

बिहार सरकार
नगर विकास एवं आवास विभाग

अधिसूचना

संख्या-09/न०वि०(टाउनशिप)-03/2026 8023 न०वि० एवं आ०वि०, दिनांक- 01/08/2026

विकास आयुक्त -सह- अध्यक्ष, बिहार शहरी आयोजना तथा विकास बोर्ड की अध्यक्षता में दिनांक-31.07.2026 को बिहार शहरी आयोजना तथा विकास बोर्ड की चौदहवीं बैठक में पाटलिपुत्र ग्रीनफील्ड सैटेलाईट टाउनशिप, पटना के विशेष क्षेत्र के लिए विकास योजना, 2047 (प्रारूप) पर गजट में प्रकाशन के माध्यम से 60 दिनों तक आमजनों/हितधारकों से आपत्ति/सुझाव प्राप्त करने की अनुशंसा की गयी है।

उक्त के आलोक में बिहार शहरी आयोजना तथा विकास अधिनियम, 2012 की धारा 24 के तहत तैयार पाटलिपुत्र ग्रीनफील्ड सैटेलाईट टाउनशिप, पटना के विशेष क्षेत्र के लिए विकास योजना, 2047 (प्रारूप) को उक्त अधिनियम की धारा 26 के तहत गजट में प्रकाशन की तिथि से अगले 60 दिनों तक के लिए आमजनों/हितधारकों से आपत्ति/सुझाव प्राप्त करने के लिए उक्त प्रारूप को अधिसूचित किया जाता है।

उक्त से संबंधित आपत्ति/सुझाव श्री मनोज कुमार (भा०प्र०से०), अपर सचिव, नगर विकास एवं आवास विभाग को डाक/कुरियर से अथवा Email (udhd@bihar.gov.in) पर भेजा जा सकता है।

बिहार राज्यपाल के आदेश से


(मनोज कुमार)
अपर सचिव,

नगर विकास एवं आवास विभाग।

ज्ञापांक-09/न०वि०(टाउनशिप)-03/2026 8023 न०वि० एवं आ०वि० पटना, दिनांक- 01/08/2026

प्रतिलिपि-अधीक्षक, राजकीय मुद्रणालय, गुलजारबाग, पटना/ई-गजट कोषांग वित्त विभाग, पटना (सी०डी० के साथ) को बिहार गजट में अतिरिक्त प्रकाशन हेतु सूचनार्थ एवं अनुरोध है कि प्रकाशित गजट के 200 कॉपी कार्यालय उपयोग के लिए उपलब्ध कराया जाय।


अपर सचिव

नगर विकास एवं आवास विभाग

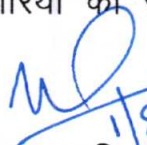
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प्रतिलिपि-मुख्य सचिव, बिहार/विकास आयुक्त, बिहार/मुख्यमंत्री के प्रधान सचिव/सभी अपर मुख्य सचिव/प्रधान सचिव/सचिव/सभी प्रमण्डलीय आयुक्त/सभी जिला पदाधिकारी/अध्यक्ष, बिहार भू-सम्पदा अपीलीय न्यायाधिकरण, पटना/अध्यक्ष, भू-सम्पदा विनियामक प्राधिकरण, बिहार, पटना/नगर आयुक्त, सभी नगर निगम/नगर कार्यपालक पदाधिकारी, सभी नगर परिषद् एवं नगर पंचायत/मुख्य कार्यपालक पदाधिकारी, सभी जिला आयोजना क्षेत्र प्राधिकार को सूचनार्थ एवं आवश्यक कारवाई हेतु प्रेषित।

प्रतिलिपि—समाहर्ता—सह जिला निबंधक, पटना/जिला अवर निबंधक/सभी अवर निबंधक, पटना को सूचनार्थ एवं आवश्यक कारवाई हेतु प्रेषित।

प्रतिलिपि—प्रमंडलीय आयुक्त, पटना/मुख्य कार्यपालक पदाधिकारी, पटना महानगर क्षेत्र प्राधिकार/जिला पदाधिकारी, पटना/नगर आयुक्त, नगर निगम, पटना/नगर कार्यपालक पदाधिकारी, नगर पंचायत, नौबतपुर/पुनपुन/अंचलाधिकारी, नौबतपुर/पुनपुन/सम्पतकचक/धनरूआ/दनियावां/मसौढ़ी/पटना ग्रामीण/फुलवारीशरीफ को सूचनार्थ तथा सुलभ स्थल पर प्रकाशन हेतु प्रेषित।

प्रतिलिपि—माननीय विभागीय मंत्री के आप्त सचिव/प्रधान सचिव के प्रधान आप्त सचिव, नगर विकास एवं आवास विभाग/विभाग के सभी पदाधिकारियों को सूचनार्थ एवं आवश्यक कारवाई हेतु प्रेषित।


1/8/2016
अपर सचिव

नगर विकास एवं आवास विभाग





PATLIPUTRA GREENFIELD SATELLITE TOWNSHIP

DEVELOPMENT PLAN – 2047 (DRAFT)



Prepared by:
TOWN AND COUNTRY PLANNING ORGANISATION
URBAN DEVELOPMENT AND HOUSING DEPARTMENT
GOVERNMENT OF BIHAR

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CHAPTER 1: INTRODUCTION

1.1 PREAMBLE

The year 2047, marking one hundred years of India's Independence, represents a defining milestone in the nation's journey towards becoming a Viksit Bharat—a developed, prosperous, sustainable, inclusive and globally competitive nation. Urbanisation has been recognized as one of the principal drivers for achieving this national vision. Globally, cities have emerged as engines of economic growth, innovation, employment generation and social transformation. Well-planned urban centres create opportunities for investment, improve quality of life and promote efficient utilization of land and infrastructure.

The Patliputra Greenfield Satellite Township Development Plan, 2047 has been prepared in alignment with the vision of Viksit Bharat @2047 and the long-term development aspirations of the Government of Bihar. The Development Plan envisions Patliputra as a next-generation, self-sustaining urban centre that will support the future growth of the Patna Planning Area through integrated spatial planning, modern infrastructure, sustainable development and economic competitiveness.

The Development Plan provides the statutory planning framework for the planned development of Patliputra Greenfield Satellite Township up to the horizon year 2047, establishing the vision, spatial structure, land use strategy, infrastructure framework and implementation mechanisms necessary for developing a world-class urban centre.

1.2 URBANISATION – THE NEED FOR NEW URBAN CENTRES

Urbanisation is widely acknowledged as one of the most significant catalysts for economic development. Across the world, cities occupy a relatively small proportion of land but contribute a major share of national economic output through industries, services, commerce, innovation and knowledge-based activities. Planned urbanisation also facilitates efficient infrastructure provision, improved public service delivery and enhanced standards of living.

Despite being one of the fastest growing states in India, Bihar continues to have one of the lowest levels of urbanisation in the country. According to the Census of India, 2011, only 11.3 percent of Bihar's population resides in urban areas, compared to the national average of 31.16 percent. The comparatively low level of urbanisation presents a significant opportunity for the State to guide future growth through planned urban development rather than unplanned urban expansion.

The coming decades are expected to witness increasing urban population, expanding economic activities, industrialisation, improved regional connectivity and rising demand for housing, infrastructure and employment. Accommodating this future growth solely through the expansion of existing cities would place considerable pressure on urban infrastructure, land resources and public services. Therefore, the creation of new planned urban centres has become imperative for ensuring balanced regional development, economic growth and sustainable urbanisation.

Recognising these emerging challenges and opportunities, the Government of Bihar has adopted a strategy of developing Greenfield Satellite Townships around major cities to accommodate future urban growth in a planned, resilient and sustainable manner.

1.3 GOVERNMENT INITIATIVE FOR GREENFIELD SATELLITE TOWNSHIPS

To promote planned urbanisation and support the long-term economic transformation of Bihar, the Urban Development & Housing Department, Government of Bihar initiated the Greenfield Satellite Township Programme under the provisions of the Bihar Urban Planning and Development Act, 2012 and the Bihar Town Planning Scheme Rules, 2025.

The programme envisages the development of planned urban centres equipped with high-quality physical, social, economic and digital infrastructure. These townships are intended to function as self-sustaining cities capable of providing housing, employment, education, healthcare, recreation, commercial activities and public services while minimizing unplanned urban sprawl and enhancing regional economic competitiveness.

Initially, the Government approved the development of eleven Greenfield Satellite Townships around major urban centres through Town Planning Schemes, regulated development and land acquisition wherever required for public infrastructure. Subsequently, the programme has been expanded to twelve Greenfield Satellite Townships, comprising the nine divisional headquarters together with three strategically important urban centres across Bihar, forming one of the State's most ambitious urban development initiatives.

The Government has also identified Special Areas and Core Areas for each township. The Core Area represents the initial development zone where urban infrastructure and Town Planning Schemes will first be implemented, while the Special Area provides the long-term spatial framework for the phased expansion of the township.

1.4 PATLIPUTRA GREENFIELD SATELLITE TOWNSHIP

Patliputra Greenfield Satellite Township has been conceived as the flagship Greenfield urban extension under Patna Planning Area. The township is intended to accommodate the future demographic, economic and spatial growth of Patna through a planned and integrated urban development approach.

Unlike conventional residential townships, Patliputra Greenfield Satellite Township is envisioned as a self-sustaining urban centre incorporating residential neighbourhoods, central business districts, commercial and institutional areas, innovation and knowledge hubs, healthcare facilities, educational institutions, recreational spaces, logistics and service-sector activities, supported by high-quality municipal infrastructure and advanced digital infrastructure.

The township has been strategically located along major regional infrastructure corridors including the Patna Ring Road (Bihta–Sarmara Corridor), Patna–Gaya Road, the proposed Amas–Darbhanga Expressway, and in proximity to the proposed Jat Dumri Railway Junction, thereby offering excellent regional connectivity and significant development potential.

The Special Area of Patliputra Greenfield Satellite Township extends over approximately 81,730 acres within Patna District. It comprises approximately 273 revenue villages and 2 Urban area distributed across nine Community Development Blocks.

The Core Area extends over approximately 3,008 acres, comprises 19 revenue villages situated within Punpun Community Development Block.

1.5 PLANNING CONTEXT

The statutory planning framework for the Patna Planning Area was established through the Patna Master Plan, 2031, which was notified in 2016, under the provisions of the Bihar Urban Planning and Development Act, 2012.

The Master Plan provided the framework for regulating land use, infrastructure planning and urban development within the notified Patna Planning Area.

Since its notification in 2016, however, the Patna Planning Area has undergone substantial transformation. Significant regional infrastructure investments, including the Bihta-Sarmera Road, Patna Ring Road, Amas–Darbhanga Expressway, proposed railway infrastructure, logistics corridors, institutional developments and other strategic projects have fundamentally altered the development dynamics of the region.

Further, the Government's decision to develop Greenfield Satellite Townships as new planned urban centres represents a major shift in the State's urban development strategy. These developments necessitate a long-term planning framework that extends beyond the scope and planning horizon of the Patna Master Plan, 2031.

Accordingly, the Government has initiated the preparation of the Patliputra Greenfield Satellite Township Development Plan, 2047, providing a comprehensive spatial framework for the planned development of the township over the next two decades in alignment with the vision of Viksit Bihar and Viksit Bharat @2047.

1.6 NEED FOR A NEW DEVELOPMENT PLAN

The preparation of the Patliputra Greenfield Satellite Township Development Plan, 2047 is driven by the need to establish a comprehensive long-term planning framework capable of addressing future urban growth and supporting Bihar's transition towards a higher level of urbanisation.

The Development Plan aims to:

- translate the Government's vision for Greenfield Satellite Townships into a comprehensive spatial development strategy;
- establish a sustainable urban structure based on compact, mixed-use and transit-oriented development principles;
- create a self-sustaining city with balanced residential, commercial, institutional and employment-generating land uses;
- provide a framework for phased implementation through Town Planning Schemes, trunk infrastructure and land development;
- facilitate public and private investment by ensuring planned infrastructure provision;
- promote climate resilience, environmental sustainability and efficient resource management;

- integrate advanced digital infrastructure and smart urban services;
- create high-quality public spaces and social infrastructure; and
- support the economic growth of the Patna Planning Area while contributing towards the vision of Viksit Bharat @2047.

1.7 ADMINISTRATIVE PROFILE

The Patliputra Greenfield Satellite Township falls within Patna District of Bihar.

The planning area comprises:

Particular	Details
District	Patna
Planning Horizon	2047
Special Area	81730 acres
Revenue Villages (Special Area)	273
Urban Administrative Unit (Special Area)	2 (Punpun and Naubatpur)
Community Development Blocks	9 (Punpun, Fatwah, Sampatchak, Dhanarua, Naubatpur Daniawan, Masaurhi, Patna Rural and Phulwari)
Urban Administrative Unit (Special Area)	2 (Punpun and Naubatpur)
Core Area	3,008 acres
Revenue Villages (Core Area)	19

1.8 VISION

"To develop Patliputra Greenfield Satellite Township as Bihar's premier next-generation urban centre and a national model for planned urban development under the vision of Viksit Bihar & Viksit Bharat @2047—an economically vibrant, environmentally sustainable, climate-resilient, digitally connected and inclusive city offering world-class infrastructure, quality public services, innovation-led economic opportunities and an exceptional quality of life."

The township shall function as:

- a regional economic growth engine;

- a knowledge and innovation hub;
- a destination for investment and employment;
- a model of sustainable urban development;
- a digitally enabled and technology-driven city;
- a resilient city with integrated blue-green infrastructure; and
- a benchmark for future Greenfield urban development in Bihar.

1.9 OBJECTIVES OF THE DEVELOPMENT PLAN

The principal objectives of the Patliputra Greenfield Satellite Township Development Plan, 2047 are:

1. To develop a self-sustaining Greenfield city capable of accommodating future population and economic growth.
2. To promote planned urbanisation through Town Planning Schemes and integrated infrastructure development.
3. To establish a balanced land use structure integrating residential, commercial, institutional, industrial, recreational and ecological uses.
4. To create a multimodal transportation system emphasizing public transport, non-motorised transport and regional connectivity.
5. To provide universal access to high-quality urban infrastructure and municipal services.
6. To promote investment, innovation, employment generation and economic competitiveness.
7. To strengthen environmental sustainability through blue-green infrastructure, climate resilience and resource-efficient development.
8. To develop a digitally enabled city supported by intelligent urban infrastructure and e-governance systems.
9. To establish a phased implementation framework supported by public and private investment.
10. To contribute towards the realization of Bihar Vision 2047 and Viksit Bharat @2047.

1.10 SCOPE OF THE DEVELOPMENT PLAN

The Patliputra Greenfield Satellite Township Development Plan, 2047 establishes the statutory framework for the orderly development of the township by year 2047. It provides guidance on:

- Spatial Development Strategy
- Proposed Land Use Plan
- Urban Design Structure
- Mobility and Transportation Framework
- Physical Infrastructure
- Social Infrastructure
- Blue-Green Infrastructure
- Economic Development Strategy
- Digital Infrastructure
- Town Planning Scheme Framework
- Development Regulations
- Phasing and Implementation Strategy
- Investment and Institutional Framework

CHAPTER 2: NATIONAL AND STATE PLANNING CONTEXT

2.1 Introduction

The Patliputra Greenfield Satellite Township Development Plan, 2047 has been prepared within the framework of national, state and regional planning policies that collectively promote sustainable urbanisation, economic growth, climate resilience and integrated infrastructure development.

The Development Plan derives its statutory authority from the Bihar Urban Planning and Development Act, 2012 and has been prepared considering the planning principles contained in national urban development policies, State planning legislation and Government resolutions relating to the development of Greenfield Satellite Townships.

This chapter outlines the policy framework that has guided the preparation of the Development Plan.

2.2 National Planning Framework

Viksit Bharat @2047

The Government of India has articulated the vision of **Viksit Bharat @2047**, which envisages India as a developed nation by the centenary of its Independence. The vision emphasizes sustainable economic growth, world-class infrastructure, technological advancement, environmental sustainability and improved quality of life. Urban centres are expected to play a pivotal role in achieving this objective by acting as engines of economic growth, innovation and employment generation. The Patliputra Greenfield Satellite Township Development Plan, 2047 has been conceived in alignment with this national vision by creating a future-ready urban centre that promotes planned urbanisation, integrated infrastructure and sustainable economic development.

PM Gati Shakti National Master Plan

The PM Gati Shakti National Master Plan promotes integrated planning and coordinated development of transport, logistics and infrastructure networks across the country. The Development Plan adopts this approach by integrating regional transportation corridors, logistics infrastructure, utility networks and land use planning to create a connected and economically competitive urban centre.

Sustainable Development Goals (SDGs)

The Development Plan is aligned with the **United Nations Sustainable Development Goals (SDGs)**, particularly **SDG 9 (Industry, Innovation and Infrastructure)**, **SDG 11 (Sustainable Cities and Communities)**, **SDG 13 (Climate Action)** and **SDG 15 (Life on Land)**. The planning proposals encourage compact urban development, efficient infrastructure systems, environmentally sustainable land use, climate-resilient infrastructure, conservation of natural resources and equitable access to housing, public services and open spaces. By integrating economic development with environmental stewardship and social inclusion, the Development Plan contributes towards achieving sustainable urban development in accordance with internationally accepted planning principles.

2.3 State Planning Framework

Bihar Urban Planning and Development Act, 2012

The **Bihar Urban Planning and Development Act, 2012** is the principal legislation governing urban planning and planned development in the State. The Act provides the statutory framework for the declaration of **Planning Areas** and **Special Areas**, preparation of Development Plans, regulation of land use, constitution of planning authorities and implementation of planned urban development. It also empowers the Government to undertake integrated infrastructure development and regulate future growth through statutory planning instruments. The Patliputra Greenfield Satellite Township Development Plan has been prepared under the provisions and planning principles established by the Act.

Special Area under the Bihar Urban Planning and Development Act, 2012

The Bihar Urban Planning and Development Act, 2012 empowers the State Government to notify **Special Areas** for the planned development of locations having strategic economic, administrative, environmental or regional importance. Unlike a conventional Planning Area, which generally encompasses an existing urban settlement and its growth area, a **Special Area** is notified to facilitate comprehensive planning and coordinated development of large greenfield or strategically important areas through a dedicated planning framework.

The **Patliputra Greenfield Satellite Township** has been notified as a **Special Area**, enabling the preparation of a dedicated Development Plan and phased implementation through Town Planning Schemes, trunk infrastructure development and other statutory planning mechanisms. The notification of the Special Area provides the legal framework necessary for creating a planned, self-sustaining urban centre in accordance with the long-term development objectives of the Government of Bihar.

Bihar Town Planning Scheme Rules, 2025

The **Bihar Town Planning Scheme Rules, 2025** establish a statutory mechanism for implementing planned urban development through land pooling and land readjustment. The Rules provide detailed procedures for preparation of Town Planning Schemes, reconstitution of land parcels, reservation of land for public infrastructure and equitable redistribution of development benefits among landowners. The framework enables infrastructure-led urban development while reducing dependence on compulsory land acquisition and ensuring that landowners participate in and benefit from the urbanisation process. The development of Patliputra Greenfield Satellite Township is envisaged to be undertaken primarily through the implementation of Town Planning Schemes.

Bihar City Development Authority Act, 2026

The **Bihar City Development Authority Act, 2026** provides an institutional framework for the planning, financing, development and management of new cities and strategically important urban areas in Bihar. The Act facilitates the establishment of dedicated City Development Authorities with powers relating to integrated planning, infrastructure development, land management, project implementation, municipal service delivery and resource mobilisation. The legislation is intended to ensure coordinated and efficient implementation of large-scale urban development projects, including Greenfield Satellite Townships, through a unified institutional mechanism.

Bihar Building Bye-Laws

The **Bihar Building Bye-Laws** prescribe the development control regulations governing building construction and urban development throughout the State. The Bye-Laws establish standards relating to land use, floor area ratio (FAR), building height, setbacks, parking, fire safety, accessibility, environmental safeguards and urban design controls. They ensure orderly, safe and sustainable urban development while maintaining uniform planning standards. All developments within the Patliputra Greenfield Satellite Township shall conform to the applicable provisions of the Bihar Building Bye-Laws and amendments issued by the Government from time to time.

2.4 Government Initiatives Supporting the Development Plan

The location of the Patliputra Greenfield Satellite Township **Special Area** has been strategically selected considering several ongoing and proposed infrastructure, institutional and economic development projects within and around the **Patna Planning Area**. Collectively, these initiatives are expected to transform the southern and south-eastern growth corridor of the Patna Planning Area into a major centre for economic activity, logistics, education, sports, institutional development and urban expansion. The Development Plan has therefore been prepared by integrating these strategic investments into a comprehensive spatial development framework.

Amas–Darbhanga Expressway (NH-119D)

The proposed **Amas–Darbhanga Expressway (NH-119D)** is one of the most significant regional transport corridors in Bihar. Passing in proximity to the proposed township, the expressway will substantially improve regional connectivity between South and North Bihar, reduce travel time and facilitate movement of people and goods. The corridor is expected to stimulate economic development and enhance the attractiveness of Patliputra Greenfield Satellite Township for residential, commercial and industrial investments.

Bihta–Sarmera National Highway (NH-131G)

The **Bihta–Sarmera National Highway (NH-131G)**, popularly known as the **Patna Ring Road**, forms the primary regional mobility corridor around Patna. The proposed township is strategically located along this corridor, providing seamless connectivity to Patna City, Bihta, Fatuha and adjoining regions. The highway is expected to become the principal growth corridor for future urban expansion and economic development within the Patna Planning Area.

Multi Modal Logistics Park

A **Multi Modal Logistics Park (MMLP)** has been proposed in **Jaitiya Mauza** of **Fatuha Block** over an area of approximately **103–105 acres**. The project is intended to develop an integrated logistics ecosystem comprising freight terminals, warehousing facilities, cold storage, value-added logistics services and multimodal transport infrastructure. The facility will strengthen Bihar's supply chain network and enhance the economic potential of the surrounding region by supporting industrial development, trade and freight movement. The proximity of the Logistics Park is expected to generate significant employment opportunities and strengthen the economic base of Patliputra Greenfield Satellite Township.

Fintech City

The Government has proposed the development of a **Fintech City** over approximately **242 acres** in **Jaitiya Mauza**, Fatuha Block. The project is envisioned as a specialized financial and technology hub accommodating banking institutions, digital payment companies, insurance firms, information technology enterprises, financial technology startups and innovation centres. The Fintech City is expected to promote knowledge-based employment, attract private investment and position Patna as an emerging financial and digital services centre.

Sports City

A **Sports City** has been proposed over approximately **100 acres** at **Dumri Mauza** in **Punpun Block**. The project is planned to include international-standard multi-sport complexes, Olympic-level training facilities, sports academies, athlete accommodation and associated recreational infrastructure. The Sports City aims to strengthen Bihar's sporting ecosystem while creating opportunities for sports tourism, training and allied economic activities. Its proximity to the proposed township will significantly enhance the quality of urban amenities available to future residents.

Bihar Judicial Academy

The Government has proposed a **Special Area** for the establishment of the **Bihar Judicial Academy** over approximately **38.77 acres** in **Punpun, Patna**. The Academy is envisioned as a premier institution for capacity building, training and continuing education of judges and judicial officers. The project will strengthen Bihar's judicial infrastructure while generating institutional activity and professional employment within the region, thereby complementing the overall development objectives of Patliputra Greenfield Satellite Township.

2.5 Emerging Growth Corridor within the Patna Planning Area

The southern and south-eastern parts of the **Patna Planning Area**, where the Patliputra Greenfield Satellite Township Special Area is located, are undergoing a significant transformation driven by strategic public investments in transport infrastructure, logistics, institutional facilities and economic development projects. The convergence of the **Bihta–Sarmara National Highway (NH-131G)**, the **Amas–Darbhanga Expressway (NH-119D)**, the proposed **Multi Modal Logistics Park**, **Fintech City**, **Sports City** and the **Bihar Judicial Academy** is creating a new urban growth corridor with substantial potential for future residential, commercial and institutional development.

The notification of the Patliputra Greenfield Satellite Township as a **Special Area** enables this growth to be planned and managed in an integrated manner, ensuring coordinated infrastructure provision, sustainable land use, efficient mobility systems and balanced

urban development. The Development Plan, therefore, serves as the principal spatial planning framework for guiding the orderly development of this strategically important Special Area up to the horizon year 2047.

2.6 Planning Principles Adopted for the Development Plan

The Patliputra Greenfield Satellite Township Development Plan has been prepared based on internationally accepted principles of sustainable urban planning while responding to the unique physical, environmental and socio-economic characteristics of the Special Area. The planning principles aim to create a resilient, economically vibrant, environmentally sustainable and future-ready urban centre that supports the long-term development objectives of the Government of Bihar.

2.6.1 Infrastructure-First Development

The Development Plan adopts an **Infrastructure-First** approach, wherein the provision of major transport and utility infrastructure precedes large-scale urban development. Rather than allowing fragmented growth, urban expansion shall be guided by the phased development of arterial roads, trunk infrastructure and public utilities.

The proposed road network within the Special Area has been designed to integrate with major regional transport corridors, including the **Bihta–Sarmara National Highway (NH-131G)** and the **Amas–Darbhanga Expressway (NH-119D)**. In addition, a hierarchy of **arterial roads, sub-arterial roads, collector streets and local roads** is proposed to ensure efficient internal circulation and connectivity. These transportation corridors will serve as the primary framework for phased urban development, enabling systematic provision of water supply, sewerage, storm water drainage, power distribution, ICT infrastructure and other municipal services. The infrastructure-first approach will facilitate orderly urban expansion, reduce future infrastructure costs and support timely delivery of public services.

2.6.2 Compact Mixed-Use Development

The Development Plan promotes a **compact and mixed-use urban form** to encourage efficient land utilisation, reduce travel distances and create vibrant neighbourhoods. Residential, commercial, institutional, recreational and employment-generating activities shall be integrated in appropriate proportions to promote walkability, economic vitality and balanced urban development.

Higher-density mixed-use development is proposed along major mobility corridors and urban activity centres, ensuring optimal utilisation of infrastructure investments while preserving environmentally sensitive areas and public open spaces. This approach will

support sustainable urban growth, reduce dependence on private vehicles and enhance the overall quality of the urban environment.

2.6.3 Transit-Oriented Development and Multi-Modal Mobility

The spatial structure of the township has been planned around the principles of **Transit-Oriented Development (TOD)** and an integrated **Multi-Modal Transit System**. Major urban activities, employment centres and higher-density mixed-use developments are proposed along identified transit corridors to maximise accessibility and encourage the use of public transport.

The transportation network will integrate regional highways, arterial roads, public transport systems, intermediate public transport, cycling infrastructure and pedestrian networks into a seamless mobility framework. Inter-modal integration between road-based public transport, regional rail facilities, non-motorised transport and future mass transit systems will ensure efficient movement of people while reducing traffic congestion, travel time and carbon emissions. The TOD-based development strategy will contribute towards creating a compact, accessible and sustainable urban structure.

2.6.4 Blue-Green Infrastructure and Climate Resilience

The Development Plan adopts a comprehensive **Blue-Green Infrastructure Strategy** that recognises natural drainage systems, water bodies and green spaces as essential components of urban infrastructure. Existing rivers, canals, ponds, wetlands and the traditional **Ahar-Pyne system** shall be conserved, rejuvenated and integrated into the overall urban structure to enhance ecological sustainability and strengthen flood resilience.

The interconnected blue-green network will function as a natural storm water management system by improving groundwater recharge, reducing surface runoff and mitigating urban flooding. Green corridors, ecological buffers and urban forests will also contribute to biodiversity conservation, improve air quality and create healthy public spaces. This integrated approach will enhance environmental resilience while preserving the unique hydrological and ecological characteristics of the Special Area.

2.6.5 Flood Management and Heat Mitigation

Considering the regional hydrological characteristics and the increasing impacts of climate change, the Development Plan incorporates flood management and heat mitigation as integral components of urban planning. Natural drainage channels, flood plains and the Ahar-Pyne network shall be protected and enhanced to ensure efficient storm water conveyance and minimise flood risks.

Urban design interventions such as permeable surfaces, rainwater harvesting, detention ponds, bio-swales, urban lakes and green infrastructure will improve climate resilience and reduce pressure on conventional drainage systems. Simultaneously, an extensive network of urban forests, avenue plantations, neighbourhood parks, green corridors and shaded streets will reduce the urban heat island effect, improve micro-climatic conditions and enhance thermal comfort across the township.

2.6.6 Connected Green Network and City Lung

An integrated network of open spaces is proposed to function as the **green infrastructure backbone** of the township. Large urban forests, regional parks, neighbourhood parks, greenways, recreational corridors and ecological buffers shall be physically interconnected to create a continuous green network across the Special Area.

This network will function as the **"City Lung"**, providing ecological services such as carbon sequestration, air purification, biodiversity conservation and climate regulation while simultaneously offering accessible recreational spaces for residents. The connected green system will also strengthen ecological connectivity, support non-motorised mobility and contribute significantly to the overall liveability of the township.

2.6.7 Digital Urban Systems and Smart Governance

The Development Plan envisions Patliputra Greenfield Satellite Township as a **digitally enabled smart city**, where digital infrastructure forms an integral part of urban planning and service delivery. Advanced Information and Communication Technology (ICT) systems shall be integrated into the planning, operation and management of urban infrastructure.

A city-wide **Integrated Command and Control Centre (ICCC)** will facilitate real-time monitoring and management of transport, utilities, emergency response, public safety and municipal services. **SCADA (Supervisory Control and Data Acquisition)** systems shall be deployed for intelligent operation of water supply, sewerage, power distribution and other utility networks. A comprehensive **Digital Twin** platform will support data-driven planning, infrastructure management, predictive maintenance and evidence-based decision-making throughout the lifecycle of the township.

The adoption of smart governance platforms, e-governance services, intelligent transport systems, GIS-based asset management and integrated digital service delivery will enhance administrative efficiency, transparency and citizen engagement while improving the quality and reliability of municipal services.

2.6.8 Inclusive Housing and Social Infrastructure

The Development Plan seeks to create an inclusive urban environment by ensuring access to quality housing, social infrastructure and public amenities for all sections of society. Housing policies within the township shall be aligned with the provisions of the **Bihar Affordable Housing Policy** and other applicable Government initiatives to promote a balanced mix of affordable, middle-income and premium housing.

Residential neighbourhoods shall be planned as self-sufficient communities supported by schools, healthcare facilities, parks, community centres, commercial areas and public transport within convenient walking distance. The integration of affordable housing with employment centres and social infrastructure will promote inclusive urban development, reduce socio-spatial segregation and ensure equitable access to urban opportunities.

