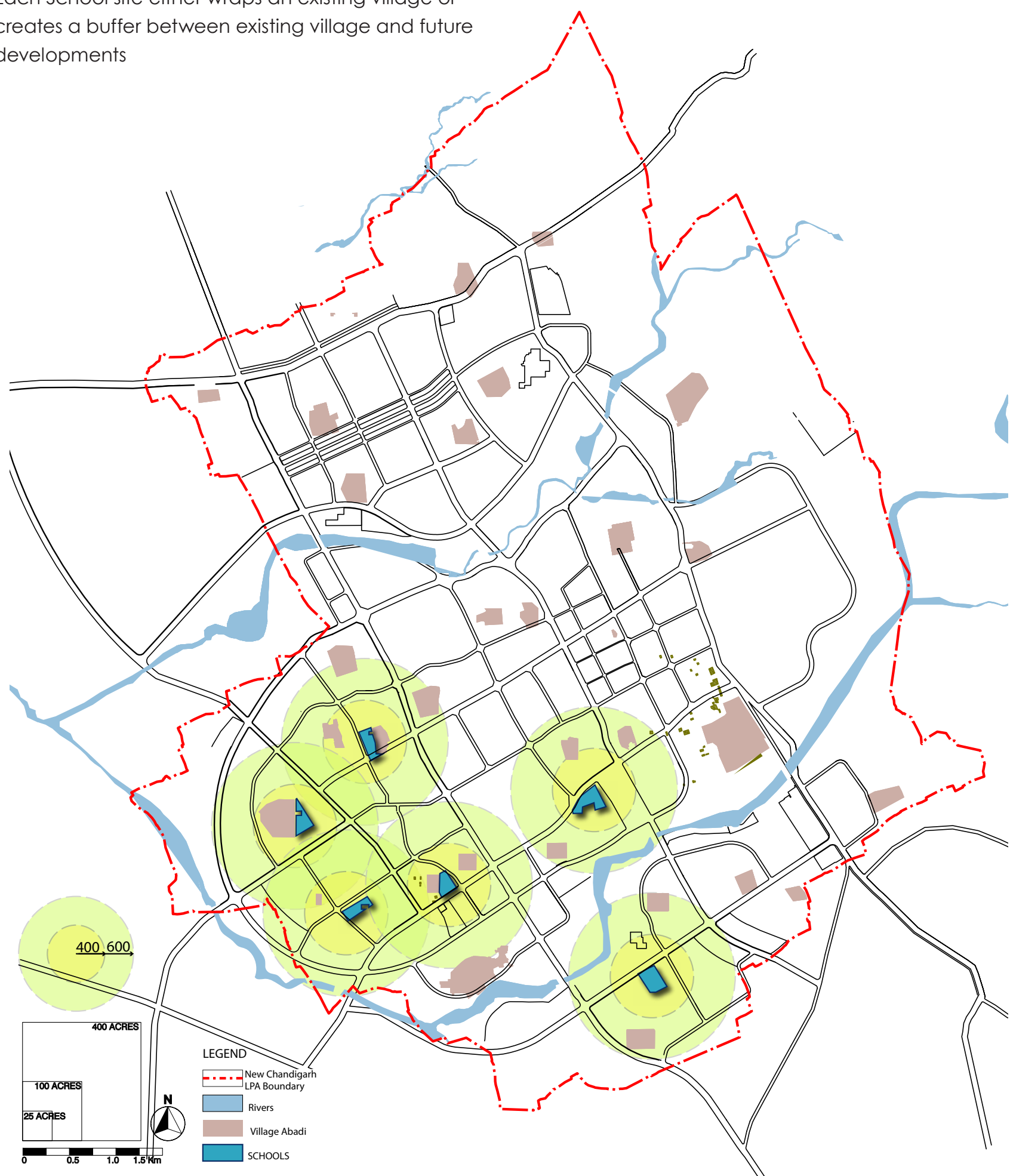


Fig. 7-15 Suggestive site locations for Schools according to walking distances from residential neighbourhoods
Source: AECOM

7.7 MEDICITY - ZONE 1

7.7.1 Delineation criteria

- Already delineated by Govt. Of Punjab and is as per the notified Master Plan of New Chandigarh
- Site location as per present notified Master Plan⁷
- Along major road MDR-B

7.7.2 Hospital beds to built up area ratio

The area required per bed is 400 sq.m for hospitals

7.7.3 Land use distribution for Medi city

Medical Campuses and Institutions	60%(min.)
Residential Housing & Commercial	40%(max.)

Table 7-13 Land use distribution for Medicity

Net area under Campuses(max.)	60%
Green (min.)	15%
Utilities and Amenities &Roads	25%

Table 7-14 Percentage area breakup for Medical institutions & campuses

- The land use distribution shown in the Table 7-13 and 7-14 are guiding parameters. The actual distribution of land uses in edu city will be governed by the policy of GMADA/ Govt. as amended from time to time.
- The approval for Medicity projects shall be in accordance to GMADA Medi City development policy.
- Approximate Area available for medical Campus= 26.46 Ha.
- Building rules and FAR as per the Govt. Of Punjab Policies amended from time to time

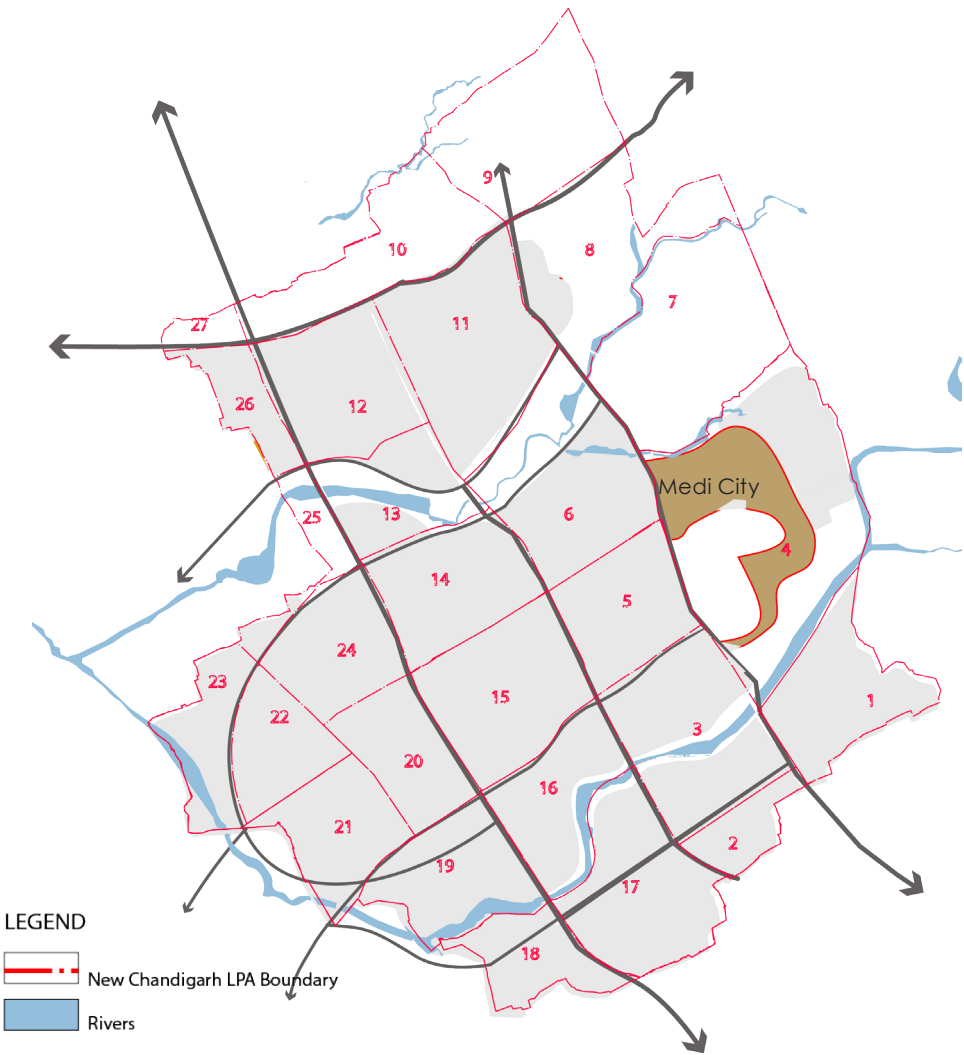


Fig. 7-16 Medicity

7.7.4 FAR & Ground Coverage

FAR	
Medical Campuses (including staff accommodation)	As per Policy/ Building Rules of the Government as amended from time to time
Medi Institutions (research, blood banks, stem cell banks and other medical related institutions)	1

Ground Coverage	
For overall parcel including staff accommodation	30%

Table 7-15 FAR & Ground coverage permissible for Medical Campuses

Note:

- 15% of permissible FAR for education campuses shall be permitted for development of accommodation for staff and student housing .

