



ESTABLISHMENT OF HYDERABAD PHARMA CITY

RANGA REDDY DISTRICT, TELANGANA STATE



PRE FEASIBILITY REPORT

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TELANGANA STATE INDUSTRIAL
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PREPARED BY





CONTENTS

Chapter 1. Executive Summary.....1-1

1.1	Project Components	1-1
1.2	Preliminary Infrastructure Assessment.....	1-2
1.3	Project Cost Estimate	1-3
1.4	Socio Economic Benefits of Project	1-3

Chapter 2. Introduction of the Project / Background Information2-1

2.1	Identification of Project and Project Proponent.....	2-1
2.1.1	Identification of Project	2-1
2.1.2	Identification of Project Proponent	2-2
2.2	Brief Description of Nature of the Project	2-3
2.3	Need for the Project (Importance to the Country and Region)	2-5
2.3.1	Promote Domestic API Manufacturing to Reduce Dependence on API Imports Fraught with Risks	2-5
2.3.2	Relocation of Pharma Units within Hyderabad ORR to beyond ORR	2-5
2.3.3	Expansion Plans of Local Manufacturing Units	2-5
2.3.4	Provide Integrated Pharma Manufacturing Ecosystem with built in Green Initiatives	2-6
2.4	Demand – Supply Gap.....	2-6
2.5	Imports vs. Indigenous Production	2-7
2.6	Export Possibility.....	2-9
2.7	Domestic / Export Markets	2-9
2.8	Employment Generation (Direct and Indirect) due to Project	2-10

Chapter 3. Project Description.....3-1

3.1	Type of Project including Interlinked and Interdependent Projects, if any	3-1
3.1.1	Pharma NIMZ	3-1
3.1.2	Pharma City Township	3-2
3.1.3	Pharma University.....	3-3
3.1.4	Pharma Research & Development and Ancillary Hub	3-3
3.2	Project Location	3-3
3.3	Details of Alternate Sites.....	3-4
3.4	Size or Magnitude of Operation.....	3-7
3.5	Project Description.....	3-7
3.6	Raw Material Required	3-7
3.7	Resource Optimisation/Recycling and Reuse	3-8
3.8	Availability of Water and Power	3-8
3.8.1	Water Supply.....	3-9



PRE FEASIBILITY REPORT

3.8.2	Availability of Power	3-10
3.9	Quantity of Wastes to be Generated	3-11
3.10	Schematic Representations	3-11

Chapter 4. Site Analysis.....4-1

4.1	Connectivity	4-1
4.1.1	Seaports	4-1
4.1.2	Road Connectivity	4-2
4.1.3	Rail Connectivity.....	4-5
4.1.4	Air Connectivity.....	4-6
4.2	Land Form, Landuse and Land Ownership.....	4-6
4.3	Topography	4-8
4.4	Existing Landuse Pattern	4-8
4.5	Existing Infrastructure	4-13
4.6	Soil Classification.....	4-13
4.7	Climatic Data from Secondary Sources	4-13
4.8	Social Infrastructure Available	4-14

Chapter 5. Planning Brief.....5-1

5.1	Planning Concept	5-1
5.1.1	Development Strategies.....	5-1
5.1.2	Type of Industries.....	5-2
5.1.3	Common Amenities & Utilities.....	5-3
5.2	Population Projection	5-3
5.3	Landuse Planning	5-3
5.4	Assessment of Infrastructure Demand	5-4
5.5	Amenities / Facilities	5-5
5.5.1	Common Amenities & Utilities.....	5-5
5.5.2	Incubation Centre	5-5
5.5.3	Technical Infrastructure	5-5

Chapter 6. Proposed Infrastructure6-1

6.1	Industrial Area (Proposed Area).....	6-1
6.2	Residential Area (Non Processing Area)	6-1
6.3	Green Belt	6-2
6.4	Social Infrastructure.....	6-2
6.5	Connectivity	6-2
6.5.1	Road Connectivity	6-2
6.5.2	Rail Connectivity.....	6-4



PRE FEASIBILITY REPORT

6.5.3	Air Connectivity	6-4
6.6	Drinking Water Management	6-4
6.7	Sewerage System	6-5
6.8	Industrial Waste Management	6-5
6.8.1	Industrial Wastewater Management.....	6-5
6.8.2	Domestic Wastewater.....	6-7
6.9	Solid Waste Management.....	6-7
6.9.1	Municipal Solid Waste.....	6-7
6.9.2	Industrial Solid Waste	6-8
6.10	Power Requirement & Supply/Source	6-10
Chapter 7. Rehabilitation and Resettlement Plan		7-1
Chapter 8. Project Schedule & Cost Estimates		8-1
8.1	Project Schedule	8-1
8.2	Project Cost Estimates	8-1
8.2.1	Block Cost Estimate for External Linkages	8-1
8.2.2	Block Cost Estimates for Internal Site Development	8-2
Chapter 9. Analysis of Proposal (Final Recommendation).....		9-1

PRE FEASIBILITY REPORT

LIST OF FIGURES

Figure 2-1: Proposed Pharma City Zoning (Indicative)	2-4
Figure 2-2: Growth in Trade and Production of APIs and Advanced Intermediates	2-7
Figure 2-3: Leading Importers and their Raw Material Import Figures	2-8
Figure 2-4: Value Share of China in Total Imports of API and Advanced Intermediates	2-8
Figure 3-1: Key Map of Hyderabad Pharma City Site Location	3-4
Figure 4-1: Seaports in Hyderabad Pharma City Hinterland	4-1
Figure 4-2: Hyderabad Pharma City Site – Road Linkages	4-2
Figure 4-3: Hyderabad Pharma City Site Location on the Rail Network Map of Deccan Region of India	4-5
Figure 4-4: Pharma City Site Contour Map	4-9
Figure 4-5: Pharma City Site Landuse Map	4-10
Figure 4-6: Pharma City Site –Environmental Sensitivity Map	4-12
Figure 6-1: Proposed Location of Common Wastewater Treatment Plants at Pharma City	6-7

LIST OF TABLES

Table 3-1: Alternative Site Evaluation for Hyderabad Pharma City	3-5
Table 3-2: Programme of Implementation of Krishna Water Supply Project	3-10
Table 4-1: Landownership and Land Acquisition Status for Hyderabad Pharma City Project	4-7
Table 4-2: Meteorological Conditions of Project Region	4-13
Table 5-1: Proposed Landuse Break Up in Pharma City	5-3
Table 8-1: Block Cost Estimates for External Linkages to Pharma City Project	8-1

LIST OF DRAWINGS

- Drawing 1: Administrative and Physical Map
- Drawing 2: Conceptual Site Master Plan
- Drawing 3: Proposed External Linkages

Chapter 1. EXECUTIVE SUMMARY

1.1 Project Components

In order to provide an impetus to the pharmaceutical industry in Telangana State and also to provide an industry-friendly integrated environment for expansion units of existing pharma companies as well as to attract new investments in manufacturing and allied segments of pharma industry, Government of Telangana State (GoTS) proposes to develop a PHARMA CITY near Hyderabad.

The HYDERABAD PHARMA CITY is proposed to be developed with integrated physical, environmental, social and technical infrastructure in an area of 19,333.20 acres (7824 ha./ 78.24 sq.km) of land in Ranga Reddy District of Telangana State. Key components of the Hyderabad Pharma City Project include:

- (A) Pharma NIMZ¹ (for pharma manufacturing and allied activities)
- (B) Pharma City Township (for housing and allied social infrastructure)
- (C) Pharma University (exclusive university for pharmaceutical sector)
- (D) Pharma R&D and Ancillary Hub (Research & Development Hub; hub for ancillary units)

Pharma City is proposed to be developed with all integrated infrastructure including:

Common Amenities & Utilities	<ul style="list-style-type: none">• Supply common utilities such as steam, chilled water, brine, nitrogen, treated water etc.• Centralised environmental facilities such as ZLD based CETP, incinerator and integrated solid waste handling facilities• Central facilities like bulk chemicals storage, transport, common kitchen, workshop, warehouses etc.
Incubation Centre	<ul style="list-style-type: none">• Facilitate first generation technocrats to set up their own manufacturing facilities• Provide speedy hassle free manufacturing facilities with all necessary statutory approvals & clearances at the park level• Provide centralized utilities and services at reasonable cost to minimize investment by individual units• Provide standard design factory sheds, plant & machinery on lease basis
Technical Infrastructure – Central Knowledge	<ul style="list-style-type: none">• Drug Discovery and Development: Drug discovery & development services include areas such as analogue research, combinatorial chemistry, chiral chemistry and new drug delivery systems.

¹ National Investment and Manufacturing Zone

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Hub

- **Chemistry Services:** This could potentially include a library of novel compounds with high diversity to act as leads for the drug targets.
- **Biological services:** This could potentially include identifying and characterizing targets, screening including assay development, and lead optimization using adsorption, distribution, metabolism, efficacy and toxicity.
- **Clinical trials:** Currently a high share of costs in drug development goes into clinical trials. India's vast and diverse genetic pool has distinct cost advantages in this segment.
- **Testing and certification with accreditation:** Required for inspection agencies, especially for exports.
- **Contract Research and Custom Synthesis:** Opportunity in this segment is expected to grow due to introduction of product patent regime.

1.2 Preliminary Infrastructure Assessment

Transportation infrastructure proposed for the project includes development of several new roads and upgradation of new roads to link the site to its hinterland as well for internal circulation. Apart from roads, a rail link as well as a logistics hub and heliport is also proposed within Pharma City.

Preliminary estimate of gross water demand of Hyderabad Pharma City is 200 MLD. After considering recycling and reuse of wastewater, the net fresh water demand is around **123 MLD**. It is proposed to treat the wastewater generated at HPC to tertiary level (Zero Liquid Discharge) thus enabling its reuse and recycle at the site. Hence, the total net fresh water demand for HPC has been reduced from 200 MLD to 123 MLD (including losses at 15%).

The total estimated power demand for the Pharma City ultimate phase development is about **900 MW**.

The estimated industrial wastewater from Hyderabad Pharma City in the ultimate phase of project development is **47 MLD**. It is envisaged to treat the industrial wastewater in the proposed Zero Liquid (ZLD) based Common Effluent Treatment Plant (CETP) which will be developed in modules as per the demand. The estimated domestic wastewater (Sewage) from Hyderabad Pharma City in the ultimate phase of project development is **24 MLD**. It is proposed to treat the sewage in Sewage Treatment Plant (STP) which wi

ll be established in modules.

Total municipal solid waste (MSW) generation from the Project has been estimated at about **70 TPD**. The estimated solid waste from the Project would be in the order of **3 lakh TPA**.

1.3 Project Cost Estimate

The total project cost estimate is **Rs. 16,395 Crores²** with the following break up:

- Land acquisition cost – Rs. 1,550 Crores
- Block cost estimate for external linkages – Rs. 6,145 Crores
- Block cost estimate for internal site development – Rs. 8,700 Crores

1.4 Socio Economic Benefits of Project

The estimated employment generation potential of the project is **4.25 lakhs** including direct employment generation of **1.7 lakhs**.

The estimated total investment in pharma manufacturing in the Pharma City by the ultimate phase of project development is **Rs. 64,000 Crores**, with an estimated turnover of **Rs. 1.4 lakh Crores** and estimated pharma exports of **Rs. 58,000 Crores**.

The other project benefits include relocation of pharma units within Hyderabad urban sprawl to an **integrated township** that is economically, socially and environmentally sustainable. The project will promote domestic API manufacturing that would help **reduce the current scenario of huge dependence on API imports** which are fraught with risks for the nation. **The project is planned in tandem with the Make in India program of the Government of India.**

² This cost is exclusive of technical infrastructure and township (housing and allied social infrastructure) development proposed within the Project since technical infrastructure is proposed to be developed with Govt of India funding under NIMZ Scheme, while housing and allied social infrastructure are proposed to be developed as standalone PPP projects.

Chapter 2. INTRODUCTION OF THE PROJECT / BACKGROUND INFORMATION

2.1 Identification of Project and Project Proponent

2.1.1 Identification of Project

Hyderabad, the “Bulk Drug Capital of India”, accounts for almost 20% of pharma exports from India, while Telangana State contributes to 1/3rd of the total pharma production in the country. There are around 400 plus pharma companies including 170 plus bulk drug units in Telangana. Hyderabad also has witnessed infrastructural development in the biotech domain wherein the Knowledge Park, the Biotech Park, Genome Valley and other projects have come up giving the city an advantage over others. Hyderabad is also a hub for R&D Centres like Centre for Cellular and Molecular Biology (CCMB), Indian Institute of Chemical Technology (IICT), International Crop Research Institute for Semi-arid Tropics (ICRISAT), Central Food Technology Research Institute (CFTRI) and Institute for Life Sciences Centre (ILSC).

Leveraging on this industry environment, several existing pharma companies have been working on expansions plans, while several new pharma units have also been proposed in Hyderabad. Various industry associations including the Bulk Drug Manufacturers Association (India) have estimated the need for around 7,000 acres of plotted industrial land to meet the investment plans of its members.

Therefore, in order to provide an impetus to the pharma industry in Telangana State and also to provide an industry-friendly integrated environment for expansion units of existing pharma companies as well as to attract new investments in manufacturing and allied segments of pharma industry, Government of Telangana State (GoTS) proposes to develop a PHARMA CITY near Hyderabad. The **HYDERABAD PHARMA CITY** is proposed to be developed with integrated physical, environmental, social and technical infrastructure in an area of **19,333.20 acres (7824 ha./ 78.24 sq.km)** of land in Ranga Reddy³ District of Telangana State.



³ Part of erstwhile Rangareddy district which was bifurcated into three districts comprising of Vikarabad, Medchal and Rangareddy districts on October 11, 2016. Part of erstwhile Mahabubnagar District (Amangal Mandal) is also now part of Ranga Reddy District.

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Of this, 13,030 acres (5,273 ha / 52.73 sq.km) of land, at around **16 km** to the south of Hyderabad Outer Ring Road in Kandukur and Yacharam Mandals of Ranga Reddy District, is proposed to be developed as a **Hyderabad Pharma NIMZ⁴** devoted exclusively to Pharma Manufacturing while the rest of the Pharma City land is proposed to be developed for a **Pharma University, Pharma R&D and Ancillary Hub** and **Pharma City Township** with all allied social and physical infrastructure.

National Investment and Manufacturing Zones

NIMZs have been conceptualised as important instruments under the National Manufacturing Policy and the Make in India Program to realise the objectives of the Policy. As per the Policy, “NIMZs will be developed as integrated industrial townships with state-of-the art infrastructure and land use on the basis of zoning; clean and energy efficient technology; necessary social infrastructure; skill development facilities, etc., to provide a productive environment to persons transitioning from the primary sector to the secondary and tertiary sectors. These NIMZs would be managed by SPVs which would ensure master planning of the Zone; obtain/ facilitate prior clearances for setting up the industrial units to be located within the zone and undertake such other functions as specified in the various sections of this policy. To enable the NIMZ to function as a self governing and autonomous body, it will be declared by the State Government as an Industrial Township under Art 243 Q(c) of the Constitution of India. In sum, the NIMZs would be large areas of developed land, with the requisite eco-system for promoting world class manufacturing activity. They would be different from SEZs in terms of size, level of infrastructure planning, and governance structures related to regulatory procedures and exit policies.”

2.1.2 Identification of Project Proponent

Telangana State Industrial Infrastructure Corporation Limited (TSIIC), a 100% undertaking of the Government of Telangana State (GoTS), is the engine for industrial growth in Telangana. TSIIC is geared up to transform the State into an ideal destination for industrial investments. TSIIC functions with a mandate to provide industrial infrastructure and manages industrial land bank.

- TSIIC has 1,54,882-acres land bank for promoting manufacturing in the State
- TSIIC has 150 Industrial Parks spanning a wide range of sectors - IT, Biotechnology, Aerospace, Apparels, Pharmaceuticals, Automobiles/Auto Components etc
- Telangana is host to 28 SEZs out of the 192 operational SEZs in the country
- TSIIC is spread over all districts of Telangana State with 6 Zonal Offices
- TSIIC exercises the local authority powers and functions through its Industrial Area Local Authorities (IALAs)

Core functions of TSIIC include:

- Identification of potential sites for Industrial Areas
- Acquisition / Alienation of lands for Industrial Parks
- Providing infrastructure facilities through in house engineering division in Industrial Parks
- Allotment of land/plots/sheds for various industries
- Identification and development of infrastructure projects in PPP mode

⁴ National Investment and Manufacturing Zone

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Through the Government Order, G.O.MS.No. 31, dated June 10, 2016, Industries and Commerce Department of GoTS designated TSIIC as the **Project Proponent and Nodal Agency** for establishment of Hyderabad Pharma City.