2.7 Chapter Summary

This chapter establishes the national and state planning framework guiding the preparation of the **Patliputra Greenfield Satellite Township Development Plan, 2047**. It highlights the alignment of the Development Plan with the vision of **Viksit Bharat @2047**, the statutory provisions of the **Bihar Urban Planning and Development Act, 2012**, the **Bihar Town Planning Scheme Rules, 2025**, the **Bihar City Development Authority Act, 2026** and the **Bihar Building Bye-Laws**. The chapter also outlines the strategic infrastructure and institutional projects within the **Patna Planning Area** that support the development of the **Special Area**. Finally, it presents the key planning principles that will guide the creation of a resilient, sustainable, digitally enabled and self-sustaining urban centre through integrated infrastructure, compact urban development and environmentally responsive planning.

CHAPTER 3: REGIONAL CONTEXT AND PLANNING FRAMEWORK

3.1 Introduction

The Patliputra Greenfield Satellite Township has been envisaged as a strategically located Greenfield urban centre within the **Patna Planning Area**, planned to support the long-term spatial, economic and demographic growth of the capital region. Its location has been identified considering regional connectivity, availability of developable land, proximity to existing urban centres, proposed infrastructure investments and future growth potential.

This chapter examines the regional context of the Special Area, its administrative setting, regional connectivity, planning hierarchy and strategic significance within the broader development framework of the Patna Planning Area. It also highlights the emerging growth drivers that establish the planning rationale for the proposed township.

3.2 Regional Setting

The **Patliputra Greenfield Satellite Township Special Area** is strategically located in the southern and south-western parts of the **Patna Planning Area** within **Patna District, Bihar**. The Special Area has been notified by the Government of Bihar under the provisions of the **Bihar Urban Planning and Development Act, 2012** for the planned development of a Greenfield Satellite Township.

The notified **Special Area** extends over approximately **81,730 acres** and encompasses **273 revenue villages** distributed across **nine Community Development Blocks**, namely **Punpun, Fatwah, Sampatchak, Dhanarua, Naubatpur, Daniawan, Masaurhi, Patna Rural and Phulwari**. The Special Area also includes portions of **two Urban Administrative Units**, namely **Punpun Nagar Panchayat** and **Naubatpur Nagar Panchayat**, thereby integrating both rural and urban settlements within a unified planning framework.

The **Core Area**, covering approximately **3,008 acres** and comprising **19 revenue villages**, has been identified as the initial implementation area for the township. Planned development within the Core Area shall commence through the preparation and implementation of **Town Planning Schemes**, supported by trunk infrastructure and public facilities. The remaining Special Area shall be developed in a phased manner based on infrastructure availability, development demand and population growth.

The strategic location of the Special Area, its large contiguous land parcels and its proximity to Patna City make it well suited for accommodating future urban expansion while supporting balanced and sustainable development within the Patna Planning Area.

3.3 Regional Planning Context

The Patliputra Greenfield Satellite Township forms an integral component of the long-term spatial development strategy for the **Patna Planning Area**. The township has been conceived to accommodate future urban growth in a planned manner while reducing development pressure on the existing urban core.

The Development Plan complements the planning framework established under the **Patna Master Plan, 2031** by providing a dedicated statutory planning framework for the notified **Special Area**. While the Master Plan regulates development within the broader Planning Area, the Patliputra Greenfield Satellite Township Development Plan provides a comprehensive strategy for planned development of the Special Area through phased infrastructure provision, Town Planning Schemes and integrated land use planning.

3.4 Administrative Context

The Patliputra Greenfield Satellite Township **Special Area** falls entirely within **Patna District** and comprises both rural and urban administrative jurisdictions. The notified area covers **273 revenue villages** spread across **nine Community Development Blocks**—Punpun, Fatwah, Sampatchak, Dhanarua, Naubatpur, Daniawan, Masaurhi, Patna Rural and Phulwari—and includes parts of **Punpun Nagar Panchayat** and **Naubatpur Nagar Panchayat**.

The inclusion of multiple administrative jurisdictions necessitates an integrated planning approach to ensure coordinated land use planning, infrastructure provision and service delivery across the entire Special Area. The notification of the area as a **Special Area** under the Bihar Urban Planning and Development Act, 2012 enables unified planning and implementation through a dedicated Development Plan, thereby overcoming administrative fragmentation and facilitating coordinated urban development.

3.5 Regional Connectivity

One of the principal strengths of the Special Area is its excellent regional accessibility. The township is strategically located along existing and proposed transportation corridors that will significantly improve connectivity with Patna and other parts of Bihar.

The **Bihta–Sarmara National Highway (NH-131G)**, forming the proposed Patna Ring Road, constitutes the primary regional mobility corridor and provides direct connectivity to the western, northern and eastern parts of the Patna Planning Area. The proposed **Amas–Darbhanga Expressway (NH-119D)** further strengthens north-south connectivity and enhances access between southern Bihar and the northern districts of the State.

In addition, the proposed **Jat Dumri Railway Junction**, together with the regional road network and future public transport systems, will provide multimodal connectivity, supporting efficient movement of people and goods while enhancing the investment potential of the Special Area.

3.6 Emerging Regional Growth Drivers

The Special Area is supported by several strategic public investments that are expected to transform the surrounding region into a major economic and institutional growth corridor.

Key projects include:

- **Multi Modal Logistics Park** at Jaitiya Mauza.
- **Fintech City** at Jaitiya Mauza.
- **Sports City** at Dumri Mauza.
- **Bihar Judicial Academy** at Punpun.
- **NH-131G (Patna Ring Road).**
- **NH-119D (Amas–Darbhanga Expressway).**

These projects are expected to generate employment, attract investment, improve regional accessibility and stimulate planned urban development. Collectively, they establish a strong economic foundation for the development of the Patliputra Greenfield Satellite Township.

3.7 Planning Framework of the Special Area

The spatial planning framework for the Special Area has been formulated on the principle of **planned, infrastructure-led and phased urban development.**

The Development Plan identifies the **Core Area** as the initial implementation zone, where Town Planning Schemes, trunk infrastructure and public facilities will be developed in the first phase. Subsequent phases will progressively extend urban development across the remaining Special Area in accordance with infrastructure availability, investment demand and population growth.

The planning framework integrates regional transport corridors, utility infrastructure, ecological systems and economic development nodes into a unified spatial structure, ensuring coordinated and sustainable urban expansion.

3.8 Opportunities and Strategic Advantages

The Special Area possesses several strategic advantages that support its long-term development as a Greenfield Satellite Township.

These include:

- Strategic location within the Patna Planning Area.
- Large contiguous land parcels suitable for planned urban development.
- Excellent regional connectivity through national highways and expressways.
- Availability of land for integrated infrastructure development.
- Proximity to proposed logistics, institutional and economic hubs.
- Presence of the traditional **Ahar–Pyne** drainage system and natural water bodies that can be integrated into the blue-green infrastructure network.
- Potential for implementing Town Planning Schemes over large areas.
- Capacity to develop a self-sustaining urban centre with diverse economic functions.

3.9 Chapter Summary

The Patliputra Greenfield Satellite Township Special Area occupies a strategically significant location within the **Patna Planning Area**, supported by strong regional connectivity, major infrastructure investments and substantial development potential. The notified Special Area provides the statutory framework for implementing integrated, infrastructure-led and phased urban development through Town Planning Schemes. The regional context, combined with emerging economic, logistics, institutional and transport projects, establishes a strong foundation for the creation of a sustainable and self-sustaining Greenfield Satellite Township. The subsequent chapter examines the existing physical, environmental, socio-economic and infrastructure characteristics of the Special Area, which form the basis for the proposed spatial development strategy.

CHAPTER 4: EXISTING SITUATION ANALYSIS

4.1 Introduction

The preparation of a comprehensive Development Plan requires a detailed understanding of the existing characteristics of the planning area. The Existing Situation Analysis provides the baseline assessment of the physical, environmental, socio-economic and infrastructure conditions of the **Patliputra Greenfield Satellite Township Special Area**. It identifies the opportunities and constraints that influence future urban development and forms the basis for the Spatial Development Strategy and Land Use Plan proposed in the subsequent chapters.

The analysis presented in this chapter has been prepared using available secondary data, field reconnaissance, satellite imagery, departmental records and planning studies. It evaluates the existing conditions of the Special Area with respect to land use, settlements, transportation, physical infrastructure, environmental resources, economic activities and institutional developments.

4.2 Administrative Profile

The **Patliputra Greenfield Satellite Township Special Area** is located entirely within **Patna District, Bihar**, and forms an integral part of the **Patna Planning Area**. The Special Area extends over approximately **81,730 acres** and comprises **273 revenue villages** distributed across **nine Community Development Blocks**, namely **Punpun, Fatwah, Sampatchak, Dhanarua, Naubatpur, Daniawan, Masaurhi, Patna Rural and Phulwari**.

The Special Area includes both rural and urban administrative jurisdictions. It encompasses the **entire jurisdiction of Punpun Nagar Panchayat** and **part of Naubatpur Nagar Panchayat**, together with the surrounding rural areas. The inclusion of these urban local bodies within the notified Special Area provides administrative continuity between the

existing urban settlements and the adjoining rural hinterland, facilitating integrated planning and coordinated infrastructure development.

Being entirely located within the **Patna Planning Area**, the Special Area occupies a strategically important position in the long-term spatial growth of Patna. The unified administrative jurisdiction enables comprehensive planning, coordinated infrastructure provision and effective land use management across the entire Special Area under a single statutory Development Plan.

4.3 Existing Settlement Pattern

The **Patliputra Greenfield Satellite Township Special Area** is predominantly rural in character, with existing built-up development concentrated in villages, Nagar Panchayats and linear settlements along major transportation corridors. The total existing settlement area is approximately **4,310 acres**, representing a relatively small proportion of the overall Special Area. Most settlements comprise low-rise residential development interspersed with commercial, institutional and community uses.

The dispersed settlement pattern and the availability of extensive contiguous land parcels present a significant opportunity for planned urban expansion through phased development while minimizing the need for large-scale displacement. The existing settlements will be integrated into the future urban structure by upgrading infrastructure, improving accessibility and enhancing the provision of public amenities.

4.4 Physiography and Topography

The physiography and topography of the **Patliputra Greenfield Satellite Township Special Area** play a significant role in shaping its development potential, drainage characteristics and environmental resilience. The area forms part of the alluvial plains of the Ganga Basin and is characterized by predominantly flat terrain with gentle variations in elevation, making it suitable for planned urban development.

4.4.1 Topography

The contour analysis indicates that the elevation within the Special Area ranges from approximately **46 m to 68 m above Mean Sea Level (MSL)**. The terrain exhibits a gradual west-to-east slope, facilitating natural surface runoff towards the eastern parts of the planning area.

The relatively higher elevations in the western portion provide favourable conditions for urban development and infrastructure construction, whereas the comparatively lower-lying eastern areas are more susceptible to seasonal waterlogging during periods of intense rainfall. The overall topographic characteristics are conducive to gravity-based stormwater

drainage, reducing the dependence on mechanically pumped drainage systems where natural drainage pathways are preserved.

4.4.2 Slope Analysis

The slope analysis reveals that the Special Area is predominantly flat, with ground slopes generally ranging between **0 and 2 percent**. Such gentle slopes provide excellent conditions for urban development, transportation infrastructure and utility networks due to minimal earthwork requirements and favourable construction conditions.

Areas with comparatively steeper slopes, generally exceeding **3 percent**, are confined to riverbanks and natural drainage corridors. These areas perform important hydrological functions and require careful planning to preserve their natural drainage characteristics. While the overall terrain offers high development potential, effective stormwater management and protection of natural drainage corridors remain essential to minimise waterlogging and maintain hydrological balance.

4.4.3 Natural Drainage Network

The modelled hydrological analysis based on the **Strahler Stream Order** classification illustrates a well-defined hierarchical drainage network within the Special Area. The drainage system comprises **first-order to fifth-order streams**, which collectively facilitate the conveyance of surface runoff across the planning area.

Lower-order streams collect runoff from local catchments and discharge into higher-order drainage channels, while the **fourth- and fifth-order streams** function as the principal stormwater conveyance corridors. These natural drainage channels perform a critical role in reducing flood risk and maintaining regional hydrological continuity.

The preservation and integration of the existing drainage network into future urban development will be essential to minimise waterlogging, reduce flood hazards and prevent encroachment upon natural drainage corridors.

4.4.4 Flood and Inundation Characteristics

Analysis of inundation patterns during the **2019 flood event**, one of the most significant flood events experienced in the region during the past decade, indicates that flooding is primarily concentrated in the **eastern portion of the Special Area**. The lower ground elevations and reduced natural drainage gradients contribute to a higher susceptibility to temporary inundation in these areas.

Historical flood records further indicate that the highest recorded flood level in the region reached approximately **53.91 m MSL** during the severe floods of **1976**, underscoring the need to consider flood levels in long-term urban planning and infrastructure design.

The existing physiography demonstrates that flood management within the Special Area should be based on the preservation of natural drainage systems, enhancement of stormwater conveyance capacity and incorporation of nature-based solutions. The relatively flat terrain and established drainage network provide favourable conditions for integrating **Blue-Green Infrastructure (BGI)** and **Sponge City** principles to improve flood resilience, enhance groundwater recharge and manage urban runoff sustainably.

4.5 Climate

The **Patliputra Greenfield Satellite Township Special Area** experiences a **humid subtropical climate (Cwa)** under the **Köppen Climate Classification**, characterized by hot summers, a pronounced southwest monsoon season and cool winters. Summers extend from **late March to June**, with temperatures frequently exceeding **40°C**, while the monsoon season generally prevails from **late June to September**, contributing the majority of the annual rainfall. Winters, extending from **November to February**, are characterized by cool nights, moderate daytime temperatures and occasional fog.

The region receives an **average annual rainfall of approximately 1,078 mm**, with nearly **85–90%** of the precipitation occurring during the southwest monsoon between **June and September**. July and August are the wettest months, making stormwater management and flood resilience critical considerations for urban planning.

Temperature varies considerably throughout the year. The **highest recorded temperature** in Patna is **46.6°C**, while the **lowest recorded temperature** is **1.1°C**, reflecting a wide annual thermal range that influences building design, energy demand and outdoor comfort.

The prevailing wind direction exhibits a distinct seasonal pattern. Winds predominantly originate from the **east during the monsoon period (late April to early October)**, while **westerly winds prevail from early October to late April**, particularly during the winter months. This seasonal wind regime is an important consideration in land use planning, environmental management and the siting of industrial activities.

The climatic characteristics of the Special Area necessitate an urban development approach that incorporates climate-responsive planning, including efficient stormwater management, preservation of natural drainage systems, adequate urban green cover, and passive building design to improve thermal comfort and enhance resilience to extreme weather events.

4.6 Hydrology and Water Resources

The hydrological system of the **Patliputra Greenfield Satellite Township Special Area** is defined by an interconnected network of rivers, natural drainage channels, wetlands and ponds that collectively regulate surface runoff, groundwater recharge and flood management. The area lies within the **Punpun River Basin** and benefits from a well-established drainage system that has historically supported agriculture and settlement development.

The principal watercourses within and around the Special Area include the **Punpun River**, **Dardha River** and **Phalgu River**, which form the primary natural drainage corridors. These rivers are supplemented by an extensive hierarchy of **primary, secondary and tertiary drains**, creating a well-defined hydrological network that conveys stormwater towards the regional river system.

The hydrological network plays a critical role in regulating runoff during the monsoon season and maintaining the ecological balance of the planning area. Preservation of these natural drainage corridors is essential to maintain hydraulic continuity, minimise flood risk and prevent waterlogging arising from urban development.

The existing hydrological characteristics provide a strong foundation for integrating **Blue-Green Infrastructure (BGI)** and **Sponge City** principles into future urban development, enabling sustainable stormwater management, groundwater recharge and enhanced climate resilience.

4.7 Environmental Features

The Special Area possesses significant natural environmental assets that contribute to ecological stability and environmental sustainability. The landscape comprises rivers, wetlands, ponds, drainage corridors and extensive vegetation, which collectively form an interconnected ecological system within the planning area.

The notified environmental resources include approximately **52.95 acres of wetlands**, which perform important ecological functions such as flood attenuation, groundwater recharge and habitat conservation. In addition, the Special Area contains approximately **68.23 acres of ponds**, comprising **37.93 acres of Government-owned ponds** and **30.30 acres of privately owned ponds**. These water bodies contribute to local water storage, biodiversity conservation and regulation of the microclimate.

The planning area also contains approximately **830 acres of dense vegetation**, including tree cover and green patches distributed across the landscape. These areas provide

valuable ecosystem services by improving air quality, moderating urban temperatures, supporting biodiversity and contributing to carbon sequestration.

Together, the rivers, wetlands, ponds, drainage channels and vegetation form a robust natural ecological network that provides an excellent basis for developing an integrated **Blue-Green Infrastructure** system. The conservation and enhancement of these environmental assets will be fundamental to improving flood resilience, strengthening ecological connectivity, enhancing environmental quality and promoting sustainable urban development within the Special Area.

Table 1: Existing Environmental Resources

Environmental Feature	Extent
Rivers	Punpun, Dardha and Phalgu Rivers
Notified Wetlands	52.95 acres
Ponds	68.23 acres
Government Ponds	37.93 acres
Private Ponds	30.30 acres
Dense Vegetation	Approximately 830 acres
Natural Drainage Network	Primary, Secondary and Tertiary Drains

4.8 Settlement Pattern

The settlement pattern within the **Patliputra Greenfield Satellite Township Special Area** is predominantly rural, comprising villages, Nagar Panchayat areas and scattered residential clusters. Existing development is characterized by **low-density, low-rise built-up areas**, with settlements primarily concentrated along major transportation corridors and in proximity to natural water bodies. **Ribbon development is evident along National Highways, State Highways, district roads and major village roads, where linear expansion has occurred due to improved accessibility.** The interior areas remain predominantly agricultural, interspersed with dispersed rural settlements.

The existing **building footprint** within the Special Area covers approximately **890 acres**, representing a relatively small proportion of the total planning area. The limited extent of the built-up area indicates the availability of substantial contiguous land for planned urban development while providing opportunities to integrate existing settlements into the future urban structure.

The Special Area contains approximately **52,910 buildings**, comprising predominantly residential structures along with commercial establishments, institutional buildings, public facilities and agricultural support structures. The pattern of development reflects the traditional rural settlement morphology of the region, with linear growth occurring along

highways, district roads and village roads due to improved accessibility and infrastructure availability.

The existing settlement structure exhibits a combination of clustered village settlements and ribbon development along major road corridors. While the dispersed nature of development provides substantial opportunities for planned urban expansion, the continuation of uncontrolled ribbon development could adversely affect traffic operations, infrastructure provision and land use efficiency. Accordingly, future urban growth should be guided through a planned urban structure that promotes compact, integrated and well-connected development.

Table 2: Existing Settlement Characteristics

Parameter	Details
Existing Building Footprint	Approximately 890 acres
Approximate Number of Buildings	52,910
Predominant Settlement Pattern	Linear and clustered rural settlements
Development Character	Low-rise, low-density, predominantly residential with mixed rural uses
Major Growth Corridors	National Highways, State Highways, District Roads and Village Roads
Settlement Distribution	Concentrated along transportation corridors and water bodies with dispersed rural settlements in the interior

4.9 Demographic Profile

The **Patliputra Greenfield Satellite Township Special Area** is predominantly rural in character, with settlements distributed across villages and urban local bodies within the planning area. The existing population is estimated at approximately **2.45 lakh persons**, residing in around **52,910 households**.

The occupational structure of the Special Area is primarily **agrarian**, with agriculture and allied activities constituting the principal source of livelihood for the majority of the population. In addition to agriculture, a section of the population is engaged in trade, small businesses, services and other non-farm activities, particularly within the Nagar Panchayat areas and along major transportation corridors.

The demographic profile reflects a predominantly rural settlement pattern with relatively low population density and extensive agricultural land. The availability of large contiguous tracts of undeveloped land, together with the existing population base, provides favourable conditions for the planned development of a sustainable and self-sustaining urban centre.

Table 3: Demographic Profile

Parameter	Details
Estimated Population	Approximately 2.45 lakh
Estimated Households	Approximately 52,910
Predominant Occupation	Agriculture and allied activities
Settlement Character	Predominantly rural with dispersed village settlements

4.10 Existing Transportation Network

The Special Area enjoys excellent regional connectivity through an extensive hierarchy of highways, state roads, district roads and village roads, making it one of the most accessible growth corridors within the **Patna Planning Area**.

Road Network

Table 4: Existing Road Network

Road Category	Length (km)
National Highways (NH)	79.15
State Highways (SH)	6.50
Major District Roads (MDR)	7.74
Other District Roads (ODR)	4.13
Village Roads	553.10

The road network is further strengthened by two strategic high-speed corridors—the **Bihta–Sarmara National Highway (NH-131G)** and the **Amas–Darbhanga Expressway (NH-119D)**—which significantly enhance regional accessibility and establish the Special Area as an emerging growth corridor. The presence of multiple highway corridors provides resilient and efficient connectivity through alternative travel routes while supporting freight movement, industrial development and regional economic integration.

The extensive village road network ensures connectivity to individual settlements and provides a strong foundation for future integration with the proposed urban road hierarchy.

4.11 Existing Rail Connectivity

The Special Area is well served by the **Danapur Railway Division of East Central Railway**, providing strong regional and inter-city connectivity for both passenger and freight movement.

Table 5: Existing Railway Network

Particular	Number
Railway Junction	1
Railway Stations	3
Railway Halts	7
Railway Track Length	42.78 km

The proposed **Jat Dumri Junction** on the bypass rail corridor is expected to play a strategic role in strengthening regional rail connectivity. The junction is envisaged to decongest the existing Patna Junction by diverting long-distance rail traffic while improving operational efficiency and supporting future logistics and passenger movement associated with the township.

The existing and proposed rail infrastructure significantly enhances the regional accessibility of the Special Area and provides a strong basis for transit-oriented urban development.

4.12 Existing Social Infrastructure

The Special Area is served by a range of public and private educational and healthcare facilities that cater to the needs of the resident population.

Educational Facilities

A total of **354 educational institutions**, including schools, colleges, technical institutes and other educational establishments, are located within the Special Area. These institutions provide a broad educational base; however, the future township will require additional higher-order educational, research and skill development institutions to meet the projected population and employment demand.

Healthcare Facilities

The Special Area presently contains **38 healthcare facilities**, comprising Primary Health Centres (PHCs), community health centres, nursing homes and private hospitals. While these facilities provide essential healthcare services to the existing population, the proposed township will require a comprehensive hierarchy of healthcare infrastructure, including multi-speciality hospitals, trauma centres, medical colleges and neighbourhood health centres to support future urban growth.

4.13 Physical Infrastructure

The existing physical infrastructure within the **Patliputra Greenfield Satellite Township Special Area** is characteristic of a predominantly rural area and is inadequate to support future urbanisation at the scale envisaged under the Development Plan.

Water Supply

The Special Area is primarily dependent on **groundwater** as the principal source of water supply. Most households meet their domestic water requirements through **individual borewells**, while a significant proportion is served under the Government of Bihar's flagship **Har Ghar Nal Ka Jal** scheme, which provides piped water supply. Although the scheme has considerably improved household water access, it also relies predominantly on groundwater extraction, highlighting the need for sustainable water resource management in the future.

Sewerage and Sanitation

The Special Area currently **does not have an underground sewerage system**. Domestic wastewater is largely managed through individual septic tanks, soak pits and open drains, resulting in fragmented sanitation infrastructure. The absence of a comprehensive sewerage network poses significant environmental and public health challenges and necessitates the development of an integrated wastewater management system.

Storm Water Drainage

A comprehensive stormwater drainage system is presently absent within the Special Area. Existing drainage infrastructure is limited primarily to the **Punpun and Naubatpur Nagar Panchayat areas**, where the drainage network is inadequate and, in many locations, also carries domestic wastewater. This mixing of stormwater and sewage reduces drainage efficiency, contributes to waterlogging and adversely affects environmental quality. Outside the urban local bodies, natural drains and traditional drainage channels serve as the primary means of stormwater conveyance.

Solid Waste Management

The Special Area currently lacks a comprehensive solid waste management system. Waste collection, segregation, transportation and scientific processing facilities are either absent or limited in coverage, with waste management practices largely confined to localised arrangements within urban settlements. As urbanisation progresses, an integrated municipal solid waste management system will be essential to ensure environmental sustainability and public health.

Power Infrastructure

The Special Area is traversed by an extensive network of **132 kV, 220 kV and 400 kV high-voltage transmission lines**, supported by the **Naubatpur, Jakkanpur and Gaurichak transmission substations**. This robust regional power infrastructure provides a high-capacity and reliable electricity backbone capable of supporting future urban growth and

economic activities. However, appropriate safety corridors and right-of-way management will be necessary while planning future urban development around transmission infrastructure.

Telecommunication and Digital Connectivity

The Special Area is served by **5G mobile network connectivity**, providing good wireless communication coverage. However, **high-speed broadband and fibre-optic infrastructure remain limited**, particularly in rural areas, constraining the adoption of advanced digital services and smart city applications. Strengthening digital infrastructure will be essential to support future governance, businesses and citizen services.

4.14 Ongoing and Proposed Major Projects

The Special Area is supported by several ongoing and proposed strategic infrastructure and institutional projects that are expected to significantly influence its future growth trajectory. These projects will not only strengthen regional connectivity and economic competitiveness but will also serve as **flagship developments** of the Patliputra Greenfield Satellite Township, shaping its identity as a modern, self-sustaining urban centre.

Bihta–Sarmera National Highway (NH-131G)

The **Bihta–Sarmera National Highway (NH-131G)**, forming part of the proposed Patna Ring Road, will substantially improve regional connectivity by linking the Special Area with western, northern and eastern parts of the Patna Planning Area. The corridor is expected to facilitate urban expansion, improve accessibility and promote commercial, residential and industrial development along its alignment.

Amas–Darbhanga Expressway (NH-119D)

The proposed **Amas–Darbhanga Expressway (NH-119D)** will provide high-speed north-south connectivity across Bihar, significantly reducing travel time and improving regional accessibility. The expressway is expected to stimulate investment, enhance logistics efficiency and support the development of new economic activities within the Special Area.

Multi Modal Logistics Park

The proposed **Multi Modal Logistics Park** at **Jaitiya Mauza** will serve as a regional logistics hub, integrating road and rail freight movement with warehousing, cold storage and value-added logistics services. The project is expected to generate substantial employment opportunities, strengthen supply chain infrastructure and position the township as an important logistics destination within eastern India.

Fintech City

The proposed **Fintech City** at **Jaitiya Mauza** is envisaged as a specialised hub for financial services, information technology, digital innovation and knowledge-based industries. The project will diversify the economic base of the township, attract private investment and create high-value employment opportunities, supporting the transition towards a knowledge-driven urban economy.

Sports City

The proposed **Sports City** at **Dumri Mauza** will comprise world-class sports infrastructure, training academies, recreational facilities and sports-related commercial development. The project is expected to establish the township as a regional centre for sports excellence while promoting tourism, recreation and allied economic activities.

Bihar Judicial Academy

The proposed **Bihar Judicial Academy** will function as a premier institution for the training and capacity building of judicial officers and legal professionals. The Academy will strengthen the institutional profile of the township while attracting associated educational, residential and support services.

Collectively, these strategic projects will serve as the **flagship developments** of the Patliputra Greenfield Satellite Township. Together with the township's planned residential, commercial, institutional and industrial areas, they will act as key catalysts for urbanisation, investment, employment generation and long-term economic growth, establishing the township as a major regional growth centre within the **Patna Planning Area**.

4.15 SWOT Analysis

Strengths	Weaknesses
Strategic location within the Patna Planning Area with excellent regional connectivity.	Predominantly rural area with limited urban infrastructure and municipal services.
Large contiguous land parcels suitable for planned Greenfield urban development.	Absence of underground sewerage and comprehensive stormwater drainage systems.
Strong regional road and rail connectivity through NH-131G, NH-119D and the East Central Railway network.	Existing drainage infrastructure is inadequate and, in urban areas, often carries both stormwater and sewage.

Presence of extensive Blue-Green Infrastructure comprising the Punpun, Dardha and Phalgu Rivers, wetlands, ponds and natural drainage corridors.	Dependence on groundwater for domestic water supply and absence of integrated water resource management.
Robust regional power transmission network supported by 132 kV, 220 kV and 400 kV transmission lines and substations.	Limited solid waste management and digital broadband infrastructure.
Existing educational and healthcare facilities provide a foundation for future social infrastructure.	Ribbon development along major road corridors may lead to inefficient land utilisation if left unmanaged.
Opportunities	Threats
Development of a planned, self-sustaining Greenfield Satellite Township.	Unplanned urban expansion and continued ribbon development along transportation corridors.
Leveraging flagship projects such as NH-131G, NH-119D, Fintech City, Sports City, Multi Modal Logistics Park and Bihar Judicial Academy as catalysts for economic growth.	Encroachment upon rivers, drainage corridors, wetlands and ponds, increasing flood risk and environmental degradation.
Integration of Blue-Green Infrastructure and Sponge City principles to enhance climate resilience and urban livability.	Increased groundwater extraction due to urbanisation, affecting long-term water security.
Development of integrated multimodal transportation and smart urban infrastructure.	Climate change impacts, including extreme rainfall events, heat stress and flooding.
Establishment of knowledge-based industries, logistics and institutional hubs to diversify employment.	Environmental degradation resulting from uncontrolled development and loss of natural ecosystems.

4.16 Key Planning Issues

Based on the Existing Situation Analysis, the following key planning issues have been identified for the preparation of the **Patliputra Greenfield Satellite Township Development Plan, 2047**:

1. **Managing Planned Urban Expansion:** Directing future growth through an integrated Development Plan to prevent unplanned and fragmented urbanisation.
2. **Provision of Trunk Infrastructure:** Developing comprehensive water supply, sewerage, stormwater drainage, solid waste management, power and digital infrastructure to support future population and economic growth.
3. **Protection of Natural Drainage Systems:** Conserving rivers, natural drainage channels, wetlands and ponds to reduce flood risk, improve groundwater recharge and enhance environmental sustainability.
4. **Climate Resilience and Flood Management:** Incorporating Blue-Green Infrastructure and Sponge City approaches to manage stormwater, mitigate urban flooding and strengthen climate resilience.
5. **Managing Ribbon Development:** Controlling linear development along highways and major roads through planned land use and development controls to ensure efficient infrastructure provision and preserve the functional capacity of transportation corridors.
6. **Sustainable Water Resource Management:** Reducing dependence on groundwater by promoting diversified water sources, water conservation, reuse and efficient resource management.
7. **Integrated Transportation Planning:** Developing a multimodal transportation system that integrates regional highways, rail infrastructure, public transport, non-motorised transport and complete street principles.
8. **Conservation of Environmental Assets:** Protecting the existing Blue-Green Infrastructure network, including rivers, wetlands, ponds and vegetation, while integrating these resources into the urban structure.
9. **Economic Development and Employment Generation:** Leveraging strategic projects such as the Multi Modal Logistics Park, Fintech City, Sports City and Bihar Judicial Academy to create a diversified and resilient urban economy.
10. **Development of Smart and Digital Infrastructure:** Strengthening digital connectivity, utility management and smart governance systems to support the development of a modern, efficient and future-ready city.