7.8 EDUCATION CITY - ZONE 1

7.8.1 Delineation criteria

The site location is as per the present notified plan⁷ along the major road PR-4. Already approx 2000 Ha, of land under education use in Chandigarh and SAS Nagar.

7.8.2 Student & Faculty Density

Students	50 Students/ Acre*
Faculty- Student Ratio	15 Students/ Faculty*
Support Staff- Faculty Ratio	5 Support Staff/ Faculty*

*These are approximate numbers benchmarked from various international and national case studies and UGC norms.
The numbers may vary with the nature of institute and scale of institute

7.8.3 Land use distribution for Education City

Education Campuses	60% (min.)
Residential Housing & Commercial	40%(max.)

Table 7-16 Land use distribution for Education City

Land use	Percentage area
Net area under Campuses(max.)	60%
Green (min.)	15%
Utilities and Amenities & Roads	25%

Table 7-17 Percentage area breakup for Education institutions & campuses
* Notes:

- The land use distribution shown in the Table 7-16 and 7-17 are guiding parameters. The actual distribution of land uses in edu city will be governed by the policy of GMADA/ Govt. as amended from time to time.
- Approximate Area available for Campus design= 120 Ha.
- Building rules and FAR as per the Govt. Of Punjab Policies amended from time to time. Competent Authority may increase or decrease the area for Non Education use in special cases with proper justification.
- For residential and commercial areas, the norms as applicable for residential and commercial zones will be followed.

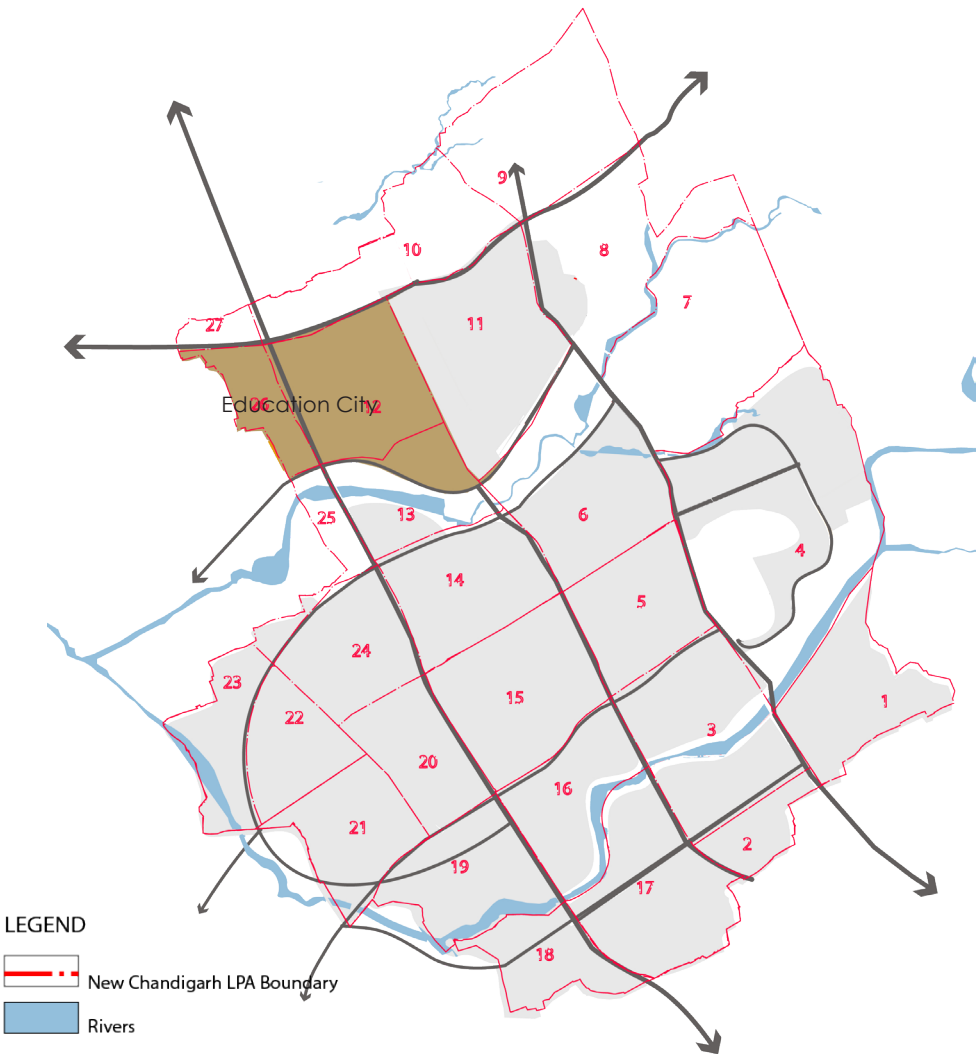


Fig.7-17 Education City

7.8.4 FAR & Ground Coverage

FAR	
Education Campuses	As per Policy/ Building Rules of the Government as amended from time to time
Staff accommodation	15% of total permissible FAR

Ground Coverage	
For overall parcel including staff accommodation	30%

Table 7-18 FAR & Ground coverage permissible for Educational Campuses

* **Note:**

- 15% of permissible FAR for education campuses shall be permitted for development of accommodation for staff and student housing .

7.9 CITY CENTRE - ZONE 2

7.9.1 Delineation criteria

The city centre has been located at PR-4, and is also proposed as a gateway development to New Chandigarh.

The delineated area for the city centre is approximately 90

Commercial (Office and Retail)	75 Ha.
City Hospital	6 Ha.
Bus Terminal	4 Ha.
Cultural Centre	10 Ha.

Table 7-19 Land use bifurcation of City Centre Area

7.9.2 FAR & Ground Coverage

Global FAR	4.0
Ground Coverage	30%
Ground Coverage (smaller properties along the river)	In case of small commercials along the river the ground coverage can be 100% with openings available on both sides.
Green Area/Public Promenade	20%

Table 7-20 FAR & Ground Coverage For City Centre

7.9.3 Permissible Uses

<ul style="list-style-type: none">Office Public office, commercial office, banks	40% of BUA
<ul style="list-style-type: none">Hospitality Hotels, Convention Centre, service apartment, museum, concert hall, auditorium, library	30% of BUA
<ul style="list-style-type: none">Commercial and FnB Restaurants, retail shops, shopping promenade along river, shopping centre, multiplex/cinema	20% of BUA
<ul style="list-style-type: none">Public- Semi Public , Utilities and Amenities City Hospital, Utilities, petrol pump, bus terminal, fire station, police station, water supply / sewerage/ drainage related infrastructure, central control and monitoring area, post office	10% of BUA