As per the GO, “TSIIC shall take up with Gol all necessary correspondence to get required clearances such as Environmental Clearance (EC) in time and shall follow up with DIPP⁵ and other ministries to get approvals under NIMZ guidelines and establishment of relevant Gol organisation in the Park. TSIIC shall also engage an expert/consultancy agency to ensure proper development of timelines, and which will guide TSIIC in infrastructure planning and execution. It will ensure that all aspects as envisaged under the Park are actually incorporated and the best practices as prevalent across the world are studied and incorporated for each aspect of the Park. Special emphasis shall be laid on the modalities of development of CETP and the stages involved and technology required which will be suitable based on the climatic conditions and cost-wise. Since development of Park requires close coordination with various agencies not only at the state level but also with Gol agencies as well as funding agencies and the stakeholders, a detailed activity chart will be developed by TSIIC in coordination with the expert/consultancy agency and a full time nodal officer shall be designated for the Park till such time it is fully developed. TSIIC shall send detailed project proposal to the Government on modalities for implementation and execution of project. The financing model of the Park will be worked out in consultation with this agency and all efforts should be made to access funds available with Gol or raise infrastructure funds from various agencies. TSIIC shall carry out all aspects related to the development of this park in a transparent manner duly following all relevant rules in vogue”.

2.2 Brief Description of Nature of the Project

GoTS has set out a comprehensive vision for Pharma City encompassing the complete range of activities associated with the pharma industry broadly grouped under ‘make’, ‘live’, ‘learn’, ‘innovate’ and ‘excel’.

MAKE: The Hyderabad Pharma NIMZ, which constitutes pharma manufacturing & related activities, occupies the largest chunk of Pharma City. It shall be developed with all integrated physical, environmental management, technical, and social infrastructure.

EXCEL: Hyderabad Pharma City shall have the necessary supporting **trade promotion infrastructure** to ensure that its units excel in the trade.

LIVE: Pharma City shall have an exclusive **Township** with housing facilities for all employee categories, as well as allied social infrastructure covering health, education, entertainment and recreation.



⁵ Department of Industrial Policy and Promotion, Ministry of Commerce and Industry, Government of India

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LEARN: Pharma City shall also have a **Pharma University** that shall provide a steady stream of skilled manpower to the Pharma City. It shall also have a Skill Development Hub for training the manpower to suit the industry requirements.

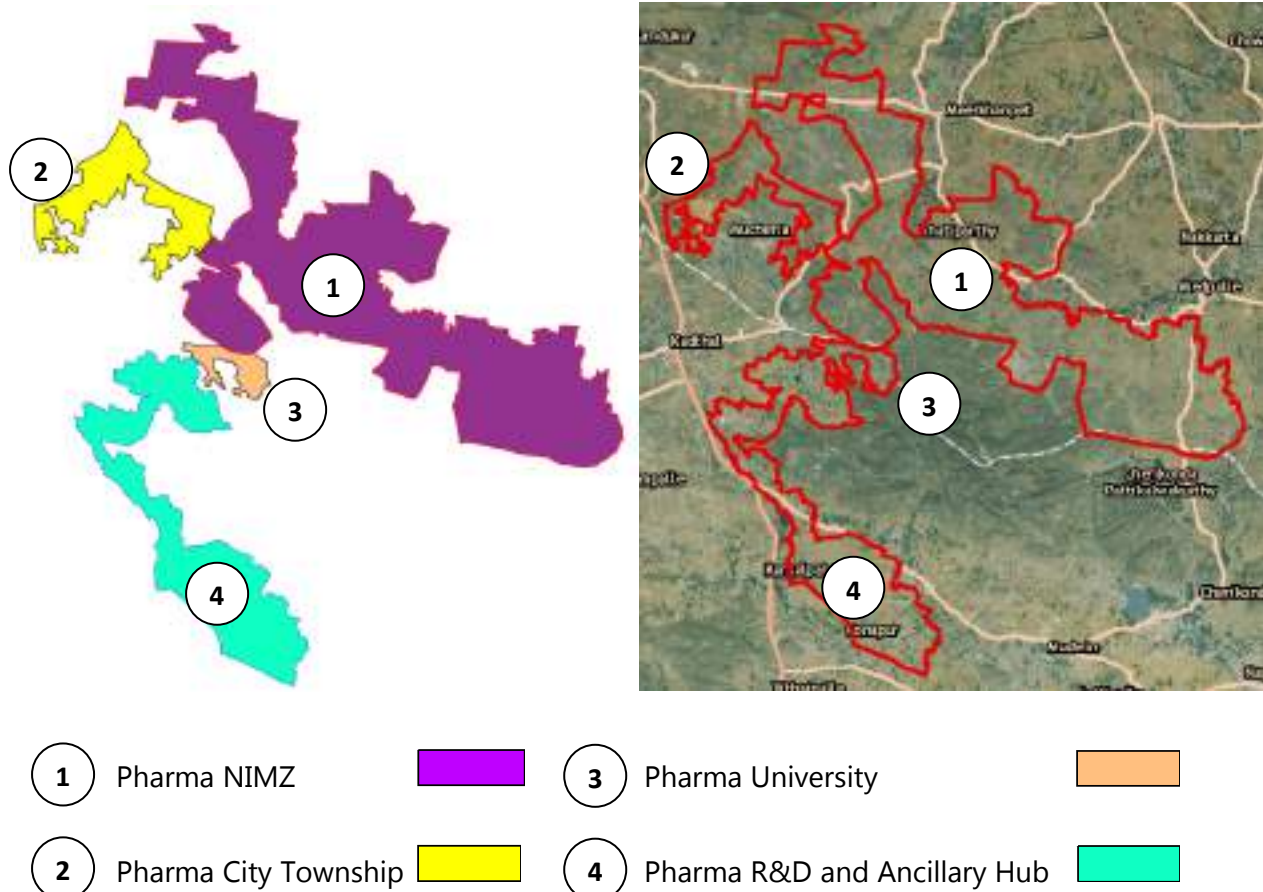
INNOVATE: Pharma City shall have a **Research & Development (R&D)** Hub that develops new drugs not only for diseases that are prevalent globally but also for diseases that are specific to India and other tropical countries.

Pharma City's key project components are:

Pharma City Component	Area in Acres	% to Total Area
Pharma NIMZ (Pharma Manufacturing)	13030	67.40%
Pharma City Township*	1593	8.24%
Pharma University*	630	3.26%
Pharma R&D and Ancillary Hub*	4080	21.10%
Total Pharma City Land	19333	100.00%

*extents for Township, University and R&D and Ancillary Hub are indicative

Figure 2-1: Proposed Pharma City Zoning (Indicative)



2.3 Need for the Project (Importance to the Country and Region)

2.3.1 Promote Domestic API Manufacturing to Reduce Dependence on API Imports Fraught with Risks

Being a major producer of pharmaceuticals in the country, Hyderabad's pharma manufacturers are facing the heat due to the industry's growing dependence on imports for Active Pharma Ingredients (APIs) and advanced intermediates used to manufacture key drugs. This reliance is entirely concentrated in China, posing significant risks of supply shortages under a scenario of strained bilateral ties between the two countries. Any adverse environment in China can create shortages of these APIs and advanced intermediates in India and drive up prices; this risk was highlighted by the scarcity of Pen-G and the significant spike in the prices of the API post Beijing Olympics when the Chinese government cracked down on domestic penicillin plants for non-compliance with environmental norms.

As far as intermediates are concerned there is more than 65 to 70% dependence on China, particularly for antibiotics, cephalosporin, vitamins, aspirin, paracetamol, metformin, renitidine, ibuprofen, amoxicillin, ciprofloxacin, cefixime, ofloxacin, ampicillin etc. Growing import dependence for raw materials also raises concerns about the quality of finished products (formulations). Now a number of Indian firms face quality issues with formulations in the US and EU markets.

The proposed Hyderabad Pharma City project shall mitigate the aforementioned risks faced by the domestic pharma industry. Developed with integrated infrastructure, especially the most crucial aspect in API manufacturing i.e. environmental management infrastructure for wastewater management and hazardous waste management apart from common utilities like water, power, steam etc., the Pharma City shall definitely attract API investments.

2.3.2 Relocation of Pharma Units within Hyderabad ORR to beyond ORR

As per G.O. Ms. No 20 dated March 01, 2013, polluting industries existing within Hyderabad Outer Ring Road (ORR) have to be compulsorily shifted to areas outside ORR. In this context, GoTS is under the process of establishing/facilitating development of industrial parks outside ORR. GoTS proposes that Pharma units located within ORR can be relocated to the proposed Hyderabad Pharma City (within the Pharma City).

2.3.3 Expansion Plans of Local Manufacturing Units

Existing pharma units in and around Hyderabad have expansion plans to meet the global demand for pharmaceuticals. Most of these units, through Bulk Drug Manufacturers Association (India), BDMA, have sought developed land from TSIIC with all integrated infrastructure, which can be materialised in Pharma City.

2.3.4 Provide Integrated Pharma Manufacturing Ecosystem with built in Green Initiatives

Apart from the market need (demand-supply gap) for Pharma City that has led to the 'need' for conceptualisation of Pharma City at this scale, the other 'need' that prevailed in the decision making for the Project was the 'need' to *"Provide Integrated Pharma Manufacturing Ecosystem with built in Green Initiatives"*. Pharma manufacturing has long turned notorious due to the several issues related to environmental pollution cause by the industry due to the lack of efficient environmental management systems. GoTS proposes to build a gain-gain situation by promoting pharma industry in an all-integrated manufacturing ecosystem that assures economic sustainability along with social sustainability and environmental sustainability. The various aspects of this development model are discussed in Chapter 5.

2.4 Demand – Supply Gap

Hyderabad incubated Pharma industry by the setting-up of IDPL's Synthetic Drug Plant in late 1960s by Government of India. This resulted in the State developing as a major Bulk Drug and Pharmaceutical manufacturer and exporter by 1990. Bulk Drug & Pharma Industry, is the flagship Industry of Telangana that gives Hyderabad the name **"Bulk Drug Capital of India"**. Telangana has nearly **200 Bulk Drug and Intermediate manufacturers and 400 Formulation units** – a majority of which is clustered around Hyderabad, spread in a radius of 60 km.

About **35%** of USFDA approved facilities in India are in Telangana; **30%** of medicines exported to USA are from Telangana. Of the total production of Rs. 65,200 Crores, exports from Telangana are about Rs. 32,584 Crores. Presently more than **30%** of the production in the country is from Telangana and **40%** of the country's pharma exports are from this region.

Hyderabad is also referred to as the **'Vaccine Hub of India'**. The city is home to leading vaccine producers such as Bharat Biotech, Biological E, Shantha Biotech, Indian Immunologicals, Globion Bio among others. The Clinical Trial sector in Hyderabad has also witnessed a steep rise, with leading clinical trial companies such as GVK Biosciences, Sipra, Vimta Labs and Quintiles among others.

The key success factors for the development of Hyderabad pharmaceuticals cluster can be attributed to the strong technical knowledge of entrepreneurs, their past working experience with large and medium pharmaceuticals organizations and proactive steps taken by State Government in the development of infrastructure.

In April 2015, Bulk Drug Manufacturers Association (India), BDMA, submitted a requisition to TSIIC for industrial land of around 4,000 acres from around 120 BDMA members. The letter encloses a list of land requirement of BDMA members (local industries) in the proposed Hyderabad Pharma City. The industrial land demand as per the list is in the plot-size range of 2 acres to 250 acres from around 120 firms, with 70% of the units seeking plot sizes of 20 acres or less. The total industrial plot area demand as per the BDMA list is around 4,000 acres, almost half of which are from 12 units whose demand lies in the 100 acres plus plot categories. These 12 units with the largest plot size demands are:

- Aurobindo Pharma Ltd – 250 acres
- Balaji Amines Ltd – 100 acres
- Dr Reddy's Laboratories Ltd – 200 acres

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- Gland Chemicals Pvt Ltd – 100 acres
- Gland Pharma Ltd – 100 acres
- Granules India Ltd – 100 acres
- Hetero Group – 250 acres
- MSN Laboratories Pvt Ltd – 250 acres
- MSN Pharmachem Pvt Ltd – 150 acres
- Mylan Laboratories Ltd – 100 acres
- Srinu Pharmaceuticals Ltd – 100 acres
- Virchow Laboratories Ltd – 200 acres

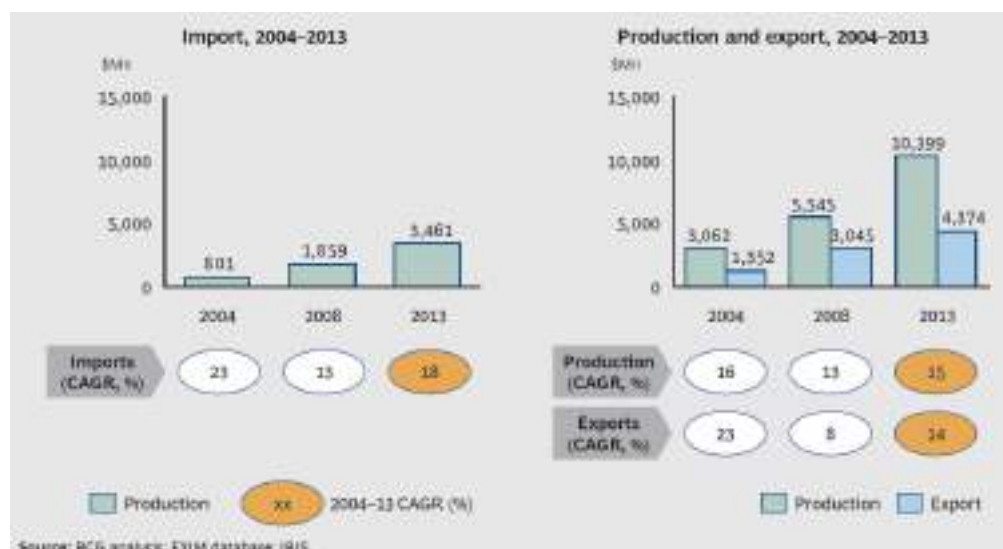
Apart from BDMA's land demand, the Telangana Association of Pharma and Chemical Industries (TAPCI) has also indicated to TSIIC, requirement for around 2,000 acres of industrial plots land from its members, largely belonging to the SME category.

Thus there is an immediate pharma industrial land demand for over 6,000 acres while considering promoters from outside the state, multinational companies and manufacturers of API Intermediates the total demand for industrial plotted land in the Hyderabad Pharma City may go up to over 8,000 acres.

2.5 Imports vs. Indigenous Production

In continuation to the aspects discussed in **Section 2.3.1**, a matter of concern is the higher growth rates of pharma imports, lower than the growth rate of pharma exports as shown in the following figure.

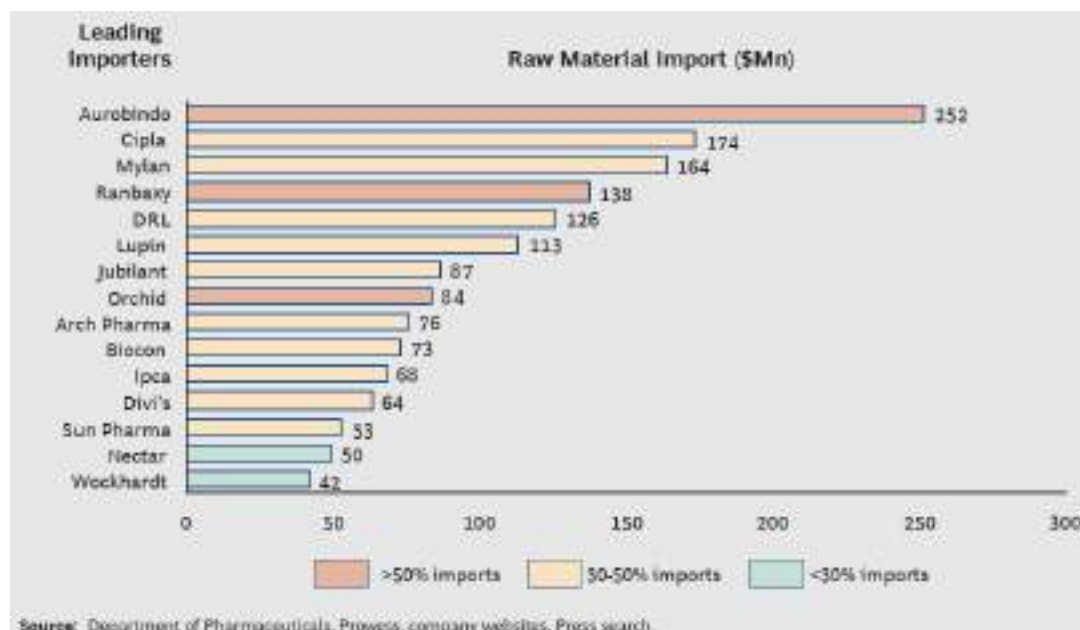
Figure 2-2: Growth in Trade and Production of APIs and Advanced Intermediates



While the CAGR of pharma exports were 14% during 2004 to 2013, the corresponding CAGR of pharma imports were higher at 18%. The increasing dependence of overseas suppliers is also reflected in the import figures of leading Indian pharmaceutical companies, many of whom source between 30% and 70% of their total raw material requirements from abroad. Some of these firms are prominent API players, indicating that intermediates and starting materials account for a significant share of total imports (refer following figure).