These planning issues form the basis for the **Vision, Spatial Development Strategy and Land Use Plan** presented in the subsequent chapters, ensuring that the proposed township evolves as a **single, integrated and self-sustaining Greenfield city** within the **Patna Planning Area**.

CHAPTER 5: VISION, DEVELOPMENT OBJECTIVES & PLANNING PRINCIPLES

5.1 Vision

"To develop Patliputra Greenfield Satellite Township as a sustainable, resilient, inclusive and globally competitive Greenfield city that serves as a growth engine for the Patna Planning Area through integrated land use and transportation planning, world-class infrastructure, environmental stewardship, economic competitiveness and a high quality of life, while preserving its natural ecosystems and cultural heritage."

5.2 Development Objectives

The Development Plan is guided by the following objectives:

1. Planned and Sustainable Urban Growth

Promote compact, orderly and phased urban development through an integrated land use framework that prevents unplanned urban sprawl and ribbon development.

2. Balanced Land Use Structure

Develop a balanced mix of residential, commercial, institutional, industrial, recreational and public utility uses to create a self-sustaining city with reduced travel demand.

3. Economic Growth and Employment

Establish the township as a regional economic hub by promoting logistics, finance, information technology, innovation, manufacturing, education, healthcare and tourism.

4. Transit-Oriented and Integrated Mobility

Develop a multimodal transportation system integrating highways, arterial roads, public transport, railway infrastructure, cycling and pedestrian networks.

5. Environmental Sustainability

Protect rivers, wetlands, ponds, natural drainage systems and green areas while integrating Blue-Green Infrastructure and Sponge City principles into urban development.

6. Climate Resilience

Strengthen resilience against flooding, heat stress and climate change through nature-based solutions, resilient infrastructure and sustainable water management.

7. World-Class Urban Infrastructure

Provide reliable water supply, sewerage, drainage, solid waste management, power, ICT and smart city infrastructure to support future growth.

8. Inclusive and Livable Communities

Ensure equitable access to housing, healthcare, education, parks, public spaces and community facilities for all sections of society.

9. Smart Governance

Promote technology-enabled governance, digital infrastructure, intelligent utility management and citizen-centric service delivery.

10. Efficient Resource Management

Encourage water conservation, wastewater recycling, renewable energy, circular economy practices and efficient utilisation of urban resources.

5.3 Planning Principles

The planning framework for the Patliputra Greenfield Satellite Township is based on the following principles:

A. One Integrated City

The township shall be planned as **a single integrated urban entity**, rather than multiple independent nodes, with a clearly defined Central Business District (CBD), complementary activity centres and integrated infrastructure.

B. Transit-Oriented Development

Concentrate higher-density mixed-use development along major public transport corridors and key mobility nodes to encourage sustainable travel and optimise infrastructure investments.

C. Compact Urban Form

Promote compact, contiguous and efficient urban growth while preventing scattered and ribbon development.

D. Blue-Green Infrastructure

Protect and integrate rivers, lakes, ponds, wetlands, natural drains, green corridors and open spaces as interconnected ecological infrastructure.

E. Sponge City Approach

Incorporate sustainable urban drainage systems, permeable landscapes, rainwater harvesting and flood retention measures to improve urban water management.

F. Complete Streets

Develop roads that safely accommodate pedestrians, cyclists, public transport and motor vehicles while promoting universal accessibility.

G. Mixed Land Use

Promote compatible mixed-use development to create vibrant neighbourhoods, reduce travel demand and enhance walkability.

H. Fifteen-Minute Neighbourhoods

Plan residential communities where daily needs, education, healthcare, parks and neighbourhood services are accessible within a short walking or cycling distance.

I. Climate-Responsive Urban Design

Encourage energy-efficient buildings, urban forestry, passive design, renewable energy and heat island mitigation.

J. Economic Competitiveness

Leverage strategic investments such as the Multi Modal Logistics Park, Fintech City, Sports City and Bihar Judicial Academy to establish the township as a major regional economic destination.

K. Phased Infrastructure Development

Synchronise infrastructure provision with urban growth through a phased implementation strategy to ensure financial sustainability and efficient service delivery.

L. Smart and Future-Ready City

Integrate digital technologies, GIS-based planning, smart utilities, intelligent transport systems and data-driven governance to improve urban management.

5.4 Development Strategy

The Development Strategy seeks to transform the predominantly rural Special Area into a **self-sustaining Greenfield satellite city** that complements Patna while functioning as an independent economic and urban centre. Growth shall be structured around a **single Central Business District**, supported by specialised economic districts, integrated residential neighbourhoods, institutional campuses, logistics hubs, industrial areas and an interconnected Blue-Green Infrastructure network. Urban expansion shall be supported by phased infrastructure development, multimodal mobility and sustainable resource management, ensuring long-term environmental resilience and economic competitiveness.

CHAPTER 6: SPATIAL DEVELOPMENT STRATEGY

CHAPTER 6

SPATIAL DEVELOPMENT STRATEGY

6.1 Introduction

The Spatial Development Strategy establishes the long-term physical development framework for the **Patliputra Greenfield Satellite Township**. It provides an integrated approach to land use, transportation, infrastructure, environmental conservation and economic development, ensuring that future urban growth is planned, compact, resilient and sustainable.

The strategy seeks to transform the predominantly rural Special Area into a modern, self-sustaining Greenfield city that complements Patna while functioning as an independent economic, institutional and employment centre. The proposed urban structure integrates residential neighbourhoods, commercial activities, employment centres, social infrastructure and ecological systems through a comprehensive planning framework.

6.2 Spatial Development Concept

The township is planned as **a single integrated city** centred around a **Central Business District (CBD)** located **within and around the Core Area**. Rather than developing as multiple independent urban nodes, the township shall evolve around a strong central core supported by specialised activity areas connected through an efficient multimodal transportation network.

The Spatial Development Concept is guided by the following principles:

- Development of a single integrated urban structure.
- CBD as the primary commercial, financial and administrative centre.
- Compact and contiguous urban expansion.

- Transit-oriented and mixed-use development.
- Infrastructure-led phased growth.
- Conservation of rivers, wetlands and natural drainage systems.
- Integration of Blue-Green Infrastructure and Sponge City principles.
- Development of specialised economic and institutional areas.
- Climate-responsive and resilient urban planning.

6.3 Urban Structure

The proposed urban structure is organised around a **Central Business District (CBD)** developed **within and around the Core Area**, which shall function as the principal economic, commercial and administrative nucleus of the township. Surrounding the CBD, the city shall comprise interconnected residential, commercial, institutional, industrial and recreational areas supported by an integrated transportation network and Blue-Green Infrastructure system.

The principal components of the urban structure are as follows.

6.3.1 Central Business District (CBD)

The CBD shall be developed within and around the Core Area and shall serve as the primary destination for business, commerce, governance, finance and public activities. The area shall accommodate:

- Commercial office complexes
- Financial institutions
- Government offices
- Convention and exhibition centres
- Hotels and hospitality
- Retail and entertainment
- High-density mixed-use development
- Cultural and civic facilities
- Public plazas and open spaces

The CBD shall function as the economic heart of the township while providing a vibrant, walkable and transit-oriented urban environment.

6.3.2 Mixed-Use Areas

Mixed-use areas shall be developed surrounding the CBD and along major transportation corridors. These areas shall integrate residential, commercial, office, institutional and recreational activities to promote walkability, reduce travel demand and create vibrant urban environments.

6.3.3 Residential Areas

Residential development shall comprise well-planned neighbourhoods with balanced housing options supported by schools, healthcare facilities, neighbourhood shopping centres, parks and community facilities. Residential areas shall be planned following neighbourhood planning principles with emphasis on walkability, accessibility and quality of life.

6.3.4 Industrial and Logistics Area

Industrial and logistics activities shall be concentrated along the NH-131G corridor and around the proposed Multi Modal Logistics Park. The area shall accommodate logistics parks, warehousing, light manufacturing, industrial estates, freight terminals and supporting commercial activities while maintaining appropriate environmental buffers.

6.3.5 Knowledge and Innovation Area

The Knowledge and Innovation Area shall include the proposed Fintech City, information technology parks, research institutions, higher educational campuses, innovation centres, business incubators and knowledge-based industries, creating a diversified and future-ready economy.

6.3.6 Institutional Area

The Institutional Area shall accommodate the Bihar Judicial Academy, universities, hospitals, government establishments, public institutions and other regional-level civic facilities, strengthening the township's role as an administrative, educational and healthcare destination.

6.3.7 Sports and Recreation Area

Anchored by the proposed Sports City, this area shall include sports infrastructure, stadiums, training academies, recreational facilities, urban parks, event venues and tourism-related developments, promoting sports excellence and public recreation.

6.3.8 Blue-Green Infrastructure Network

The Blue-Green Infrastructure Network shall form the ecological framework of the township by integrating the Punpun River, Dardha River, Phalgu River, wetlands, ponds, natural drainage channels, regional parks, urban forests and green corridors. This interconnected network shall support flood mitigation, groundwater recharge, biodiversity conservation, climate resilience and recreational opportunities.

6.4 Growth Structure

The township shall be developed through a compact and phased urban growth model that prioritises infrastructure availability and efficient land utilisation.

The growth strategy shall focus on:

- Development of the CBD within and around the Core Area.
- Sequential outward expansion from the Core Area.
- Compact and contiguous urban development.
- Higher intensity development along major transportation corridors.
- Prevention of ribbon development.
- Protection of environmentally sensitive areas.
- Infrastructure-led urban expansion.

This approach will minimise urban sprawl, optimise infrastructure investments and ensure orderly long-term growth.

6.5 Activity Centre Hierarchy

A hierarchy of activity centres is proposed to distribute commercial, institutional and community facilities across the township while maintaining the primacy of the CBD.

Table 6: Hierarchy of Activity Center

Level	Primary Function
Central Business District	Metropolitan commercial, financial and administrative centre
City Centres	Major commercial, institutional and entertainment activities
District Centres	Retail, offices, healthcare and educational facilities
Community Centres	Local commercial and community facilities
Neighbourhood Centres	Daily convenience shopping and neighbourhood services

6.6 Development Corridors

Future urban development shall be guided along strategic transportation corridors, including:

- NH-131G (Patna Ring Road Corridor)
- NH-119D (Amas–Darbhanga Expressway Corridor)
- Major arterial roads
- Railway corridor
- Proposed public transport corridors

These corridors shall support higher-density mixed-use development while ensuring efficient mobility and infrastructure provision.

6.7 Blue-Green Infrastructure Strategy

The Blue-Green Infrastructure Strategy integrates natural and built systems to enhance environmental sustainability and climate resilience.

The strategy includes:

- Conservation of rivers and natural drainage systems.
- Protection of wetlands and ponds.
- Development of urban lakes.
- Regional parks and city parks.
- Linear green corridors.
- Green buffers along rivers and infrastructure corridors.
- Urban forests.
- Sustainable Urban Drainage Systems (SuDS).
- Rainwater harvesting and groundwater recharge.
- Flood retention and detention areas.

The interconnected Blue-Green network shall become one of the defining spatial elements of the township.

6.8 Transportation-Oriented Development Strategy

Urban growth shall be closely integrated with the transportation system to create a highly accessible and efficient city.

The strategy includes:

- Higher-density mixed-use development around major transit corridors.
- Integration of land use and transportation planning.
- Development of Complete Streets.
- Priority for public transport.
- Safe pedestrian and cycling infrastructure.
- Reduced dependence on private vehicles.
- Integrated multimodal transport network.

6.9 Urban Design Strategy

The township shall be planned as a high-quality urban environment based on the following principles:

- Human-scale urban design.
- Walkable streets and neighbourhoods.
- Mixed-use development.
- Complete Streets.
- Universal accessibility.
- High-quality public realm.
- Active street frontages.
- Green boulevards and landscaped avenues.
- Landmark civic spaces.
- Climate-responsive urban form.

6.10 Development Phasing Strategy

The township shall be developed in a phased manner aligned with infrastructure provision and market demand.

Phase I

- Development of the Core Area.
- Central Business District.
- Primary residential areas.
- Fintech City.
- Multi Modal Logistics Park.
- Primary road network.
- Trunk infrastructure.
- Initial social infrastructure.

Phase II

- Expansion of residential areas.
- Institutional Area.
- Sports City.
- Industrial and Logistics Area.
- Secondary transportation network.
- Additional public facilities.

Phase III

- Completion of remaining urban areas.
- Regional parks and tourism facilities.
- Additional economic activity areas.
- Long-term infrastructure augmentation.

6.11 Spatial Development Framework

The Spatial Development Framework integrates all major components of the Development Plan into a coherent urban structure.

The framework comprises:

- Central Business District.
- Mixed-Use Areas.
- Residential Areas.
- Industrial and Logistics Area.
- Knowledge and Innovation Area.
- Institutional Area.
- Sports and Recreation Area.
- Blue-Green Infrastructure Network.
- Transportation Network.
- Utility Infrastructure.
- Public Open Space Network.
- Social Infrastructure.

Together, these components establish a **compact, connected, resilient and economically vibrant urban structure** that will guide the planned development of the Patliputra Greenfield Satellite Township up to **2047**. The strategy positions the township as a **self-sustaining satellite city**, with the **CBD developed within and around the Core Area**, supported by world-class infrastructure, integrated mobility, environmental sustainability and diversified economic opportunities.

CHAPTER 7: PROPOSED LAND USE PLAN

7.1 Introduction

The Proposed Land Use Plan establishes the spatial allocation of land for various urban activities within the Patliputra Greenfield Satellite Township. The Plan seeks to achieve a balanced urban structure by integrating residential, commercial, industrial, institutional, recreational and infrastructure uses while ensuring environmental sustainability, economic competitiveness and a high quality of life.

The land use plan has been prepared based on the vision, spatial development strategy, projected population, economic growth potential, transportation network, environmental constraints and applicable planning standards. It provides the statutory framework for regulating future development and ensuring orderly urban expansion.

7.2 Planning Approach

The Proposed Land Use Plan has been prepared based on the following planning principles:

- Compact and contiguous urban development.
- Mixed-use and transit-oriented development.
- Development of the CBD within and around the Core Area.
- Self-sustaining neighbourhoods.
- Protection of environmentally sensitive areas.
- Integration of Blue-Green Infrastructure.
- Infrastructure-led phased development.
- Climate-resilient planning.
- Efficient utilisation of land resources.
- Prevention of ribbon development.

7.3 Planning Norms and Standards

The Proposed Land Use Plan–2047 has been prepared in accordance with the planning vision of the Government of Bihar to develop modern, sustainable and self-sustaining urban centres capable of supporting long-term economic growth and improving the quality of life. The planning framework seeks to progressively align the urban development standards of Bihar with the planning principles and service benchmarks prescribed under the **Urban and Regional Development Plans Formulation and Implementation (URDPFI) Guidelines, 2014**, while adapting them to the local socio-economic conditions and development aspirations of the State.

7.4 Population Projection

The Proposed Land Use Plan has been prepared to accommodate the long-term growth requirements of the Patliputra Greenfield Satellite Township up to the planning horizon of **2047**. Population capacity has been assessed using gross planning density consistent with the URDPFI approach for Greenfield urban development.

The township has been planned with a **design population capacity of approximately 66.10 lakh persons**, corresponding to an average **gross density of 200 persons per hectare**, thereby ensuring optimum utilisation of the available land and infrastructure.

The proposed urban structure also provides flexibility to accommodate an **optimum operational population of approximately 25 lakh persons** during the initial stages of development while maintaining a lower average density of **75 persons per hectare**, allowing phased infrastructure development and future intensification.

Table 6: Population Planning Parameters

Parameter	Value
Planning Horizon	2047
Gross Planning Area	81,730 Acres
Gross Planning Area	~33,070 Hectares
Design Population	66.10 lakh
Design Density	200 persons/hectare
Optimum Population	25.00 lakh
Optimum Density	75 persons/hectare

7.5 Proposed Land Use Structure

The Proposed Land Use Structure allocates land to various urban activities in a balanced manner to support the development of a compact, sustainable and self-sustaining Greenfield city. The distribution of land has been prepared by balancing residential demand, economic activities, public facilities, environmental conservation, transportation infrastructure and future urban expansion.

The proposed land use categories comprise Residential, Commercial, Public Purpose, Transit-Oriented Development (TOD) Zone, Industrial, Recreational, Transport & Communication, Public Utilities, Water Bodies, Canal/Streams/Drains, Green Belt and Urban Agriculture. The proposed distribution has been designed to provide adequate land for housing, employment, mobility, public infrastructure, environmental protection and urban services while maintaining ecological balance and long-term sustainability.

Table 7: Proposed Land Use Distribution

Land Use Category	Area (Acres)	Percentage
Residential	28,723.95	35.18%
Commercial	3,246.03	3.98%
Public Purpose	3,319.56	4.07%
TOD Zone	5,406.00	6.62%
Industrial	4,651.67	5.70%
Recreational	4,774.86	5.85%
Transport & Communication	6,237.60	7.64%
Public Utilities	359.54	0.44%
Water Bodies	1,814.12	2.22%
Canal/Streams/Drains	1,898.66	2.33%
Green Belt	3,606.00	4.42%
Urban Agriculture	17,616.13	21.57%
Total	81,654.12	100.00%

7.6 Proposed Land Use Classification and Development Framework

The Proposed Land Use Plan–2047 establishes a balanced and integrated urban structure to support the long-term development of the Patliputra Greenfield Satellite Township as a self-sustaining, economically vibrant and environmentally resilient city. The land use distribution has been formulated based on the Spatial Development Strategy, projected population, transportation framework, environmental considerations and infrastructure requirements.

The land use pattern promotes compact urban development, mixed-use planning, transit-oriented development, environmental conservation and phased infrastructure expansion while ensuring equitable distribution of employment centres, social infrastructure and public amenities. The various land use categories and their planning rationale are described below.

7.6.1 Residential

Residential development occupies **28,723.95 acres (35.18%)** of the Special Area and constitutes the largest land use category. It has been planned to accommodate the projected population of the township while providing safe, inclusive and high-quality living environments.

Residential areas are distributed throughout the township in a hierarchy of neighbourhoods organised into urban sectors. Higher-density residential development is proposed **within and around the Central Business District (CBD)** and along the **Transit-Oriented Development (TOD) corridors**, while comparatively lower-density residential neighbourhoods are planned towards the peripheral areas.

The township is organised into sectors averaging **1.25 km × 1.25 km**, with smaller sectors around the Core Area to support higher development intensity and finer street connectivity. Sector sizes gradually increase towards the outer parts of the township, reflecting lower planned development densities.

Each residential sector is designed as a **self-sustaining neighbourhood** with schools, healthcare facilities, neighbourhood commercial centres, parks, community facilities and public transport within convenient walking distance. A range of housing typologies, including plotted housing, group housing, apartments, affordable housing and rental housing, is proposed to cater to diverse socio-economic groups.

7.6.2 Central Business District (CBD)

The Central Business District shall be developed **within and around the Core Area** and shall function as the principal commercial, financial, administrative and cultural centre of the township. The CBD will accommodate high-density mixed-use development comprising

commercial offices, corporate headquarters, financial institutions, government offices, hotels, convention and exhibition centres, retail, entertainment, cultural institutions and high-rise residential development.

The CBD shall be directly served by the proposed MRTS network and the Transit Hub, making it the most accessible and highest-intensity urban area within the township.

7.6.3 Commercial

Commercial activities have been strategically distributed to support economic growth while ensuring convenient access to retail and business services.

A **200-metre-wide commercial corridor** has been proposed along major stretches of the **Bihta–Sarmara Road (NH-131G)** to accommodate regional commercial activities, business parks, hotels, retail centres, offices and service establishments. Additional commercial centres are proposed around MRTS stations, major intersections and neighbourhood centres to serve local and city-level commercial needs.

7.6.4 Public Purpose and Institutional Areas

Public Purpose areas have been strategically distributed to accommodate educational institutions, hospitals, government offices, emergency services, public administration and civic infrastructure.

A major Government Administrative Complex is proposed west of the Core Area, providing land for Divisional Offices, the Township Development Authority, Urban Civic Centre, Courts and Tribunals, offices of Central and State Government departments, Public Sector Undertakings, Boards and other statutory authorities. Other public institutions, including hospitals, educational campuses, the Bihar Judicial Academy, coaching hubs and regional public facilities, are distributed across the township based on accessibility and service requirements.

7.6.5 Transit-Oriented Development (TOD) Zone

A TOD influence zone of approximately **500 metres** has been proposed along the principal MRTS corridors centred on the CBD and the north-south and east-west axial transit corridors.

The TOD Zone shall accommodate high-density mixed-use development integrating residential, commercial, office, hospitality, institutional and recreational activities within walking distance of MRTS stations. Higher Floor Area Ratio (FAR), increased development intensity and mixed-use development shall be encouraged to maximise public transport usage and reduce dependence on private vehicles.

Except for hazardous, heavy, red-category and obnoxious industries, all compatible urban activities shall generally be permitted within the TOD Zone.

7.6.6 Industrial and Logistics Areas

Industrial development has been strategically located to maximise regional connectivity while maintaining appropriate separation from residential neighbourhoods.

A major **Industrial Hub** is proposed on the **eastern side of the Amas–Darbhanga Expressway**, adjacent to the proposed logistics facilities. The area shall accommodate manufacturing industries, MSMEs, industrial parks and clean industries.

An **Agriculture-Based Industrial Area** is proposed west of the expressway near the existing Bazaar Samiti to promote agro-processing, food processing, cold storage and agricultural value addition.

A **Non-Polluting Service Industry Area** is proposed outside the Western Ring Road to accommodate IT-enabled services, electronics, research facilities and other knowledge-based non-polluting industries.

A comprehensive **Logistics Hub** is proposed along the newly constructed railway bypass near **Gawaspur Halt** and the Amas–Darbhanga Expressway, incorporating warehousing, truck terminals, freight terminals and multimodal logistics facilities for efficient movement of goods.

7.6.7 Sports, Recreation and Open Spaces

The township places significant emphasis on public open spaces as one of its defining urban characteristics.

A landmark **Central Park**, centred around a large urban lake immediately outside the Core Area, shall function as the principal recreational space of the township. The proposed Sports City, sports complexes, regional parks, neighbourhood parks, greenways and recreational facilities are distributed throughout the township to enhance urban livability, promote healthy lifestyles and support sports tourism.

Existing parks, orchards and natural landscapes have been integrated into the overall recreational network.

7.6.8 Transportation and Mobility Framework

The transportation network forms the structural backbone of the township.

The hierarchy comprises:

- Two **90-metre-wide Axial Roads** (North–South and East–West).

- A **60-metre-wide Ring Road** connecting all major corridors.
- Widening of **SH-01** to a **60-metre Right-of-Way**.
- Upgradation of NH-31, NH-431 and the remaining section of NH-131G to a **60-metre Right-of-Way**.
- Additional **45-metre** and **30-metre** arterial roads.
- Continuous service roads along all Master Plan roads.

The two axial roads, the Ring Road and SH-01 shall accommodate the proposed **MRTS corridors**. The North–South Axial Road shall additionally accommodate the proposed **Patna–Gaya–Bodh Gaya Regional Rapid Transit System (RRTS)**.

Additional MRTS corridors are proposed on two strategically located **45-metre roads** around the Core Area to strengthen public transport accessibility.

The MRTS network shall connect the township with **ISBT through SH-01** and **AIIMS through the southern extension of the North–South Axial Road**.

A **Transit Hub with Multi-Modal Transit Hub (MMTH)** is proposed near the intersection of the North–South and East–West Axial Roads adjoining the proposed **Jat Dumri Railway Junction**, integrating MRTS, RRTS, regional rail, bus services and intermediate public transport.

The proposed road hierarchy divides the township into well-defined urban sectors. Existing MDRs, ODRs and village roads shall be integrated through subsequent Zonal and Sector Plans.

7.6.9 Public Utilities

Twenty-seven utility sites have been distributed throughout the township to accommodate water treatment plants, sewage treatment plants, pumping stations, substations, solid waste management facilities, telecommunication infrastructure and other essential municipal services.

On average, one utility site has been provided for every four developed sectors to ensure efficient infrastructure distribution and long-term operational flexibility.

7.6.10 Blue-Green Infrastructure Network

The Blue-Green Infrastructure Network forms the environmental framework of the township.

The **Punpun, Dardha and Phalgu Rivers**, together with the traditional **Ahar-Pyne** system, existing ponds, wetlands and drainage channels, have been integrated into a continuous ecological network that supports flood management, groundwater recharge, biodiversity conservation and public recreation.

A major **Retention Reservoir** is proposed at the confluence of the **Punpun and Dardha Rivers**, utilising the naturally low-lying terrain. Designed to store approximately **25 billion litres of water**, the reservoir will provide an emergency water reserve capable of meeting approximately one month's water requirement of the township at its design population of **66.1 lakh**. The reservoir shall be replenished through stormwater harvesting and regulated inflows from the Punpun River and, where feasible, the Ganga River.

The Ahar-Pyne system shall function as the primary drainage network and an urban sponge system, substantially improving flood resilience and groundwater recharge.

7.6.11 Green Belt and Urban Agriculture

A comprehensive Green Belt has been proposed along rivers, major drainage corridors and environmentally sensitive areas to preserve ecological integrity and strengthen climate resilience.

A continuous **30-metre-wide green corridor** is proposed along the Amas–Darbhanga Expressway MRTS corridor. Existing orchards, dense vegetation, ponds and water bodies have been preserved and integrated into the township's Blue-Green Infrastructure Network.

Urban Agriculture has been retained around much of the township periphery to act as a transition zone between urban development and the surrounding rural landscape. Besides supporting local food production, these areas will help contain urban sprawl, preserve productive agricultural land and maintain ecological continuity until future Development Plan revisions.

7.6.12 Development Control Framework

The proposed land use pattern shall be implemented through a comprehensive Development Control Framework governing land use compatibility, FAR, building heights, development intensity, TOD regulations, environmental buffers, road reservations, utility corridors and urban design standards. Detailed development control regulations shall be prescribed separately under the applicable planning regulations to ensure orderly, sustainable and high-quality urban development.

This integrated framework establishes a **compact, transit-oriented, climate-resilient and economically competitive urban structure**, positioning the Patliputra Greenfield Satellite Township as a model Greenfield city and a major growth centre within the Patna Planning Area.

7.7 Proposed Land Use Plan – 2047

The **Proposed Land Use Plan–2047** establishes the statutory spatial framework for the planned development of the **Patliputra Greenfield Satellite Township**. The Plan translates the vision, development objectives and spatial development strategy into a comprehensive land use pattern that integrates residential neighbourhoods, employment centres, transportation systems, social infrastructure, environmental assets and public utilities into a unified urban structure.

The township has been planned as a **single integrated Greenfield city** centred around a **Central Business District (CBD)** located within and around the **Core Area**. The CBD forms the principal commercial, financial, administrative and cultural centre of the township and is supported by strategically distributed residential areas, commercial centres, institutional campuses, industrial and logistics hubs, recreational areas and public utilities. This integrated urban structure promotes balanced growth while reducing travel distances and ensuring efficient infrastructure provision.

The proposed land use plan adopts a **compact and transit-oriented development pattern**, with higher development intensity concentrated along the proposed MRTS corridors, major arterial roads and activity centres. The **500-metre TOD influence zone** surrounding the core MRTS network accommodates high-density mixed-use development, thereby maximising accessibility to public transport and promoting sustainable urban mobility. Development intensity gradually reduces towards the outer sectors of the township, creating a balanced urban density gradient and preventing dispersed urban sprawl.

The township is structured around a hierarchical transportation network comprising two **90-metre-wide axial roads**, a **60-metre-wide ring road**, upgraded National and State Highways and a network of **45-metre** and **30-metre** arterial roads. These corridors divide the township into a series of well-defined urban sectors that provide the basic planning units for future development. Smaller sectors have been planned around the Core Area to accommodate higher urban densities and mixed-use activities, while larger sectors are proposed in the peripheral areas to facilitate phased urban expansion. Continuous service roads are proposed along all Master Plan roads to ensure efficient local access while preserving the functional efficiency of the primary road network.

The proposed **Mass Rapid Transit System (MRTS)** forms the backbone of the township's public transportation system and is integrated with the two axial roads, the ring road and SH-01. The proposed **Patna–Gaya–Bodh Gaya Regional Rapid Transit System (RRTS)** shall be accommodated along the North–South Axial Road, providing high-speed regional connectivity. A **Transit Hub with Multi-Modal Transit Hub (MMTH)** is proposed near the

intersection of the two axial roads at the proposed Jat Dumri Junction, integrating MRTS, RRTS, regional rail and bus services into a single multimodal interchange.

Economic activities have been strategically distributed to leverage regional connectivity and promote diversified employment generation. The **CBD** serves as the primary business and commercial centre, while commercial corridors are developed along major transportation routes. The **Industrial Hub, Logistics Hub, Agriculture-Based Industrial Area, Non-Polluting Service Industry Area, Fintech City, Sports City, Coaching Hub, Healthcare Hub** and other specialised institutional developments collectively establish a diversified economic base capable of supporting long-term urban growth and regional competitiveness.

The township's environmental framework is anchored by a comprehensive **Blue-Green Infrastructure Network**, integrating the **Punpun, Dardha and Phalgu Rivers**, the traditional **Ahar-Pyne** drainage system, existing ponds, wetlands and extensive green corridors. River buffers, green belts and ecological corridors have been incorporated to preserve natural ecosystems, improve biodiversity and enhance climate resilience. A major **Retention Reservoir** is proposed at the confluence of the Punpun and Dardha Rivers to provide flood moderation, groundwater recharge and emergency water storage. Existing orchards, dense vegetation and water bodies have been retained as integral components of the township's environmental structure, while Urban Agriculture has been preserved around the periphery to contain urban expansion and maintain ecological continuity.

Public Purpose areas and Public Utility sites have been distributed strategically across the township to ensure equitable access to government services, education, healthcare, emergency services and municipal infrastructure. Major administrative institutions are concentrated west of the Core Area, while utility infrastructure has been planned to support phased urban development and efficient service delivery.

Overall, the **Proposed Land Use Plan** establishes a balanced and integrated urban framework that harmonises economic development, environmental conservation and social infrastructure. The Plan promotes a compact, transit-oriented and climate-resilient pattern of urbanisation while providing the flexibility required to accommodate future population growth, infrastructure expansion and economic transformation. It provides the statutory basis for regulating land use and guiding the planned development of the Patliputra Greenfield Satellite Township up to the year **2047**.

CHAPTER 8: SOCIAL INFRASTRUCTURE FRAMEWORK

8.1 Introduction

The Social Infrastructure Framework establishes the planning standards and spatial distribution of social infrastructure required to support the projected population of the Patliputra Greenfield Satellite Township. Social infrastructure forms an integral component of the **Public Purpose Land Use** and has been planned to ensure equitable access to education, healthcare, public safety, recreation, community facilities and social welfare services.