Table 7-21 Permissible uses within City Centre

Source: AECOM

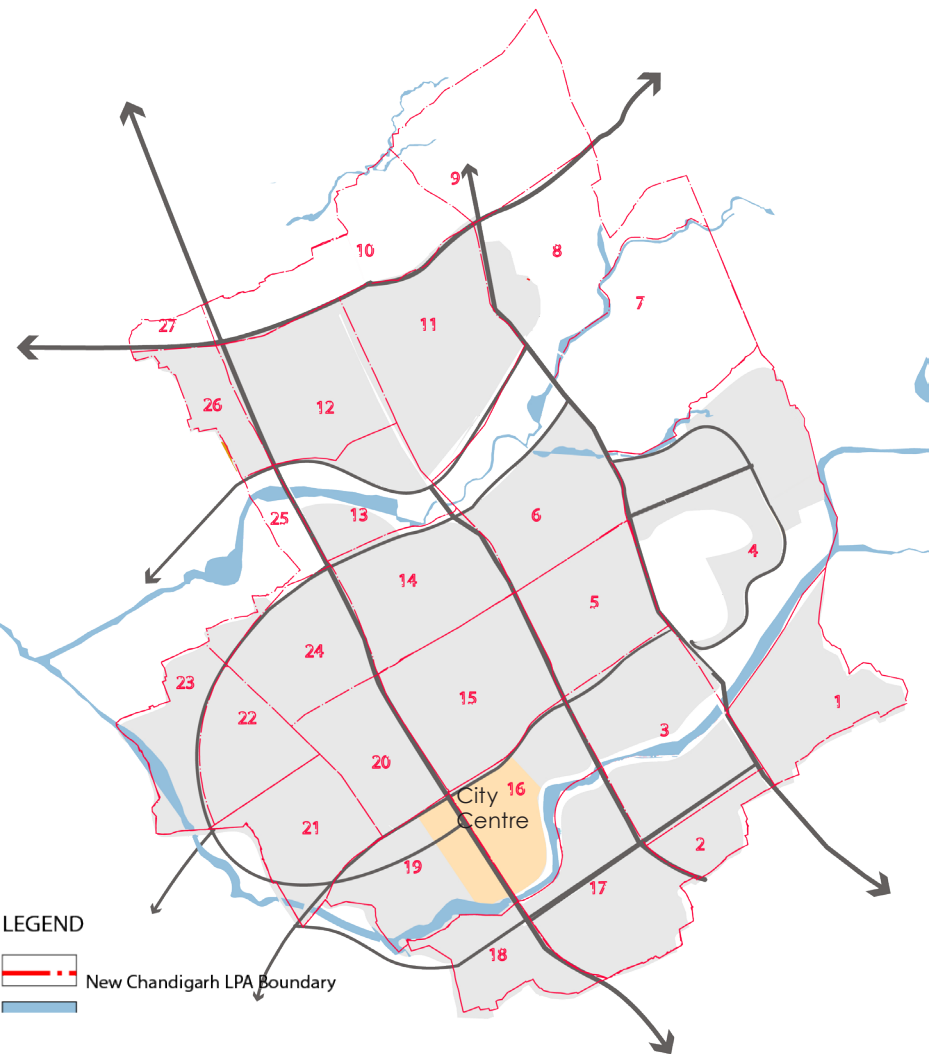


Fig.7-18 City Centre (Urban Square)

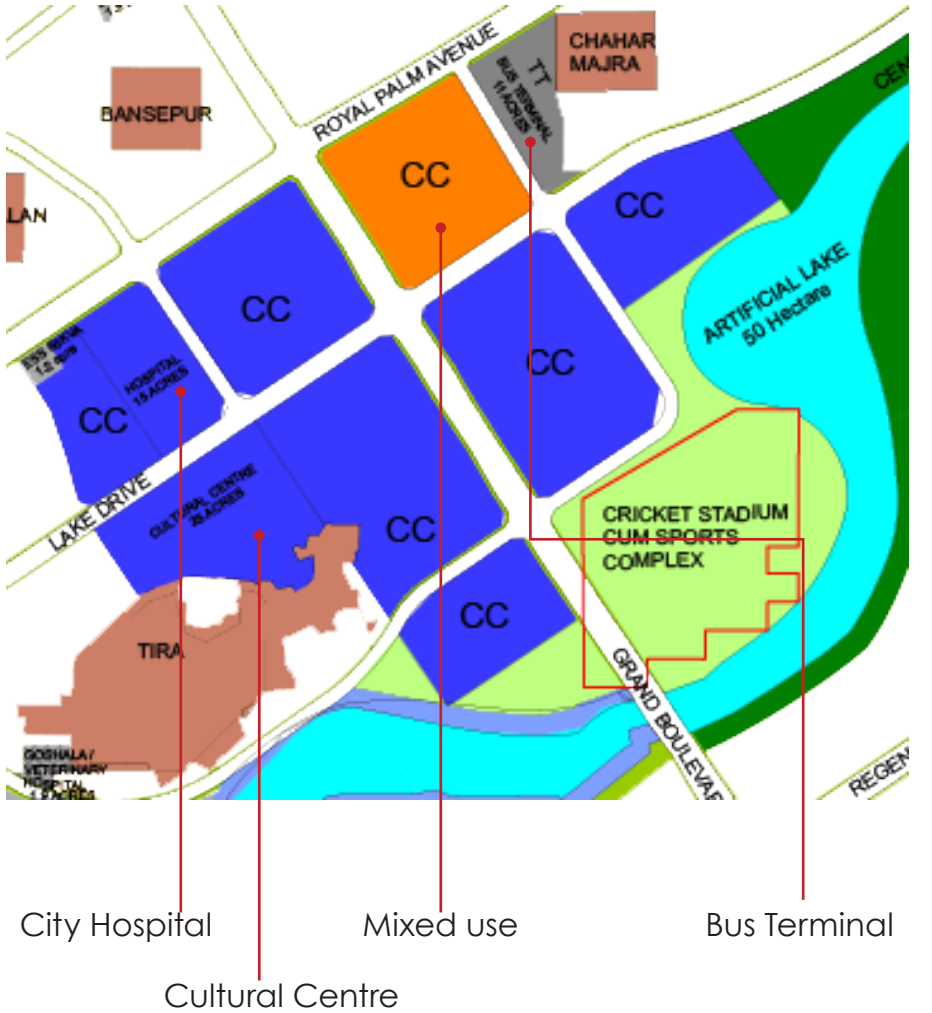


Fig.7-19 Land use distribution of City Centre Area

7.9.4 Building Siting

For all buildings except riverfront facing developments	6m or 1/3rd of the height of the building whichever is more. But this distance should not increase more than 16m in any case.
Properties facing riverfront	For such properties Build to lines(build to property line) has been proposed. All properties with side facing river should have at least 75% of the façade extend to the build to line.
Green Buffer along roads	5m green buffer has been proposed along the 60m wide road but there are no buffer provided in any of the other streets.
One way system of streets has been provided within the city centre so all streets except the 60M & 45m have to be one way streets.	
For each sector a maximum of 2 major roads (24m) can open onto the master plan roads.	
Along 60m road	A maximum height of <u>20 floors</u> is allowed within <u>100m of PR4</u> . But the buildings need to step back beyond 4 floors.
Properties facing riverfront	A maximum height of <u>4 storey's</u> is allowed within <u>50m of the river</u> .

Table 7-22 Building Controls

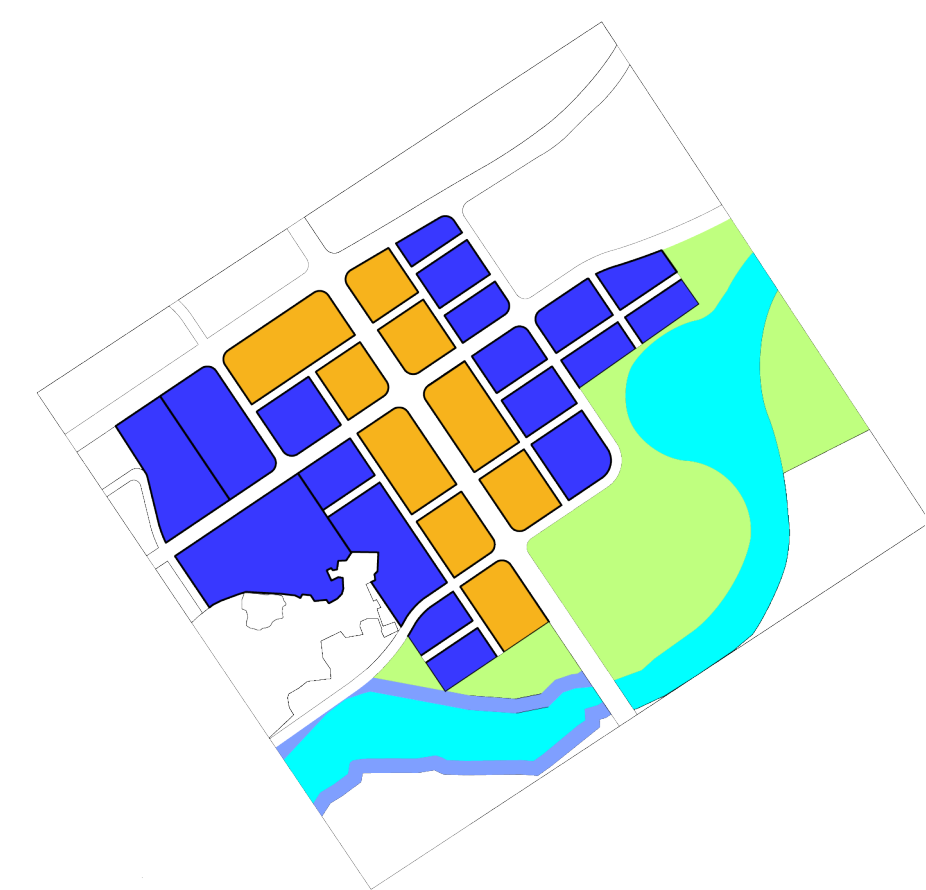


Fig.7-20 Minimum block size is 1.5 Ha and bigger blocks (Orange Colour in figure) provided along 60 mts. PR-4
Source: AECOM