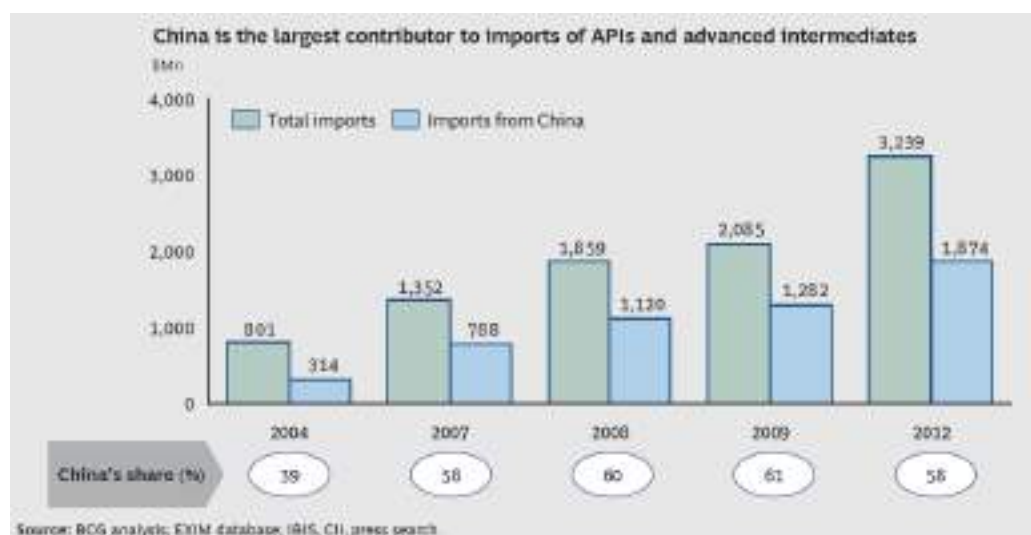
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Figure 2-3: Leading Importers and their Raw Material Import Figures



This reliance creates significant risk for India's domestic demand for essential drugs. The risk is further accentuated since China alone contributes 58% of these imports by value. China's contribution to India's total imports increased by 19 percentage points from 2004 to 2007, and has been stable since. In volume terms, the picture is starker, with China's share of imports going up to almost 80%. This suggests that imports from China are those of high-volume, mature products.

Figure 2-4: Value Share of China in Total Imports of API and Advanced Intermediates



The proposed Hyderabad Pharma City project shall mitigate the aforementioned risks faced by the domestic pharma industry. Developed with integrated infrastructure, especially the most crucial aspect in API manufacturing i.e. environmental management infrastructure for wastewater management and

hazardous waste management apart from common utilities like water, power, steam etc., the Pharma City shall definitely attract API investments.

2.6 Export Possibility

Indian pharma companies are capitalising on export opportunities in regulated and semi-regulated markets. Department of Pharmaceuticals (Government of India) targets to export USD18.02 billion worth of pharmaceuticals in 2016. Indian drugs are exported to more than 200 countries in the world, with the US as the key market. India is the world's largest provider of generic medicines; the country's generic drugs account for 20% of global generic drug exports (in terms of volumes). In terms of value, exports of pharmaceutical products increased at a CAGR of 14% during FY12–15. US is the largest export market for India.

In line with the market trends, the pharma manufacturing units of the proposed Pharma City would also contribute to the pharma exports of India. The total investment estimated in pharmaceutical manufacturing in the Hyderabad Pharma City by the ultimate phase of development is **Rs. 64,000 Crores**, while the corresponding turnover is **Rs. 1.4 lakh Crores**. **The corresponding worth of exports from the Hyderabad Pharma City is estimated at Rs. 58,000 Crores.**

2.7 Domestic / Export Markets

The Indian pharma industry, which is expected to grow over 15% per annum between 2015 and 2020, will outperform the global pharma industry, which is set to grow at an annual rate of 5% between the same period. The market is expected to grow to US\$ 55 billion by 2020, thereby emerging as the sixth largest pharmaceutical market globally by absolute size. Branded generics dominate the pharmaceuticals market, constituting nearly 80% of the market share (in terms of revenues).

India exports to over 200 countries. The US is the largest importer of Indian products. Exports to the UK grew at 11.9% between 2009 and 2010, and 2013 and 2014.

Overall drug approvals given by the US Food and Drug Administration (USFDA) to Indian companies have nearly doubled to 201 in FY 2015-16 from 109 in FY 2014-15. The country accounts for around 30% (by volume) and about 10% (value) in the US\$ 70-80 billion US generics market.

India has the highest number of plants approved by the USFDA outside the US. Around 584 Indian companies/sites are registered with the USFDA. Several plants have also obtained regulatory approvals from the Medicines and Healthcare Products Regulatory Agency (MHRA) in the UK; the Medicines Control Council (MCC) in South Africa; and the Therapeutic Goods Administration (TGA) in Australia.

India has one of the lowest manufacturing costs in the world. Manufacturing cost in India is approximately 35–40% of that in the US as installation and workforce costs are low.

2.8 Employment Generation (Direct and Indirect) due to Project

The total estimated direct employment from Hyderabad Pharma City by the ultimate phase of project development is about **1.70 lakhs**, while including indirect employment the total estimated employment potential of Pharma City is around **4.25 lakhs**.

**GOVERNMENT OF TELANGANA
ABSTRACT**

Industries & Commerce Department - Establishment of Pharma City in the name and style of 'Hyderabad Pharma City' in parts of Ranga Reddy District and Mahaboobnagar District with state of the art infrastructure, treatment support facilities & other utilities - Orders - Issued.

INDUSRIES & COMMERCE (IP&INF) DEPARTMENT

G.O.MS.No. 31

Dated: 10/06/2016

Read the following:-

- 1) G.O.Ms.No.33, Ind.& Com. (IP&INF) Dept. dt.11.06.2015
- 2) G.O.Ms.No.49, Ind.& Com. (IP&INF) Dept. dt.18.08.2015
- 3) From the Under Secretary to GOI, DIPP, Ministry of Commerce & Industry Lr.No.15/6/2015-MPS, dt.22.01.2016
- 4) G.O.Ms.No.18, Ind.& Com. (IP&INF) Dept. dt.19.03.2016
- 5) From the VC&MD, TSIIIC, single file No.41784/TSIIC/Projects / Pharma City/2014, dt.02.06.2016

ORDER:

Telangana State has traditionally been the Bulk drugs capital in the country. The Application Program Interface (API)/formulations/bulk drugs manufacturing in the state is almost one-third of the total production in the country in value terms. The state government reaffirms its focus on the sector and intends to keep not only the leader status in the sector but would also facilitate setting up of the most modern facilities along with all necessary where withal in an integrated manner.

2. The Government has accordingly decided to set up a state of the art Pharmaceutical City, a one stop shop for pharmaceuticals manufacturing companies, biotech & life sciences companies along with all related activities. The proposed park will have components and other related activities at Pharma city including antibiotics, fermentation products, synthetic drugs, large volume chemical synthesis, intermediaries, vitamins, vaccines, drug formulations, nutraceuticals, herbal medicinal products, specialty chemicals, cosmetics among others. Efforts will also be made to establish Research & Development (R&D) incubation center, central testing facilities facilitating clinical trials, testing & certification, contract research & custom synthesis. It is the endeavor of the state government that the park should have a centralized Effluent Treatment Plant (CETP) and other such common facilities on pay as you use basis. The state government shall also endeavor to have a dedicated technical university to specifically focus on pharma related research, training, teaching and academia in the Park. Efforts will also be made to develop other common facilities including certification and testing facilities, enabling concerned agencies to set up their offices/labs/centers in the park.

3. In the reference 1st & 2nd read above, the Government have constituted Special Task Force Committee to advise and monitor for speedy implementation of Hyderabad Pharma City proposed to be developed in Ranga Reddy and Mahboobnagar District duly involving various stakeholders.

4. In the reference 3rd read above, the Department of Industrial Policy and Promotion (DIPP), Ministry of Commerce & Industry, Government of India, have accorded 'in-principle' approval for setting up of National Investment Manufacturing Zone (NIMZ) for the proposed Pharma City. This in-turn implies strategic and infrastructure support from Government of India for the project.

(PTO)

::2::

5. Government, after careful examination of the matter, hereby accord permission for establishment of “Hyderabad Pharma City” in certain Mandals of Ranga Reddy district and Mahaboobnagar district. The actual location and exact extent will be firmed up based on the availability of government land and private land which can be acquired for this purpose based on the negotiation process. Efforts will be made by the concerned District Collectors of the two districts so that the total extent is at least 12500 acres. It should be a contiguous block so that an integrated development can be planned.

6. Government hereby designate Telangana State Industrial Infrastructure Corporation (TSIIC) as a Project Proponent and Nodal Agency for this purpose. Telangana State Industrial Infrastructure Corporation (TSIIC) shall take up with GOI all necessary correspondence to get required clearances such as the Environmental Clearance (EC) in time and shall follow up with DIPP and other ministries to get approvals under NIMZ guidelines and establishment of relevant GOI organizations in the park. TSIIC shall also engage an expert/consultancy agency to ensure proper development of timelines, and which will guide TSIIC in infrastructure planning and execution. It will be ensured that all aspects as envisaged under the Park are actually incorporated and that best practices as prevalent across the world are studied and incorporated for each aspect of the park. Special emphasis shall be laid on the modalities of development of CETP and the stages involved & technology required which will be suitable based on the climatic conditions and cost wise. Since development of park requires close coordination with various agencies not only at the state level but also with GOI agencies as well as funding agencies and the stakeholders, a detailed activity chart will be developed by Telangana State Industrial Infrastructure Corporation (TSIIC) in coordination with the expert/consultancy agency and a full time nodal officer shall be designated for the park till such time it is fully developed. The Telangana State Industrial Infrastructure Corporation (TSIIC) shall send detailed project proposal (DPR) to the Government on modalities for implementation and execution of project. The financing model of the park will be worked out in consultation with this agency and all efforts should be made to access funds available with Government of India (GOI) or raise infrastructure funds from various agencies. Telangana State Industrial Infrastructure Corporation (TSIIC) shall carry out all aspects related to the development of this park in a transparent manner duly following all relevant rules in vogue.

7. The Vice Chairman & Managing Director, Telangana State Industrial Infrastructure Corporation (TSIIC), Hyderabad shall take necessary further action in the matter accordingly.

(BY ORDER AND IN THE NAME OF THE GOVERNOR OF TELANGANA)

**ARVIND KUMAR
PRINCIPAL SECRETARY TO GOVERNMENT AND
COMMISSIONER FOR INDUSTRIAL PROMOTION**

To

The Vice Chairman & Managing Director, Telangana State Industrial Infrastructure Corporation (TSIIC), Hyderabad.

Copy to:

The Secretary, Dept of Industrial Policy & Promotion (DIPP), Ministry of Commerce and Industry, GOI, Udyog Bhavan, New Delhi.

The Commissioner of Industries, Hyderabad

The Collector and District Magistrate, Ranga Reddy & Mahaboobnagar.

The Member Secretary, TS Pollution Control Board, Hyderabad

The President, Bulk Drugs Manufacturers Association (BDMA), Sanathnagar, Hyd.

PS to the Hon'ble Minister for Industries

PS to the Addl.Prl.Secretary to Hon'ble Chief Minister

PS to the Prl.Secretary to Govt. & CIP, Ind. & Com. Dept.

[C.No.4830/IP&INF/A2/2016]

//Forwarded::By order//

SECTION OFFICER

GOVERNMENT OF ANDHRA PRADESH

ABSTRACT

Industries & Commerce Department – Shifting of Polluting Industries (Compulsory) and non-polluting Industries (Optional) from within the Outer Ring Road (ORR) to outside ORR – Guidelines on utilization of the land falling within Industrial Estates after shifting of Industries – Orders – Issued.

INDUSTRIES & COMMERCE (INF) DEPARTMENT

G.O. Ms.No: 20

Dated: 01.03.2013.

Read the following:-

1. Record of discussions held with the representatives of Industry Associations and Industrial Area Associations on 24-3-2012.
2. G.O. Rt. No. 508, Ind. & Com. (INF) Dept., Dt. 28.07.2012.
3. M.A. & U.D. (UD) Dept. File C.No.21344/11/2009.

* * *

ORDER:

In the reference 1st read above, a Meeting was convened on 24.03.2012 with the representatives of Industry Associations and Industrial Area Associations to discuss the issues related to the shifting of polluting industries from Greater Hyderabad Municipal Corporation(GHMC) areas to outside the Outer Ring Road (ORR) and some decisions were taken regarding Shifting of industries from GHMC areas to outside the Outer Ring Road (ORR), Development of New Industrial Areas outside Outer Ring Road (ORR), Land use conversions in the existing Industrial Areas and Status of Industrial Area Local Authorities (IALA).

2. In pursuance to the decisions taken in the meeting held on 24.03.2012, a Committee was constituted chaired by the Commissioner of Industries, A.P., Hyderabad to identify the polluting industries located inside Outer Ring Road (ORR), vide G.O. 2nd read above.

3. After careful examination of the matter, Govt. have taken a decision to shift the polluting industries (compulsory) and non-polluting industries (optional) from within the Outer Ring Road (ORR) to outside Outer Ring Road and to issue the following guide lines on utilization of land after shifting of Industries:-

(1) Development of New Industrial Areas Outside Outer Ring Road:

- (a) 45 locations have been identified outside the Outer Ring Road (ORR) which will be notified as Industrial use areas in the Master Plan of Hyderabad Metropolitan Development Authority (HMDA). These areas can be developed either by the A.P. Industrial Infrastructure Corporation (APIIC) or by Private Developers into Industrial Estates in a phased manner;
- (b) Preference to be given by A.P. Industrial Infrastructure Corporation to develop product specific estates to provide suitable and relevant infrastructure in these Estates;
- (c) Adequate infrastructure including buildings with plug-and-play facilities may be developed by the A.P. Industrial Infrastructure Corporation; and
- (d) All around these proposed estates, buffer green belt Zone at least 500 Meters width will be developed to prevent future environmental problems in the adjacent areas.

(2) Land use conversions in the Existing Industrial Areas:

- (a) Multiple land use is not permitted in the existing industrial areas till all the industries are shifted from the industrial area; and
- (b) Where existing industries have shifted from Industrial areas to outside ORR, plots of 10 acres or more abutting the High-ways may be allowed to develop commercial and residential lay outs after they provide minimum 100 Meters, green-belt zone to separate the industries that may exist on the remaining three sides.

(P.T.O)

(3) Status of Industrial Area Local Authorities (IALA):

- (a) The Industrial Area Local Authority in the existing industrial area will be continued till at least 50% of the area is under occupation of Industries;
- (b) In the Industrial Area Local Authority, only industry members should have voting rights;
- (c) Industrial Area Local Authorities and Industry representatives to be given opportunity to represent their case at the time of revision of Property Tax; and
- (d) Whenever necessary and feasible, Industrial Area Local Authorities to be permitted to develop and run Common Effluent Treatment Plants (CETP) by providing assistance under Industrial Infrastructure Development Fund (IIDF).