The framework has been prepared in accordance with the planning vision of the township, URDPFI Guidelines and applicable Government standards. While neighbourhood and sector-level facilities cater to the daily needs of residents, several city-level and regional institutions are proposed to serve the broader Patna Planning Area and the State of Bihar.

8.2 Planning Principles

The planning of social infrastructure is based on the following principles:

- Equitable access to civic amenities.
- Hierarchical distribution of facilities.
- Integration with residential neighbourhoods.
- Transit-oriented location of major institutions.
- Universal accessibility.
- Inclusive infrastructure.
- Shared use of public facilities.
- Phased development corresponding to population growth.
- Smart and resilient public infrastructure.

8.3 Social Infrastructure Hierarchy

The proposed facilities shall be organised into four levels:

Level	Service Area
Neighbourhood Level	Daily community facilities
Sector Level	Schools, PHCs, parks, police posts
City Level	Universities, tertiary hospitals, sports complexes, cultural institutions
Regional Level	Sports City, Bihar Judicial Academy, specialised hospitals, major universities

8.4 Educational Facilities

Education forms the foundation of the proposed township. Educational facilities have been distributed hierarchically to ensure universal accessibility while establishing the township as an important educational destination.

Planning Standards

Facility	Population Standard	Land / Capacity Benchmark
Nursery / Pre-Primary	1 per 2,500 persons	0.08–0.10 ha
Primary School	1 per 5,000 persons	0.40 ha
Secondary / Senior Secondary School	1 per 7,500 persons	1.60 ha
Integrated School	1 per 90,000–100,000 persons	3.5–3.9 ha
General College	1 per 125,000 persons	4.0 ha
University	1 per 10 lakh persons	10+ ha

Planning Approach

- Schools shall be located within walking distance of residential neighbourhoods.
- Colleges shall serve sector and city populations.
- Universities and specialised educational institutions shall be located along major transport corridors.
- Coaching hubs and higher education institutions shall strengthen Patna's educational ecosystem.

8.5 Healthcare Facilities

A comprehensive healthcare system is proposed comprising primary, secondary and tertiary healthcare facilities.

Planning Standards

Facility	Population Standard	Capacity
PHC	20,000–30,000	4–6 beds
Nursing Home	45,000–100,000	25–30 beds
General Hospital	2.5 lakh	300–500 beds

Planning Strategy

- PHCs distributed throughout residential sectors.
- Secondary hospitals at sector level.
- Multi-speciality hospitals along major arterial roads.
- Medical education and research facilities at city level.

8.6 Public Safety and Emergency Services

Public safety infrastructure shall ensure timely emergency response.

Police

Facility	Population Standard
Police Post	40,000–50,000
Police Station	90,000
Battalion HQ	10 lakh

Fire Services

Facility	Population Standard
Sub Fire Station	50,000–100,000
Main Fire Station	2 lakh

Facilities shall be located to maintain emergency response times in accordance with national standards.

8.7 Parks, Recreation and Open Spaces

The township adopts a hierarchical open space system supported by the Blue-Green Infrastructure Network.

Open Space Standard: Minimum 10–12 sq.m per capita.

Hierarchy

Facility	Population
Tot Lot	2,500

Neighbourhood Park	10,000–15,000
Sector Park	1 lakh
City Park	10 lakh

The proposed Central Park, Central Lake, Sports City, regional parks, neighbourhood parks, greenways and riverfront open spaces together establish an interconnected recreational network.

These standards shall serve as Development Plan norms. The exact number, size and location of parks shall be finalised in the respective Sector Plans and Zonal Plans.

8.8 Community Facilities

Community infrastructure shall support social interaction and cultural activities.

Facility	Population
Community Room	5,000
Community Hall & Library	15,000
Recreation Club	1 lakh
Music, Dance & Drama Centre	1 lakh
Meditation Centre	1 lakh
Socio-Cultural Centre	10 lakh

8.9 Inclusive Social Infrastructure

The township promotes inclusive development through dedicated facilities for vulnerable and special-needs populations.

Facility	Population
Anganwadi	2,500
School for Differently Abled	45,000
Senior Citizen Home	1 lakh
Night Shelter / Working Women's Hostel	1 lakh

8.10 Public Distribution and Citizen Services

Essential civic services shall be distributed across residential neighbourhoods.

Facility	Population
Fair Price Shop	2,000–4,000
Post Office	15,000–20,000
Bank / ATM	10,000–15,000
Milk Booth	5,000

8.11 Crematoria, Burial Grounds and Civic Utilities

Provision shall be made for essential lifecycle infrastructure.

Facility	Standard
Crematorium / Burial Ground	1 per 5 lakh population
Dharmashala / Guest House	1 per 1 lakh population

These facilities shall be suitably located considering environmental, cultural and accessibility requirements.

8.12 City-Level Institutions

In addition to the neighbourhood and sector-level facilities, the township shall accommodate several regional and state-level institutions, including:

- Bihar Judicial Academy.
- Sports City.
- International Convention Centre.
- Government Administrative Complex.
- Universities and Higher Education Campuses.
- Multi-speciality Hospitals.
- Coaching Hub.
- Research and Innovation Institutions.
- Cultural Centres and Museums.

These institutions will strengthen the township's role as a major administrative, educational, sports and knowledge hub within the Patna Planning Area and the State of Bihar.

8.13 Social Infrastructure Implementation Strategy

The development of social infrastructure shall be undertaken in phases aligned with population growth and urban expansion. Neighbourhood-level facilities shall be developed concurrently with residential sectors, while city-level institutions shall be implemented in accordance with the township's economic development strategy and infrastructure readiness. Sector and Zonal Plans shall identify the exact locations, capacities and implementation schedules of individual facilities based on the planning standards prescribed in this chapter.

This structure is suitable for a statutory Development Plan, provides clear planning norms, and allows flexibility for future sector-level planning without overcrowding the Development Plan with facility-by-facility calculations.

CHAPTER 9: MOBILITY & TRANSIT-ORIENTED DEVELOPMENT

9.1 Introduction

A well-planned mobility system is fundamental to the successful development of the Patliputra Greenfield Satellite Township. The proposed mobility framework has been designed to provide safe, efficient, sustainable and multimodal transportation for the projected population while strengthening regional connectivity and supporting economic development.

The mobility strategy integrates highways, arterial roads, mass rapid transit, regional rail, freight infrastructure, pedestrian and cycling facilities, and intelligent transport systems into a unified transportation network. The framework is closely integrated with the proposed land use pattern to promote compact urban development, reduce travel demand and encourage public transport usage.

9.2 Planning Objectives

The mobility strategy aims to:

- Develop an integrated multimodal transportation system.
- Promote public transport as the preferred mode of travel.
- Integrate land use with transportation planning.
- Improve regional connectivity.
- Support economic development and logistics.
- Encourage walking and cycling.
- Reduce congestion and travel time.
- Improve road safety.
- Develop climate-resilient transportation infrastructure.
- Support smart mobility and intelligent transport systems.

9.3 Regional Connectivity

The township enjoys excellent regional connectivity through major national and state transportation corridors.

The principal regional corridors include:

- NH-31.
- NH-431.
- NH-131G (Bihta–Sarmera Corridor).
- NH-119D (Amas–Darbhanga Expressway).
- SH-01.
- East Central Railway.
- Proposed Patna–Gaya–Bodh Gaya RRTS.
- Proposed MRTS corridors.

These corridors establish the township as a major regional transportation and logistics hub within the Patna Planning Area.

9.4 Road Hierarchy

A hierarchical road network has been proposed to ensure efficient traffic distribution and accessibility.

Expressway Network

The **Amas–Darbhanga Expressway (NH-119D)** forms the principal regional mobility corridor traversing the township.

Within the township, the corridor is proposed with an **overall Right-of-Way of 180 metres**, comprising:

- Existing Expressway
- Dedicated RRTS Corridor
- MRTS Corridor
- 30-metre Green Corridor
- Continuous Service Roads
- Utility Corridors
- Landscape Buffers
- Non-Motorised Transport Facilities

This integrated corridor shall function as a high-capacity mobility and green infrastructure spine.

National Highways

The following highways are proposed to have a **60-metre Right-of-Way**:

- NH-31.
- NH-431.
- NH-131G (entire township stretch).

The remaining two-lane section of NH-131G between the Amas–Darbhanga Expressway and NH-431 shall be upgraded to match the proposed urban road standard.

State Highway

SH-01 shall be widened from the existing two-lane configuration to a **60-metre Right-of-Way** and shall accommodate one of the township's principal MRTS corridors.

Axial Roads

Two new **90-metre-wide Axial Roads** are proposed:

North–South Axial Road

Functions:

- Primary urban mobility spine.
- MRTS Corridor.
- Patna–Gaya–Bodh Gaya RRTS Corridor.
- Direct connectivity with AIIMS.
- Connection with Transit Hub.

East–West Axial Road (Expressway)

Functions:

- Primary east-west mobility corridor.
- MRTS Corridor.
- CBD access.
- Connection to NH-131G and NH-119D.

The intersection of the two axial roads shall form the **primary Transit Hub** of the township.

Ring Road

A **60-metre-wide Ring Road** is proposed to connect all major regional highways and arterial roads while distributing traffic around the township.

The Ring Road shall:

- Reduce through traffic within residential areas.
- Improve freight movement.
- Connect all activity centres.
- Improve emergency accessibility.
- Support MRTS operations.

Arterial Roads

Additional arterial roads of:

- 45 metres ROW
- 30 metres ROW

have been proposed to create a well-connected grid dividing the township into planned urban sectors.

Sector Roads

The arterial road network divides the township into sectors averaging approximately **1.25 km X 1.25 km**.

The sectors become progressively smaller around the Core Area where higher densities are proposed and gradually increase in size towards the township periphery.

Detailed internal road networks shall be prepared through subsequent Sector Plans and Zonal Plans.

9.5 Public Transport System

Public transport forms the backbone of the proposed mobility strategy.

The system comprises:

- MRTS.
- RRTS.
- Regional Rail.
- City Bus.
- Feeder Bus.
- Intermediate Public Transport.
- NMT.

The objective is to maximise public transport accessibility while reducing dependence on private vehicles.

9.6 Mass Rapid Transit System (MRTS)

The proposed **Mass Rapid Transit System (MRTS)** forms the backbone of the township's public transport network and is closely integrated with the proposed land use pattern to promote Transit-Oriented Development (TOD), reduce dependence on private vehicles and support compact urban growth.

The MRTS network is proposed along the following major corridors:

- North–South Axial Road (90 m ROW)
- East–West Axial Road (90 m ROW)
- SH-01 (60 m ROW)
- Ring Road (60 m ROW)
- Two additional 45 m ROW corridors around the Core Area to strengthen public transport accessibility in the high-density urban zone.

To ensure convenient access while maintaining operational efficiency, **MRTS stations shall generally be located at intervals of approximately 400–800 metres**, depending upon the size, density and land use characteristics of the adjoining sectors. Smaller station spacing is proposed within and around the Core Area and CBD to support higher pedestrian activity and development intensity, while comparatively wider spacing may be adopted in lower-density peripheral sectors.

The MRTS network has been planned to provide direct connectivity between the Central Business District, residential neighbourhoods, institutional areas, commercial centres, Sports City, Fintech City, industrial and logistics areas, major public facilities and regional transport nodes.

9.7 Regional Rapid Transit System (RRTS)

The proposed **Patna–Gaya–Bodh Gaya Regional Rapid Transit System (RRTS)** shall be accommodated along the **North–South Axial Road**, providing high-speed regional connectivity between Patna, the proposed township, Gaya and Bodh Gaya.

The corridor shall be integrated with the MRTS network at major interchange locations, allowing seamless transfer between regional and intra-city public transport systems. The RRTS corridor will significantly reduce regional travel times and strengthen the township's role as an important regional growth centre within the Patna Planning Area.

9.8 Transit Hubs and Multi-Modal Integration

To facilitate seamless interchange between different modes of transport, **two major Transit Hubs** are proposed within the township.

Transit Hub–I: Jat Dumri Junction

The first Transit Hub is proposed in the vicinity of the **proposed Jat Dumri Railway Junction**, where a **Multi-Modal Transit Hub (MMTH)** shall be developed. This hub will integrate:

- Indian Railways
- MRTS
- Regional Bus Services
- City Bus Services
- Intermediate Public Transport
- Taxi Services
- Park-and-Ride Facilities
- Bicycle Parking
- Pedestrian Plaza

The hub will function as the principal regional gateway to the township and facilitate efficient interchange between regional and urban transport systems.

Transit Hub–II: Central Transit Hub

The second Transit Hub is proposed at the **intersection of the North–South and East–West Axial Roads**, at the heart of the township adjacent to the CBD.

This hub shall function as the principal urban interchange, integrating:

- MRTS (North–South Corridor)
- MRTS (East–West Corridor)
- RRTS
- City Bus Services
- Feeder Bus Services
- Intermediate Public Transport

- Taxi and Ride-Sharing Facilities
- Park-and-Ride Facilities
- Pedestrian and Cycling Networks

The Central Transit Hub will serve as the primary mobility node for the township and act as the focal point of Transit-Oriented Development. High-density mixed-use development, commercial activities, offices, hospitality, retail and public spaces shall be concentrated around this hub to maximise accessibility and public transport ridership.

9.9 Transit-Oriented Development (TOD)

The proposed MRTS network forms the basis for the township's Transit-Oriented Development strategy. A TOD influence zone of approximately **500 metres** is proposed along the core MRTS corridors, particularly around stations and the two Transit Hubs.

Within the TOD Zone:

- Higher FAR and development intensity shall be permitted.
- Mixed-use development comprising residential, commercial, office, hospitality, institutional and recreational activities shall be encouraged.
- Active street frontages and pedestrian-oriented urban design shall be promoted.
- Walking and cycling shall be prioritised through continuous footpaths, dedicated cycle tracks and universal accessibility.
- Public spaces and neighbourhood amenities shall be integrated with transit stations.

Hazardous industries, heavy industries, red-category industries and other environmentally incompatible activities shall not be permitted within the TOD Zone.

9.10 Freight and Logistics Mobility

Freight movement has been planned separately from passenger transport.

The principal logistics facilities include:

- Multi Modal Logistics Park.
- Truck Terminal.
- Warehousing Hub.
- Railway Freight Terminal.
- Industrial Hub.

These facilities are concentrated near the railway bypass, **Gawaspur Halt**, NH-119D and NH-131G to minimise heavy vehicle movement through residential areas.

9.11 Non-Motorised Transport (NMT)

The township shall adopt a Complete Streets approach.

All Master Plan roads shall incorporate:

- Continuous footpaths.
- Dedicated cycle tracks.
- Universal accessibility.
- Safe pedestrian crossings.
- Street furniture.
- Landscaping.
- Street lighting.

A network of greenways shall connect residential sectors, parks, educational institutions and transit stations.

9.12 Intelligent Transport Systems

The township shall incorporate Smart Mobility technologies including:

- Adaptive traffic signals.
- Area Traffic Control.
- Smart parking.
- Integrated ticketing.
- Passenger Information Systems.
- CCTV surveillance.
- Traffic Management Centre.
- EV charging infrastructure.
- Mobility-as-a-Service platforms.

9.13 Parking Strategy

The parking strategy promotes efficient land use while discouraging excessive private vehicle dependence.

Key measures include:

- Structured parking in the CBD.
- Park-and-Ride facilities at MRTS and RRTS stations.
- Shared parking within mixed-use areas.

- EV charging facilities.
- Smart parking management systems.

9.14 Mobility Implementation Strategy

The mobility framework shall be implemented in phases aligned with urban development.

Phase I

- Axial Roads.
- Ring Road.
- SH-01 widening.
- Initial MRTS corridors.
- Transit Hub.
- Primary logistics infrastructure.

Phase II

- Additional MRTS corridors.
- RRTS integration.
- Sector road development.
- NMT network.
- Smart mobility systems.

Phase III

- Expansion of transit services.
- Additional logistics facilities.
- Intelligent transport upgrades.
- Future mobility technologies.

This integrated MRTS–TOD framework will create compact, walkable and transit-oriented urban centres, reduce reliance on private vehicles, optimise infrastructure investment and support sustainable long-term urban growth.

CHAPTER 10: ECONOMIC DEVELOPMENT STRATEGY

10.1 Introduction

The Patliputra Greenfield Satellite Township is envisioned not merely as a residential settlement but as a major economic growth centre that will diversify the economy of the Patna Planning Area and contribute to the long-term economic transformation of Bihar. The Economic Development Strategy aims to establish a balanced urban economy by promoting employment-intensive sectors, knowledge-based industries, manufacturing, logistics, services, tourism and innovation.

The proposed economic framework seeks to reduce dependence on a single economic sector by creating a diversified economic base supported by world-class infrastructure, efficient transportation networks, skilled human resources and an enabling business environment. The strategy also leverages the township's strategic location along major national highways, the Amas–Darbhanga Expressway, railway network, MRTS, RRTS and proximity to Patna to attract domestic and international investment.

10.2 Vision

To develop the Patliputra Greenfield Satellite Township as a **globally competitive, innovation-driven and employment-intensive economic hub** that supports sustainable economic growth, enhances regional competitiveness and contributes significantly to the economic development of the Patna Planning Area and the State of Bihar.

10.3 Economic Development Objectives

The strategy seeks to:

- Create a diversified and resilient economic base.
- Generate high-quality employment across multiple sectors.
- Promote industrialisation and value addition.
- Develop Bihar's premier knowledge and innovation ecosystem.
- Strengthen logistics and supply chain infrastructure.
- Attract domestic and foreign investment.
- Promote entrepreneurship, start-ups and MSMEs.

- Support transit-oriented commercial development.
- Encourage tourism, sports and convention-based economic activities.
- Improve ease of doing business through integrated planning and digital governance.

10.4 Economic Structure

The township has been planned around multiple complementary economic sectors to ensure balanced employment generation and long-term resilience.

The major economic drivers include:

- Financial and Business Services
- Information Technology and IT-enabled Services
- Manufacturing Industries
- Agro-based Industries
- Logistics and Warehousing
- Research and Innovation
- Education
- Healthcare
- Sports Economy
- Tourism and Hospitality
- Government Administration
- Retail and Commercial Services
- Creative and Cultural Industries

Together, these sectors are expected to create a diversified employment base catering to both skilled and semi-skilled workforce.

10.5 Major Economic Growth Engines

10.5.1 Central Business District (CBD)

The CBD shall function as the primary commercial, financial and administrative centre of the township and accommodate:

- Corporate offices
- Financial institutions
- Business parks
- Hotels
- Convention and Exhibition Centre
- Retail and entertainment
- Mixed-use commercial development

The CBD will serve as the principal employment hub and benefit from direct connectivity to the MRTS and RRTS networks.

10.5.2 Fintech City

The proposed Fintech City will position the township as a centre for digital finance, financial technology, artificial intelligence, cybersecurity, fintech innovation and knowledge-based services.

The development shall encourage:

- Financial institutions
- Global Capability Centres (GCCs)
- Fintech companies
- IT and IT-enabled services
- Data centres
- Innovation and incubation centres
- Research institutions

10.5.3 Industrial Development

Industrial development shall focus on clean, modern and employment-intensive industries.

Priority sectors include:

- Electronics
- Engineering
- Pharmaceuticals
- Medical devices
- Electrical equipment
- Renewable energy components
- Building materials
- MSMEs

Industries shall adopt environmentally sustainable technologies and comply with applicable environmental standards.

10.5.4 Agro-Based Industrial Cluster

The township will leverage Bihar's agricultural economy by promoting:

- Food processing
- Cold chain infrastructure
- Warehousing
- Packaging industries
- Seed processing
- Agricultural machinery
- Agri-logistics
- Value addition for horticultural products

The cluster shall strengthen market linkages between rural producers and urban consumers while generating rural non-farm employment.

10.5.5 Logistics and Warehousing Hub

The proposed Logistics Hub, located near the railway bypass and the Amas–Darbhanga Expressway, will serve as a major freight distribution centre for the region.

Key components include:

- Multi-modal logistics facilities
- Warehousing
- Freight terminals
- Truck terminals
- Cold storage
- Distribution centres
- E-commerce fulfilment centres

The logistics ecosystem will support industrial development and regional trade.

10.5.6 Education and Knowledge Economy

Higher educational institutions, universities, coaching hubs, research centres and skill development institutes shall form an important component of the township's knowledge economy.

These institutions will:

- Produce skilled human resources.
- Promote research and innovation.
- Encourage industry-academia collaboration.
- Support entrepreneurship.
- Attract national and international students.

10.5.7 Healthcare Economy

The development of multi-speciality hospitals, medical colleges, research institutions and allied healthcare facilities will establish the township as a regional healthcare destination, generating employment in medical services, diagnostics, biotechnology, pharmaceuticals and medical education.

10.5.8 Sports and Recreation Economy

The proposed Sports City and associated sports infrastructure will support:

- National and international sporting events.
- Sports academies.

- Sports medicine.
- Training centres.
- Sports tourism.
- Recreation and wellness industries.

10.5.9 Tourism, Hospitality and Convention Economy

The township's proximity to Patna, Bodh Gaya, Nalanda and Vaishali provides opportunities to develop tourism-related economic activities.

The strategy promotes:

- Hotels
- Convention centres
- Exhibition facilities
- Cultural tourism
- Religious tourism
- Business tourism
- Entertainment and recreation

10.6 Employment Generation Strategy

The township aims to create a balanced employment structure by distributing employment centres throughout the urban area while concentrating high-order economic activities within the CBD and major transit corridors.

Employment shall be generated through:

- Commercial activities.
- Industrial development.
- Logistics.
- Government institutions.
- Educational institutions.
- Healthcare services.
- Tourism.
- Sports infrastructure.
- Construction sector.
- Urban services.
- Knowledge industries.

This diversified structure is expected to provide employment opportunities across different skill levels and income groups.

10.7 Investment Promotion Strategy

To attract private and institutional investment, the township shall promote:

- Plug-and-play industrial infrastructure.
- Ready-to-develop commercial districts.
- Digital infrastructure.
- Transit-oriented business districts.
- Public-Private Partnerships (PPP).
- Single-window approvals.
- Ease of Doing Business reforms.
- Innovation and start-up ecosystems.
- Sustainable and green development practices.

10.8 Innovation and Entrepreneurship

Innovation shall be promoted through:

- Incubation centres.
- Research parks.
- Start-up hubs.
- Technology transfer centres.
- University-industry collaboration.
- Digital innovation labs.
- Skill development centres.

Special emphasis shall be placed on fintech, urban technologies, clean technologies, agri-tech, health-tech and artificial intelligence.

10.9 Phasing of Economic Development

Economic development shall be implemented in a phased manner aligned with infrastructure availability and population growth.

- **Phase I:** CBD, Logistics Hub, Agro-based Industries, initial commercial corridors, Fintech City and government administrative complex.
- **Phase II:** Industrial parks, universities, healthcare hub, convention centre, sports infrastructure and expanded commercial districts.
- **Phase III:** Advanced manufacturing, research and innovation ecosystem, international business districts, tourism infrastructure and emerging technology sectors.

10.10 Economic Development Framework

The Economic Development Strategy establishes a diversified and resilient economic foundation for the Patliputra Greenfield Satellite Township by integrating commercial, industrial, institutional, logistics, knowledge and service sectors with high-quality infrastructure and multimodal transportation. The strategic location of the township, coupled with its planned urban structure and world-class connectivity, positions it to become a major economic engine for the Patna Planning Area and the State of Bihar, generating large-scale employment, attracting investment and supporting sustainable economic growth up to the horizon year **2047**.

CHAPTER 11: ENVIRONMENT, BLUE-GREEN INFRASTRUCTURE & CLIMATE RESILIENCE

11.1 Introduction

The Environment, Blue-Green Infrastructure and Climate Resilience Framework establishes a comprehensive strategy for conserving natural ecosystems, enhancing environmental quality and building resilience against climate change within the Patliputra Greenfield Satellite Township. The framework integrates rivers, wetlands, canals, green corridors, parks, forests and open spaces into a continuous ecological network that functions as critical urban infrastructure for water management, biodiversity conservation, recreation and climate adaptation.

Recognising the increasing risks associated with flooding, urban heat island effects, groundwater depletion and environmental degradation, the proposed framework adopts a nature-based planning approach that harmonises urban development with natural systems. The Blue-Green Infrastructure Network forms an integral component of the township's spatial structure and supports sustainable urban growth while enhancing environmental resilience and quality of life.

11.2 Planning Objectives

The objectives of the environmental framework are to:

- Conserve natural ecosystems and environmentally sensitive areas.
- Establish an interconnected Blue-Green Infrastructure Network.
- Improve flood resilience and urban drainage.
- Enhance groundwater recharge and water security.
- Increase urban green cover and biodiversity.
- Mitigate urban heat island effects.
- Promote sustainable water management.
- Improve environmental quality and public health.
- Integrate recreation with ecological conservation.
- Build resilience to climate change and extreme weather events.

11.3 Environmental Framework

The environmental structure of the township is based on the integration of natural and man-made ecological assets, including:

- Punpun River.
- Dardha River.
- Phalgu River.
- Existing ponds and wetlands.
- Ahar-Pyne irrigation system.
- Natural drainage channels.
- Existing orchards.
- Dense vegetation.
- Green belts.
- Urban forests.
- Recreational parks.
- Central Park and Central Lake.

Together, these elements create a continuous ecological network that supports both environmental conservation and urban development.

11.4 Blue-Green Infrastructure Strategy

The township adopts a Blue-Green Infrastructure approach, wherein water bodies, drainage systems, parks and green corridors are planned as interconnected infrastructure rather than isolated environmental features.

The Blue-Green Network performs multiple functions, including:

- Flood mitigation.
- Stormwater conveyance and storage.
- Groundwater recharge.
- Biodiversity conservation.
- Carbon sequestration.
- Urban cooling.
- Recreational opportunities.
- Landscape enhancement.
- Ecological connectivity.

The network also strengthens the township's visual identity and enhances the quality of the urban environment.

11.5 River Conservation and Riparian Corridors

The **Punpun, Dardha and Phalgu Rivers** constitute the primary blue infrastructure of the township.

Continuous riparian buffers shall be maintained along these rivers to:

- Preserve natural floodplains.
- Protect riverine ecosystems.
- Improve water quality.
- Prevent encroachment.
- Create ecological corridors.
- Develop public open spaces and recreational trails where environmentally appropriate.

Riverfront development shall prioritise ecological restoration and public access while avoiding intensive urban development within designated flood-prone areas.

11.6 Retention Reservoir and Integrated Water Management

A major **Retention Reservoir** is proposed at the confluence of the **Punpun and Dardha Rivers**, utilising the naturally low-lying terrain.

The reservoir has been planned to:

- Store approximately **25 billion litres** of water.
- Provide emergency water storage for approximately one month's demand at the township's design population of **66.1 lakh**.
- Moderate flood peaks during extreme rainfall events.
- Recharge groundwater.
- Maintain ecological flows.
- Enhance landscape quality.
- Support recreational and tourism activities.

The reservoir shall be replenished through stormwater harvesting and regulated inflows from the Punpun River and, where technically feasible, the Ganga River.

11.7 Ahar-Pyne System and Urban Drainage

The traditional **Ahar-Pyne** system represents a valuable component of Bihar's indigenous water management heritage and shall be preserved and integrated into the township's drainage network.

The system shall function as:

- Primary stormwater conveyance network.
- Groundwater recharge system.
- Flood moderation infrastructure.
- Ecological corridor.
- Landscape feature.

Existing Ahars and Pynes shall be conserved, rehabilitated and interconnected with the proposed urban drainage system to maximise hydraulic efficiency and ecological benefits.

11.8 Green Infrastructure Network

The proposed Green Infrastructure Network comprises:

- Green belts.
- Urban forests.
- Central Park.
- Sector parks.
- Neighbourhood parks.
- Riverfront greenways.
- Roadside plantations.
- Green buffers.
- Urban agriculture.
- Biodiversity parks.
- Landscape corridors.

These green spaces shall function collectively to improve environmental quality, promote recreation and enhance climate resilience.

11.9 Biodiversity Conservation

Existing ecological assets, including orchards, wetlands, ponds, natural vegetation and wildlife habitats, shall be conserved to the maximum extent practicable.

Key strategies include:

- Protection of existing tree cover.
- Conservation of wetlands.
- Native species plantation.

- Ecological restoration.
- Habitat connectivity.
- Invasive species management.
- Biodiversity monitoring.

11.10 Urban Forestry and Green Belt Development

Urban forestry shall play a central role in improving environmental quality and mitigating climate change. Tree plantation shall be undertaken along:

- Expressways.
- National Highways.
- State Highways.
- Axial Roads.
- Ring Road.
- MRTS corridors.
- Parks.
- Institutional campuses.
- River corridors.
- Utility corridors.

The proposed Green Belt surrounding environmentally sensitive areas and selected development edges shall help preserve ecological integrity, reduce air pollution and moderate urban temperatures.

11.11 Climate Change Adaptation and Resilience

The township adopts a comprehensive climate resilience strategy incorporating both structural and nature-based solutions.

Key measures include:

- Flood-resilient land use planning.
- Sponge City principles.
- Blue-Green Infrastructure.
- Climate-responsive urban design.
- Urban heat island mitigation.
- Rainwater harvesting.
- Groundwater recharge.
- Water-sensitive urban design.
- Energy-efficient public infrastructure.
- Emergency water storage.
- Climate-resilient landscaping.

11.12 Sustainable Water Management

Water resources shall be managed through an integrated urban water management approach.

The strategy includes:

- Rainwater harvesting.
- Surface water conservation.
- Groundwater recharge.
- Wastewater recycling.
- Reuse of treated wastewater.
- Water-efficient landscaping.
- Smart water management systems.
- Reduction of non-revenue water.

The objective is to reduce dependence on groundwater while improving long-term water security.

11.13 Environmental Quality Management

Environmental management shall include measures for:

- Air quality improvement.
- Noise mitigation.
- Water quality monitoring.
- Soil conservation.
- Construction and demolition waste management.
- Solid waste segregation and scientific disposal.
- Pollution prevention.
- Environmental monitoring.

Appropriate environmental buffers shall be maintained around utilities, transportation corridors and industrial areas to minimise adverse environmental impacts.

11.14 Renewable Energy and Low-Carbon Development

The township shall promote low-carbon urban development through:

- Solar photovoltaic systems on public and private buildings.

- Rooftop solar programmes.
- Energy-efficient street lighting.
- Electric vehicle charging infrastructure.
- Green building practices.
- District cooling opportunities for major commercial and institutional developments, where feasible.
- Energy-efficient municipal infrastructure.

These measures will contribute to reducing greenhouse gas emissions and improving long-term energy sustainability.

11.15 Environmental Management and Implementation

The environmental framework shall be implemented in conjunction with the land use plan, infrastructure development and sector planning. Detailed environmental management plans shall be prepared during subsequent planning and project implementation stages to ensure effective conservation of natural resources, protection of ecological assets and compliance with applicable environmental regulations.