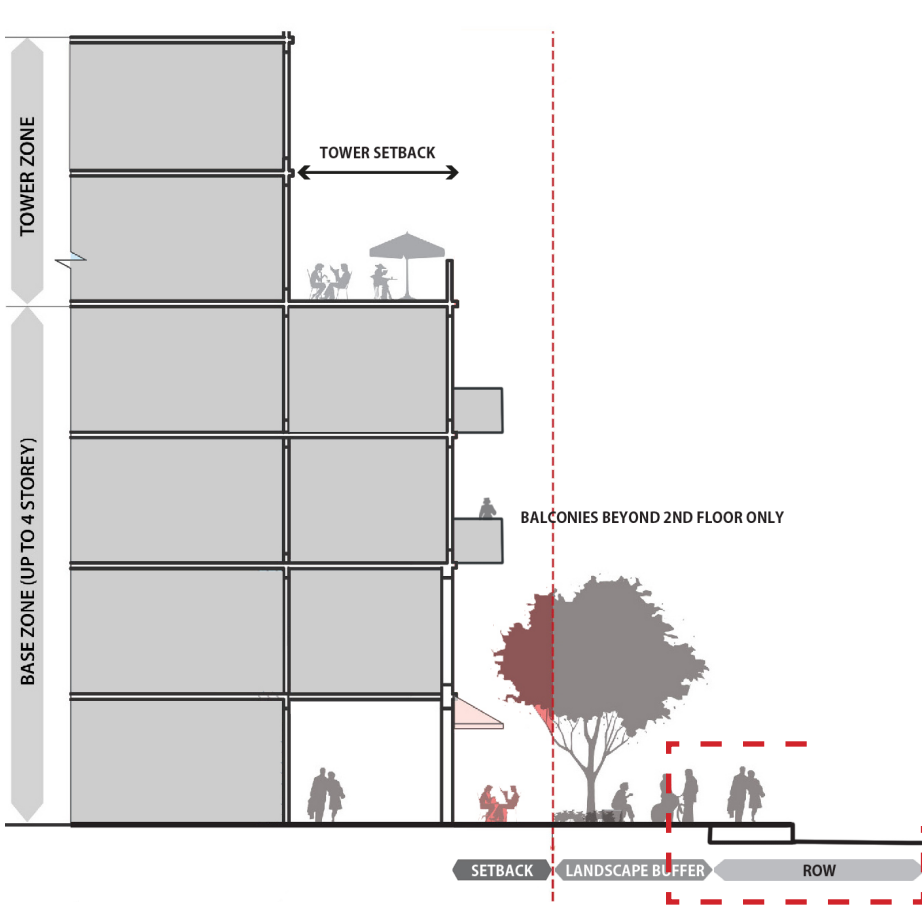


Fig.7-21 Extend sidewalks in the ROW to meet the base of buildings.(No boundary walls)

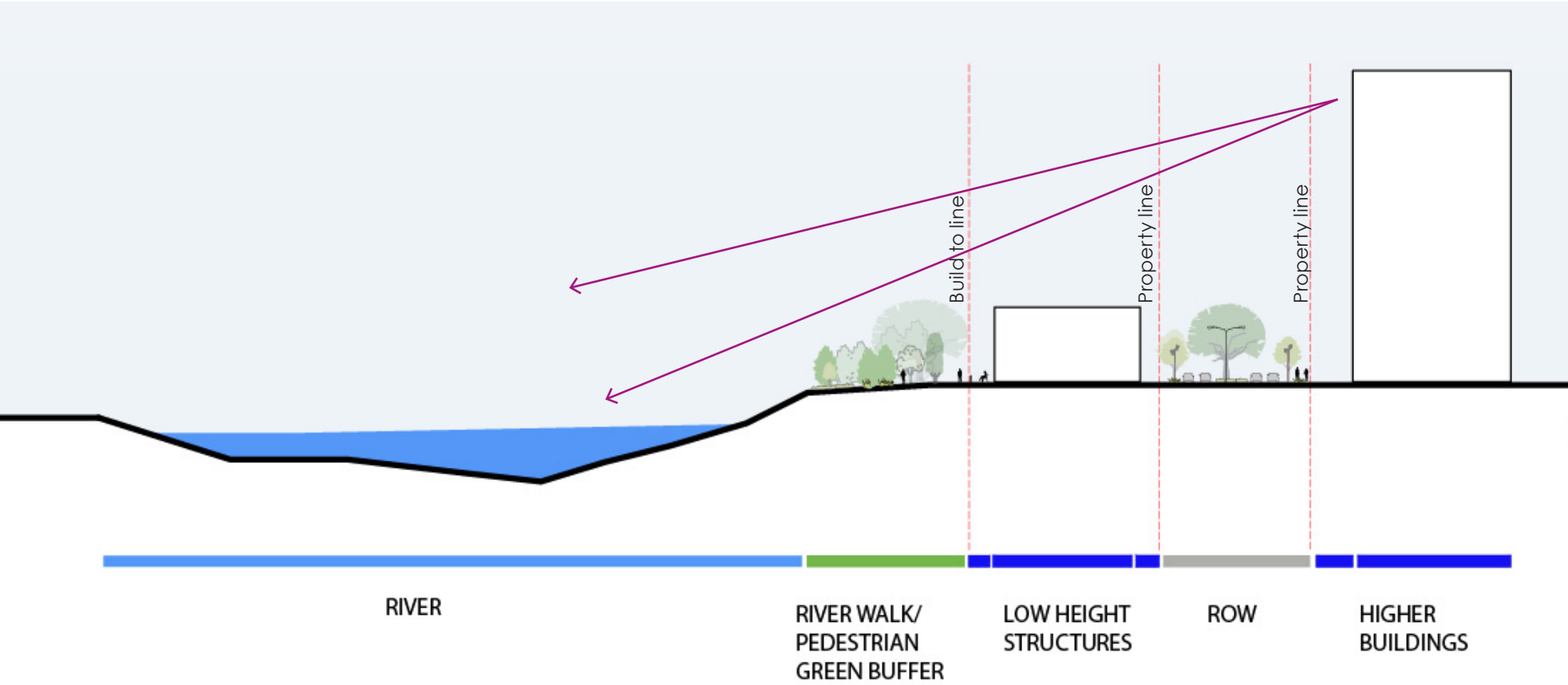
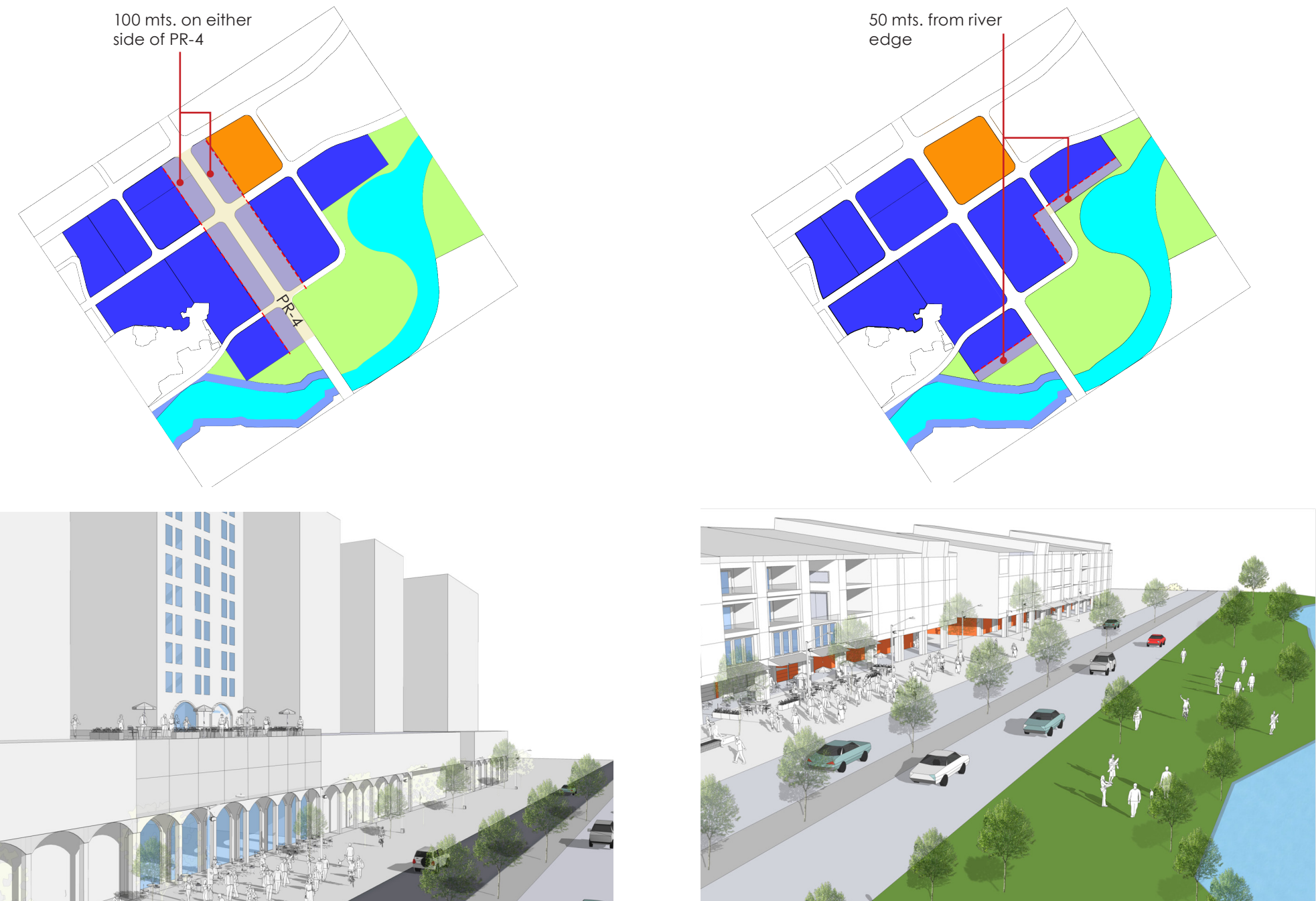