4. The Vice Chairman & Managing Director, AP Industrial Infrastructure Corporation Ltd., (APIIC), Hyderabad/ Metropolitan Commissioner, Hyderabad Metropolitan Development Authority / Member Secretary, AP Pollution Control Board shall take necessary action accordingly.

(BY ORDER AND IN THE NAME OF THE GOVERNOR OF ANDHRA PRADESH)

K. PRADEEP CHANDRA
PRINCIPAL SECRETARY TO GOVERNMENT AND
COMMISSIONER FOR INDUSTRIAL PROMOTION

To

The Vice Chairman & Managing Director, APIIC, Hyderabad.
The Metropolitan Commissioner., Hyderabad Metropolitan Development Authority.
The Member Secretary, AP Pollution Control Board, Hyderabad.
The Municipal Administration & Urban Development Dept.
The Environment, Forest, Science & Technology Dept.
The Commissioner of Industries, A.P., Hyderabad.

Copy to

The Commissioner, Greater Hyderabad Municipal Corporation (GHMC).
The General Manager, District Industries Centre, RR Dist;
The General Manager, District Industries Centre, Hyderabad.
The General Manager, District Industries Centre, Sangareddy, Medak.
Copy to FAPCCII/ FAPSIA/CII/ASSOCHAM through COI, Hyd.

//Forwarded::By order//

SECTION OFFICER

Chapter 3. PROJECT DESCRIPTION

3.1 Type of Project including Interlinked and Interdependent Projects, if any

The proposed project aims to provide an integrated ecosystem for pharma manufacturing with the following major components:

Pharma NIMZ (Pharma Manufacturing)
Pharma City Township
Pharma University
Pharma Research & Development and Ancillary Hub

A brief of each of the above components is outlined in the following paragraphs.

3.1.1 Pharma NIMZ

3.1.1.1 Pharma Manufacturing

Manufacturing of the following products will be undertaken in Hyderabad Pharma NIMZ:

- Antibiotics such as penicillin, Streptomycin, tetracyclines, fluoroquinolones and anti-fungals
- Fermentation products such as penicillins, cephalosporins and macrolides and many other intermediates
- Synthetic drugs, including sulfa drugs, antituberculosis drugs, antileprotic drugs, analgesics, anesthetics, and anti-malarials
- Chemical synthesis-based APIs or Intermediates such as paracetamol, metformin, ibuprofen, quinolones etc.
- Vitamins
- Drugs of vegetable origin such as quinine, strychnine and brucine
- Vaccines
- Intermediates
- Drug Formulations
- Nutraceuticals
- Herbal medicinal products
- Speciality Chemicals

3.1.1.2 Common Amenities & Utilities

- Supply common utilities such as steam, chilled water, brine, nitrogen, treated water etc.
- Centralised environmental facilities such as ZLD based CETP, incinerator and integrated solid waste handling facilities
- Central facilities like bulk chemicals storage, transport, common kitchen, workshop, warehouses etc.

3.1.1.3 Incubation Centre

- Facilitate first generation technocrats to set up their own manufacturing facilities
- Provide speedy hassle free manufacturing facilities with all necessary statutory approvals & clearances at the park level
- Provide centralized utilities and services at reasonable cost to minimize investment by individual units
- Provide standard design factory sheds, plant & machinery on lease basis

3.1.1.4 Technical Infrastructure

The industry's focal points include drug discovery, development of drug delivery systems, biotechnology, and bioinformatics. In view of the above it would be a pioneer effort to develop a **Central Knowledge Hub** with expertise and facilities for addressing the following industry needs:

- a) **Drug Discovery and Development:** Drug discovery & development services include areas such as analogue research, combinatorial chemistry, chiral chemistry and new drug delivery systems.
- b) **Chemistry Services:** This could potentially include a library of novel compounds with high diversity to act as leads for the drug targets.
- c) **Biological services:** This could potentially include identifying and characterizing targets, screening including assay development, and lead optimization using adsorption, distribution, metabolism, efficacy and toxicity.
- d) **Clinical trials:** Currently a high share of costs in drug development goes into clinical trials. India's vast and diverse genetic pool has distinct cost advantages in this segment.
- e) **Testing and certification with accreditation:** Required for inspection agencies, especially for exports.
- f) **Contract Research and Custom Synthesis:** Opportunity in this segment is expected to grow due to introduction of product patent regime.

3.1.2 Pharma City Township

The township shall house all the housing and allied social infrastructure needs of Pharma City. It shall be independent in terms of all spheres of urban living, the key categories being:

Housing: for all workforce categories - apartments, villas, dormitories

Social infrastructure: covering hospitals, schools, multiplexes, shopping centres, landscaped gardens, sports centres, playgrounds, clubs, restaurants, food courts, fitness centres etc

3.1.3 Pharma University

Envisaged as a premier institute, the Pharma University shall be exclusively dedicated to the field of pharmaceuticals and shall offer pharma-related courses in graduation, post graduation and doctoral programmes.

3.1.4 Pharma Research & Development and Ancillary Hub

Pharma R&D Hub: This Zone shall house the R&D facilities of Pharma City. It is ideally placed to foster stronger industry-academia interaction by facilitating to-and-fro movement of scientists between industry and academia. It shall accommodate advance research and development infrastructure in multiple formats like multi-tenanted research buildings, incubation facilities, built-to-suit blocks etc.

Ancillary Hub: This Zone shall accommodate ancillary units of the industry such as manufacture of - packaging, components/machinery, solvents, pharmaceutical excipients such as anti-adherents, binders, coatings, disintegrants, fillers, etc.

3.2 Project Location

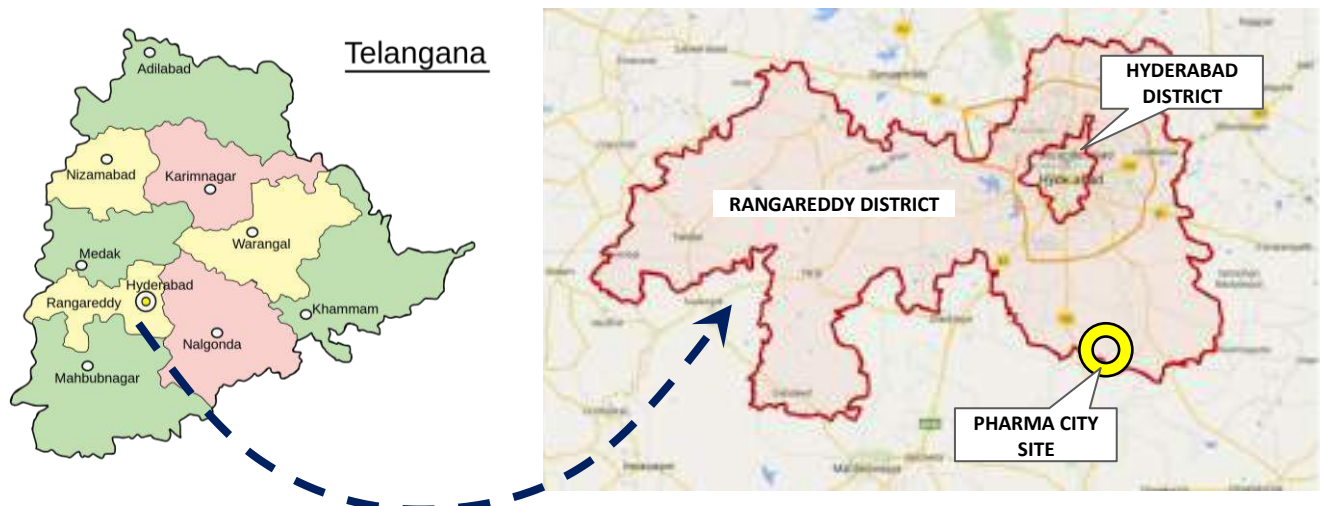
(Map showing general location, specific location, and project boundary & project site Layout with Co-ordinates)

The Hyderabad Pharma City project is proposed to be developed in an area of **19,333.20 acres (7824 ha./ 78.24 sq.km)** of land at Kandukur, Yacharam and Kadthal Mandals of Ranga Reddy⁶ District, Telangana State.

The following figure shows the key map of the Project Site location.

⁶ Part of erstwhile Rangareddy district which was bifurcated into three districts comprising of Vikarabad, Medchal and Rangareddy districts on October 11, 2016. Part of erstwhile Mahabubnagar District (Amangal Mandal) is also now part of Ranga Reddy District.

Figure 3-1: Key Map of Hyderabad Pharma City Site Location



(The 10 districts of Telangana were bifurcated into 31 districts on October 11, 2016. Since this is a recent development, the maps in this report do not reflect the changes in names and extents of districts; Maps shall be updated with the latest districts map in the EIA report)

Map showing specific location and project boundary with co-ordinates is enclosed as **Drawing 1**. Map showing the project site layout is enclosed as **Drawing 2**.

3.3 Details of Alternate Sites

(Details of Alternate Sites considered and the basis of selecting the proposed Site, particularly the environmental considerations gone into should be highlighted)

The Zoning and Development Promotion Regulations issued by the Hyderabad Metropolitan Development Authority prohibits the development of polluting/hazardous units within the Hyderabad Outer Ring Road. The G.O. Ms.No: 20, dated 01.03.2013, issued by the Industries & Commerce Department of the State Government calling for compulsory shifting of existing polluting industries to areas beyond the Outer Ring Road.

In this backdrop, Government of Telangana (GoTS) identified 4 sites for development of Integrated Pharma City near Hyderabad as listed below and Maps showing the site locations is placed at **Figure 3-A**.

- Site Option 1: About 1100 acres at Kesaram (V), Mominpet (M), Ranga Reddy District
- Site Option 2: About 19000 acres at Mucherla (V), Kandukur (M), Ranga Reddy District
- Site Option 3: About 1100 acres at Yeldurthy (V) & (M), Medak District
- Site Option 4: About 6700 acres at Lakdaram (V), Kondapak (M), Siddipet District

The above sites are assessed based on various parameters and the summarised in the following table.

PRE FEASIBILITY REPORT

Table 3-1: Alternative Site Evaluation for Hyderabad Pharma City

Project Site	Land area (Acres)	Connectivity	Availability of Power and Water	Remarks
Site Option 1 Kesaram	1500	<ul style="list-style-type: none"> • 12 km from NH 65 • 30 km from SH 149 	<ul style="list-style-type: none"> • Godavari Water Pipeline (Mission Bhageeratha) – about 2 kms from the site. • 33/11 kV substation at 6 km from the site. 	<ul style="list-style-type: none"> • Extent is less than the demand and NIMZ requirements. • Site falls in the 'conservation zone' as per approved Master Plan of HMDA.
Site Option 2 Mucherla	19000	<ul style="list-style-type: none"> • 8 km from NH 765 • 5 km from SH 19 	<ul style="list-style-type: none"> • Gungal Master Balancing Reservoir – 18 km • 765/400 kV substation of PGCIL and 400/220kV substation of TSTRANSCO are adjacent to the site. 	<ul style="list-style-type: none"> • Extent is more than 12350 acres, which is eligible for NIMZ status. • About 8915 acres of Govt land (Unassigned and Assigned) is available for alienation. • Most of the Private land is non-cultivable. • Reserve Forest along the southern boundary of the site will form a natural buffer for the overall project. • Power is readily available at the site. • The site is between NH 765 & SH 19 and well connected to International Airport, Outer Ring Road and NH 44, hence, favourable for establishment of necessary backward and forward linkages. • Industrial Eco-System is already existing in this region (Electronics, IT, Aero Space etc). • The site is preferred by the Industry.

PRE FEASIBILITY REPORT

Site Option 3 Yeldurthi	1100	<ul style="list-style-type: none"> • 17 km from NH 44 • 25 km from SH 6 	<ul style="list-style-type: none"> • Godavari Water Pipeline (Mission Bhageeratha) – about 2.5 kms from the site. • Haridra nadi Stream passes through at 1.5 km from the site. • 33/11 kV substation at 6 km from the site 	<ul style="list-style-type: none"> • Extent is less than the demand and NIMZ requirements.
Site Option 4 Lakdaram	6700	<ul style="list-style-type: none"> • 1 km from SH 1 	<ul style="list-style-type: none"> • Godavari Water Supply project is at Kondapaka – 11 km • 400/220 kV substation at Kodakandla – 9 km and 220/33kV substation at Kondapaka – 10 km 	<ul style="list-style-type: none"> • Extent is less than the demand and NIMZ requirements. • Private lands around the site are mostly cultivable and cost of acquisition is high. • Mode of transport for most of the raw materials and finished goods is by Air. Connectivity to International airport is poor compared to other options.

PRE FEASIBILITY REPORT

3.4 Size or Magnitude of Operation

The size and magnitude of the project is conveyed in **Section 3.1**.

3.5 Project Description

(Project Description with process details – a schematic diagram/ flow chart showing the project layout, components of the project etc should be given)

Pharma City project is not an individual industrial unit project as discussed in Section 3.1. It is an ecosystem for pharma manufacturing, of a very large scale, supported by various allied components. Hence a schematic diagram / flow chart would not convey the entire gamut of envisaged activities. However, the following figure to a large extent conveys the project description.



3.6 Raw Material Required

(Raw material required along with estimated quantity, likely source, marketing area of final product/s, mode of transport of raw material and finished product)

Pharma City project is not an individual industrial unit project as discussed in Section 3.1. It is an ecosystem for pharma manufacturing, of a very large scale, supported by various allied components. Hence the details of raw materials alter from unit to unit in the Pharma City.

PRE FEASIBILITY REPORT

Pharmaceutical raw materials comprise substrates or elements that are used for manufacturing different types of drugs. Pharmaceutical excipients and ingredients or raw materials used to manufacture drugs are extracted from different types of sources. These sources could be natural or synthetic. Recently, many of the raw materials previously derived from natural sources are being produced synthetically in part or even bio-technologically. This is so because manufacturing them artificially is economical, safer, and much quicker. Pharmaceutical raw materials are manufactured using different types of acids, alcohols, esters, phenones, pyridines, etc.

3.7 Resource Optimisation/Recycling and Reuse

(Resource Optimisation / recycling and reuse envisaged in the project, if any, should be briefly outlined)

- The infrastructure development plan for the Site shall ensure recycle and reuse of water through a network of zero liquid discharge wastewater treatment systems. The water supply source for the Project is the Krishna Water Supply Scheme that primarily supplies water to Hyderabad city. Growing Hyderabad metropolis would increase the urban water demand of the City, which relies entirely on sources beyond the City. Hence it is crucial that the Pharma City is very prudent in the use of fresh water by employing excellent wastewater treatment systems that recycle and reuse the water within the Site.
- Existing water bodies in the site are proposed to be retained in the Site Master Plan with the areas around it protected by green belts. These shall be used as storm water harvesting zones and developed into eco-friendly recreation spaces.
- Power generation from biogas generated at the Project's Sewage Treatment Plant shall be initiated with Central Financial Assistance under Ministry of New and Renewable Energy's Biogas based Power Generation Programme (BPGP). The organic wastes generated from the Pharma City (from hotels, canteens etc) shall also serve as feedstock for this project.
- Solar street lighting is recommended at places/zones (primarily common areas) that are feasible for solar energy utilisation within Pharma City.
- All the common amenity buildings and office blocks would be energy efficient as per the Energy Conservation Building Code, 2007 (ECBC).

3.8 Availability of Water and Power

(Availability of water its source, energy/power requirement and source should be given)



Site Levelling activity within TS Transco Site for proposed 400/220 kV Substation for Pharma City



View of Krishna Water Supply Lines along Nagarjunasagar Highway

3.8.1 Water Supply

Krishna River flows at 95 km (aerial distance) to the south of the Site, with the Nagarjunasagar Reservoir at 80 km to the south east of the Site as shown in the following figure.



HMWSSB's⁷ Krishna Water Supply Scheme envisages tapping 16.5 TMC of raw water from Krishna River i.e. 270 MGD, in three phases; each phase of 5.5 TMC raw water tapping for adding 90 MGD of treated water to the water supply system of Hyderabad Metropolitan area in each phase as shown in the following table.