The Blue-Green Infrastructure Network shall be developed as a continuous and interconnected system, with priority accorded to river restoration, the retention reservoir, Ahar-Pyne rehabilitation, urban forestry and ecological corridors during the initial phases of township development.

11.16 Environmental Framework

The proposed Environment, Blue-Green Infrastructure and Climate Resilience Framework establishes a nature-based planning approach that integrates ecological conservation with urban development. By combining rivers, wetlands, traditional water systems, green corridors, parks, urban forests and climate-responsive infrastructure into a unified environmental network, the framework enhances flood resilience, water security, biodiversity, environmental quality and public health while supporting sustainable urbanisation. This integrated approach positions the Patliputra Greenfield Satellite Township as a climate-resilient and environmentally sustainable model for future urban development in Bihar.

CHAPTER 12: DIGITAL INFRASTRUCTURE & SMART URBAN SYSTEMS

12.1 Introduction

The Patliputra Greenfield Satellite Township is envisioned as a digitally enabled, data-driven and citizen-centric city where digital infrastructure is integrated with the physical and social infrastructure from the planning stage. The Digital Infrastructure and Smart Urban Systems Framework aims to leverage advanced information and communication technologies (ICT), artificial intelligence (AI), Internet of Things (IoT), Geographic Information Systems (GIS), Building Information Modelling (BIM), digital twins and intelligent automation to enhance urban governance, infrastructure management, public service delivery and quality of life.

The framework supports the development of an efficient, resilient and sustainable urban ecosystem by enabling real-time monitoring, predictive analytics, integrated service delivery and evidence-based decision-making.

12.2 Vision

To develop the Patliputra Greenfield Satellite Township as a **digital-first, smart and resilient city**, where technology enhances governance, infrastructure efficiency, economic competitiveness, environmental sustainability and citizen well-being.

12.3 Planning Objectives

The Digital Infrastructure Framework seeks to:

- Develop a city-wide digital backbone.
- Enable integrated urban governance.
- Improve efficiency of municipal services.
- Promote data-driven planning and decision-making.
- Enhance public safety and emergency response.
- Improve resource efficiency through smart utilities.
- Facilitate digital inclusion and universal connectivity.
- Promote innovation, research and entrepreneurship.
- Strengthen cyber resilience and data security.
- Support future technological advancements.

12.4 Digital Infrastructure Backbone

The township shall be supported by a robust digital infrastructure network comprising:

- City-wide Optical Fibre Network (OFC).
- High-speed broadband connectivity.
- 5G/6G-ready telecommunications infrastructure.
- Common Utility Ducts for ICT networks.
- Data Centres and Edge Computing Facilities.
- Public Wi-Fi in major public spaces.
- Smart poles integrating communication, lighting and surveillance.
- Internet of Things (IoT) sensor networks.

Digital infrastructure shall be integrated with utility corridors and transportation infrastructure to facilitate future expansion and minimise repeated excavation.

12.5 Multi-Utility Tunnel (MUT) System

The Patliputra Greenfield Satellite Township shall adopt a comprehensive Multi-Utility Tunnel (MUT) System beneath the major road network to accommodate critical urban utility infrastructure in an integrated, accessible and future-ready manner. The Multi-Utility Tunnel shall eliminate the need for repeated road excavation for installation, maintenance or upgrading of underground services, thereby improving operational efficiency, reducing lifecycle costs and enhancing urban resilience.

The Multi-Utility Tunnel network shall be developed along the 90 m Axial Roads, 60 m Ring Road, National Highways, State Highways and other major arterial roads, with provision for future extension into important commercial, institutional and high-density urban areas, wherever technically and economically feasible.

The Multi-Utility Tunnel shall accommodate, as appropriate:

- Water Supply Mains.
- Recycled Water Distribution Network.
- Sewerage Trunk Mains.
- Stormwater Utility Services (where feasible).
- Electrical Power Distribution Cables.
- High-Voltage Transmission Cables.
- Optical Fibre Network.
- Telecommunications Infrastructure.
- Gas Distribution Pipelines (where applicable).
- District Cooling Distribution Pipelines.
- Smart City Sensor Networks.

- CCTV and Surveillance Network.
- Intelligent Transport System (ITS) Communication Cables.
- SCADA and Utility Control Networks.
- Future Utility Infrastructure.

The tunnels shall be designed with adequate access passages, ventilation, lighting, fire detection and suppression systems, drainage arrangements, safety provisions and maintenance access to facilitate safe inspection and repair without disturbing surface traffic or public activities.

The Multi-Utility Tunnel shall be integrated with the Integrated Command, Control and Communication Centre (ICCC), enabling real-time monitoring of utility assets through IoT sensors, Supervisory Control and Data Acquisition (SCADA) systems and digital asset management platforms. The tunnel network shall also support future technologies and utility expansion without requiring major reconstruction of surface infrastructure.

The development of the Multi-Utility Tunnel shall be undertaken concurrently with the construction of the primary road network and utility corridors to optimise construction costs and minimise future disruptions. Detailed engineering design, construction standards and operation and maintenance protocols shall be prepared during the infrastructure planning stage.

12.6 Integrated Command, Control and Communication Centre (ICCC)

An **Integrated Command, Control and Communication Centre (ICCC)** shall serve as the central digital operations hub for the township.

The ICCC shall integrate and monitor:

- Traffic Management.
- Public Transport Operations.
- Water Supply System.
- Sewerage Network.
- Storm Water Drainage.
- Solid Waste Management.
- Street Lighting.
- Environmental Monitoring.
- Public Safety and Surveillance.
- Disaster Management.
- Emergency Response.
- Utility Infrastructure.
- Citizen Service Delivery.

The ICCC shall support real-time monitoring, predictive analytics and coordinated decision-making across municipal departments.

12.7 Smart Governance

The township shall adopt an integrated e-Governance platform providing digital access to municipal services through a unified citizen interface.

The platform shall include:

- Online building plan approval.
- Property tax management.
- Trade and business licensing.
- Water and sewerage connections.
- Grievance redressal.
- Citizen service portal.
- GIS-based land information.
- Development permission management.
- Digital document management.
- Online payment systems.
- Mobile governance applications.

Municipal services shall be designed on a paperless, transparent and citizen-centric governance model.

12.8 GIS-Based Urban Management

A city-wide **Geographic Information System (GIS)** shall function as the spatial decision-support platform for planning, infrastructure management and urban governance.

The GIS platform shall support:

- Land use management.
- Property mapping.
- Infrastructure asset management.
- Utility network mapping.
- Environmental monitoring.
- Disaster risk assessment.
- Development permission monitoring.
- Urban analytics.
- Revenue administration.
- Master Plan implementation.

The GIS database shall be continuously updated to support evidence-based planning and policy decisions.

12.9 Digital Twin Platform

A Digital Twin of the township shall be developed to create a dynamic virtual representation of the city's physical assets, infrastructure and urban systems.

The Digital Twin shall enable:

- Urban simulation.
- Infrastructure performance monitoring.
- Predictive maintenance.
- Scenario analysis.
- Traffic modelling.
- Flood modelling.
- Utility optimisation.
- Climate resilience assessment.
- Development monitoring.

The platform shall facilitate proactive urban management throughout the lifecycle of the township.

12.10 Smart Utility Infrastructure

The township shall adopt advanced utility systems that enhance operational efficiency, optimise resource consumption and minimise environmental impacts. Smart utility infrastructure shall be integrated with the city-wide digital platform and monitored through the Integrated Command, Control and Communication Centre (ICCC).

12.10.1 Smart Water Supply

The water supply system shall incorporate:

- SCADA-based operation and monitoring.
- Smart water metering.
- Pressure management.
- Leak detection and non-revenue water reduction.
- Real-time water quality monitoring.
- Automated pumping stations.

12.10.2 Smart Sewerage and Drainage

The sewerage and stormwater systems shall incorporate:

- Smart pumping stations.

- Flow monitoring sensors.
- Automated gate control.
- Flood forecasting and early warning systems.
- Integrated stormwater management through the Blue-Green Infrastructure Network.

12.10.3 Smart Solid Waste Management

The township shall adopt an integrated solid waste management system based on waste minimisation, segregation, resource recovery and intelligent collection technologies.

A **Pneumatic Waste Collection System (PWCS)** may be developed for high-density urban areas, particularly within the **Central Business District (CBD), Transit-Oriented Development (TOD) Zones, Public Purpose Areas and high-density residential sectors**. Under this system, municipal solid waste shall be conveyed through an underground network of pneumatic pipelines from designated waste inlets to central collection stations using controlled vacuum pressure, thereby reducing dependence on conventional door-to-door waste transportation.

To optimise operational efficiency and capital investment, **one Pneumatic Waste Collection System may serve a cluster of adjoining sectors**, with each collection station catering to multiple urban sectors depending on development density, waste generation and service radius.

The system shall provide the following benefits:

- Elimination of frequent waste collection vehicles within residential areas.
- Improved urban sanitation and public hygiene.
- Reduction in traffic congestion associated with waste collection.
- Lower greenhouse gas emissions and fuel consumption.
- Improved worker safety.
- Better aesthetics and urban environment.
- Real-time monitoring of waste generation and system performance through the ICCC.

Conventional collection systems may continue to serve lower-density peripheral areas until development intensity justifies expansion of the pneumatic network.

12.10.4 Smart Energy Infrastructure

The township shall promote an intelligent energy management system integrating conventional and renewable energy sources through smart grid technologies.

Key initiatives include:

- Smart electricity meters.

- Smart grid infrastructure.
- Rooftop solar photovoltaic systems.
- Battery energy storage, where feasible.
- Intelligent street lighting.
- Demand-side energy management.
- Electric vehicle charging infrastructure.

District Cooling System

A **District Cooling System (DCS)** shall be developed for major Government buildings and institutional complexes located within the **Public Purpose Land Use Zone**. The system shall utilise centralised chilled water production and distribution to serve multiple government offices and public institutions through a common cooling network.

The District Cooling System is expected to:

- Improve overall energy efficiency.
- Reduce electricity consumption during peak demand.
- Lower lifecycle operating costs.
- Reduce greenhouse gas emissions.
- Minimise the need for individual air-conditioning systems.
- Improve reliability and ease of maintenance.
- Support the township's low-carbon development objectives.

The system may be progressively expanded to other high-density commercial and institutional developments where economically and technically feasible.

12.11 Intelligent Mobility Systems

Digital technologies shall support efficient urban mobility through:

- Adaptive traffic signal control.
- Area Traffic Control (ATC).
- Intelligent Transport Systems (ITS).
- Smart parking management.
- Integrated public transport information.
- Common Mobility Card and digital ticketing.
- Real-time passenger information systems.
- Fleet management.
- EV charging management.
- Mobility-as-a-Service (MaaS) platform.

These systems shall be integrated with the ICCC for coordinated transport operations.

12.12 Public Safety and Emergency Management

Smart technologies shall strengthen urban safety through:

- Integrated CCTV surveillance.
- AI-enabled video analytics.
- Intelligent emergency response systems.
- Disaster early warning systems.
- Emergency communication network.
- Smart street lighting.
- Incident management platform.
- Public address systems.
- Emergency call boxes.
- Drone-assisted emergency response, where appropriate.

12.13 Environmental Monitoring Systems

Real-time environmental monitoring shall include:

- Air quality monitoring.
- Water quality monitoring.
- Noise monitoring.
- Weather monitoring.
- Heat island assessment.
- River water level monitoring.
- Groundwater monitoring.
- Flood forecasting systems.

Environmental data shall support climate resilience planning and regulatory compliance.

12.14 Innovation and Digital Economy

The township shall promote innovation through:

- Fintech City.
- Innovation Districts.
- Research and Development Centres.
- Technology Incubators.
- Start-up Ecosystem.
- Artificial Intelligence Research.
- Urban Technology Laboratories.
- Digital Skills Development Centres.

The digital ecosystem shall strengthen knowledge-based industries and high-value employment.

12.15 Cyber Security and Data Governance

The Digital Infrastructure Framework shall adopt robust cyber security measures to protect critical infrastructure, municipal systems and citizen data.

The framework shall include:

- Cyber security architecture.
- Secure cloud infrastructure.
- Data governance policy.
- Privacy protection mechanisms.
- Business continuity planning.
- Disaster recovery systems.
- Secure digital identity management.
- Compliance with applicable national standards and regulations.

12.16 Implementation Strategy

Digital infrastructure and smart utility systems shall be developed concurrently with physical infrastructure to avoid future retrofitting and to maximise lifecycle efficiency. Common utility ducts, optical fibre networks, smart poles, sensor infrastructure and utility corridors shall be installed during the initial phases of road construction.

The implementation strategy shall prioritise:

- Development of the Integrated Command, Control and Communication Centre (ICCC).
- City-wide optical fibre and digital communication backbone.
- GIS-based asset management and Digital Twin platform.
- Smart utility infrastructure for water supply, sewerage, drainage and power systems.
- **Implementation of the District Cooling System within the Government Administrative Complex and other Public Purpose Areas during the initial development phases.**
- **Phased development of the Pneumatic Waste Collection System, beginning with the CBD, TOD Zones and high-density urban sectors, with each collection station designed to serve multiple adjoining sectors.**
- Adoption of interoperable, open-standard and cyber-secure technologies to enable future expansion and integration.

The Digital Infrastructure Framework shall remain scalable and technology-neutral, allowing incorporation of emerging technologies and evolving service requirements throughout the development horizon up to **2047**.

CHAPTER 13: IMPLEMENTATION, PHASING & INVESTMENT STRATEGY

13.1 Introduction

The successful implementation of the Patliputra Greenfield Satellite Township requires a coordinated approach involving institutional governance, phased infrastructure development, sustainable financing mechanisms and effective land management. This chapter establishes the implementation framework for translating the Development Plan into a functional, economically viable and sustainable urban settlement.

The implementation strategy recognises that the township will be developed over a long-term planning horizon extending to the year 2047. Accordingly, development shall be undertaken in carefully sequenced phases aligned with population growth, infrastructure readiness, market demand and investment availability.

13.2 Implementation Objectives

The implementation framework seeks to:

- Ensure planned and coordinated urban development.
- Provide infrastructure ahead of development demand.
- Promote efficient utilisation of public investment.
- Encourage private sector participation.
- Create financially sustainable implementation mechanisms.
- Facilitate timely delivery of urban infrastructure.
- Ensure transparent governance and monitoring.
- Support climate-resilient and technology-enabled development.

13.3 Institutional Framework

The implementation of the Development Plan shall involve coordinated action among State Government departments, statutory authorities, Urban Local Bodies and private sector stakeholders.

The principal implementing agencies shall include:

- Urban Development & Housing Department, Government of Bihar.
- Bihar Urban Infrastructure Development Corporation (where applicable).
- Bihar State Housing Board (where applicable).
- Bihar Industrial Area Development Authority (for industrial areas, where applicable).
- Road Construction Department.
- Water Resources Department.
- Energy Department.
- Bihar State Power Holding Company Limited.
- Public Health Engineering Department.
- Bihar State Pollution Control Board.
- Patna District Administration.
- Patliputra Greenfield Satellite Township Development Authority (or any Special Purpose Vehicle/Development Authority constituted by the Government).
- Private Developers through Public-Private Partnership (PPP) and other approved development models.

A dedicated Development Authority or Special Purpose Vehicle (SPV) is recommended to coordinate planning, land development, infrastructure implementation, investment facilitation and project monitoring.

13.4 Land Development Strategy

Land assembly and development shall be undertaken through a combination of statutory and market-based mechanisms.

The principal implementation mechanisms may include:

- Direct land acquisition under applicable laws.
- Town Planning Schemes (Land Pooling/Reconstitution).
- Negotiated purchase.
- Public land development.
- Joint development.
- Public-Private Partnerships (PPP).
- Special Area Development Schemes.

The selection of the implementation mechanism shall depend upon land ownership, development priorities, project feasibility and statutory provisions.

13.5 Infrastructure Development Strategy

Infrastructure development shall precede or progress concurrently with urban development to ensure orderly growth.

Priority infrastructure shall include:

- Regional road connectivity.
- Axial roads.
- Ring Road.
- MRTS.
- RRTS integration.
- Water supply system.
- Sewerage network.
- Stormwater drainage.
- Power supply.
- Digital infrastructure.
- Common utility corridors.
- Blue-Green Infrastructure.
- Social infrastructure.
- Public utilities.

Integrated utility corridors shall be developed wherever feasible to minimise future excavation and facilitate maintenance.

13.6 Development Phasing

The township shall be developed in a phased manner to optimise investment, infrastructure provision and market absorption.

Phase I – Foundation Phase (0–5 Years)

Priority shall be accorded to establishing the primary urban framework, including:

- Land assembly and statutory clearances.
- Development Authority/SPV establishment.
- Core Area development.
- Central Business District (initial phase).
- North–South and East–West Axial Roads.
- Initial section of the Ring Road.
- Upgradation of SH-01.
- Water supply and sewerage trunk infrastructure.
- Power supply and utility corridors.
- Integrated Command, Control and Communication Centre (ICCC).
- Jat Dumri Transit Hub.
- Initial MRTS corridors.
- Government Administrative Complex.

- Initial Public Purpose facilities.
- Retention Reservoir and Blue-Green Infrastructure.
- Logistics Hub (Phase I).

Phase II – Expansion Phase (5–10 Years)

The second phase shall focus on expansion of residential neighbourhoods, employment centres and public services.

Priority projects include:

- Expansion of the CBD.
- Completion of the Ring Road.
- Additional MRTS corridors.
- Central Transit Hub at the intersection of the North–South and East–West Axial Roads.
- Industrial Hub.
- Fintech City.
- Educational institutions.
- Healthcare facilities.
- Sports City.
- Public parks and recreation facilities.
- District Cooling System for the Government Administrative Complex.
- Initial Pneumatic Waste Collection System in the CBD, TOD Zones and high-density sectors.

Phase III – Consolidation Phase (10–20 Years)

The final phase shall consolidate the township into a fully developed metropolitan centre.

Priority projects include:

- Full build-out of residential sectors.
- Expansion of commercial districts.
- RRTS integration.
- Universities and research institutions.
- Convention and exhibition facilities.
- Tourism and hospitality infrastructure.
- Expansion of the Pneumatic Waste Collection System to additional urban sectors.
- Expansion of District Cooling Systems to major institutional and commercial precincts, where feasible.
- Advanced digital infrastructure and smart city systems.
- Completion of Green Belt and environmental enhancement projects.

Development phasing may be reviewed periodically based on population growth, investment trends, infrastructure capacity and emerging development priorities.

13.7 Investment Strategy

Implementation of the township shall require substantial public and private investment over the planning period.

Potential sources of finance include:

- State Government funding.
- Government of India schemes.
- Multilateral and bilateral financial institutions.
- Infrastructure finance institutions.
- Municipal borrowing.
- Public-Private Partnerships (PPP).
- Institutional investment.
- Private sector investment.
- Land value monetisation.
- Development charges.
- Betterment levy.
- External development charges.
- User charges.
- Lease premium and land disposal proceeds.
- Green and climate finance.

Investment shall be prioritised towards catalytic infrastructure that stimulates subsequent private sector development.

13.8 Land Value Capture Financing

The township presents significant opportunities for financing infrastructure through Land Value Capture (LVC) mechanisms arising from planned urbanisation and public investment.

Potential instruments include:

- Premium Floor Area Ratio (FAR) charges.
- Betterment Levy.
- Impact Fees.
- Development Charges.
- Transferable Development Rights (TDR), where applicable.
- Sale and lease of serviced land.
- Joint Development Agreements.
- Transit-Oriented Development premiums.

- Commercial development rights around transit stations.
- Land value appreciation resulting from infrastructure investments.

Revenue generated through these mechanisms shall be reinvested in infrastructure, public amenities and environmental improvements.

13.9 Public-Private Partnership Strategy

Public-Private Partnerships shall be encouraged for the planning, development, financing, operation and maintenance of suitable urban infrastructure and public facilities.

Potential PPP sectors include:

- MRTS station area development.
- Commercial districts.
- Affordable housing.
- Multi-level parking.
- Logistics parks.
- Sports infrastructure.
- Convention centres.
- Smart utilities.
- Renewable energy.
- District Cooling Systems.
- Pneumatic Waste Collection Systems.
- Digital infrastructure.
- Public amenities and recreational facilities.

PPP projects shall be undertaken in accordance with applicable Government policies and procurement frameworks.

13.10 Monitoring, Review and Plan Revision

Implementation of the Development Plan shall be monitored through a GIS-based planning information system integrated with the Digital Twin and the Integrated Command, Control and Communication Centre (ICCC).

Key Performance Indicators (KPIs) may include:

- Population accommodated.
- Housing delivery.
- Employment generation.
- Infrastructure coverage.
- Public transport modal share.
- Water supply coverage.
- Sewerage coverage.

- Green cover.
- Open space provision.
- Investment mobilised.
- Climate resilience indicators.
- Digital service delivery performance.

The Development Plan should be reviewed at intervals not exceeding **five years**, or earlier if required, to respond to changing demographic trends, technological advancements, environmental considerations and policy priorities.

13.11 Implementation Framework

The successful development of the Patliputra Greenfield Satellite Township will depend upon timely infrastructure provision, coordinated institutional action and sustainable financing. The implementation framework integrates phased development, diversified investment mechanisms, innovative land value capture instruments, Public-Private Partnerships and digital monitoring systems to ensure orderly urban growth. By aligning infrastructure investment with land development and economic expansion, the framework provides a practical roadmap for transforming the Development Plan into a vibrant, resilient and economically competitive Greenfield city by the year **2047**.

CHAPTER 14: DEVELOPMENT CONTROL REGULATION & URBAN DESIGN GUIDELINE

14.1 Introduction

The Development Control Regulations (DCR) establish the statutory framework for regulating development within the Patliputra Greenfield Satellite Township Special Area. These regulations are intended to ensure orderly, sustainable and high-quality urban development in conformity with the objectives of the Development Plan–2047.

Unless specifically provided otherwise in this Development Plan, all development within the Special Area shall be governed by the provisions of the **Bihar Building Bye-Laws, 2014**, as amended from time to time, and other applicable laws, rules and regulations.

The provisions contained in this Chapter shall form part of the Development Control Regulations for the Special Area and, to the extent of any inconsistency, **shall prevail over the corresponding provisions of the Bihar Building Bye-Laws, 2014.**

14.2 Applicability

These regulations shall apply to all lands falling within the notified boundary of the Patliputra Greenfield Satellite Township Special Area.

14.3 General Development Control Regulations

Except as otherwise provided in this Chapter:

- The provisions of the Bihar Building Bye-Laws, 2014, as amended from time to time, shall govern development within the Special Area.
- The applicable zoning regulations, building standards, fire safety requirements, accessibility norms, structural safety provisions and environmental safeguards prescribed under the Bihar Building Bye-Laws shall continue to apply.

14.4 Special Development Control Regulations

14.4.1 Transit-Oriented Development (TOD) Zone

The Transit-Oriented Development (TOD) Zone is intended to promote compact, mixed-use and transit-supportive urban development around the proposed MRTS corridors.

Within the TOD Zone, all land uses permissible under the applicable land use zone shall generally be permitted, **except** the following activities, which shall not be allowed:

- Hazardous industries.
- Heavy industries.
- Red-category industries.
- Highly polluting industries.
- Obnoxious and nuisance-generating activities.
- Tanneries.
- Slaughterhouses.
- Meat processing units.
- Fish processing units.
- Bulk storage of hazardous chemicals, petroleum products or explosives.
- Solid waste processing or disposal facilities, except those specifically approved as public utilities.
- Any other activity that, in the opinion of the Competent Authority, is incompatible with the objectives of Transit-Oriented Development or adversely affects public health, safety or the urban environment.

14.4.2 Development on Plots Falling in Multiple Land Use Zones

Where a plot or parcel of land falls partly within two or more land use zones as indicated in the Proposed Land Use Plan–2047, the owner or developer may utilise **any of the overlapping land uses** applicable to such plot, provided that:

- the proposed development conforms to the applicable Development Control Regulations;
- all other statutory approvals are obtained; and
- the proposed use is not specifically prohibited under these regulations.

14.4.3 Development in Urban Agriculture Zone

The Urban Agriculture Zone is primarily intended for the conservation of productive agricultural land, urban farming, horticulture and allied activities.

Residential, commercial and other buildings may be permitted within the Urban Agriculture Zone, subject to compliance with the Bihar Building Bye-Laws and the following additional conditions:

- a. The land shall not be leasehold land.
- b. The maximum ground coverage shall not exceed **20 percent** of the plot area.
- c. The maximum building height shall not exceed **7.0 metres**.
- d. At least **60 percent** of the plot area shall be maintained under agriculture, horticulture, plantation or other productive green use.
- e. The proposed development shall not adversely affect the agricultural character or environmental functions of the Urban Agriculture Zone.

14.5 Urban Design Guidelines

The urban design framework shall guide the creation of a high-quality, sustainable and visually coherent urban environment.

The following principles shall be adopted:

Public Realm

- Creation of pedestrian-friendly streets.
- Active street frontages along commercial corridors.
- Universal accessibility.
- Barrier-free public spaces.
- High-quality streetscape and landscaping.

Built Form

- Compact urban form.
- Mixed-use development in designated areas.
- Appropriate building orientation for climate-responsive design.
- Harmonious skyline around the CBD.
- Context-sensitive architecture.

Mobility

- Complete Streets approach.
- Continuous pedestrian pathways.
- Dedicated cycling infrastructure.
- Transit-supportive station areas.
- Safe road intersections.

Green and Blue Infrastructure

- Integration of parks and open spaces.
- Protection of river corridors.
- Preservation of existing water bodies.
- Native tree plantation.
- Sponge City principles.

Sustainability

- Green buildings.
- Energy-efficient development.
- Rainwater harvesting.
- Renewable energy integration.
- Climate-responsive urban design.

Detailed Urban Design Manuals may be prepared by the Competent Authority to guide implementation of specific precincts, station areas and public spaces.

CHAPTER 15: SAVINGS AND OVERRIDING EFFECT

15.1 Superseding Effect

Upon notification of the **Patliputra Greenfield Satellite Township Development Plan–2047**, the provisions of this Development Plan shall have overriding effect within the notified Special Area.

Accordingly, to the extent of any inconsistency, the provisions of this Development Plan shall **supersede the corresponding provisions of the Patna Master Plan–2031** applicable within the notified boundary of the Patliputra Greenfield Satellite Township Special Area.

15.2 Existing Authorised Development

Any building or development that has been lawfully constructed or carried out prior to the notification of this Development Plan, after obtaining valid permission from the Competent Authority in accordance with the provisions of the **Patna Master Plan–2031** and other applicable laws in force at the time of approval, shall continue to be recognised as an authorised development.

Such buildings or developments shall not be treated as unauthorised solely on account of any subsequent change in land use or zoning under the Patliputra Greenfield Satellite Township Development Plan–2047.

15.3 Future Development

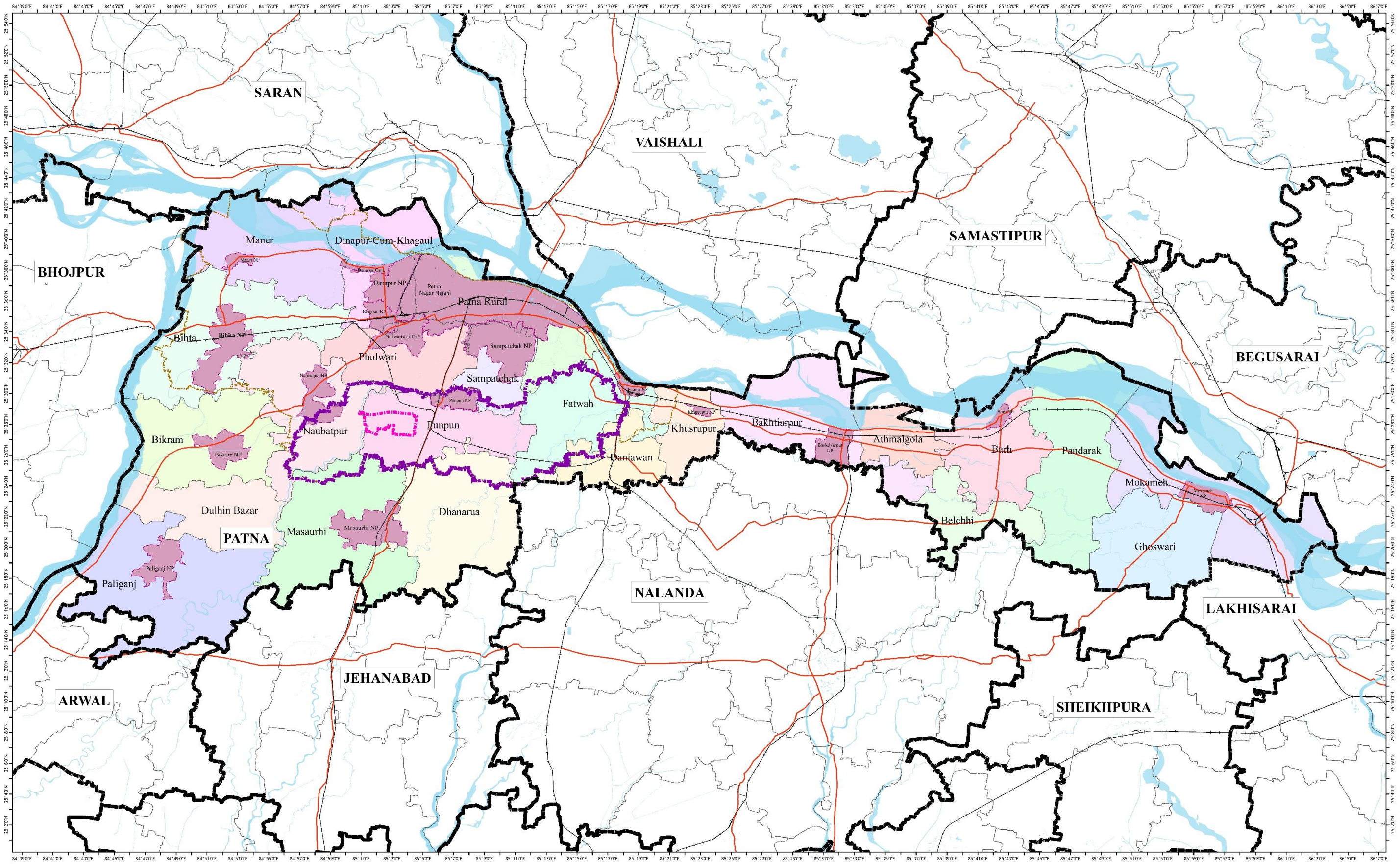
All new development, redevelopment, change of land use, subdivision of land and building activities undertaken after the notification of this Development Plan shall conform to:

- the provisions of the Patliputra Greenfield Satellite Township Development Plan–2047;
- the Development Control Regulations contained herein;
- the Bihar Building Bye-Laws, 2014, as amended from time to time, except where superseded by this Development Plan; and
- other applicable laws, rules, regulations and directions issued by the Competent Authority.