Fig.7-22 Stepped down built form towards open spaces, rivers, water bodies



A maximum height of 20 floors is allowed within 100m of PR4. But the buildings need to step back beyond 4 floors.
Fig.7-23 Building Height Controls
Source: AECOM

A maximum height of 4 storey's is allowed within 50m of the river.

7.10 SPORTS COMPLEX

7.10.1 FAR & Ground Coverage

FAR for Sports complex	0.5
Ground Coverage	20%
Set back, heights and Parking	As per building rules/policy of Govt. of Punjab as amended from time to time

Table 7-23 Development controls for sports complex

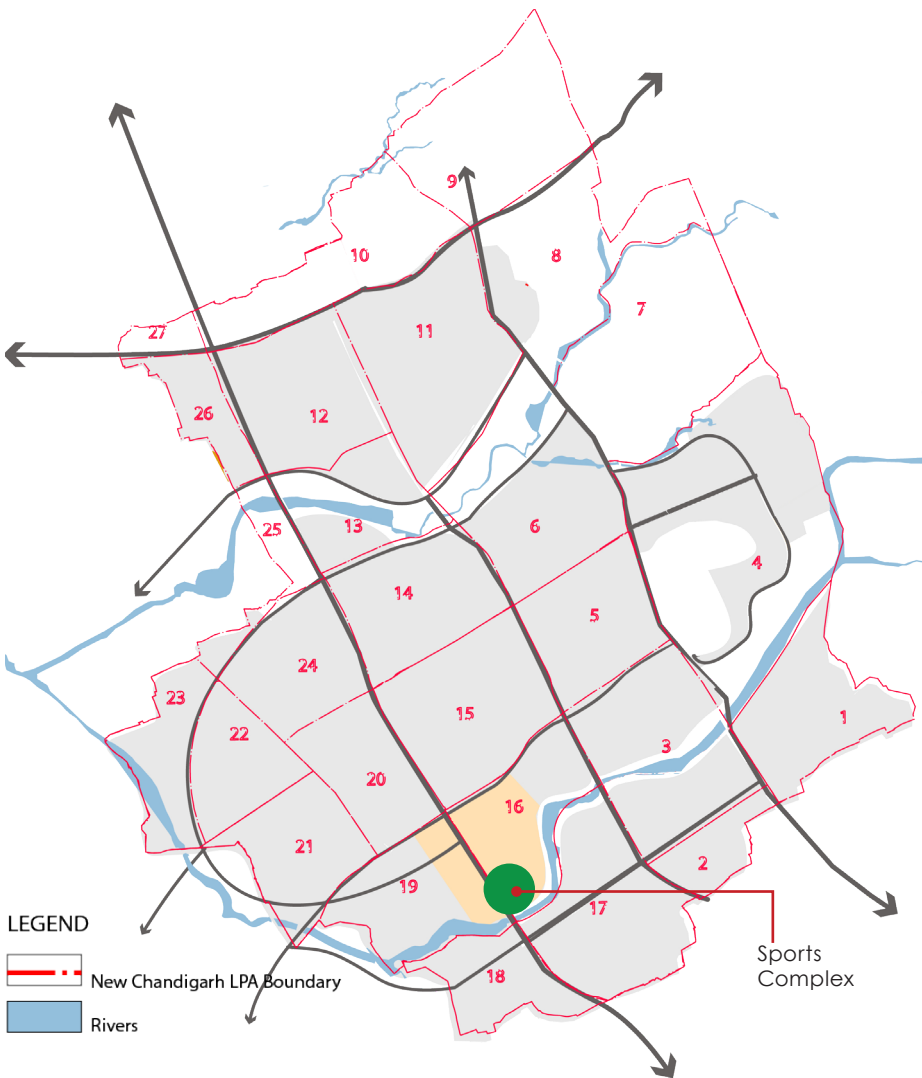


Fig.7-24 Location of Sports Complex

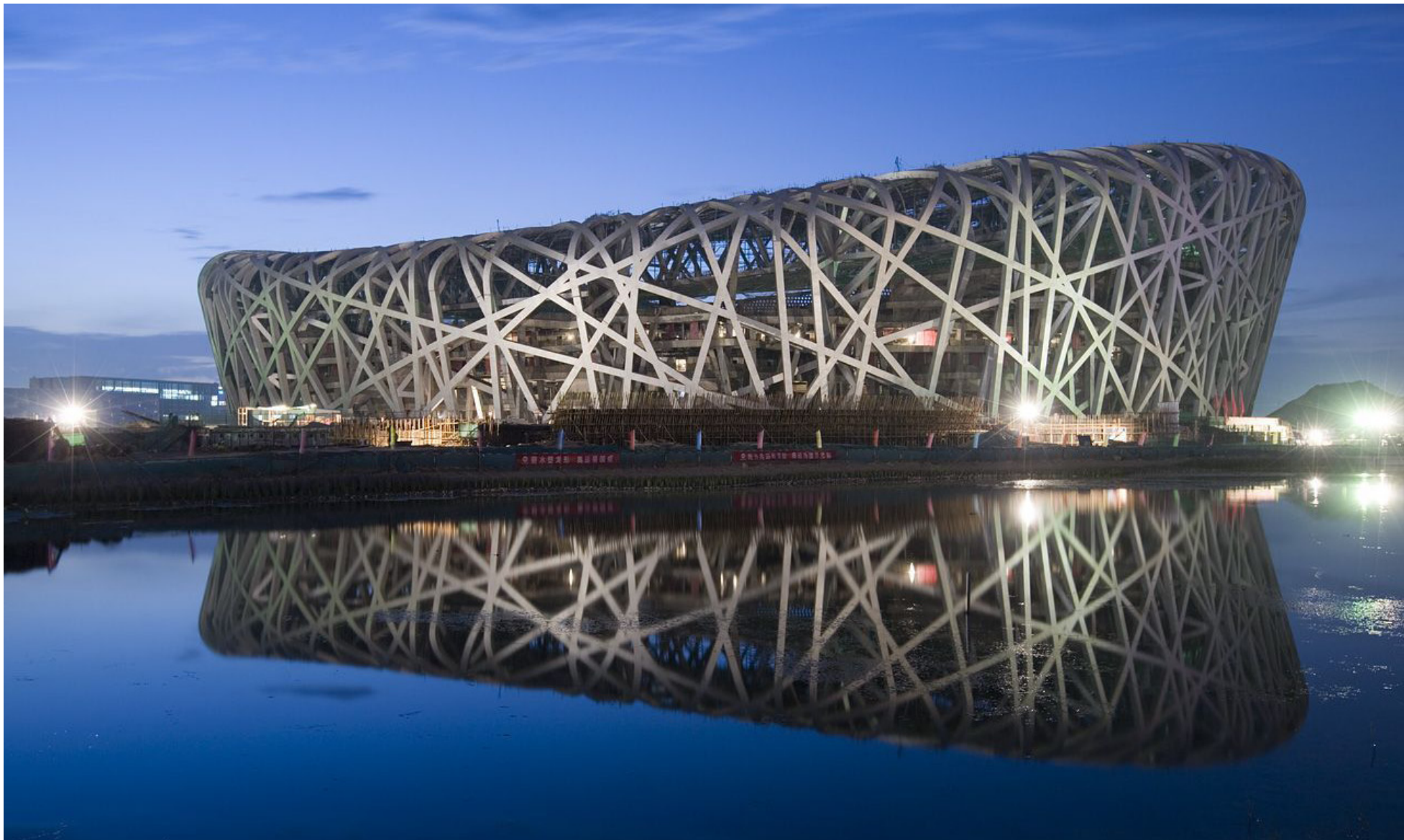


Fig.7-25 The stadium is envisioned as an iconic structure
Source: <http://decorationlovers.com/2013/11/28/top-10-football-stadiums/>

7.11 EWS HOUSING STRATEGY

7.11.1 Site Location Criteria

- Requirements of EWS with respect to land area, number of units, and percentage of development to be as per the Government of Punjab notification as amended from time to time.
- Site for EWS should be identified in the Zonal plans
- Sites should be adjoining to village settlements and should be well connected to the transportation network
- Site for EWS for maximum 3 sectors can be clubbed at one location.