⁷ Hyderabad Metropolitan Water Supply & Sewerage Board

PRE FEASIBILITY REPORT

Table 3-2: Programme of Implementation of Krishna Water Supply Project

Sl. No.	Phase & Stage / Year	Raw Water Tapping per Annum	Quantity of additional treated water to be added (in Mgd) per day	
1.	Phase-I	-	-	-
-	a) Stage-1 (2002-2004)	2.75 TMC	45 Mgd	90 Mgd
-	b) Stage-2 (2004-2006)	2.75 TMC	45 Mgd	
2.	Phase-II (2006-2011)	5.5 TMC	90 Mgd	90 Mgd
3.	Phase-III	-	-	-
-	a) Stage-1 (2011-2016)	2.75 TMC	45 Mgd	90 Mgd
-	b) Stage-2 (2016-2021)	2.75 TMC	45 Mgd	
-	Total:	16.50 TMC	-	270 Mgd

The raw water required for the Stage-1 of the Phase-I Project was tapped from the AMRP Main Canal⁸ at Km 26.328 as a time being arrangement. In Stage-2, an independent intake tower was constructed in the foreshore of Nagarjunasagar at Shunkishala. This is a permanent arrangement for drawing required raw water from Nagarjunasagar, River Krishna, to the Krishna Drinking Water Supply Project. While Phase-I and Phase-II of the project is already completed, Phase-III is currently under implementation.

GoTS proposes to tap water for Pharma City from Phase III of the Krishna Water Supply Scheme. As part of the Krishna Water Supply Scheme, two Master Balancing Reservoirs of 22.5 ML capacity each are constructed at Gunagal, from where water is proposed to be tapped for Pharma City. It is located at 12 km (distance by road) to the north east of the Project Site along Nagarjunasagar Highway.

Preliminary estimate of gross water demand of Hyderabad Pharma City is 200 MLD. After considering recycling and reuse of wastewater, the net fresh water demand is around **123 MLD**. It is proposed to treat the wastewater generated at Pharma City to tertiary level (Zero Liquid Discharge) thus enabling its reuse and recycle at the site. Hence, the total net fresh water demand for Pharma City has been reduced from 200 MLD to 123 MLD (including losses at 15%).

3.8.2 Availability of Power

PGCIL's 765/400 kV GIS Pooling Station is located adjacent to the northern part of the Site, near Vaikunta Tanda (under Mirkhanpet Village, Kandukur Mandal) as shown in **Drawing 1**. Transmission

⁸ Alimineti Madhava Reddy Srisailem Left Bank Canal Project (AMRP)

PRE FEASIBILITY REPORT

Corporation of Telangana Limited (TSTRANSCO) is currently constructing a 400/220 kV substation within the Pharma City Site (close to PGCIL Station) for power evacuation from the PGCIL Station. GoTS proposes that Pharma City shall source power from this substation, with further power transmission infrastructure to be developed within Pharma City.

During initial stages of the project, the Pharma City would source power from the existing 220 kV substation at Fab City (16 km to the north of Project Site).

The total estimated power demand for the Pharma City ultimate phase development is about **900 MW**.

3.9 Quantity of Wastes to be Generated

(Quantity of wastes to be generated, liquid and solid, and scheme for their management /disposal)

The estimated industrial wastewater from Hyderabad Pharma City in the ultimate phase of project development is **47 MLD**. It is envisaged to treat the industrial wastewater in the proposed Zero Liquid (ZLD) based Common Effluent Treatment Plant (CETP) which will be developed in modules as per the demand. Scheme for disposal is discussed in **Chapter 6**.

The estimated domestic wastewater (Sewage) from Hyderabad Pharma City in the ultimate phase of project development is **24 MLD**. It is proposed to treat the sewage in Sewage Treatment Plant (STP) which will be established in modules.

Total municipal solid waste (MSW) generation from the Project has been estimated at about **70 TPD**. Scheme for disposal is discussed in **Chapter 6**.

The estimated solid waste from the Project (as per the consultations held with BDMA⁹) would be in the order of **3 lakh TPA**. Scheme for disposal is discussed in **Chapter 6**.

3.10 Schematic Representations

(Schematic representations of the feasibility drawing which give information of EIA Purpose)

Proposed Conceptual Site Master Plan is enclosed as **Drawing 2**.

⁹ Bulk Drug Manufacturers Association (India)

Chapter 4. SITE ANALYSIS

4.1 Connectivity

4.1.1 Seaports

Telangana being a landlocked state, the nearest seaport to the Hyderabad Pharma City on the East Coast is **Krishnapatnam Port**, in SPSR Nellore district of Andhra Pradesh State, located to the south east of the Site at a distance of 450 km¹⁰ by road as shown in the following figure. The next nearest seaport is **Kakinada Deep Water Port**, located at a distance of 500 km to the east of the Site in East Godavari District of Andhra Pradesh State. Other ports include Visakhapatnam and Gangavaram Ports in Visakhapatnam district of Andhra Pradesh at 640 km and 630 km by road respectively, while **Nhava Sheva (JNPT)** on the West Coast is located on the west coast at 740 km by road.

Figure 4-1: Seaports in Hyderabad Pharma City Hinterland



Telangana being a landlocked state, the State Government (considering the envisaged industrial projects in the State) proposes to develop Dry Ports to meet the future cargo handling and processing needs of the State. Four sites have been proposed for development of Dry Ports¹¹, which include sites at:

¹⁰ However for cargo traffic, since Nagarjunasagar Highway is not a linkage option to Krishnapatnam Port due to ghat sections, the distance to port increases to 500 km by road when considering the other port linkage option (SH 2) via Nalgonda and Miryalaguda

¹¹ A Dry Port (Inland Port / (Multi Modal Logistics Park) is an inland intermodal terminal directly connected by road or rail to a seaport(s) and operating as a centre for the transshipment of sea cargo to inland destinations.

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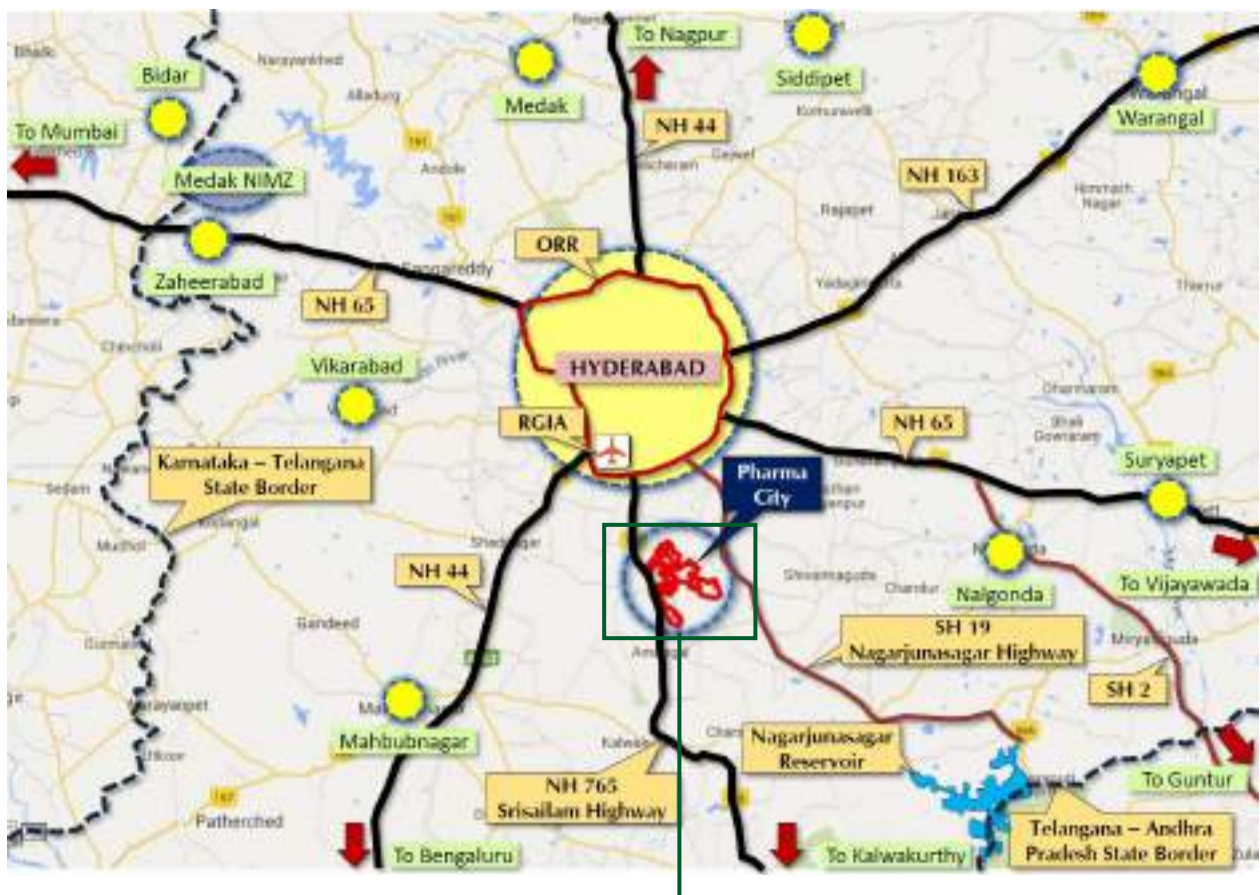
- Zaheerabad (within Medak NIMZ – 155 km by road from Pharma City Site), Medak District
- Bhuvanagiri (85 km by road from Pharma City Site), Nalgonda District
- Damarcherla (165 km by road from Pharma City Site), Nalgonda District
- Jadcherla (90 km by road from Pharma City Site), Nagarkurnool District

The Central Government recently gave its nod to set up a Dry port, at Eedula Nagulaplli (120 km from Hyderabad Pharma City Site) in Medak District. The port is proposed to be constructed by the Container Corporation of India (CONCOR) under the centrally-sponsored 'Sagaramala Project'.

4.1.2 Road Connectivity

The site can be accessed from Hyderabad via Srisailem Highway as well as Nagarjunasagar Highway as shown in the following figure. The site falls along the Kandukur-Yacharam Road which connects these two highways along Kandukur and Yacharam.

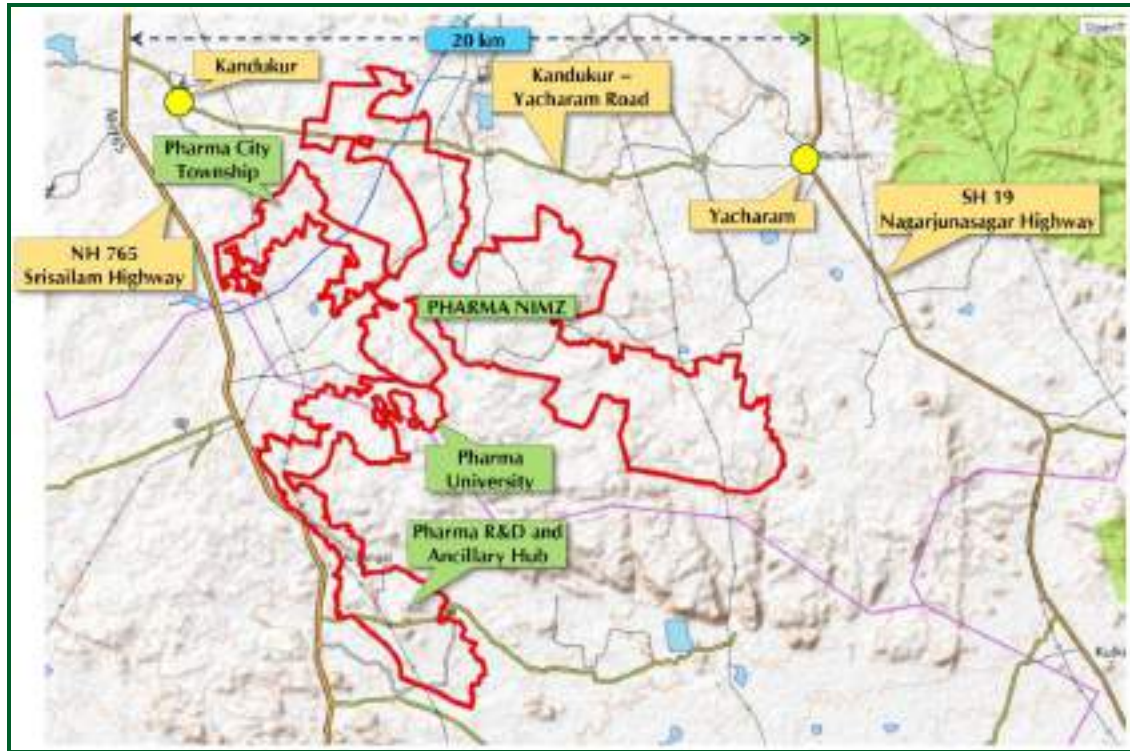
Figure 4-2: Hyderabad Pharma City Site – Road Linkages



(NH names reference: NH 44 is old NH 7, NH 65 is old NH 9, NH 163 is old NH 202)

Inset of Pharma City Site environs
enlarged in following page

Enlarged Inset of Pharma City Site Road Linkages



- **National Highway 44 (Old NH 7):** The Pharma City site lies 30 km to the east of NH 44 (Varanasi-Jabalpur- Nagpur-Hyderabad-Kurnool-Bengaluru-Krishnagiri-Salem-Dindigul-Madurai-Kanyakumari), which forms the North-South Corridor of NHDP.
- **Srisailem Highway:** This is the NH 765, erstwhile SH 5 that runs 6 km west of Pharma City Site and connects the region to Hyderabad. It is a 2 lane being widened to 4 lanes (stretch between Site and ORR is already upgraded to 2 lanes with shoulders). Srisailem Highway connects Hyderabad to Tokapelle Road in Andhra Pradesh via Kalwakurthy, Srisailem and Dornala.
- **Nagarjunasagar Highway:** This is SH 19 that connects Hyderabad to Nagarjunasagar. It runs 5 km to the east of Pharma City Site and connects the region to Hyderabad. It is an existing 2 lane road proposed for upgradation to 4 lanes.
- **Hyderabad Outer Ring Road:** The ORR runs 16 km to north of Site in E-W direction. It connects Srisailem Highway and Nagarjunasagar Highway to various parts of Hyderabad Metropolis. It is a 158 km long, 8 lane ring road expressway encircling the City of Hyderabad.
- **Kandukur-Yacharam Road:** This road connects the northern part of Site to both Srisailem Highway and Nagarjunasagar Highway. It runs through the Site for a distance of 3.3 km. This road is being planned for upgradation to 4 lanes from current single lane status by R&B Dept.
- **Road connecting Raviryal Exit 13 of ORR and Site:** This road connects northern part of Site to Hyderabad ORR at Exit 13 near Raviryal. It forms an alternate connectivity to Site from ORR apart from Srisailem Highway and Nagarjunasagar Highway. It runs via Thimmapur and Begampet before connecting Kandukur & Yacharam near Mirkhanpet. It is a single lane road which is proposed for upgradation to 4 lanes by R&B Dept.
- **Kadthal – Shaireddygudem – Kurumidda Road:** This road connects western part of Site to Srisailem Highway. It is a single lane village road from Kadthal to Kurumidda via Shaireddygudem and Mariakunta Tanda. It runs through the Site for a distance of around 1.2 km.

PRE FEASIBILITY REPORT

- **Road connecting Mirkhanpet and Tatiparti via Kurumidda:** This road connects central part of Site to Kandukur-Yacharam Road. It is a single lane village road that passes through the Site for a distance of around 2.5 km.
- **Road connecting Wanaparthi and Cherikonda via Nakkertha Medipally:** This road connects eastern part of Site to Kandukur-Yacharam Road. It is a single land village road that passes through the Site for a distance of around 3.5 km.
- **Road connecting Mahisamma (Maisigandi) and Ekkuvapally:** This single lane village road connects Srisailam Highway to the northern part of the Site proposed for R&D and Ancillary Hub and runs for a distance of 2 km through the Site.
- **Road connecting Site near Karkalpahad to Ekkuvapally:** This single lane village connects a hamlet to the south of Karkalpahad along Srisailam Highway to Ekkuvapally and runs through the Site for a distance of 2.6 km (in the site parcel identified for R&D and Ancillary Hub)
- **Road connecting Ramanuthula – Konapur – Marripally – Ekkuvapally:** This single lane village road passes through the site parcel identified for R&D and Ancillary Hub for a distance of 2.7 km.



Srisailam Highway (NH 765)



Kadthal Toll Plaza on Srisailam Highway



View of Kandukur-Yacharam Road from Nagarjunasagar Highway



View of Kandukur Junction on Srisailam Highway



Kandukur-Yacharam Road



Kandukur-Yacharam Road

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View of a Cart Track within Site in Mucherla Village



View of Road from Kadthal to Shaireddygudem

4.1.3 Rail Connectivity

The single line, broad gauge railway line that connects Secunderabad to Dhone via Kurnool runs 33 km to the west of the Site in N-S direction as shown in the following figure. The nearest railway station to the Site is Shadnagar Railway Station. This stretch of railways falls under the Hyderabad Division of South Central Railway (SCR) Line Zone. A rail spur line can be taken from this line to Pharma City to serve the logistics needs of the Project.