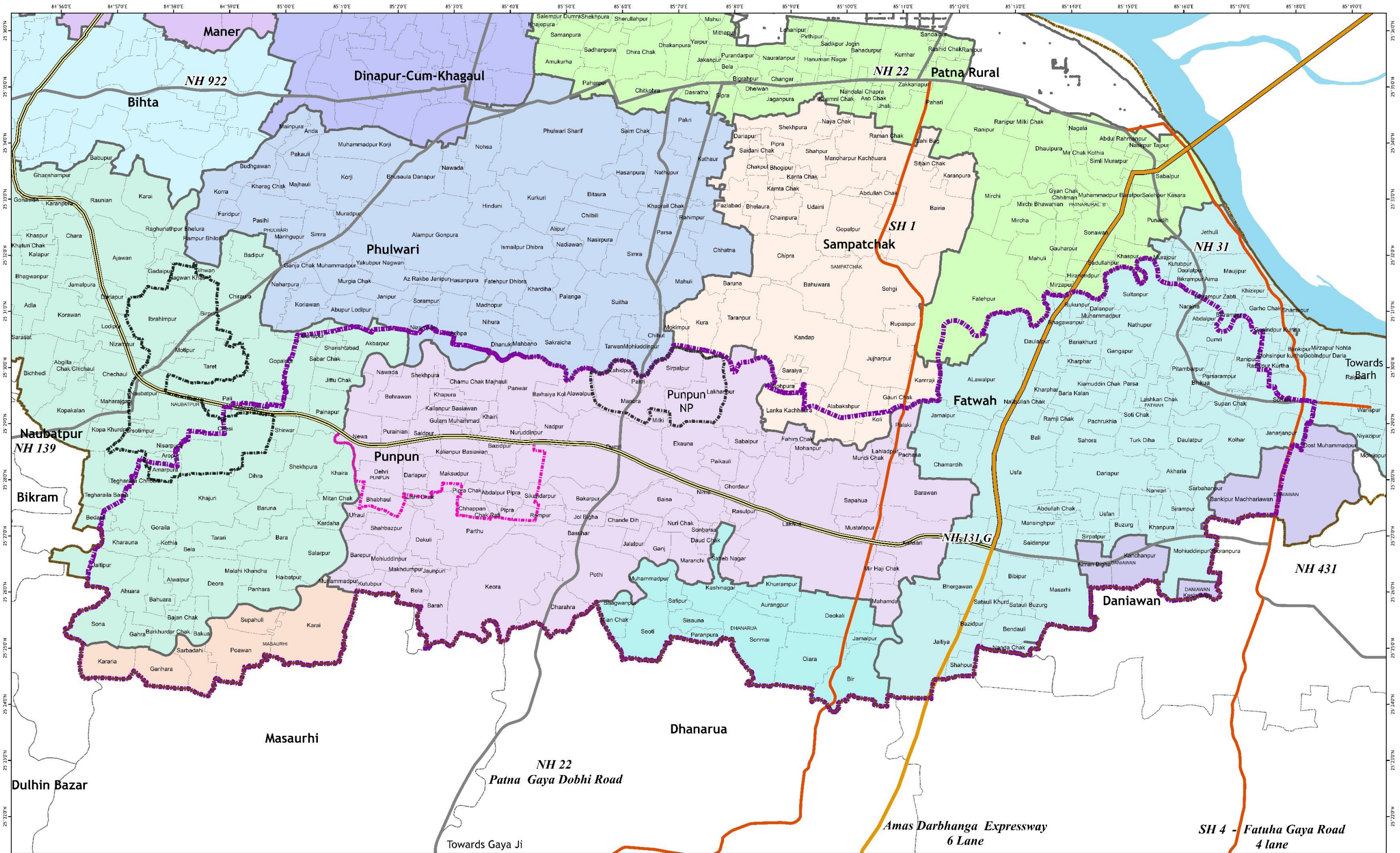
15.4 Interpretation and Resolution of Conflict

In the event of any ambiguity, inconsistency or conflict between the provisions of this Development Plan and any other planning document applicable within the notified Special Area, the provisions of the Patliputra Greenfield Satellite Township Development Plan–2047 shall prevail to the extent of such inconsistency. Matters not specifically provided for in this Development Plan shall be governed by the Bihar Building Bye-Laws, 2014, as amended from time to time, and other applicable statutory provisions.

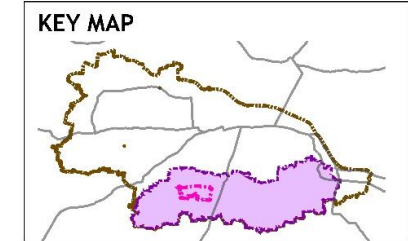
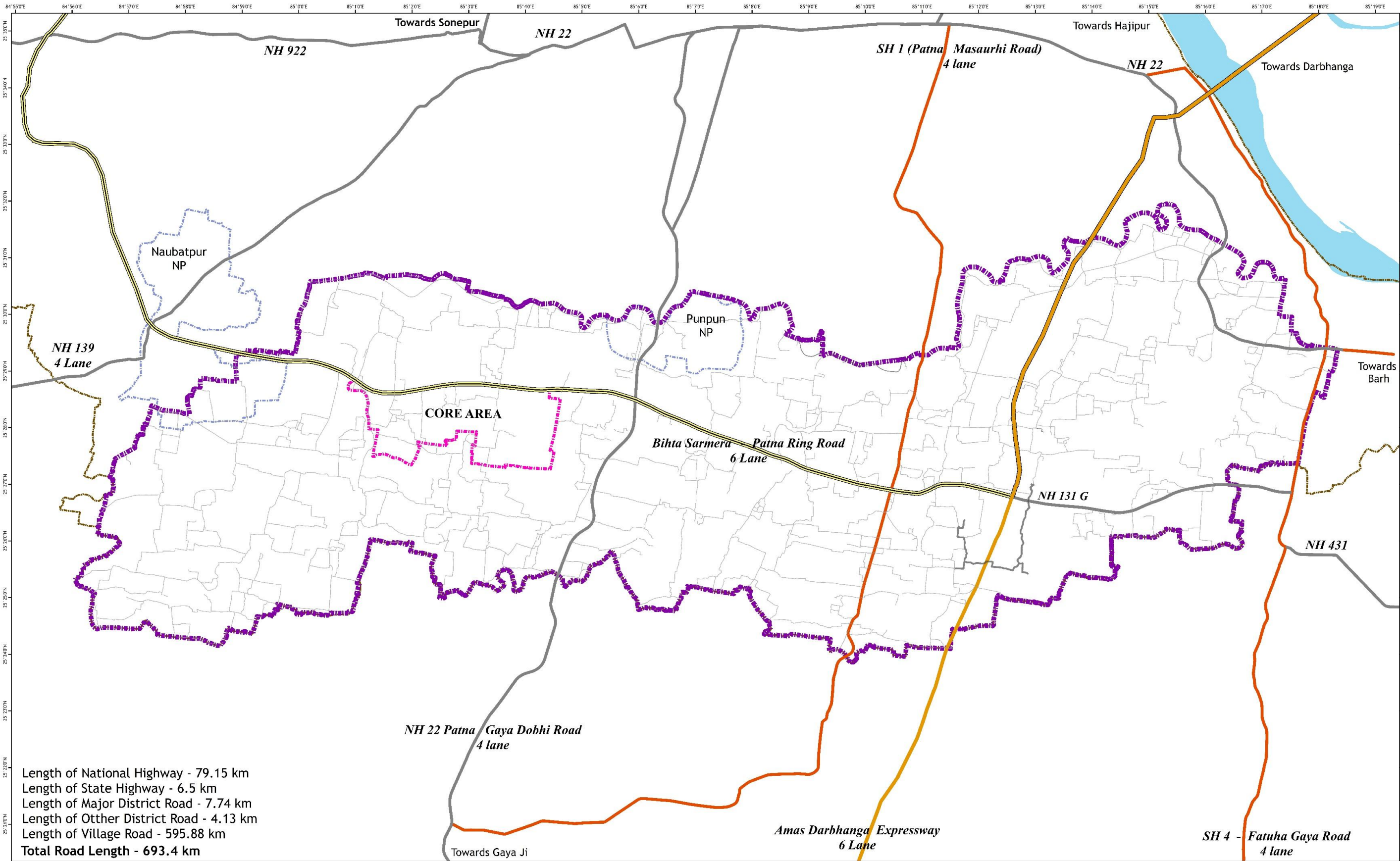
Annexure



KEY MAP 	PROJECT NAME - PATLIPUTRA GREENFIELD SATELLITE TOWNSHIP - 2047		MAP TITLE : LOCATION MAP		MAP NO - UDHD/TCPO/PTMP/01	
	LEGEND		DESCRIPTION :		SCALE	
	District Boundary Special Area Core Area Patna Planning Area C.D. Block Boundary Water Body Railway Network National Highway ULB Boundary		District - Patna Planning Area - 2,88,372 Acre Special Area - 81,654.12 Acre Core Area - 3008.61 Acre		0 2 4 8 12 16 20 24 km Prepared By :- Town and Country Planning Organisation Urban Development & Housing Department, Government of Bihar.	



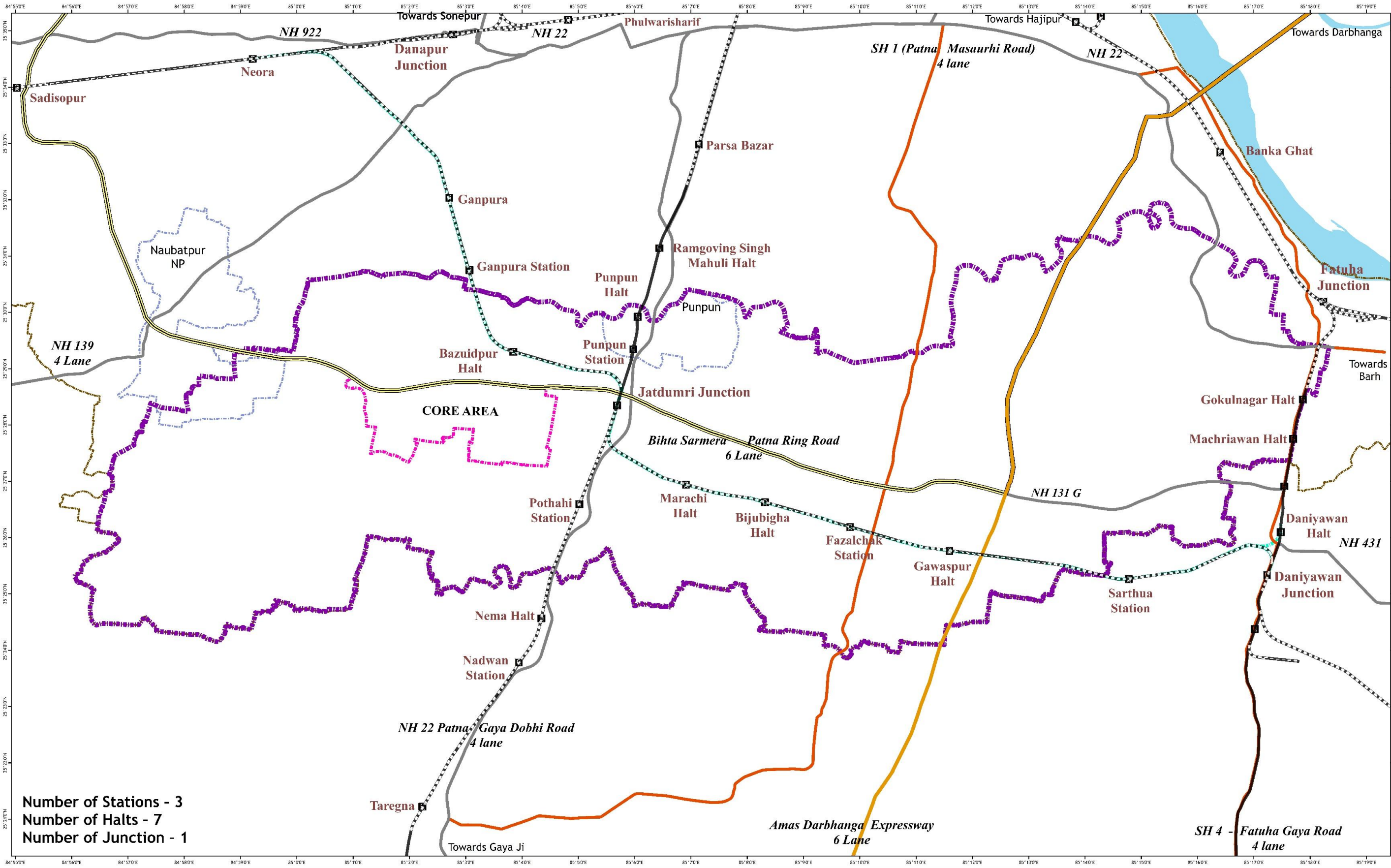
KEY MAP 	PROJECT NAME - PATLIPUTRA GREENFIELD SATELLITE TOWNSHIP - 2047		MAP TITLE : ADMINISTRATIVE BOUNDARIES		MAP NO - UDHD/TCPO/PTMP/02	
	LEGEND		DESCRIPTION :		SCALE 0 0.5 1 2 3 4 5 6 km 1:55,000	
	Road Category Amas Darbhanga National Highway State Highway Special Area Planning Area Core Area C.D. Block Boundary ULB Boundary		1. This map shows the Village and Block Boundary of Special and Core Area along with Nearby Regions. 2. Number of Blocks in Special Area - 9 (Naubatpur, Punpun, Dhanarua, Sampatchhak, Phulwari, Patna Rural, Daniawan Masaurhi and Fatuha).		Prepared By :- Town and Country Planning Organisation Urban Development & Housing Department, Government of Bihar	



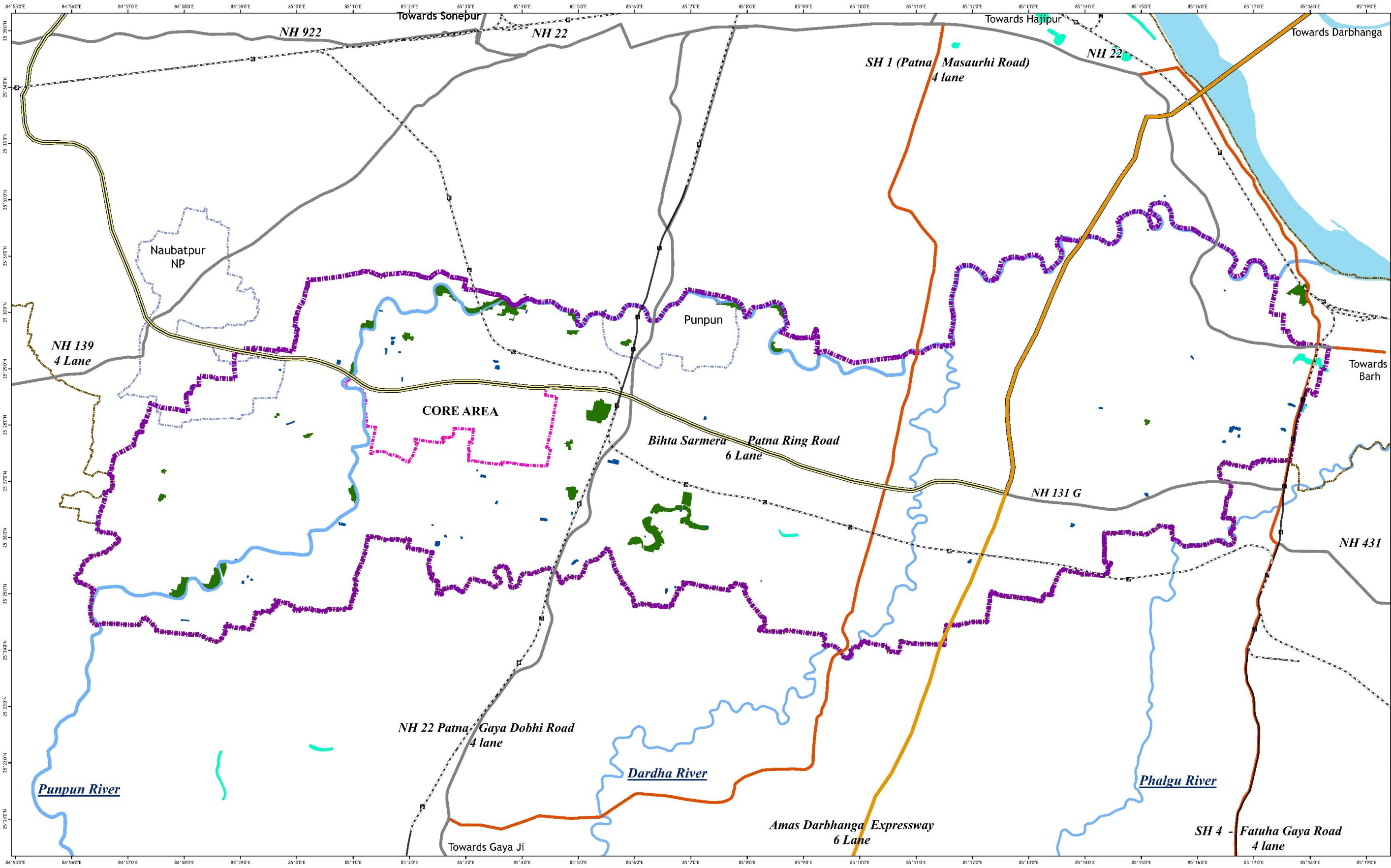
PROJECT NAME - PATLIPUTRA GREENFIELD SATELLITE TOWNSHIP - 2047			
LEGEND			
Road Category			
	State Highway		Special Area
	Amas Darbhanga		Planning Area
	Patna Ring Road		ULB Boundary
	National Highway		Core Area
	Other District Road		
	Village Road		

MAP TITLE : ROAD CONNECTIVITY MAP
DESCRIPTION :
Excellent regional connectivity through NH-22, NH-131G, N-139, SH-1, SH-4. Patna Ring Road and Amas-Darbhangha Expressway wil improve high-speed connectivity across North and South Bihar

MAP NO - UDHD/TCPO/PTMP/03	
SCALE	1:55,000
Prepared By :- Town and Country Planning Organisation Urban Development & Housing Department, Government of Bihar	



KEY MAP 	PROJECT NAME - PATLIPUTRA GREENFIELD SATELLITE TOWNSHIP - 2047		MAP TITLE : RAILWAY CONNECTIVITY MAP		MAP NO - UDHD/TCPO/PTMP/04	
	LEGEND		DESCRIPTION :		SCALE 1:55,000	
	Road Category Amas Darbhanga Patna Ring Road National Highway State Highway Major District Road Other District Road Village Road		The Township is well served by the Danapur Railway Division of East Central Railway, providing strong regional and inter-city connectivity. The proposed Jat Dumri Junction along by pass rail line is expected to decongest the Patna Junction corridor by diverting long distance rail traffic.		 Prepared By :- Town and Country Planning Organisation Urban Development & Housing Department, Government of Bihar	



KEY MAP 	PROJECT NAME - PATLIPUTRA GREENFIELD SATELLITE TOWNSHIP - 2047		MAP TITLE : BLUE GREEN INFRASTRUCTURE MAP		MAP NO - UDHD/TCPO/PTMP/05	
	LEGEND	Road Category		DESCRIPTION :		SCALE 0 0.5 1 2 3 4 5 6 km
		Special Area Special Area Planning Area ULB Boundary Core Area		River Wetland Govt Pond Private Pond		

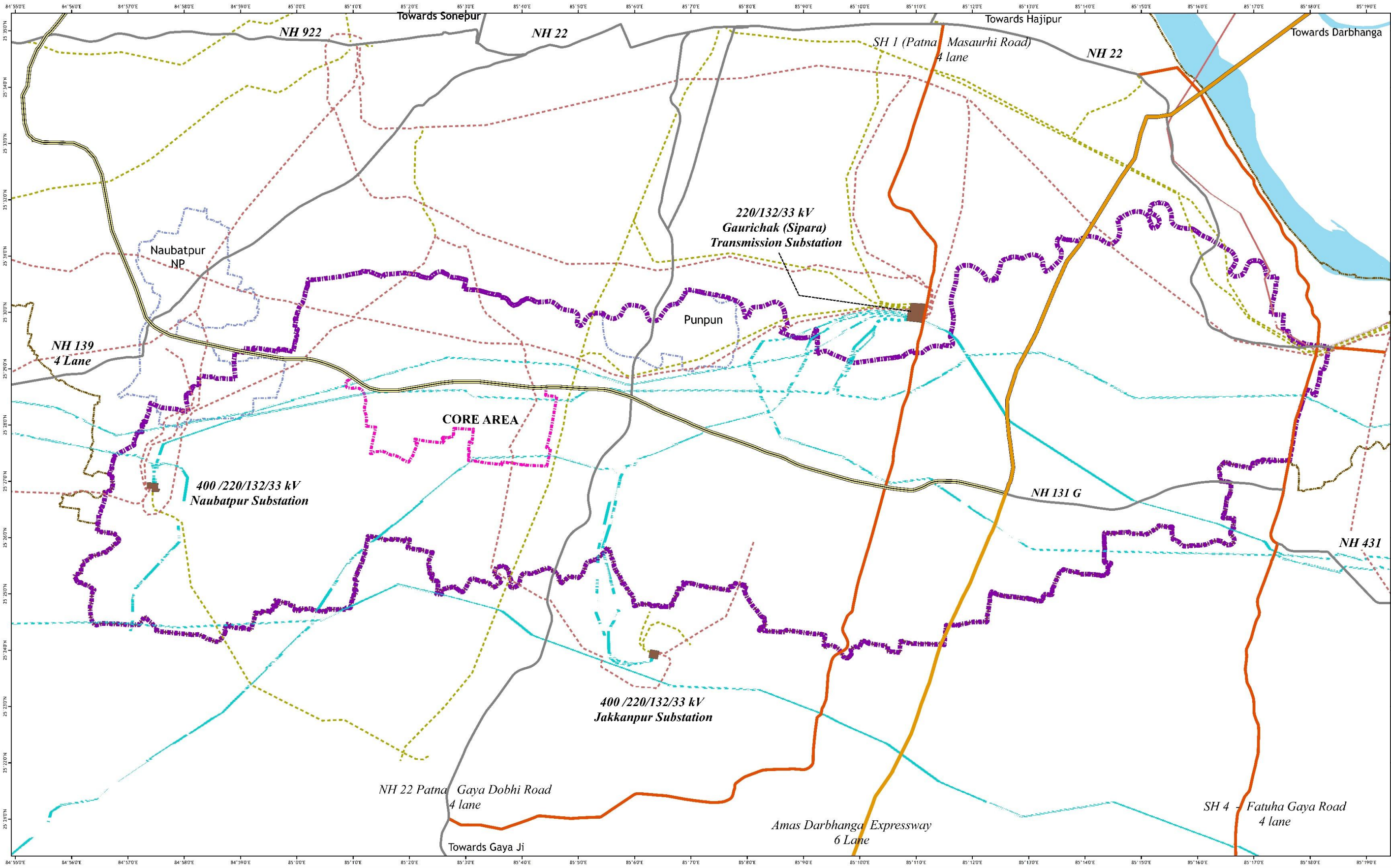
1. 52.95 Acres of Notified Wetlands

2. 68.23 Acres of Ponds

3. Approximately 830 Acres of Dense Vegetation.

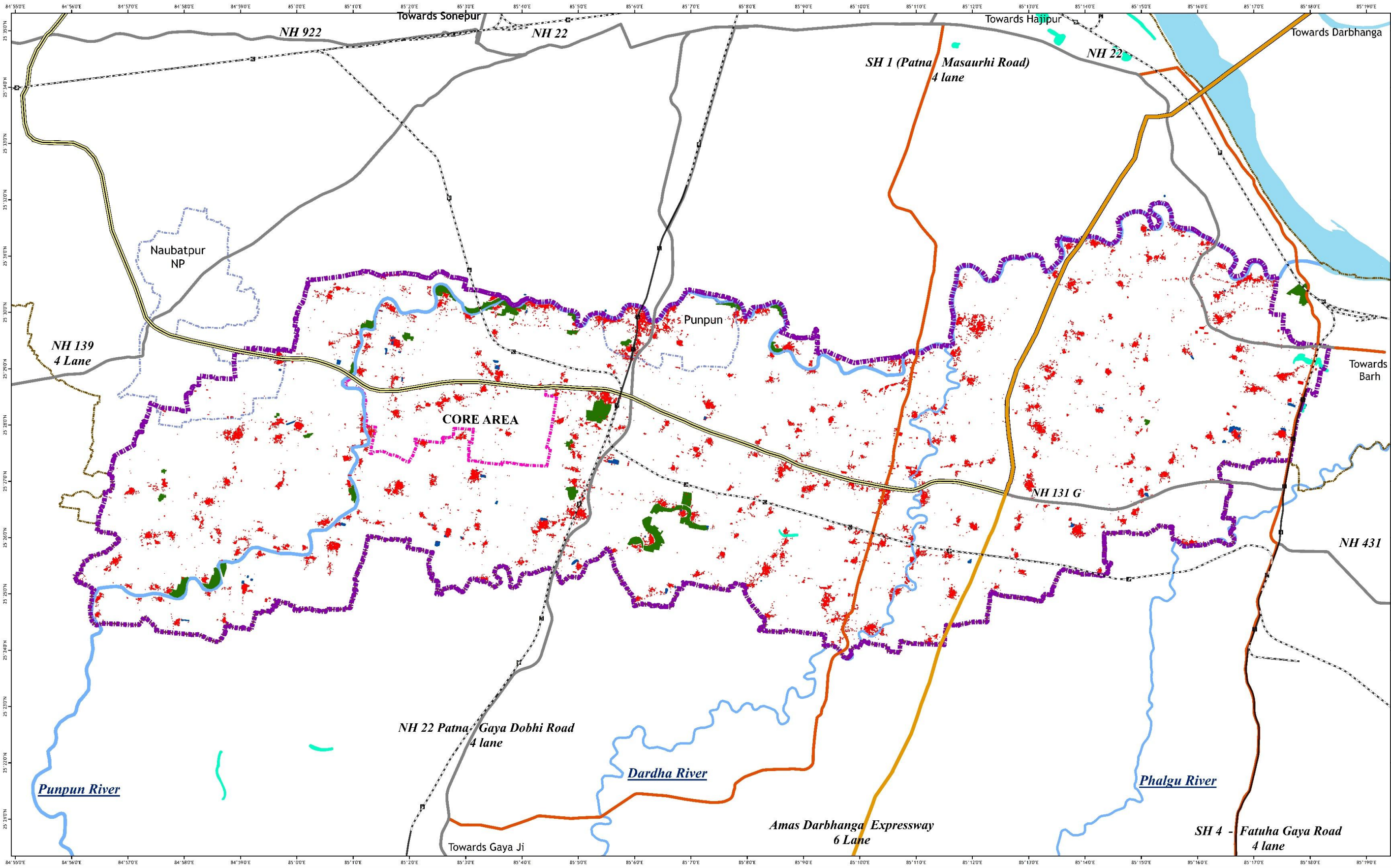
4. The Special Area possesses a robust Blue-Green Infrastructure (BGI) network comprising the Punpun, Dardha, and Phalgu Rivers.