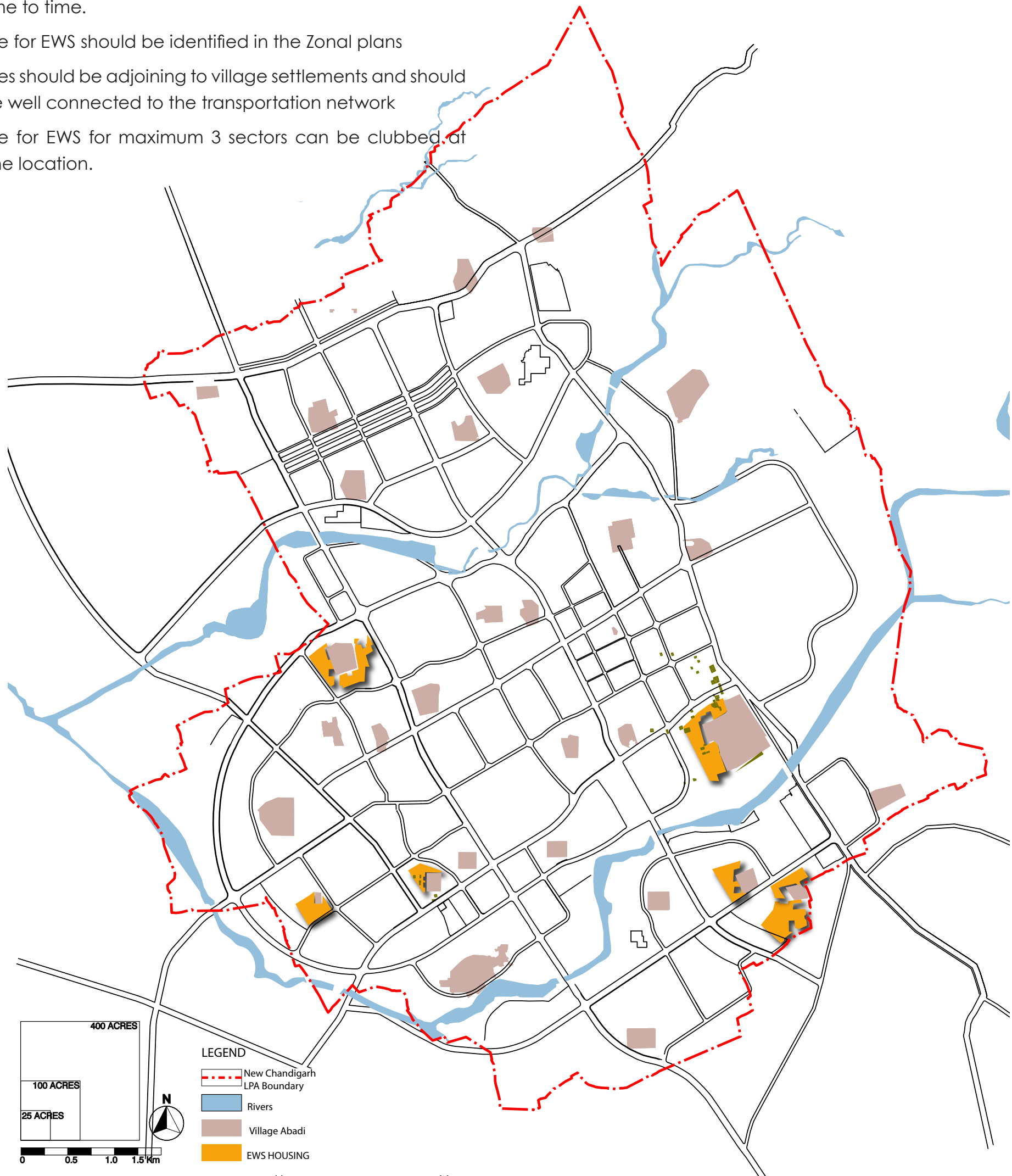


Fig.7-26 Suggestive site locations for EWS housing around existing village settlements
Source: AECOM

7.11.2 Development Strategies

- Confine existing village growth on a development parcel
- Wrap villages with landscape buffer when adjacent to future residential development
- Wrap villages with signature open spaces/neighbourhood parks and/or schools to preserve prominent frontages
- Wrap villages with uses that are compatible with land uses on adjacent block, while preserving prominent frontages (such as mixed-use).

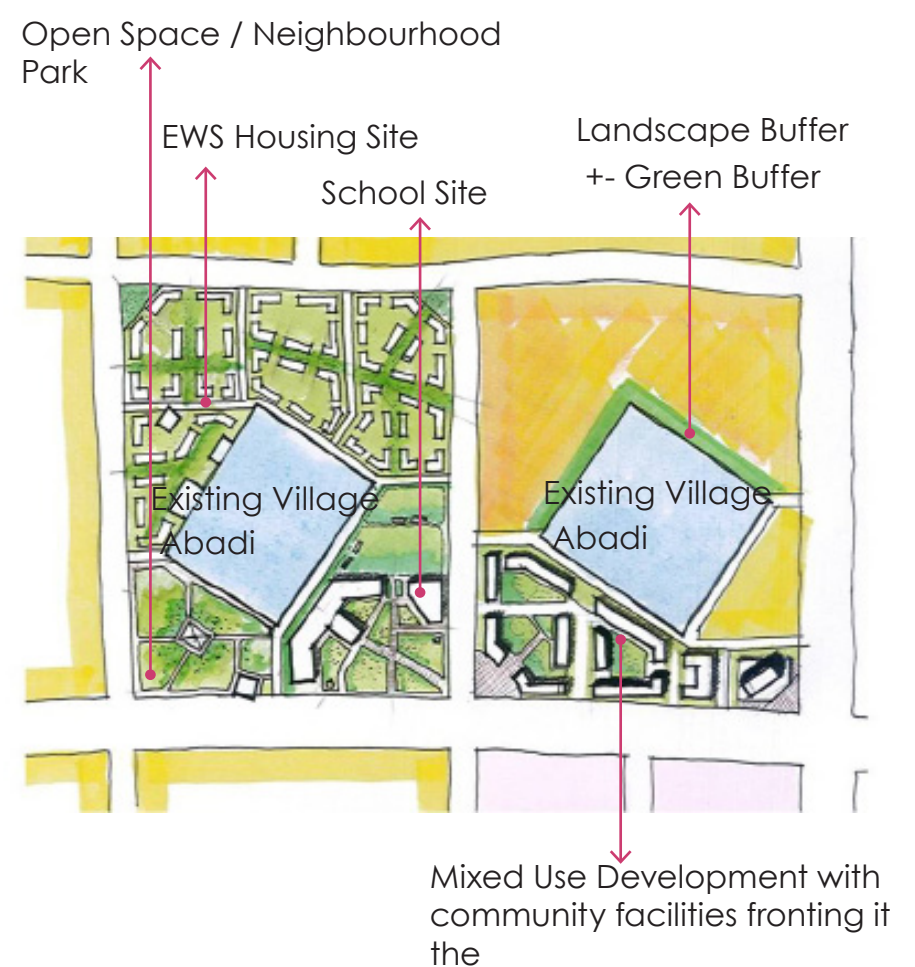
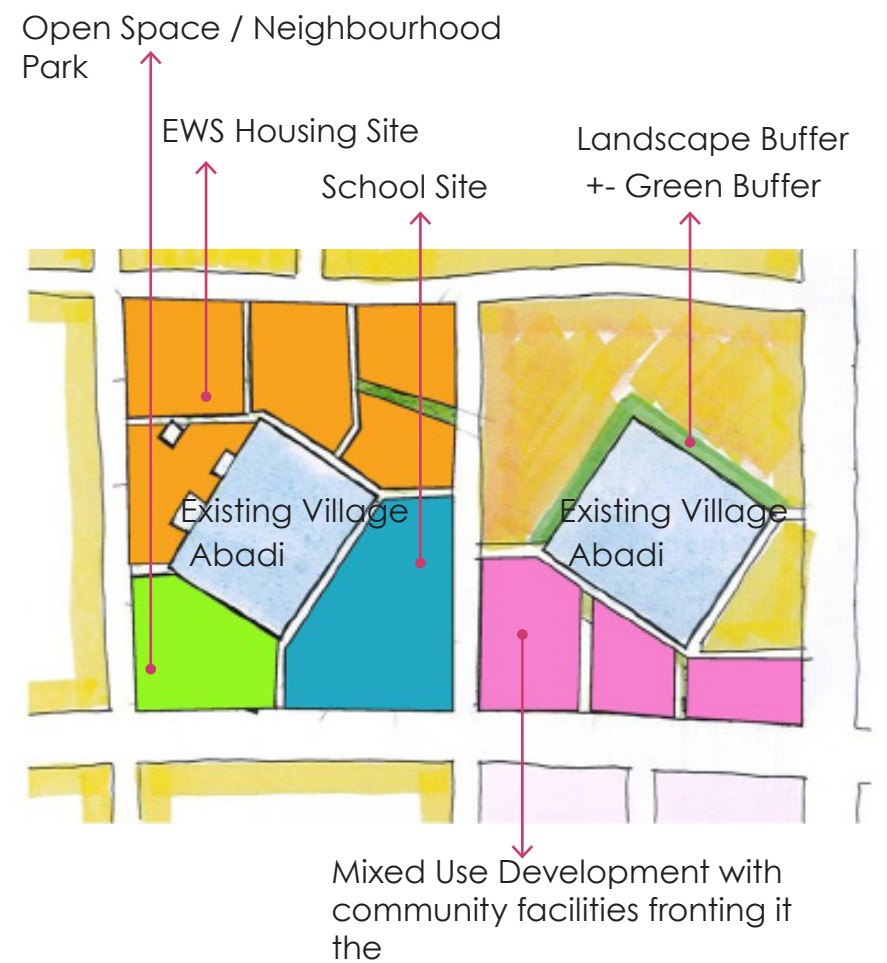