Figure 4-3: Hyderabad Pharma City Site Location on the Rail Network Map of Deccan Region of India



4.1.4 Air Connectivity

The Rajiv Gandhi International Airport (RGIA) is located 21 km to the north of Pharma City Site (32 km distance by road from site boundary) at Shamshabad as shown in the preceding road linkages figure. The airport can be accessed from the Site via Srisailem Highway and ORR. RGIA is an all-weather airport with Code-F (A380 compatible) runway and apron. The airport catered to 12.5 million passengers during 2015-16. Currently, there are 15 foreign and 3 Indian carriers flying to 20 international destinations and 7 domestic airlines operating to around 31 destinations.

The Air Cargo Terminal at Rajiv Gandhi International Airport was commissioned in 2008. It is India's first integrated cargo terminal to have both domestic and international facilities under one seamless roof. With a built-in area of 14,330 sq. m, the Air Cargo Terminal is a modular building with a capacity to handle cargo throughput of 150,000 MT annually. The terminal also boasts a dedicated Cargo Apron (Code-F A380) facility for handling regular freighter operations as well as charters. Lufthansa Cargo, Cathay Pacific, Qatar Cargo, Turkish Airlines and Blue Dart operate freighters from RGIA. Lufthansa Cargo has certified RGIA as one of its key cargo hubs in South Asia for the transport of temperature sensitive pharmaceuticals.

RGIA houses India's first Pharma Zone that offers temperature-controlled Truck-Dock to airside environment. 70% of exports from the RGIA are pharmaceuticals. Key features of Pharma Zone in RGIA include:

- Dedicated temperature - controlled truck docks for acceptance
- Floor level weighing machines at Acceptance Area
- Dedicated temperature-controlled area for Customs examination
- Dedicated CCTV coverage in Pharma Zone
- Racking system for storage of cargo to provide for examination in non-sterile area
- Modern, high capacity racking system
- Separate area earmarked for examination and forklift movement
- Ball mat system for built-up ULD movement
- Weighting of Unitized ULDs (Unit Load Devices)
- Dedicated zones with 02 to 08 degrees & 15 to 25 degrees in examination and sterile area for built-up ULDs
- FDA approved Data loggers with digital storage in all the key areas – features include SMS & email alerts and audible alarms fitted throughout

4.2 Land Form, Landuse and Land Ownership

Site topography is presented in Section 4.5, while existing landuse of the Site is presented in Section 4.6.

Land Ownership: The total land area covered by the proposed Hyderabad Pharma City Site is **19333.20 acres (7824 ha./ 78.24 sq.km)**. This includes 52.80% of privately owned lands and 46.11% of government lands as shown in the following table. Apart from this, around 0.57% of the lands are covered by water bodies.

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Table 4-1: Landownership and Land Acquisition Status for Hyderabad Pharma City Project

Category	Area in Acres	% to Total Area	Ownership	Remarks
Private Land - yet to be acquired	9937.70	51.41%	Private	Process for acquisition initiated
Private Land – acquired	269.10	1.39%	Govt	Land recently acquired and in TSIIC's possession
Government Land - in TSIIC's possession	3057.10	15.81%	Govt	Govt lands recently alienated/transferred to TSIIC
Government Land - yet to be alienated[#]	5857.30	30.30%	Govt	Govt lands to be transferred to TSIIC and Assigned lands to be acquired
TSTRANSCO Land	100.00	0.52%	Govt	Land acquired by TSTRANSCO for development of 400/220 kV Substation for power sourcing and distribution from Mirkhanpet PGCIL's 765 kV Pooling Station
Area of Water Bodies	111.00	0.57%	Govt	Not to be acquired
Total Area in Acres	19333.20	100.00%		

Another 2200 Acres of Govt lands are being alienated in the Month of October, 2016.



View of Northern Part of Site along Kandukur-Yacharam Road



View of Central Part of Site within Tatiparti Village



View of Eastern Part of Site within Nazdik Singaram Village



View of Central Part of Site within Kurumidda Village

PRE FEASIBILITY REPORT



View of Northern Part of Site near within Mirkhanpet Village



View of Western Part of Site within Mucherla Village

4.3 Topography

Site contour map is enclosed as the following figure. The northern and central parts of the Site slopes downward from southwest to northeast, while the eastern part of the Site slopes downward from west to east. In the northern part of the Site, the Site slopes from 656 m above MSL to 616 m over a distance of around 3 km. In the central part, the Site slopes from 652 m to 620 m from southwest to northeast over a distance of around 5 km. In the eastern part, the Site slopes from 650 m to 590 m over a distance of around 4 km. In the southern part, the Site slopes downward from northwest to south east; from 650 m above MSL to 530 m above MSL, over a distance of 9 km.

4.4 Existing Landuse Pattern

(agriculture, non-agriculture, forest, water bodies, shortest distances from the periphery of the project to periphery of the forests, national park, wildlife sanctuary, eco sensitive areas, water bodies – distance from the HFL of river, CRZ. In case of notified industrial area, a copy of the Gazette notification should be given)

Figure 4-5 gives the landuse map of the Pharma City Site.

Pharma NIMZ Site: The proposed NIMZ Site is completely a greenfield site with almost no developments currently at the Site. The existing landuse within the Site is largely agricultural fallow lands followed by agricultural cropped lands and scrub /barren rocky lands as shown in the existing landuse map given in **Figure 4-5**. There are no settlements within the NIMZ Site, barring few scattered buildings and dwellings.

Pharma University Site: The existing landuse in the proposed Site for the University is largely barren scrubland, followed some agricultural lands.

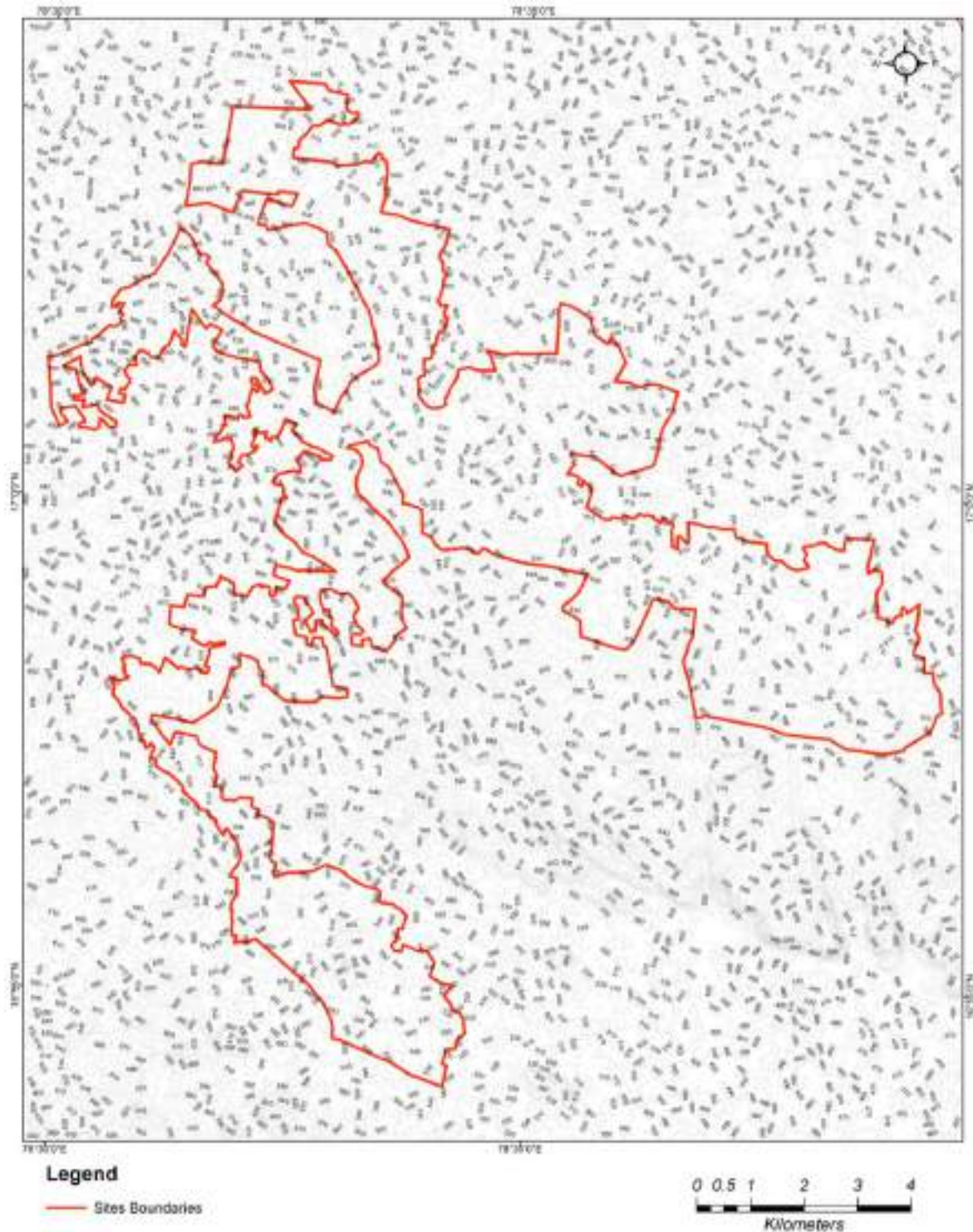
Township Site: The existing landuse in the proposed Site for the Township is largely fallow agricultural land, followed by some barren scrublands.

R&D and Ancillary Hub Site: The existing landuse in the proposed Site for R&D and Ancillary Hub Site is largely agricultural land, followed by few scattered patches of barren scrublands. There is one tiny hamlet (spread in an area of around 2 acres) situated within the northern part of this Site, located at 1.5

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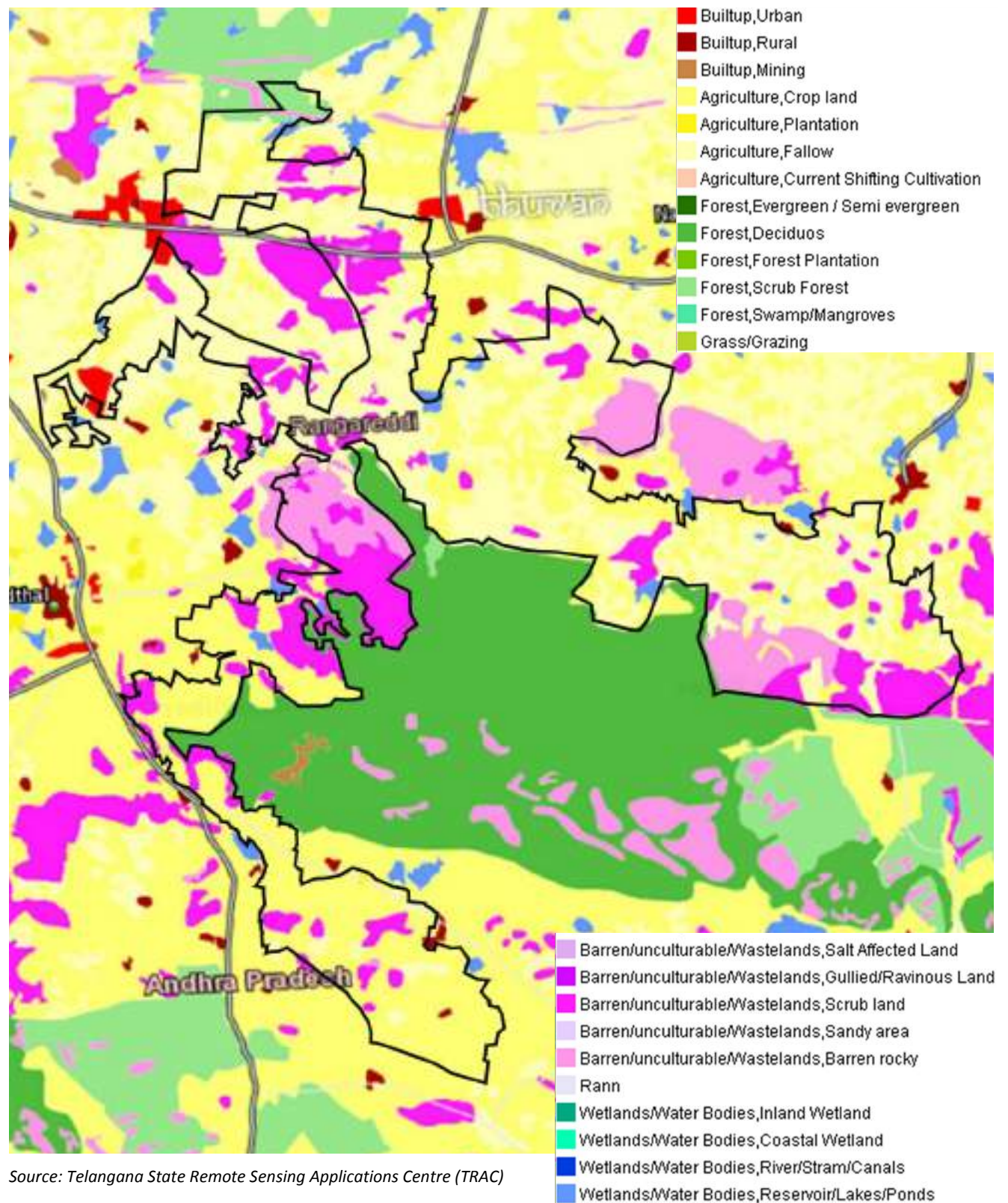
km to the east of Ganugumarla Tanda. Another settlement named Marripally, spread over an area of around 15 acres, is located within the southern part of this Site.

Figure 4-4: Pharma City Site Contour Map



Note: Site Contours extracted from Google Earth; Topography Survey of the Site using Aerial Photogrammetric Techniques is ongoing.

Figure 4-5: Pharma City Site Landuse Map



Source: Telangana State Remote Sensing Applications Centre (TRAC)

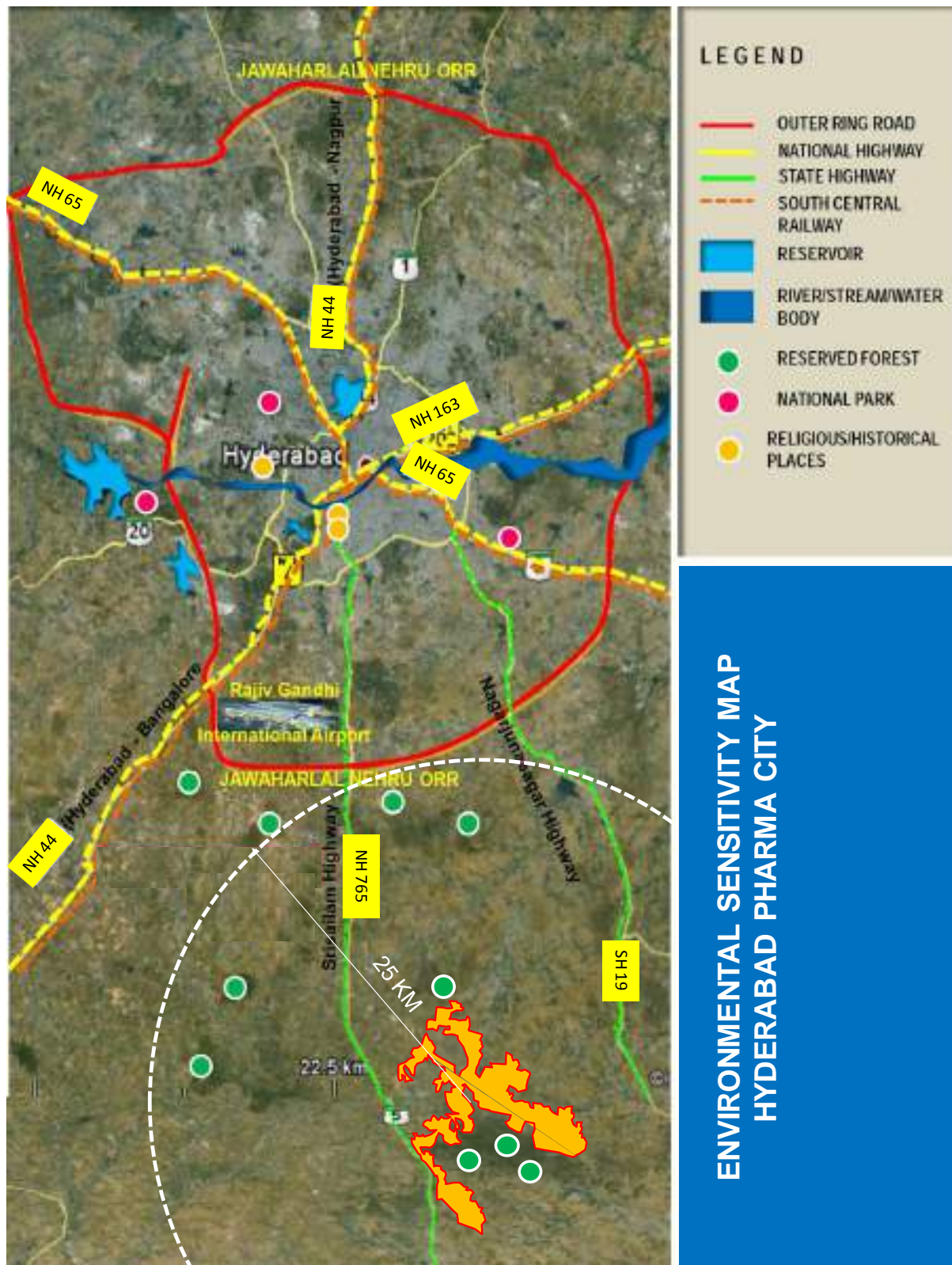
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Based on the perusal of the available information, data and maps, it is noted that, the project site **does not fall under environmentally sensitive areas such as National parks, Wild Life Sanctuaries**. However, as per the proposed preliminary conceptual master plan, a small extent of less than 10 ha would be required in the adjacent Tippiareddipalli RF for essential missing links of road network for circulation. Beyond, 15 km radius from the site, the Sri Kasu Brahmananda Reddy (KBR) National Park, Mrugavani National Park (near Osmansagar/Himayatsagar lakes), Mahavir Harina Vanasthali National Park (near Vanasthalipuram) are located. The **Figure 4-6** below indicates the project site and the eco sensitive areas in the vicinity of the project site.