Prepared By :-
Town and Country Planning Organisation
Urban Development & Housing Department,
Government of Bihar



KEY MAP 	PROJECT NAME - PATLIPUTRA GREENFIELD SATELLITE TOWNSHIP - 2047		MAP TITLE : POWER INFRASTRUCTURE MAP		MAP NO - UDHD/TCPO/PTMP/06	
	LEGEND	Road Category Amas Darbhanga Patna Ring Road National Highway State Highway	Special Area Planning Area ULB Boundary Core Area	Power Supply Network Capacity 220 kV 400 kV 132 kV	DESCRIPTION : Special Area is traversed by an extensive network of 132 kV, 220 kV, and 400 kV high-tension transmission lines, supported by the Naubatpur, Jakkanpur and Gaurichak transmission substations	SCALE 0 0.5 1 2 3 4 5 6 km
				Electric Susbtaion		

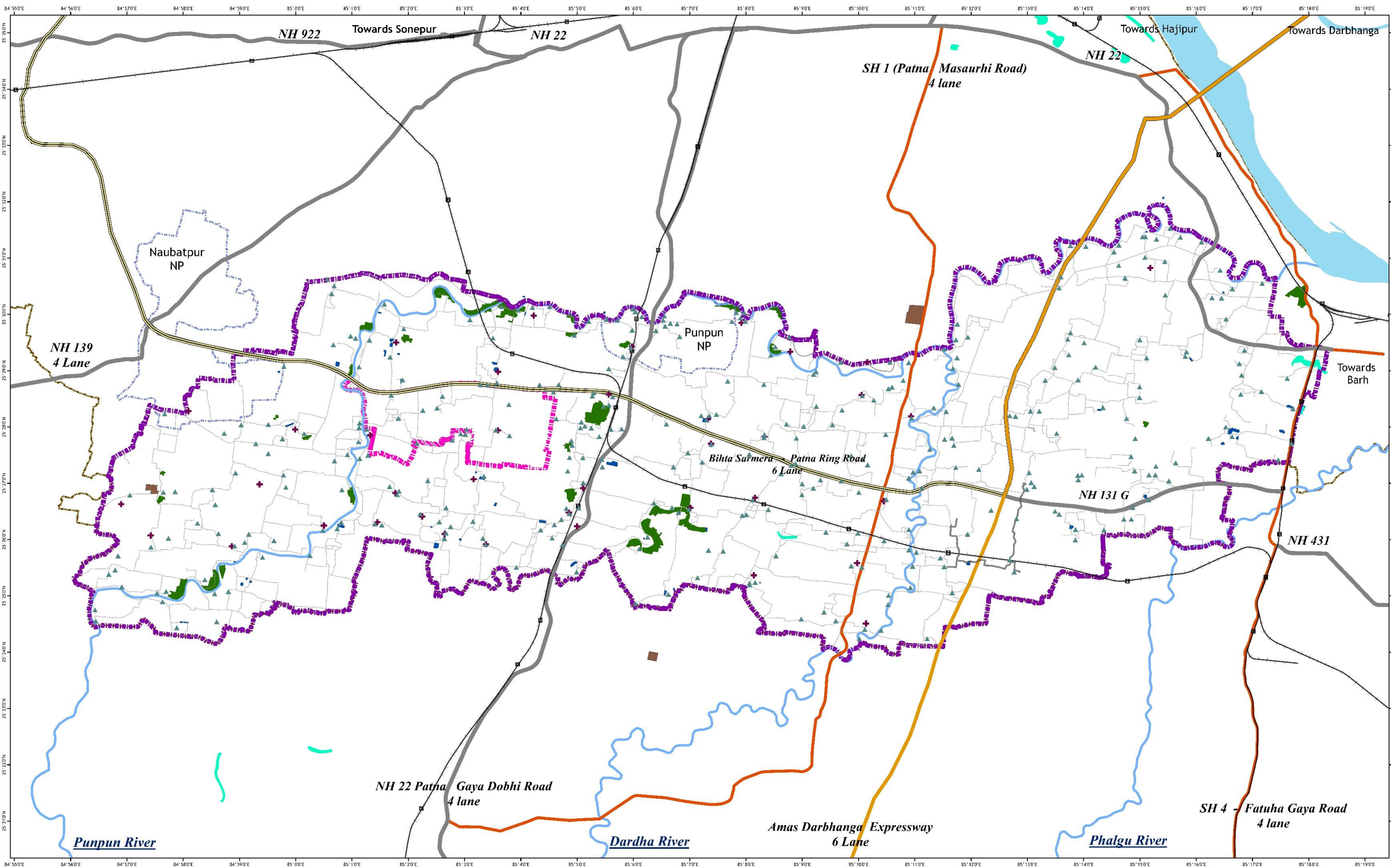
Prepared By :-
Town and Country Planning Organisation
Urban Development & Housing Department,
Government of Bihar



KEY MAP 	PROJECT NAME - PATLIPUTRA GREENFIELD SATELLITE TOWNSHIP - 2047		MAP TITLE : SETTLEMENT MAP		MAP NO - UDHD/TCPO/PTMP/07	
	LEGEND	Road Category	Special Area	Built Up Extent	SCALE 0 0.5 1 2 3 4 5 6 km 1:55,000 	
		Amas Darbhanga Patna Ring Road National Highway State Highway	Planning Area ULB Boundary Core Area	Railway Network Railway Station		

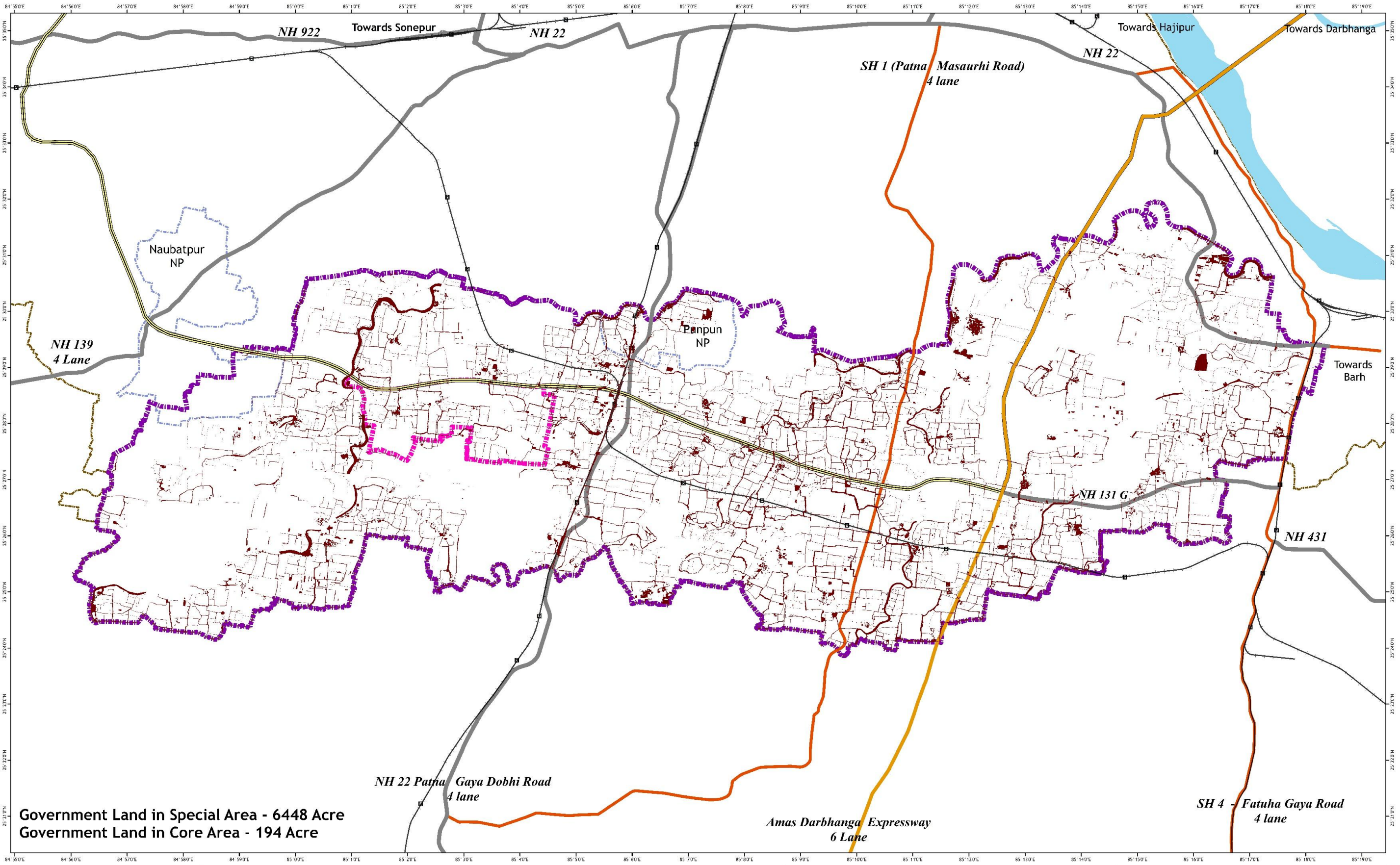
DESCRIPTION :
1. The existing built-up footprint within the Special Area covers approximately 890 acres.
2. Number of Buildings- 52910 (Approx.)
3. Existing Population - 2.45 Lakhs (Approx.)
4. Existing Landowners - 451738

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Government of Bihar

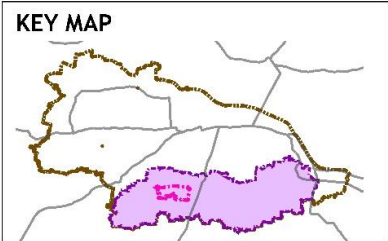
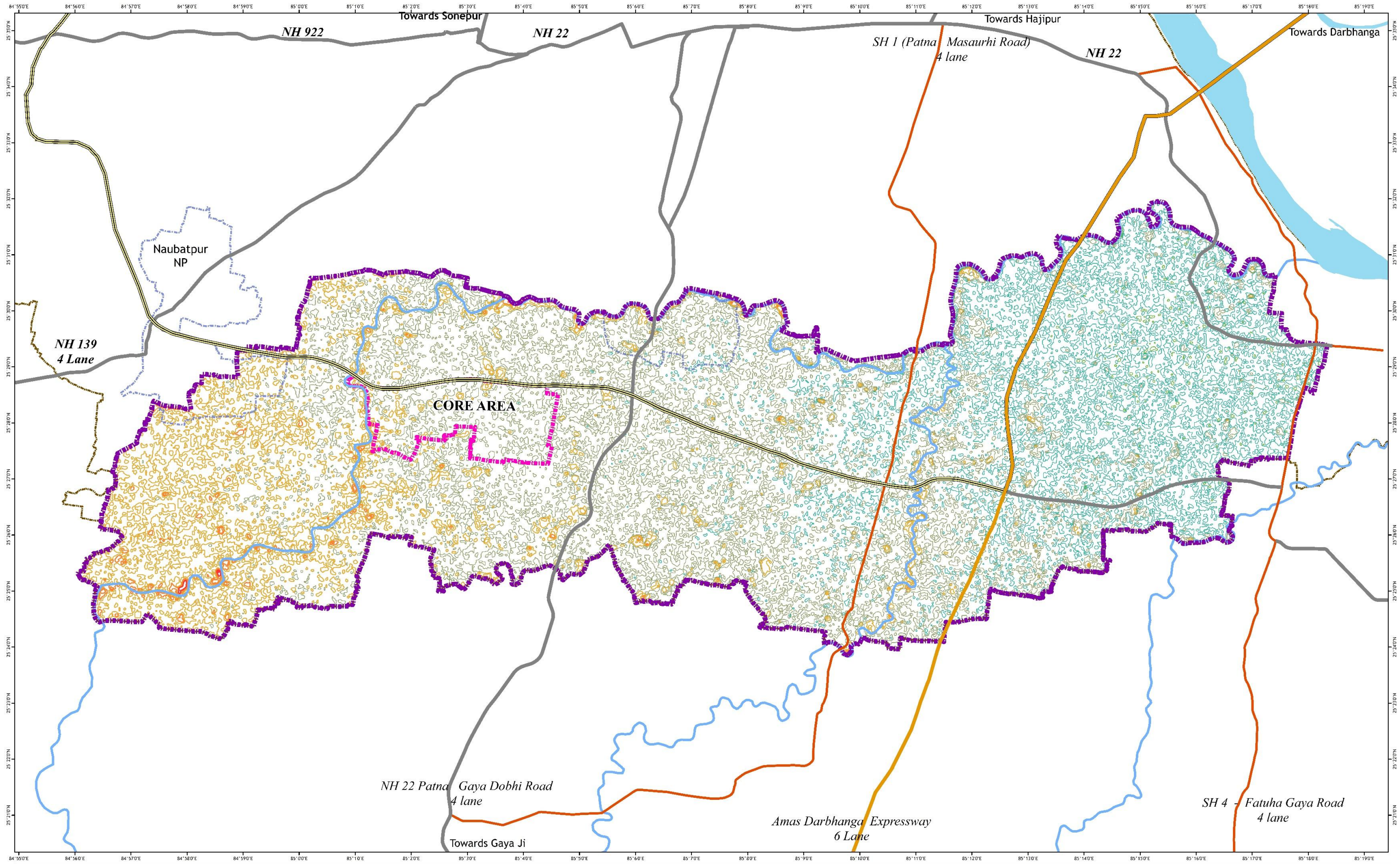


KEY MAP 	PROJECT NAME - PATLIPUTRA GREENFIELD SATELLITE TOWNSHIP - 2047		MAP TITLE : BASE MAP		MAP NO - UDHD/TCPO/PTMP/08	
	LEGEND		DESCRIPTION :		SCALE 1:55,000 0 0.5 1 2 3 4 5 6 km	
	Road Category - Amas Darbhanga - Patna Ring Road - National Highway - State Highway - Special Area - Planning Area - ULB Boundary - Core Area		Facilities - Educational Facility - Health Facility - Railway Station - Railway Network - Major District Road - Other District Road - Village Road - Electric Susbtaion		Other Features - River - Dense Vegetation - Wetland	

Prepared By :-
Town and Country Planning Organisation
Urban Development & Housing Department,
Government of Bihar



KEY MAP 	PROJECT NAME - PATLIPUTRA GREENFIELD SATELLITE TOWNSHIP - 2047		MAP TITLE : GOVERNMENT LAND MAP		MAP NO - UDHD/TCPO/PTMP/09	
	LEGEND Road Category Amas Darbhanga Patna Ring Road National Highway State Highway		DESCRIPTION : This map represents the Government Land availability for Special and Core Area.		SCALE 0 0.5 1 2 3 4 5 6 km 1:55,000	
	Special Area Planning Area ULB Boundary Core Area		Government Land		 Prepared By :- Town and Country Planning Organisation Urban Development & Housing Department, Government of Bihar	



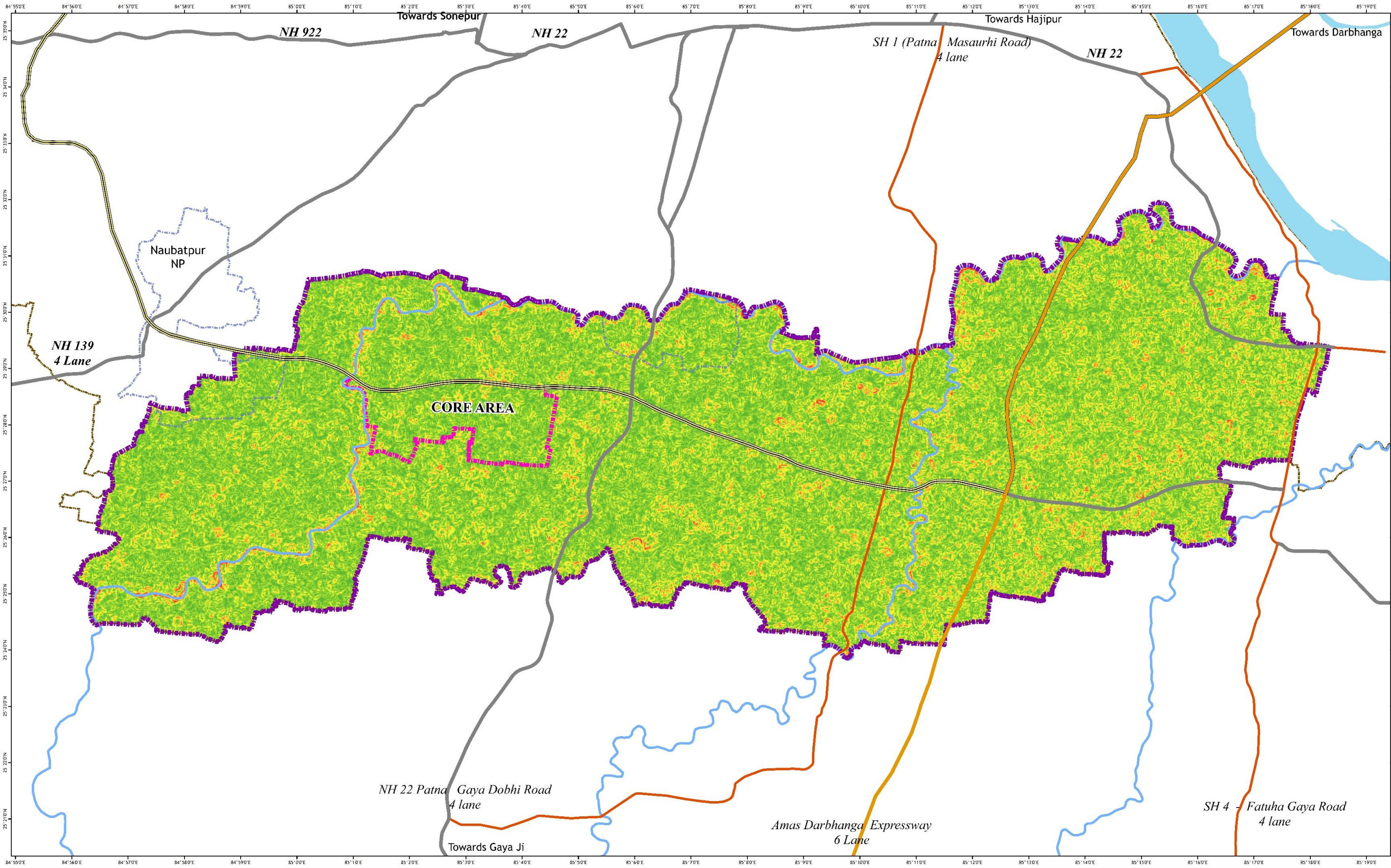
PROJECT NAME - PATLIPUTRA GREENFIELD SATELLITE TOWNSHIP - 2047			
LEGEND			
Road Category		Special Area	
	Amas Darbhanga		Special Area
	Patna Ring Road		Planning Area
	National Highway		ULB Boundary
	State Highway		Core Area
Contour Map		Contour	
			54 - 56
			58 - 60
			62 - 64
			66 - 68
			50 - 52
			46 - 48

MAP TITLE : CONTOUR MAP
DESCRIPTION :
1. The contour map has a gentle undulating terrain, with elevations ranging from 46 m to 68 m above Mean Sea Level.

MAP NO - UDHD/TCPO/PTMP/10

SCALE 1:55,000

Prepared By :-
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Urban Development & Housing Department,
Government of Bihar



KEY MAP

PROJECT NAME - PATLIPUTRA GREENFIELD SATELLITE TOWNSHIP - 2047

LEGEND

Amas Darbhanga	Special Area	Slope Percentage	
Patna Ring Road	Planning Area		<VALUE>
National Highway	ULB Boundary		0 - 0.5
State Highway	Core Area		0.5 - 1
		1 - 1.5	3 - 3.5
		1.5 - 2	3.5 - 4
		2 - 2.5	4 - 6
		2.5 - 3	6 - 10

MAP TITLE : SLOPE MAP

DESCRIPTION :

- This map represents the Slope Map for Special and Core Area.
- Special Area is predominantly flat with gently sloping (0-2%) which is ideal for construction.

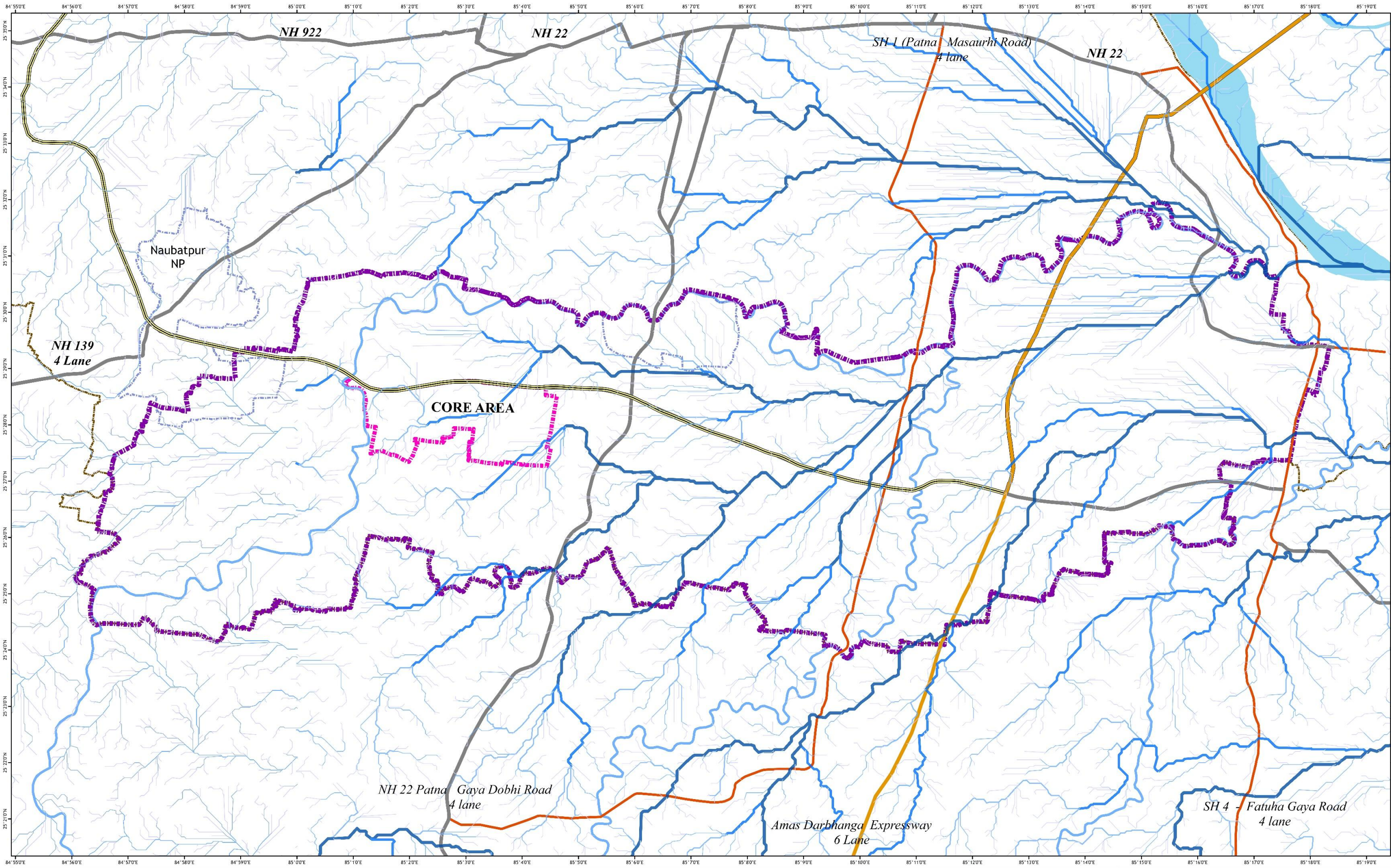
MAP NO - UDHD/TCPO/PTMP/11

SCALE 1:55,000

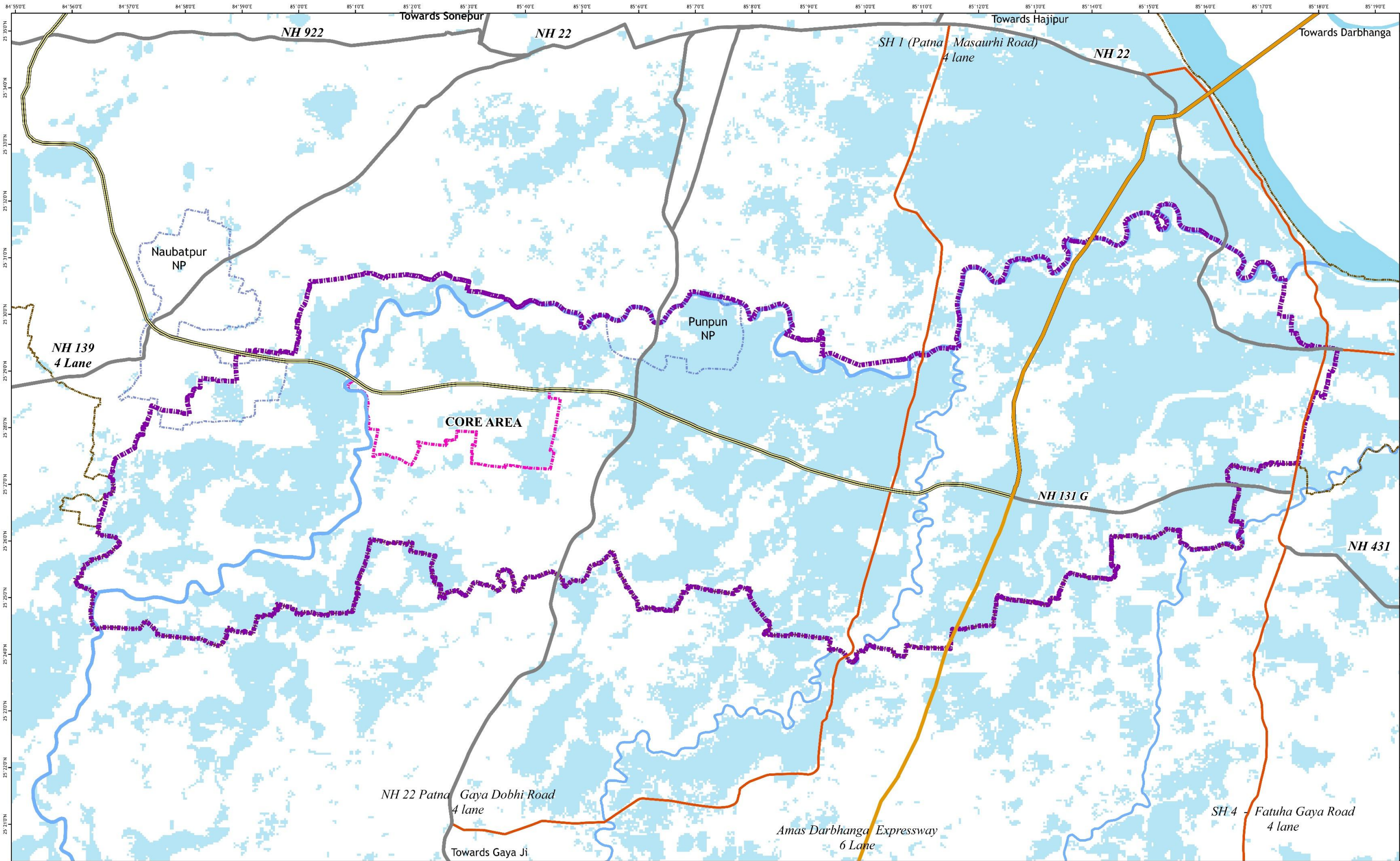
0 0.5 1 2 3 4 5 6 km

N

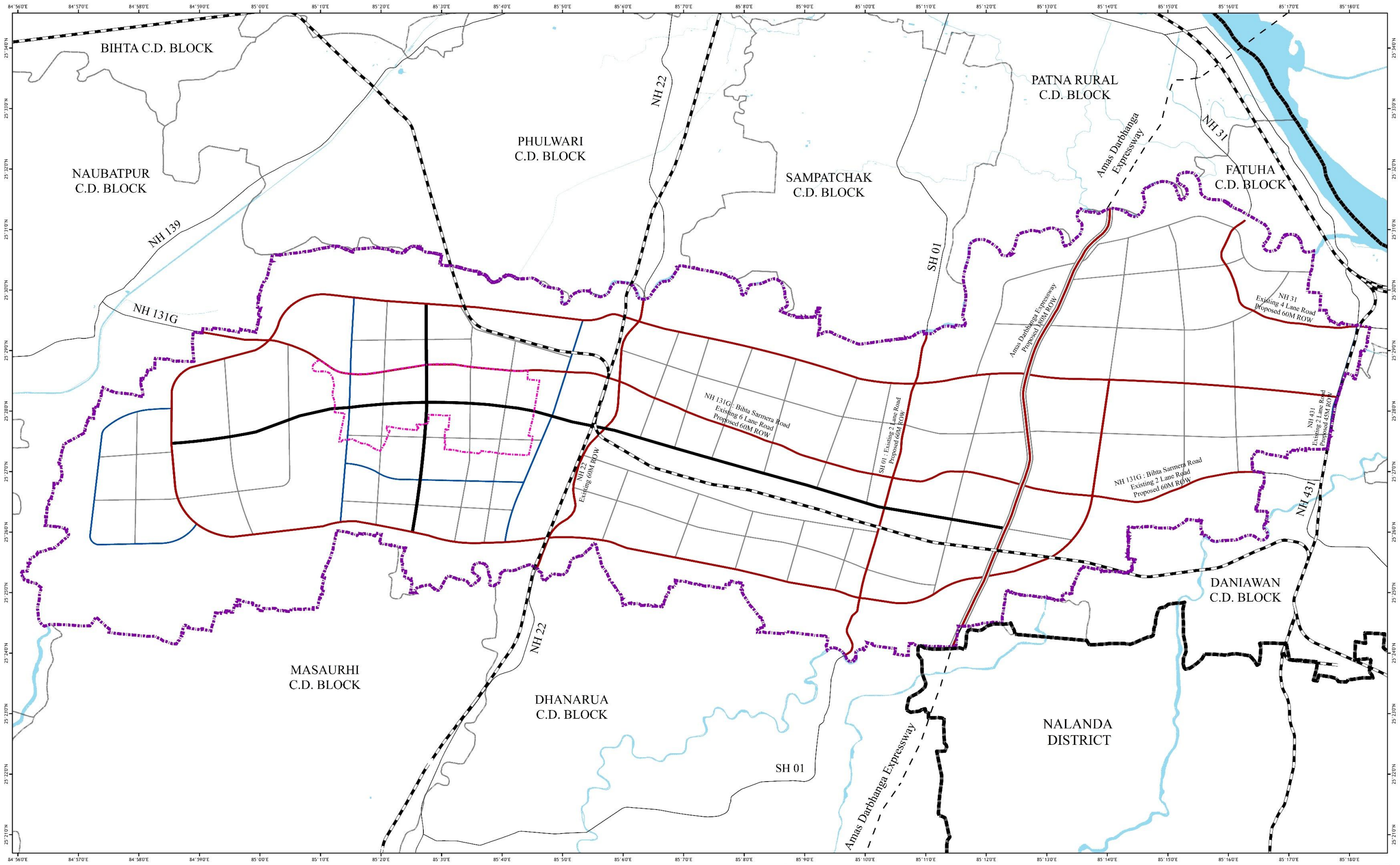
Prepared By :-
Town and Country Planning Organisation
Urban Development & Housing Department,
Government of Bihar



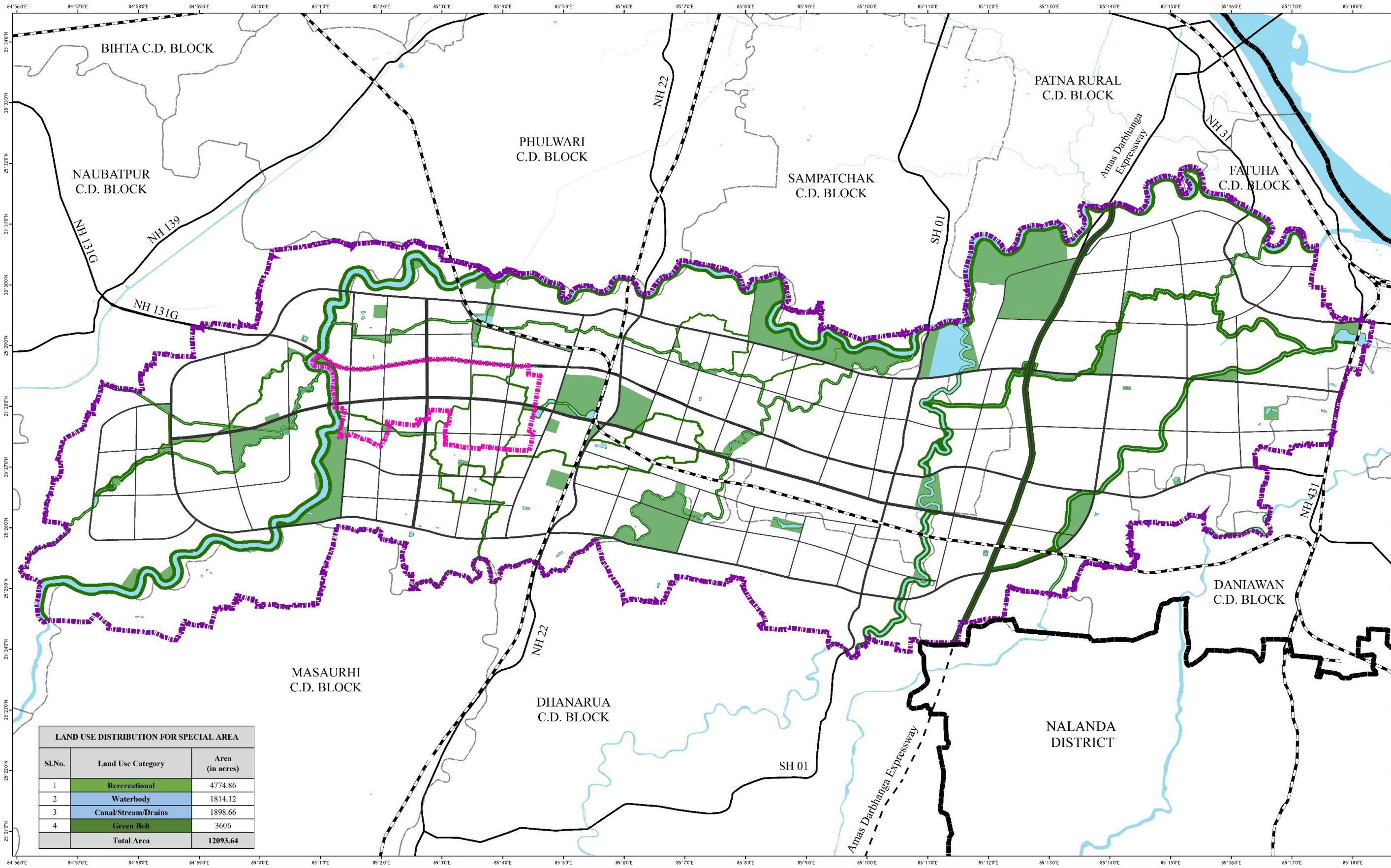
KEY MAP 	PROJECT NAME - PATLIPUTRA GREENFIELD SATELLITE TOWNSHIP - 2047		MAP TITLE : NATURAL DRAINAGE MAP		MAP NO - UDHD/TCPO/PTMP/12	
	LEGEND	Road Category Amas Darbhanga Patna Ring Road National Highway State Highway	Special Area Planning Area ULB Boundary Core Area	Stream Order First Order Second Order Third Order	Fourth Order Fifth Order	SCALE 0 0.5 1 2 3 4 5 6 km
		DESCRIPTION : 1. Depicts First- to Fifth-Order streams, of natural drainage network using the Strahler Stream Order classification. 2. Fourth- and Fifth-Order streams act as the primary stormwater conveyance corridors where as lower order streams collect local surface runoff and feed into higher-order drainage channels.				 Prepared By :- Town and Country Planning Organisation Urban Development & Housing Department, Government of Bihar



KEY MAP 	PROJECT NAME - PATLIPUTRA GREENFIELD SATELLITE TOWNSHIP - 2047		MAP TITLE : FLOOD INNUNDATION MAP		MAP NO - UDHD/TCPO/PTMP/13	
	LEGEND Road Category Amas Darbhanga Patna Ring Road National Highway State Highway	Special Area Planning Area ULB Boundary Core Area	Innundation Extent of Flood Year 2019		SCALE 0 0.5 1 2 3 4 5 6 km 1:55,000	
		DESCRIPTION : 1. This map shows the innundation extent of Flood Map for the year 2019. 2. Areas on eastern side are flooded. 3. Core area of township is predominantly on a higher land with less flooding.		Prepared By :- Town and Country Planning Organisation Urban Development & Housing Department, Government of Bihar		



KEY MAP 		PROJECT NAME - PATLIPUTRA GREENFIELD SATELLITE TOWNSHIP - 2047		MAP TITLE : PROPOSED ROAD NETWORK MAP		MAP NO - UDHD/TCPO/PTMP/14	
LEGEND - District Boundary - Special Area - Core Area - C.D. Block Boundary		- Railway Line - Roads - Water Body		Proposed Roads 30M ROW 45M ROW 60M ROW 60M ROW 90M ROW		SCALE 0 0.5 1 2 3 4 5 6 km 	
		Prepared By :- Town and Country Planning Organisation Urban Development & Housing Department, Government of Bihar.					