Fig.7-27 EWS housing location strategies

7.12 ZONAL CONTROLS

Activities	Residential	Mixed Use		Commercial		
		RESI.	COMM.	City Center	Wholesale	Retail
Plotted Housing						
Group Housing						
EWS						
Retail shop, restaurants						
Convenience shopping	3					
Weekly Market						
Sector Level Shopping center						
Commercial Center/Shopping Mall						
Multiplex/Cinema						
Wholesale Market						
Cold Storage / warehousing						
Building Material market						
Vegetable/fruit Market						
Petrol/Diesel/ Gas Filling Station	5					
Oil Depot and LPG refilling plant (Distribution centre)						
Gas Godown						
Freight Complex/Logistic Park						
Cremation and Burial Ground						
Nursing Homes	4					
Medical Retail	4			4		
Guest house						
Marriage place/Banquet Halls	only on PR-4 in special zone/ mixed land use					
Hotels, Conference centers	4					
Service Apartments						
Hostels						
Lodges, guest houses, Inns						
Offices, Banks	4		4			
Community Center/Sector Club						
Library						
Concert Hall / Auditorium						
Gymnasium						
Museum						
Exhibition spaces						
Public/Government Offices						
Govt blds (Police, Fire, Post)						
Religious Blds						
Hospital						
Medical Laboratory (Dispensary Health centre)						
Schools						
Colleges						
Reformatory and Orphanage						
School for mentally/physically challenged persons						
Old Age Home						
Vocational Institute	7					
Manufacturing industry						
IT & IT enabled service						
Storage and warehousing						
Film Centre/ TV, Radio Program Production Centre						
Amusement Park / Sports Complex						
Sector Green (20 ac) (Can be any where)						
Neighborhood Park (4 ac) (Can be any where)						

Activities	Residential	Mixed Use		Commercial		
		RESI.	COMM.	City Center	Wholesale	Retail
Pocket Park (1-2 ac) (Can be any where)						
Swimming Complex (Can be any where)						
Golf Course/Race Course						
Recreation Club						
Campsite						
Water Sports Centre						
Adventure Camp						
Theme Park						
Multipurpose Open Spaces						
Open Air Theaters						
National Memorial						
Plant nursery / Social Forestry						
Farm Houses						
Dairy Farm/Poultry Farm						
Organic Farms						
Agricultural Equipment workshop						
Food Processing parks						
Open Parking						
Covered/Multi-level parking						
Taxi/Auto stand						
Truck Terminal						
Bus Terminal						
Bus Stand						
Bus Depot						

Table 7-24 Table of Permissible uses

Note:-

a)Any activity not covered above but found compatible for a particular land use zone shall be permitted after taking technical advise of the Chief Town Planner, Punjab.

b) In Commercial/ Mixed use (Warehousing & wholesale) all uses permissible in commercial & mixed use zone as mentioned in above zonal controls will also be permissible in this zone.

Legend pertaining to Table 7-24

- 1. As per the govt policy
- 2. Only 0.5% max. - only snack bar/drinks kiosks, fresh flower/ news stands ice cream parlours
- 3. Allowed within commercial pocket of residential zone only
- 4. Only in commercial pocket
- 5. Only on commercial and sector road minimum 80'-0" wide
- 6. Only temporary panels allowed
- 7. Only in site reserved for education/public buildings.

Permissible use	
Permissible with Restrictions	
Non Permissible Use	

08 Annexures



8. ANNEXURE

8.1 NOTIFIED MASTER PLAN 2008-31

The present notified master plan for Mullanpur⁷ was proposed by Jurong Consultants Pvt Ltd. The figure below shows the plan that was proposed. The plan consisted of some prominent features like the Education City, Research areas, Medi City and City Center. There is also a new cricket stadium proposed and the location can be seen in the figure below.



fig.6-2 Notified Master Plan 2008-31

Source: Mullanpur Local Planning Area, Greater Mohali Region Punjab, Master Plan Report, 2008-2031
7)Mullanpur Local Planning Area, Greater Mohali Region Punjab, Master Plan Report, 2008-2031 [notified u/s 70 (5) of The Punjab Regional and Town Planning and Development Act,1995 vide notification no. 9664 CTP (Pb) SC-115 dated 12/16-12-2008.]

RESIDENTIAL

About 30% of the land in New Chandigarh is residential. Since the notification of the master plan 2008-31 many private and public sector developments have come up in this area. Developers such as DLF, GMADA, Omaxe, Altus Space Builders and Innovative Housing Infra Pvt. Ltd are major developers already active in the area. The proposed developments comprise of majorly residential plotted housing, group housings, commercial areas, and supporting educational and social infrastructure.