The details of Reserved Forests located in the vicinity of HPC site are given in the following table.

Sl No	Reserved Forest	Direction	Distance from Site (approx.)
1	Gummadivelli	North	Abuts site boundary
2	Eliminedu	North	9.5 km
3	Madhapuram	Northeast	7.8 km
4	Gungal	Northeast	9.3 km
5	Godkondla	East	5.5 km
6	Tirgandlapalli	East	8.5 km
7	Mudhivenu	Southeast	Abuts Site Boundary
8	Tippiareddipalli	South	Abuts site boundary
9	Kadthal	South	Abuts Site Boundary
10	Ramnutla	Southwest	2.5 km
11	Raichettu	West	6.0 km
12	Jaitaram	Northwest	8.5 km
13	Tumlur	Northwest	9.0 km

Figure 4-6: Pharma City Site –Environmental Sensitivity Map



4.5 Existing Infrastructure

The site is completely a greenfield site devoid of any significant infrastructure developments except two habitations. The existing roads within and around the Site is discussed in **Section 4.1.2**. The water and power sources for the project are discussed in **Section 3.8**.

4.6 Soil Classification

The Project Site falls in Ranga Reddy District (previously part of Rangareddy district and part of Mahbubnagar district). Dubba soils are largely found Yacharam and Kandukur Mandals of Ranga Reddy district besides Red charka soils (Red earths with loamy sub-soils). Red Sandy, Black cotton, Loamy soils are largely found in Kadthal mandal of Ranga Reddy district.

4.7 Climatic Data from Secondary Sources

The climate of Hyderabad remains fairly warm through most parts of the year. With the onset of winter in North and central parts of India, temperatures marginally come down in the months of December and January and the nights become quite cool in and around the Hyderabad city. During the summer months, the mercury goes as high as 42^o C while in winter the minimum temperature may come down to as low as 12^oC. June to November period is the months of monsoons, accompanied by rains. During the Monsoons also the temperature goes down at times. Thus, for most parts of the year the weather and climate of Hyderabad remains fairly moderate and one can visit the Hyderabad city anytime in the year but the best season to visit Hyderabad is between October-February. The Indian Meteorological Department (IMD) weather monitoring station is located at Hyderabad. The historical meteorological data of IMD (Source: Climatological Data Handbook) is presented in the table below.

Table 4-2: Meteorological Conditions of Project Region

Month	Temperature (°C)		Rainfall (mm)		Relative Humidity (%)		Mean Wind Speed (km/h)	Predominant Wind Directions (From)*	
	Daily Max.	Daily Min.	Total	No. of days	08:30	17:30		08:30	17:30
January	28.6	14.7	3.2	0.3	75	36	7.4	SE,E	E,SE
February	31.8	17.0	5.2	0.4	62	28	8.1	SE,E	SE,E
March	35.2	20.3	12.0	0.9	51	23	8.2	SE,S	SE,E
April	37.6	24.1	21.0	1.8	51	26	9.3	SE,S	SE,E
May	38.8	26.0	37.3	2.7	49	26	12.9	NW,W	NW,SE
June	34.4	23.9	96.1	7.6	70	49	20.9	W,NW	W,NW
July	30.5	22.5	163.9	10.6	81	64	21.4	W,NW	W,NW
August	29.6	22.0	171.1	10.1	82	68	18.8	W,NW	W,NW
September	30.1	21.7	181.5	8.9	81	65	12.6	W,NW	W,NW
October	30.4	20.0	90.9	5.7	75	56	7.7	SE,NW	NE,N
November	28.8	16.4	16.2	1.6	71	47	7.3	SE,E	E,NE
December	27.8	14.1	6.1	0.4	72	41	6.5	SE,E	E,SE
Annual Total/Mean	32.0	20.2	812.5	51.0	68	44	11.8	W,NW	E,SE

PRE FEASIBILITY REPORT

The salient observations from the above Climatological data are as below.

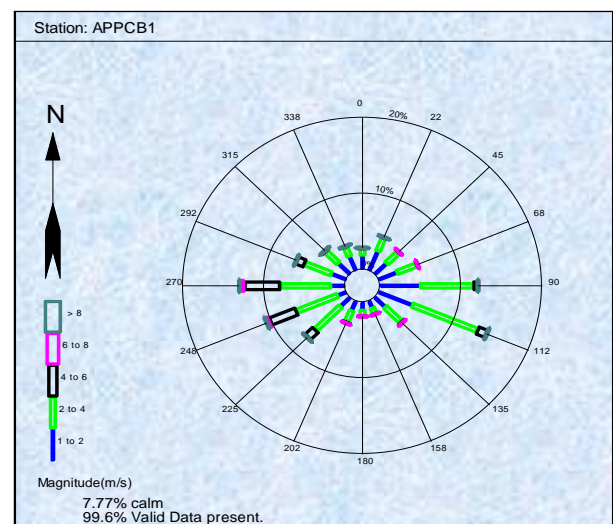
- Temperature – 32.2⁰ C (avg max) & 20.2⁰ C (avg min)
- Rainfall - 812.5 mm
- Mean wind Speed – 11.8 kmph
- Predominant wind direction - W/E

Seasonal Variation:

- Pre-monsoon season begins from February to June, monsoon from June to October, and post-monsoon from November to January.
- With the beginning of winter season drop in mercury levels is observed from December and extends till February, with the coldest month being January.
- Summer season starts with the rise in mercury levels from March and extending till May. May is the hottest month of the year.
- With the onset of rainfall monsoon begins in June 2nd week and extends till September and retreating monsoon starts in Mid October and lasts till November.

Wind Speed

It was observed that in a year, winds are either from Eastern or from Western sector. The Eastern winds are in the months of January, February, March, April, October, November and December while the Eastern winds are in the month of May, June, July, August and September. There are two transition periods/months (change of seasons) were observed, these are April - May and other is September - October. In these transition months winds were changed from Eastern to Western sector in April – May and from Western to Eastern sector in September – October.



4.8 Social Infrastructure Available

Hyderabad has witnessed major infrastructural development in the biotech domain wherein the Knowledge Park, the Biotech Park, Genome Valley and other projects have come up giving the city an advantage over others. Hyderabad is also a major R&D hub with Centres like:

- National Institute of Pharmaceutical Education & Research (NIPER)
- Centre for Cellular and Molecular Biology (CCMB, CSIR)
- Indian Institute of Chemical Technology (IICT, CSIR)
- International Crop Research Institute for Semi-arid Tropics (ICRISAT)
- Central Food Technology Research Institute (CFTRI)
- Institute for Life Sciences Centre (ILSC)
- Central Institute for Medicinal and Aromatic Plants, CSIR

PRE FEASIBILITY REPORT

- Indian Immunologicals Limited
- National Institute of Nutrition, ICMR, Ministry of Health and Family Welfare, Govt.
- Centre of Plant Molecular Biology, Osmania University

IKP Knowledge Park (IKP) nestles in a 200-acre zone in Genome Valley, Hyderabad. Developed with an objective of nurturing an environment for innovation and the expected growth in life sciences and related fields, it has a mix of ready-to-use multi-tenanted modular wet laboratory blocks (Innovation Corridors) with in-built flexibility around some common, shared facilities and support services, as well as developed land for customised R&D facilities. Currently, the 140,000 sft Innovation Corridor 1 with 84,000 sft of wet laboratory space is operational. The Park achieved operational break-even in 2005-06. IKP has promoted 65 companies so far, and is currently associated with 47 of them.

Further, GoTS submitted the proposals recently to set up Incubation Centres for Pharma & Life Sciences under Atal Innovation Mission (AIM) Scheme.

Hyderabad has several technical institutes, management colleges, universities and research centres. Apart from Osmania University, the oldest university in the State, the city has three central universities, including the top-ranked University of Hyderabad. There are around 250 private engineering colleges, medical colleges, **150 pharmacy colleges** and nearly 50 business schools in and around Hyderabad. The major educational institutions located at Hyderabad are:

- Indian School of Business (ISB)
- Indian Institute of Technology (IIT), Hyderabad
- Birla Institute of Technology and Science (BITS), Pilani - Hyderabad Campus
- International Institute of Information Technology (IIIT), Hyderabad
- Jawaharlal Nehru Technological University (JNTU), Hyderabad
- NALSAR University of Law
- Acharya N. G. Ranga Agricultural University
- Andhra Pradesh Open University (Dr. B.R. Ambedkar Open University)
- GITAM University Hyderabad Campus
- Potti Sreeramulu Telugu University
- Institute of Chartered Financial Analysts of India (ICFAI)

A Centre of National Institute of Pharmaceutical Education & Research (NIPER), under the aegis of Department of Pharmaceuticals (DoP), Ministry of Chemicals and Fertilizers, the Govt. of India, was set up at the former R&D Centre of IDPL (at Balanagar, Hyderabad) in 2007 to offer training programmes in all pharmacy-related disciplines to Graduate / Post Graduate students. Today, NIPER-Hyderabad is a fully integrated global pharmaceutical education and research institute. The main objective of the institute is to offer 2 years M.S. (Pharm.), M.B.A (Pharm.), M.Tech. (Pharm.) courses and Ph.D programmes. The institute started with 3 disciplines via Medicinal Chemistry, Pharmacology and Toxicology and Pharmaceutical Analysis in the year 2007. Subsequently 4 new courses were added - Pharmaceutics (2009), M.B.A (Pharm.) (2011) and Regulatory Toxicology and M.Tech. - Process Chemistry (2013). PhD programme in this institute commenced from academic year 2011-12 in 4 disciplines (Medicinal Chemistry, Pharmacology & Toxicology, Pharmaceutical Analysis and Pharmaceutics).



PRE FEASIBILITY REPORT

Owing to all the technical infrastructure and manpower availability in Hyderabad, the proposed Hyderabad Pharma City is well positioned to develop into a key Pharma Hub of India, more so with the development of international standard Pharma University and Pharma R&D Hub within the Pharma City.

Chapter 5. PLANNING BRIEF

5.1 Planning Concept

(type of industries, facilities, transportation etc)

5.1.1 Development Strategies

5.1.1.1 Sustainable Development

The vision for Hyderabad Pharma City (refer **Section 2.2**) integrates the three key dimensions of sustainable development – **economic, social and environmental**.

- **Economic:** The proposed Hyderabad Pharma City shall contribute to building a strong, responsive and competitive economy by ensuring that the emerging market demand for manufacturing in pharma sector in Hyderabad is efficiently supplied in the project. The project shall be developed with all integrated infrastructure such that it meets the demand with right type of land at the right time and at the right place. Pharma City shall have within it all the components to support growth and innovation in pharma manufacturing to ensure sustainable economic growth of the Pharma City.
- **Social:** The proposed Pharma City Township shall support a strong, vibrant and healthy community by supplying housing required to meet the needs of the various phases of Pharma City development. The Township shall have a high quality built environment with accessible local services that reflect the community needs and support its health, social and cultural well-being.
- **Environmental:** The Pharma City shall contribute to protecting and enhancing the environment. As part of this, the Infrastructure Development Plan shall ensure that natural resources are used prudently especially fresh water by ensuring that water is recycled and reused within the Pharma City to the maximum extent while also ensuring efficient ground water recharge and rainwater harvesting. Solar power, bio-gas based power and other renewable energy sources shall be used to the maximum feasible extent. Provision of secondary green network for Pedestrians and Cyclists shall be integrated into the Site Master Plan and Transport Network to lower the carbon footprint of the project. Tertiary level amenities shall be provided within walking/cyclable distances from each industrial plot i.e. around 1 km/2-3 km. Efficient bus shuttle services shall be provided between the Township and manufacturing zones. All the proposed common amenity buildings and office blocks would be energy efficient as per the Energy Conservation Building Code, 2007 (ECBC). Overall, the Development Plan shall enable to minimise waste and pollution, and mitigate and adapt to climate change including moving to a low carbon economy.

5.1.1.2 Inclusive Planning

Hyderabad Pharma City aims to be an urban node serving multifaceted needs of not just the employees of the industries, but also the populace surrounding the Pharma City site. The physical inclusiveness shall be enabled by ensuring that the road links between the surrounding settlements which have been affected by the Project Site land spread are replaced by the Site's internal circulation network that is designed incorporating the access needs of surrounding settlements as well. This measure would also reduce the social impact of the project to a very large extent and also increase the local population's acceptance and support for the project. It shall also offer better visibility and accessibility of the

PRE FEASIBILITY REPORT

proposed technical infrastructure within the Pharma City and thereby enhance student enrolment in the proposed institutes. This would facilitate active involvement of local populace in the project – through their skill enhancement at the institutes within Pharma City followed by their employment in the industries. In the long term perspective, this would help in a balanced regional development that does not require its populace to emigrate for better employment opportunities elsewhere.

5.1.1.3 Disaster-Risk Consideration

Considering the proposed concentration of pharma manufacturing activity in the Site, the likely risk related to industrial disasters, and the large land spread of the project, multiple primary entry / exit points shall be planned in the arterial circulation network of Pharma City. Green belts of adequate widths shall be proposed around manufacturing zones such that they act as green buffers.

5.1.1.4 Road-Rail-Air Logistics Synergy

For efficient cargo movement, both in terms of delivery of raw materials as well as evacuation of finished goods, it is imperative to have a logistics synergy between road, rail, and air transport modes, to the Site's hinterland (raw material sourcing areas and consumption centres) as well as to airport and seaports. The Site shall have a dedicated rail spur line as well as easy accessibility to the Rajiv Gandhi International Airport. Leveraging on the existing highway network in the vicinity of the Site, the highways shall be proposed for strengthening/upgradation in order to improve the road connectivity of the Site.

5.1.1.5 Specific Need-Based Green Spaces

Green spaces shall be integrated into the Development Plan based on the needs of that particular landuse /area/ zone. They shall be meaningful spaces serving a specific purpose such that they are not relegated as incidental spaces that tend to transform into dumping yards. The green spaces shall be developed with plant species that serve the specific purpose identified for each green area.