KEY MAP

PROJECT NAME - PATLIPUTRA GREENFIELD SATELLITE TOWNSHIP - 2047

MAP TITLE : PROPOSED BLUE GREEN INFRASTRUCTURE MAP

MAP NO - UDHD/TCPO/PTMP/ 16

LEGEND

Special Area

Core Area

C.D. Block Boundary

Railway Line

Proposed Blue Green Infrastructure

Green Belt

Recreation

Roads

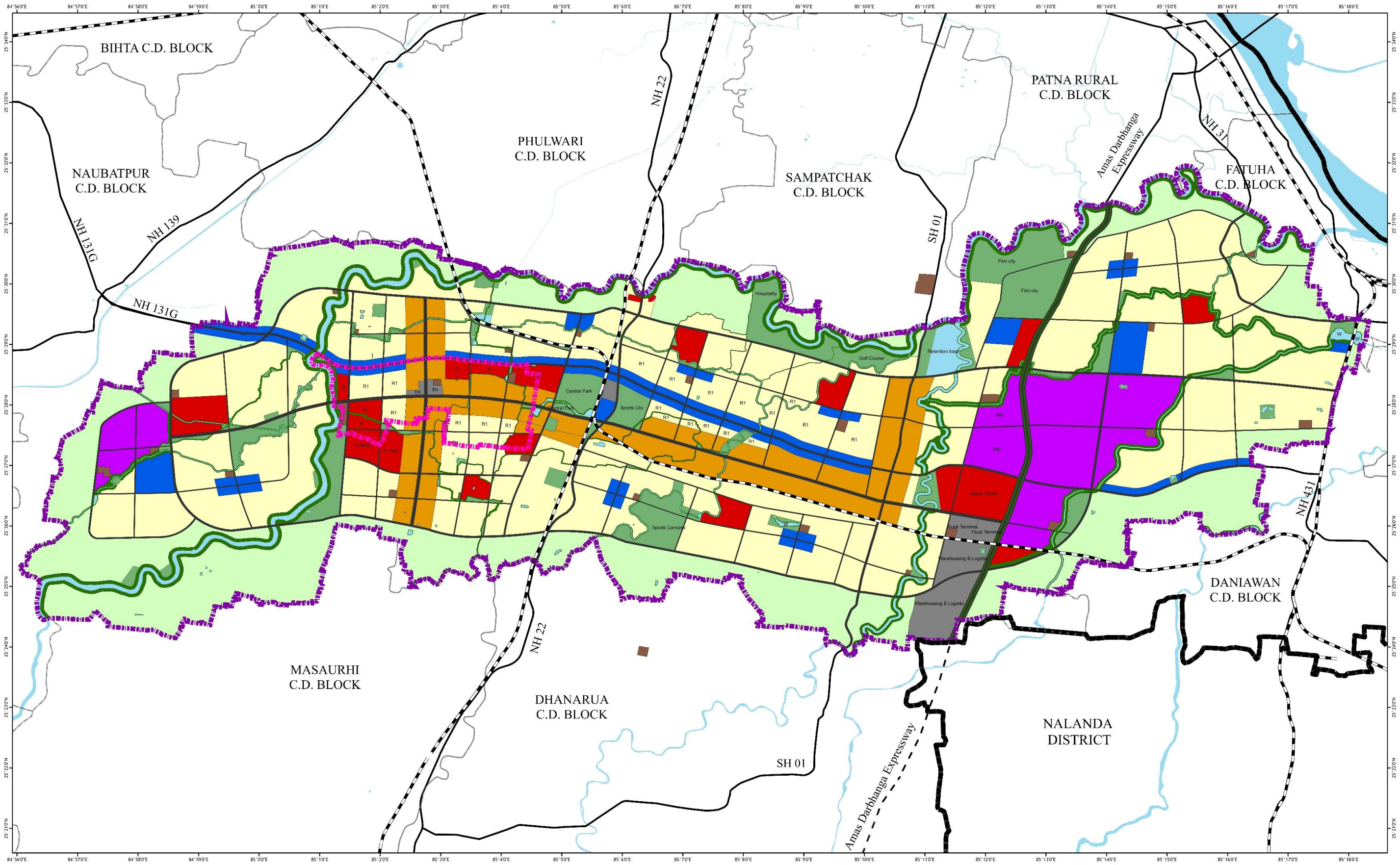
Stream & Canal

Waterbody

SCALE

0 0.5 1 2 3 4 5 6 km

Prepared By :-
Town and Country Planning Organisation
Urban Development & Housing Department,
Government of Bihar.



KEY MAP

PROJECT NAME - PATLIPUTRA GREENFIELD SATELLITE TOWNSHIP - 2047

MAP TITLE : PROPOSED LAND USE MAP

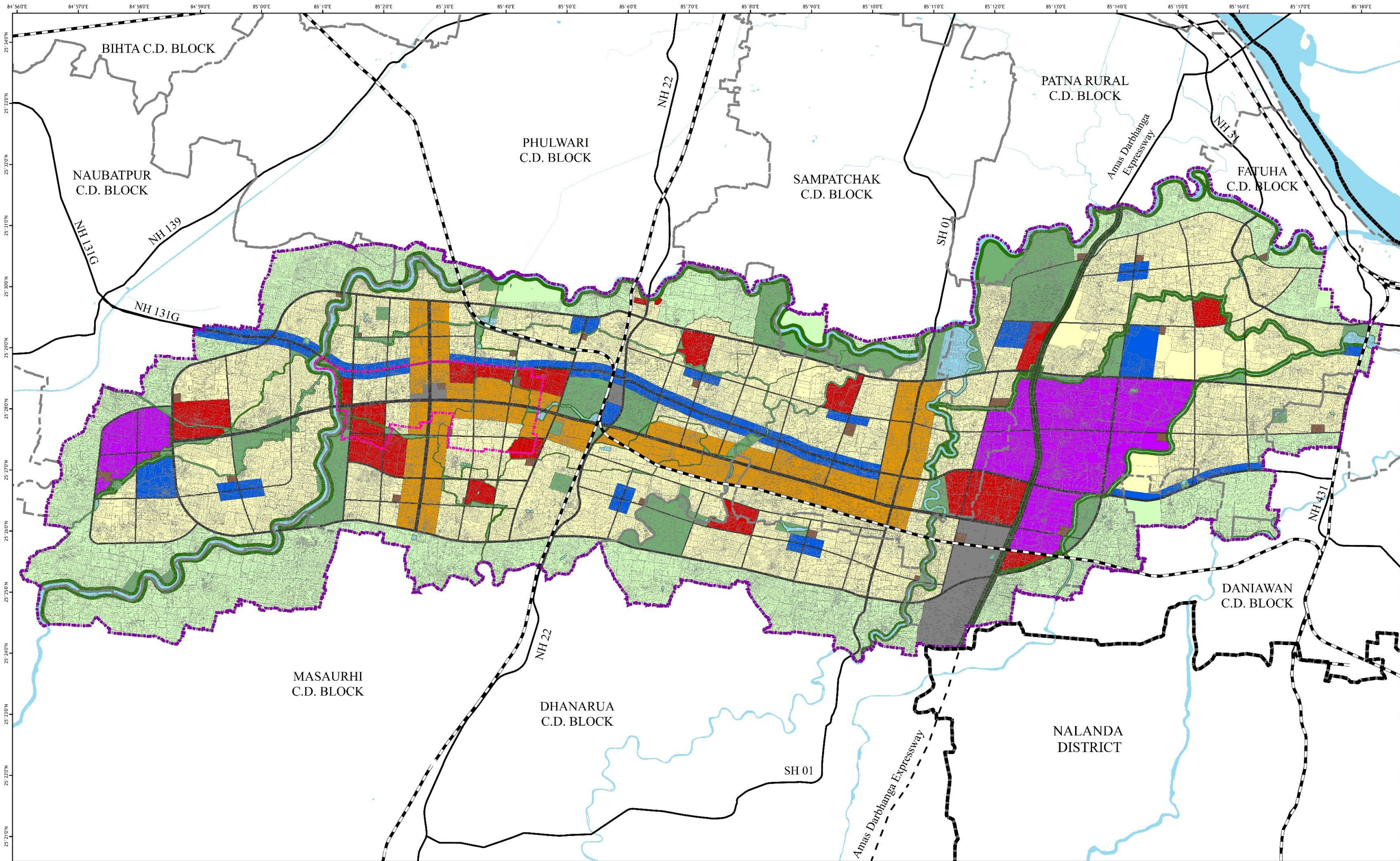
MAP NO - UDHD/TCPO/PTMP/17

LEGEND

Special Area	Proposed Land Use	Public Purpose	Roads	Urban Agriculture
Core Area	Commercial	Public Utilities	Stream & Canal	Waterbody
C.D. Block Boundary	Green Belt	Recreation	TOD Zone	
Railway Line	Industrial	Residential	Transport & Communications	

SCALE
0 0.5 1 2 3 4 5 6 km

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Government of Bihar.



KEY MAP

PROJECT NAME - PATLIPUTRA GREENFIELD SATELLITE TOWNSHIP - 2047

LEGEND

Special Area	Railway Line
Core Area	Cadastral Land Parcel
C.D. Block Boundary	

Proposed Land Use

Commercial	Public Purpose	Roads
Green Belt	Public Utilities	Stream & Canal
Industrial	Recreation	TOD Zone
	Residential	Transport & Communications

MAP TITLE : PROPOSED LAND USE PLAN WITH CADASTRAL

Urban Agriculture
Waterbody

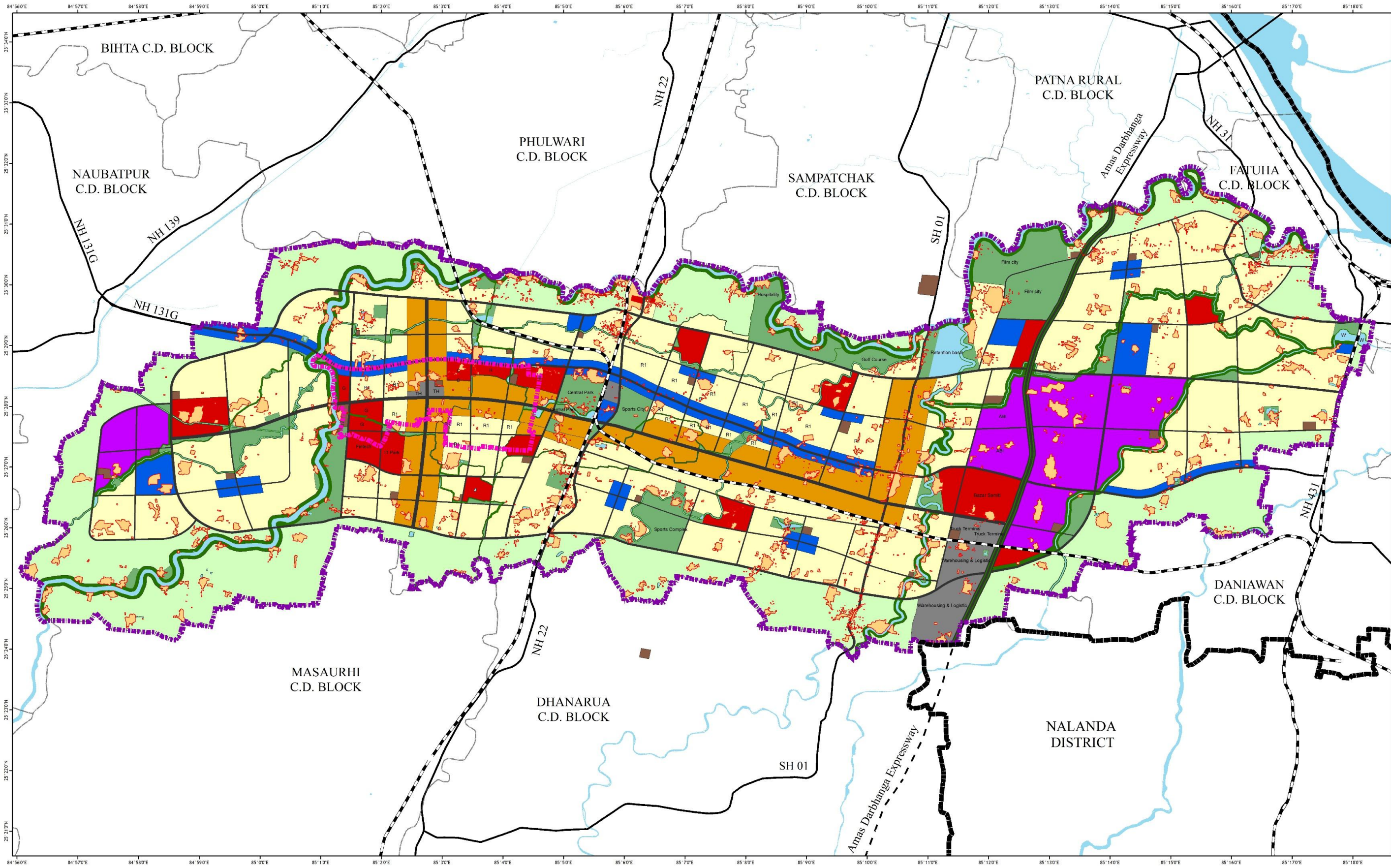
MAP NO - UDHD/TCPO/PTMP/18

SCALE

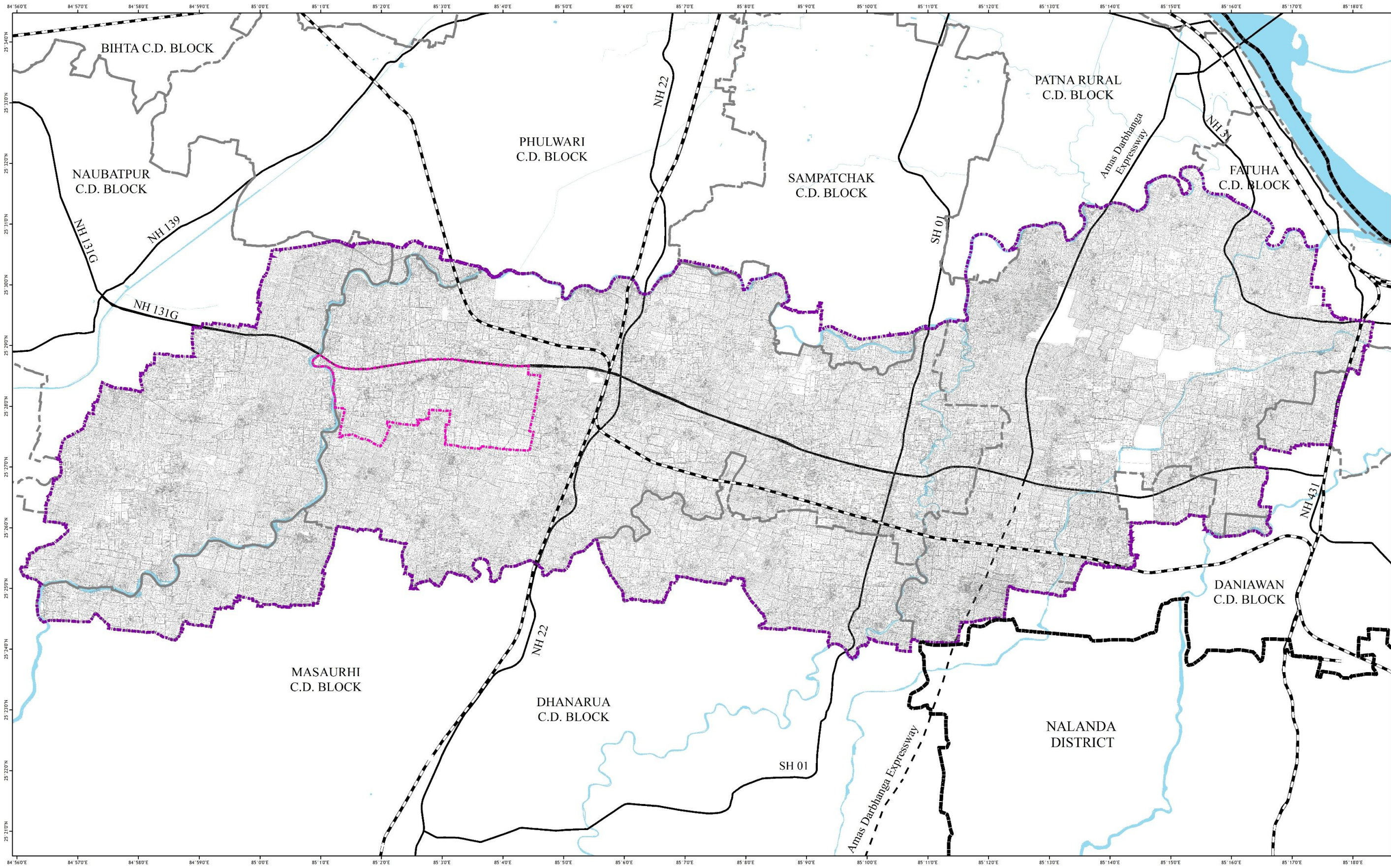
0 0.5 1 2 3 4 5 6 km

N

Prepared By :-
Town and Country Planning Organisation
Urban Development & Housing Department,
Government of Bihar.

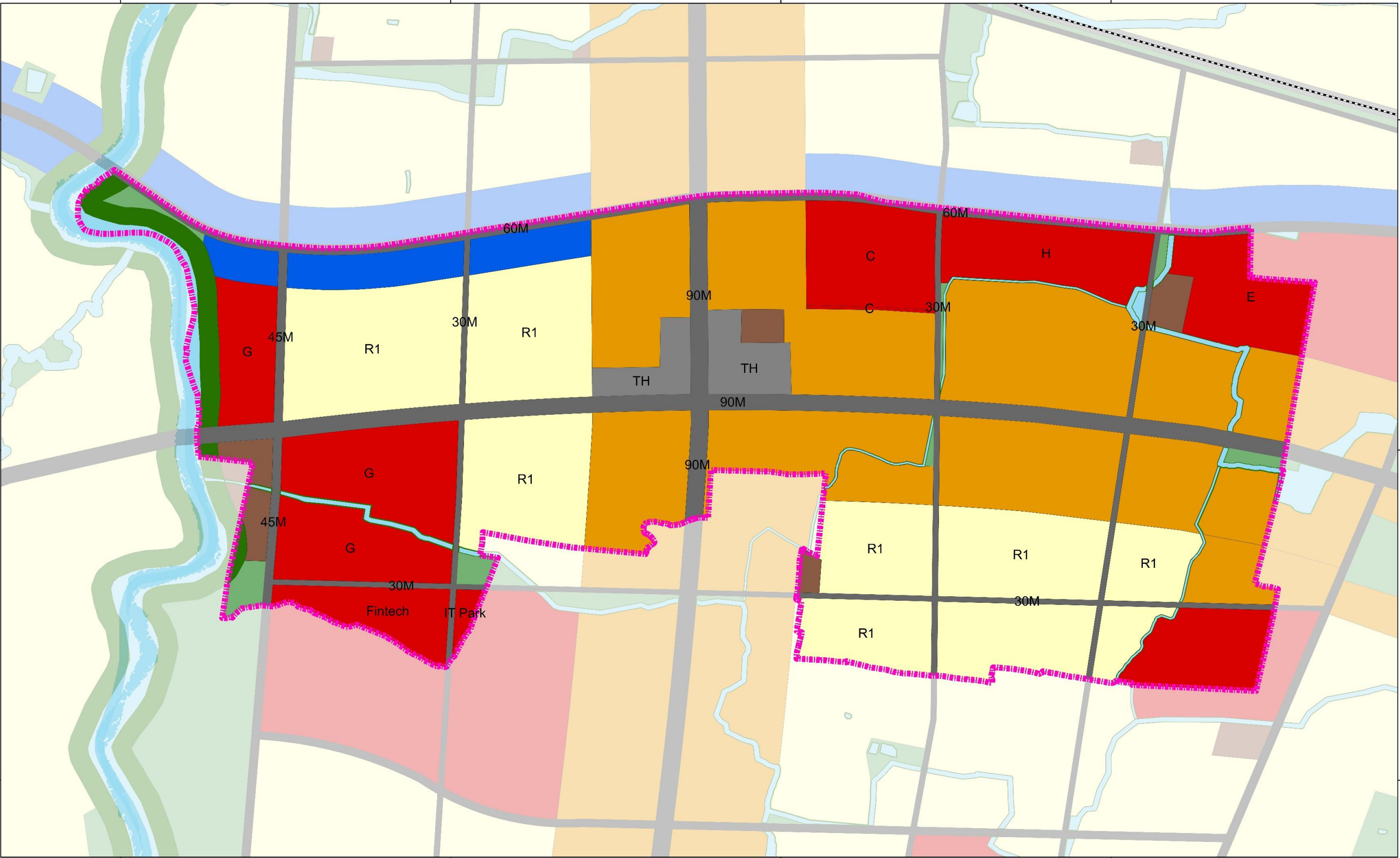


KEY MAP 		PROJECT NAME - PATLIPUTRA GREENFIELD SATELLITE TOWNSHIP - 2047		MAP TITLE : PROPOSED LAND USE MAP		MAP NO - UDHD/TCPO/PTMP/19	
LEGEND Special Area Core Area C.D. Block Boundary		Railway Line Existing Settlement		Proposed Land Use Commercial Green Belt Industrial		Public Purpose Public Utilities Recreation Residential	
				Roads Stream & Canal TOD Zone Transport & Communications		Urban Agriculture Waterbody	
						SCALE 0 0.5 1 2 3 4 5 6 km N	
						Prepared By :- Town and Country Planning Organisation Urban Development & Housing Department, Government of Bihar.	



KEY MAP 	PROJECT NAME - PATLIPUTRA GREENFIELD SATELLITE TOWNSHIP - 2047		MAP TITLE : EXISTING CADASTRAL LAND PARCEL IN SPECIAL AREA		MAP NO - UDHD/TCPO/PTMP/ 20	
	LEGEND					
	Special Area	Core Area	C.D. Block Boundary	Railway Line	Cadastral Land Parcel	SCALE 0 0.5 1 2 3 4 5 6 km

Prepared By :-
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Urban Development & Housing Department,
Government of Bihar.



PROJECT NAME - PATLIPUTRA GREENFIELD SATELLITE TOWNSHIP - 2047

MAP TITLE : PROPOSED LAND USE MAP FOR CORE AREA

MAP NO - UDHD/TCPO/PTMP/21

LEGEND

Special Area

Core Area

Railway Line

Proposed Land Use

Commercial

Green Belt

Industrial

Public Purpose

Public Utilities

Residential

Roads

Stream & Canal

TOD Zone

Transport & Communications

Urban Agriculture

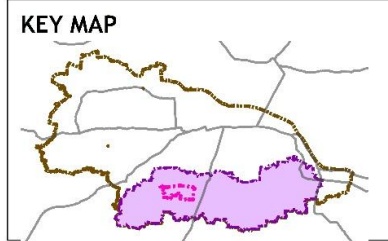
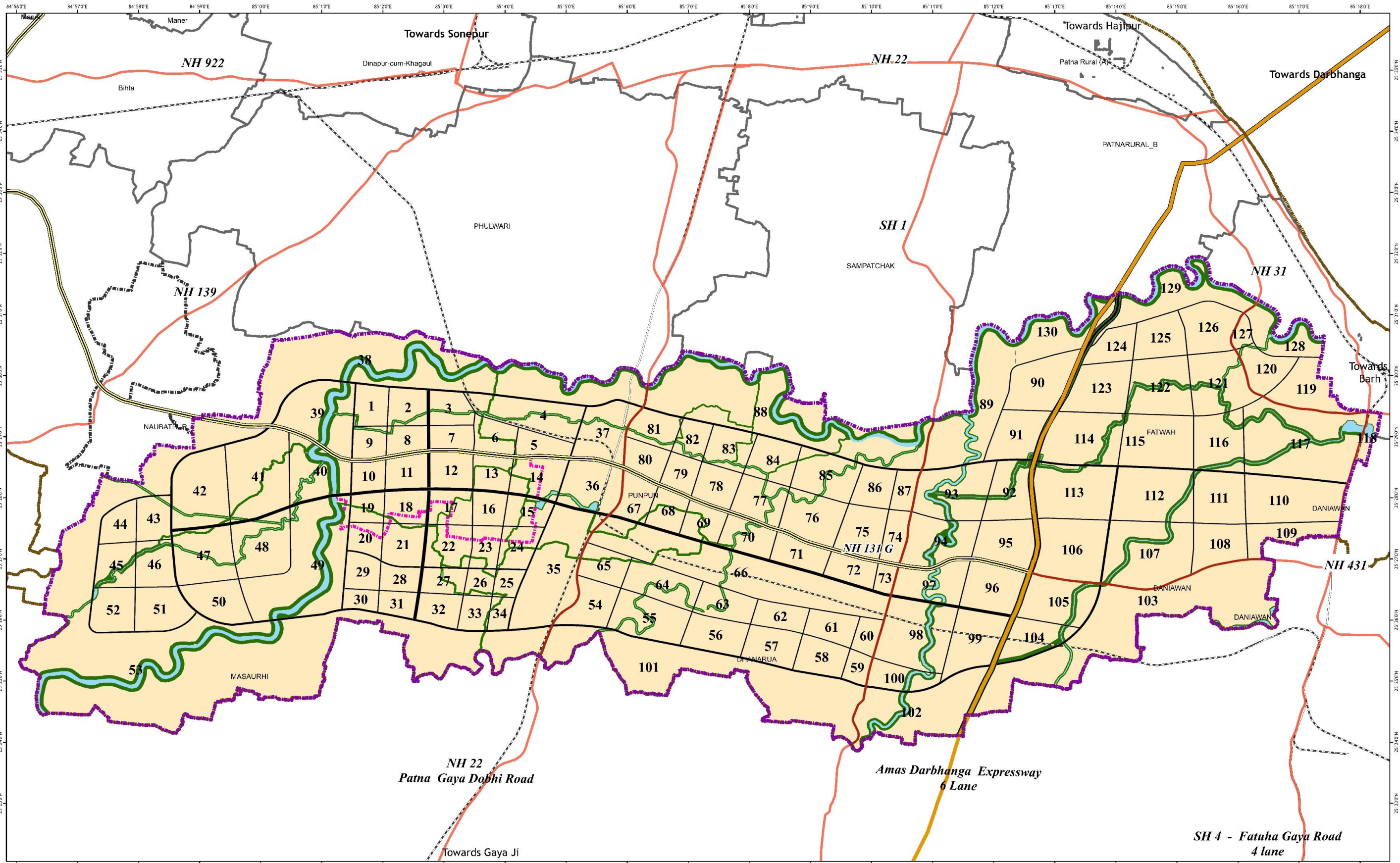
Waterbody

SCALE

0 0.1 0.2 0.4 0.6 0.8 1 km

N

Prepared By :-
Town and Country Planning Organisation
Urban Development & Housing Department,
Government of Bihar.



PROJECT NAME - PATLIPUTRA GREENFIELD SATELLITE TOWNSHIP - 2047

LEGEND

Railway Network

Amas Darbhanga

Patna Ring Road

Highway

Planning Area

Special Area

Core Area

Stream & Canal

Waterbody

Sector Plan

Block_Boundary

Green Belt

Proposed Road

MAP TITLE : SECTOR MAP

DESCRIPTION :
Regional connectivity - NH-22, NH-131G, NH-139, SH-1, SH-4. Patna Ring Road and Amas–Darbhanga Expressway. Proposed Roads- Major Roads-90 M Wide (Central Spine); 60 M (Township Ring Road), Collector Road-45M, Sector Roads- 30M Wide
Total Sectors - 130 sector.

MAP NO - UDHD/TCPO/PTMP/ 22

SCALE
0 0.5 1 2 3 4 5 6 km

Prepared By :-
Town and Country Planning Organisation
Urban Development & Housing Department,
Government of Bihar