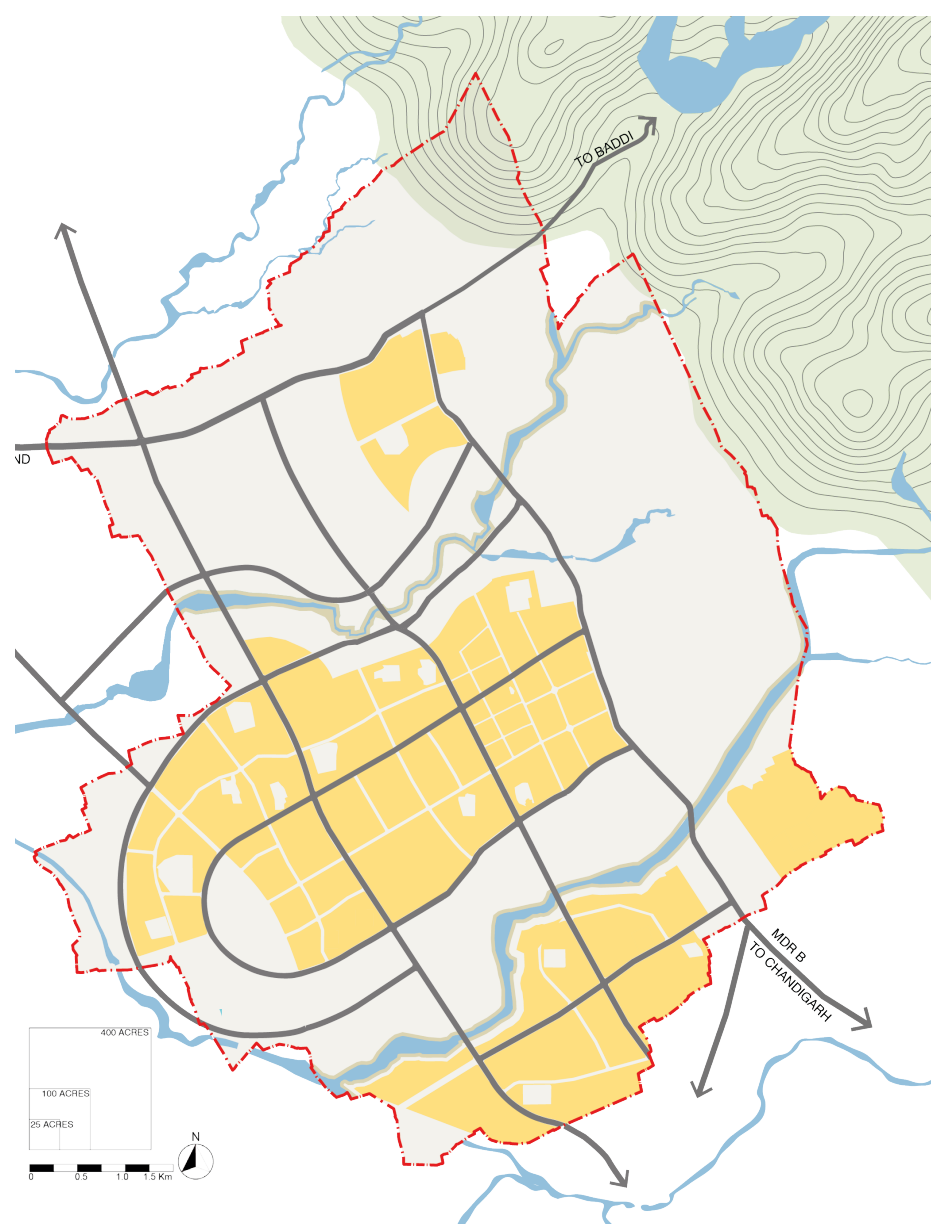


Fig.8-3 Land use -Residential

Source: Mullanpur Local Planning Area, Greater Mohali Region Punjab, Master Plan Report, 2008-2031

MIXED USE

Mixed used areas are located in four areas of the site each with a different locational character. The first mixed use area site is at the eastern entry to the site from Chandigarh. The second lies along the southern side of the Siswan River front.

A small area of mixed use lies north of eco-city phase 2. The fourth is located within the western part of New Chandigarh adjacent to residential areas, nearby educational and industrial land.

All activities other than industrial are permitted within the mixed use areas. As per the notification 1458-69-CTP (Pb) / SC-76-vol-22 from Town and Country Planning Department, Punjab, minimum area requirement for setting up of projects in mixed land use zone are as follows:

- Group Housing 5 Acres
- Commercial 5 Acres
- Hotel /Hospital 2.5 Acres
- Marriage Palace 5 Acres
- Institution 5 Acres



Fig.8-4 Land use -Mixed use

MEDI CITY

A site of 350 acres has been set aside on the master plan for a “Medi-city”, located to the east of HR-2, adjacent to the Defense site and the PLPA land.

The objective of the Medi-City is to provide world-class medical institutions and services focussed on health care, clinical research, training and education, within a peaceful zone located adjacent to the green areas of the master plan. It is our understanding that 50 Acres of land has already been allotted to Tata Cancer Hospital, on which work is underway.

CIVIC CENTRE

Approximately 168 Acres of Land in the Master Plan next to Rao Jayanti rivulet has identified in New Chandigarh for a Civic Center.



Fig.8-5 Land use -Medi City

Fig.8-6 Land use -Civic Centre

Source: Mullanpur Local Planning Area, Greater Mohali Region Punjab, Master Plan Report, 2008-2031

INTEGRATED EDUCATION CITY

Education City has been proposed on a site of 1,700 Acres. The area is planned to include schools, colleges and universities, in addition to land dedicated for residential communities with on-campus housing for students and faculty. The vision for Education City is to create a preferred education destination that will attract a young population to the area.

EDUCATION INSTITUTION

Further to Education City an additional parcel of land of almost 134 Acres has been assigned to educational institutes approximately 5 kilometers south of Education City .



Fig.8-7 Land use - Integrated Education City

Source: Mullanpur Local Planning Area, Greater Mohali Region Punjab, Master Plan Report, 2008-2031

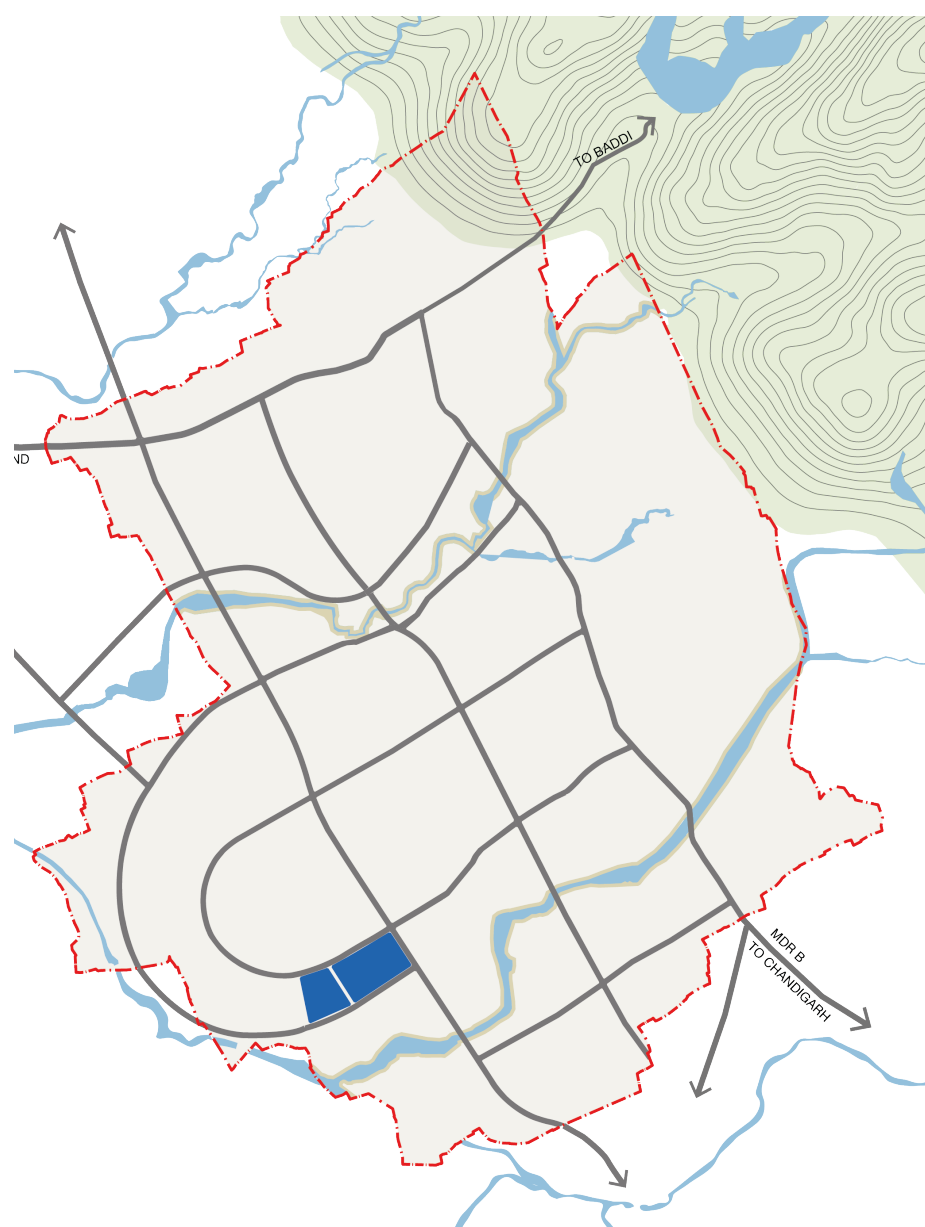


Fig.8-8 Land use - Education institutions

AECOM TEAM

Master Planning & Urban Design

- Vince Berkhout
Executive Director- Project Director
- Abhishek Malhotra
Associate Director- Project Manager/ Urban Planner
- Vishal Kundra
Associate Director- Urban Designer
- Bhaskar Agarwal
Urban Designer
- Rattandeep Ahuja
Urban Planner
- Dinesh Sharma
CAD Technician

Infrastructure Planning

- Iqbal S. Dua
Project Director – Infrastructure
- Raman Kumar
Associate Director- Infrastructure
- Vijay Sharma
Drainage Engineer
- Deepika
Utility & Water Supply Planner
- Chaman
Sewerage Engineer

Landscape Planning

- Peter Widdrington
Associate – Landscape
- Akshay Deshpande
Project Landscape Designer
- Tania Kaushal
Landscape Designer

Transport Planning

- Satbir Bal
Associate – Transport Planning
- Sarabpreet Singh
Senior Transport Planner



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