5.1.2 Type of Industries

Manufacturing of the following products will be undertaken in Hyderabad Pharma City NIMZ:

- Antibiotics such as penicillin, Streptomycin, tetracyclines , fluoroquinolones and anti-fungals
- Fermentation products such as penicillins, cephalosporins and macrolides and many other intermediates
- Synthetic drugs, including sulfa drugs, antituberculosis drugs, antileprotic drugs, analgesics, anesthetics, and anti-malarials
- Chemical synthesis-based APIs or Intermediates such as paracetamol, metformin, ibuprofen, quinolones etc.
- Vitamins
- Drugs of vegetable origin such as quinine, strychnine and brucine
- Vaccines
- Intermediates
- Drug Formulations
- Nutraceuticals
- Herbal medicinal products

PRE FEASIBILITY REPORT

- Speciality Chemicals

Manufacturing of the following products will be undertaken in the Hyderabad Pharma City Ancillary Hub:

This Zone shall accommodate ancillary units of the pharma industry such as manufacture of - packaging, components/machinery, solvents, pharmaceutical excipients such as anti-adherents, binders, coatings, disintegrants, fillers, etc.

5.1.3 Common Amenities & Utilities

The details are discussed in **Section 5.5** as per the PFR format.

5.2 Population Projection

The total direct employment projection of Pharma City is **1.7 lakhs** by the ultimate phase of Pharma City development. Around 10% of the workforce is proposed to be accommodated in dormitories proposed to be developed within Pharma NIMZ. Another 25% of the workforce is proposed to be accommodated in the proposed Pharma City Township. In order to accommodate the rest of the workforce – (a) GoTS proposes to upgrade the towns in the region, with physical and social infrastructure facilities, and (b) TSIC proposes to develop housing in other identified land parcels in the project region.

Therefore the population that would be accommodated within Pharma City by the ultimate phase of Pharma City development (in the proposed township wherein a household size of 4 is considered, and the proposed dormitories) is **1.6 lakhs**.

5.3 Landuse Planning

The proposed landuse plan for the Site is enclosed as **Drawing 2**. The following table gives the **indicative landuse break up** as per the Conceptual Master Plan for the Site. Currently Detailed Site Master Planning exercise is ongoing and the same shall be firmed up and reported in the EIA report.

Table 5-1: Proposed Landuse Break Up in Pharma City

Landuse Break Up	Area in Acres	% to Total Area
Pharma NIMZ		
Pharma Manufacturing	8295	63.66%
Amenities & Utilities	1219	9.36%
Logistics Hub	203	1.56%
Green Belts and Green Areas	2216	17.01%
Water Bodies	110	0.84%
RoW of Roads	987	7.57%
Sub Total - Pharma NIMZ	13030	100.00%

PRE FEASIBILITY REPORT

Pharma City Township		
Residential	1066	66.92%
Commercial	80	5.02%
Institutional	80	5.02%
Utilities	80	5.02%
Green Belts and Green Areas	160	10.04%
RoW of Roads	127	7.97%
Sub Total - Pharma City Township	1593	100.00%
Pharma University		
Institutional	322	51.11%
Residential	75	11.90%
Amenities & Utilities	126	20.00%
Green Belts and Green Areas	95	15.08%
RoW of Roads	12	1.90%
Sub Total - Pharma University	630	100.00%
Pharma R&D and Ancillary Hub		
Research & Development	827	20.27%
Ancillary Manufacturing	1240	30.39%
Amenities & Utilities	612	15.00%
Green Belts and Green Areas	734	17.99%
Water Bodies	14	0.34%
RoW of Roads	653	16.00%
Sub Total - Pharma R&D and Ancillary Hub	4080	100.00%
Pharma City - Grand Total Area	19333	

5.4 Assessment of Infrastructure Demand

Water Demand: Preliminary estimate of gross water demand of Hyderabad Pharma City is 200 MLD. After considering recycling and reuse of wastewater, the net fresh water demand is around **123 MLD**. It is proposed to treat the wastewater generated at Pharma City to tertiary level (Zero Liquid Discharge) thus enabling its reuse and recycle at the site. Hence, the total net fresh water demand for Pharma City has been reduced from 200 MLD to 123 MLD (including losses at 15%).

Industrial Wastewater Generation: The estimated industrial wastewater from Hyderabad Pharma City in the ultimate phase of project development is **47 MLD**. It is envisaged to treat the industrial wastewater in the proposed Zero Liquid (ZLD) based Common Effluent Treatment Plant (CETP) which will be developed in modules as per the demand.

Sewage Generation: The estimated domestic wastewater (Sewage) from Hyderabad Pharma City in the ultimate phase of project development is **24 MLD**. It is proposed to treat the sewage in Sewage Treatment Plant (STP) which will be established in modules.

Power Demand: The total estimated power demand of Hyderabad Pharma City in the ultimate phase development is about **900 MW**.

5.5 Amenities / Facilities

5.5.1 Common Amenities & Utilities

- Supply common utilities such as steam, chilled water, brine, nitrogen, treated water etc.
- Centralised environmental facilities such as ZLD based CETP, incinerator and integrated solid waste handling facilities
- Central facilities like bulk chemicals storage, transport, common kitchen, workshop, warehouses etc.

5.5.2 Incubation Centre

- Facilitate first generation technocrats to set up their own manufacturing facilities
- Provide speedy hassle free manufacturing facilities with all necessary statutory approvals & clearances at the park level
- Provide centralized utilities and services at reasonable cost to minimize investment by individual units
- Provide standard design factory sheds, plant & machinery on lease basis

5.5.3 Technical Infrastructure

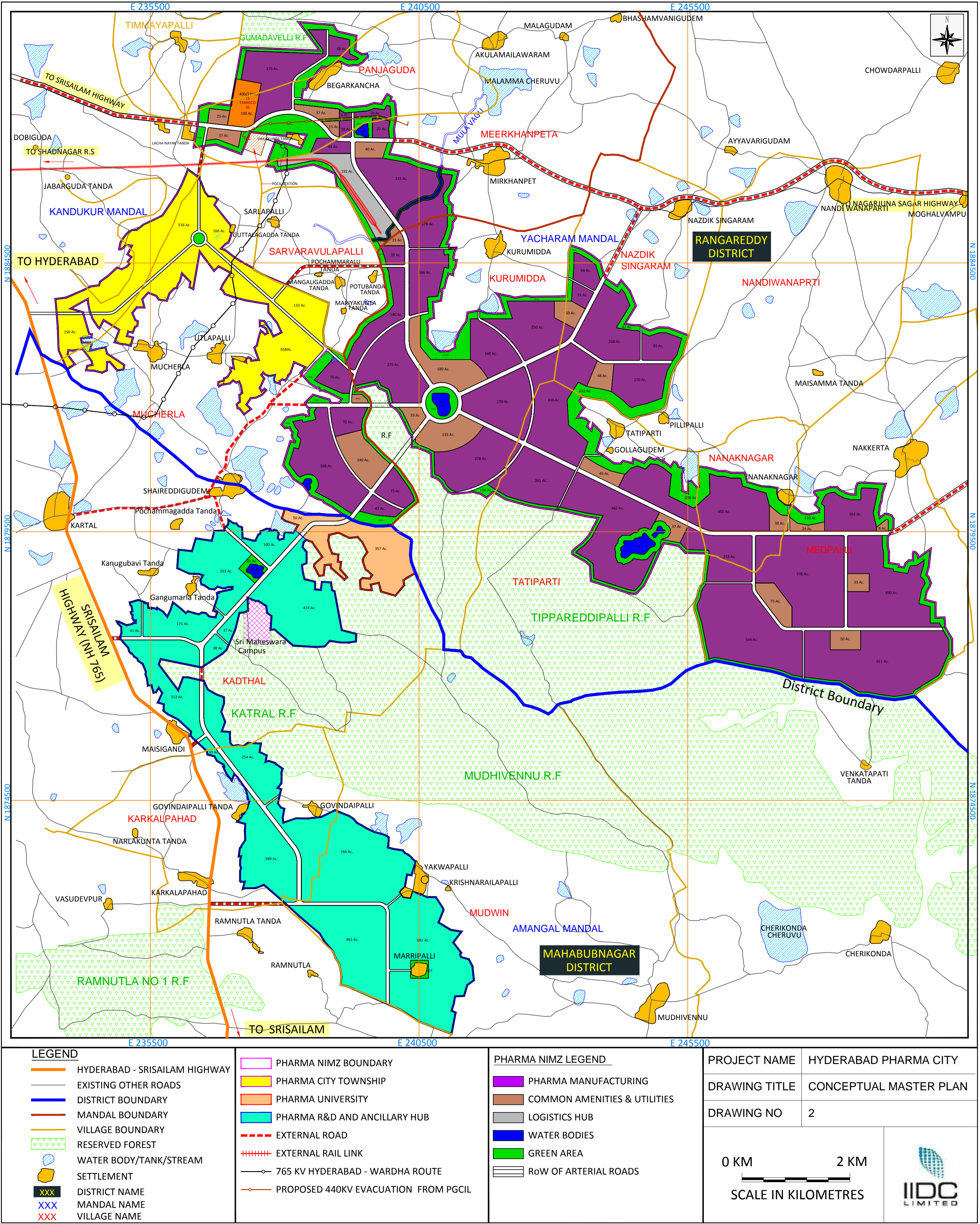
The industry's focal points include drug discovery, development of drug delivery systems, biotechnology, and bioinformatics. In view of the above it would be a pioneer effort to develop a **Central Knowledge Hub** with expertise and facilities for addressing the following industry needs:

- g) Drug Discovery and Development:** Drug discovery & development services include areas such as analogue research, combinatorial chemistry, chiral chemistry and new drug delivery systems.
- h) Chemistry Services:** This could potentially include a library of novel compounds with high diversity to act as leads for the drug targets.
- i) Biological services:** This could potentially include identifying and characterizing targets, screening including assay development, and lead optimization using adsorption, distribution, metabolism, efficacy and toxicity.
- j) Clinical trials:** Currently a high share of costs in drug development goes into clinical trials. India's vast and diverse genetic pool has distinct cost advantages in this segment.



PRE FEASIBILITY REPORT

- k) **Testing and certification with accreditation:** Required for inspection agencies, especially for exports.
- l) **Contract Research and Custom Synthesis:** Opportunity in this segment is expected to grow due to introduction of product patent regime.





Chapter 6. PROPOSED INFRASTRUCTURE

6.1 Industrial Area (Proposed Area)

The Pharma NIMZ and the Pharma Ancillary Hub form the Processing Area of the Pharma City. The following are the components within the manufacturing zones:

LANDUSE CATEGORY	COMPONENTS
Manufacturing Zone	Plotted pharma and ancillary industrial area, RoW of secondary & tertiary roads, tertiary-level amenities & utilities, tertiary green spaces.
Amenities	Technical Infrastructure and Incubation Centre(s). Business centres, hotels, trade facilitation centres, commercial/ shopping centres, office blocks (for administration, government, commercial, other service providers – IT/telecom, banking, post, courier, etc.), food courts/canteens, restaurants, socio-cultural facilities, health care facilities, day care centres/ crèches, fire stations, police station(s), parking, bus terminal/bays, bus stops, security posts, fuel stations etc.
Utilities	Electric sub stations, wastewater treatment plants, steam generation plant(s), warehouses, truck parking, solid waste management facilities, water supply system (treatment, storage, pumping & supply facilities)etc.
Logistics Hub	Warehouses & storages, container terminal, truck terminal, auto workshop, railway siding infrastructure, helipad, office block for various service providers & agents, dormitories for drivers, food courts, green belt, fuel station, weigh bridge, etc.
Green Areas	Green belts along site boundary, green belts/buffers to protect existing stream and water bodies in site and landscaped green spaces (excluding avenue plantation along RoW of internal roads and tertiary level green spaces like parks and playgrounds within zones)

6.2 Residential Area (Non Processing Area)

The Pharma City Township forms the Non Processing Area of the Project, the components of which are listed herewith:

LANDUSE CATEGORY	COMPONENTS
Residential Zone	Housing area, RoW of secondary & tertiary roads, tertiary-level amenities & utilities, tertiary green spaces.
Social Infrastructure	Educational facilities, health care facilities, socio-cultural facilities, distribution services, police station, fire station

PRE FEASIBILITY REPORT

Commercial Activity	Shopping centre(s), hotel/restaurant(s), library, science centres, art/craft/music/ dance school, bus terminal, informal shopping and weekly markets etc
Utilities	Electric sub stations, wastewater treatment plant,, solid waste management facilities, water supply system (treatment, storage, pumping & supply facilities) etc.
Green Areas	Parks and open spaces, sports centre and playgrounds

6.3 Green Belt

Green spaces are integrated into the Conceptual Site Master Plan based on the needs of that particular landuse /area/ zone. The green spaces shall be developed with plant species that serve the specific purpose identified for each green area.

Green Areas in Processing Area: Green belts are proposed all along the Site boundary and around the existing water bodies. Open green lung spaces shall be developed within the Site and shall be detailed in the Detailed Site Master Plan.

Green Areas in Non Processing Area: Parks and open spaces, sports centre and playgrounds are proposed under green areas in the Township. The detailing of these components shall be carried out in the Detailed Site Master Planning Stage of the project.

6.4 Social Infrastructure

Social Infrastructure within Processing Area: Club House(s), Landscaped open spaces

Social Infrastructure within Non Processing Area: discussed in **Section 6.2**.

6.5 Connectivity

(Traffic and transportation – road/rail/metro/waterway etc)

6.5.1 Road Connectivity

The following are the tentative road links proposed for Pharma City. The same shall be detailed during the Detailed Site Master Planning Stage of the Project.

S No	Name of Link	Existing Status	Proposed Upgradation/ Development Plan	Remarks
1.	Kandukur-Yacharam Road	Single lane road	<ul style="list-style-type: none"> Entire road stretch of around 22 km to be upgraded to 6 lanes in Phase 1 Six bypasses to be developed at - Kandukur, Vaikunta Tanda, 	<ul style="list-style-type: none"> To link Site to Srisailem Highway and Nagarjunasagar Highway

PRE FEASIBILITY REPORT

S No	Name of Link	Existing Status	Proposed Upgradation/ Development Plan	Remarks
			Mirkhanpet, Singaram, Wanaparthy, and Yacharam	
2.	NH 765 (Srisailem Highway) from Hyderabad ORR to Ramanuthula	Two lane road	<ul style="list-style-type: none"> Upgradation of 36 km highway stretch (from ORR near Mankhal to Ramnuthula) to 4 lanes in Phase 1 and 6 lanes in Phase 2 	<ul style="list-style-type: none"> To link Site to Hyderabad ORR and Rajiv Gandhi International Airport
3.	Nagarjunasagar Highway from Hyderabad ORR to Takkellapalli Tanda (near Chintapatla)	Two lane road	<ul style="list-style-type: none"> Upgradation of 30 km highway stretch (from ORR near Bonguloor to Takkellapalli Tanda) to 4 lanes in Phase 1 and 6 lanes in Phase 2 	<ul style="list-style-type: none"> To link Site to Hyderabad ORR
4.	Road connecting ORR Exit 13 (near Raviryal) and NIMZ Site	Single lane road	<ul style="list-style-type: none"> Upgradation of 23 km road stretch to 4 lanes in Phase 1 and 6 lanes in Phase 2 	<ul style="list-style-type: none"> To link Site to Hyderabad ORR and Rajiv Gandhi International Airport
5.	Greenfield road link between proposed Pharma City Township and NIMZ Site near Lacha Nayak Tanda	Nil	<ul style="list-style-type: none"> 600 m stretch to be developed to 2 lanes in Phase 1 and 4 lanes in Phase 2 	<ul style="list-style-type: none"> To link NIMZ Site to Pharma City Township
6.	Greenfield road link between proposed Pharma City Township and NIMZ Site near Potubanda Tanda	Nil	<ul style="list-style-type: none"> 2 km stretch to be developed to 4 lanes in Phase 1 and 6 lanes in Phase 2 	<ul style="list-style-type: none"> To link NIMZ Site to Pharma City Township; Also to serve as interconnectivity link between surrounding settlements
7.	Road connecting Kadthal (on NH 765) to NIMZ Site near Mariakunta Tanda via Saireddigudem	Single lane road	<ul style="list-style-type: none"> 5.6 km stretch to be developed to 4 lanes in Phase 1 and 6 lanes in Phase 2 	<ul style="list-style-type: none"> To link NH 765 to NIMZ Site, Pharma City Township, Pharma University, Pharma R&D and Ancillary Hub
8.	Greenfield road link from NIMZ Site to Kadthal Road (preceding Item 7)	Nil	<ul style="list-style-type: none"> 700 m stretch to developed to 4 lanes in Phase 1 and 6 lanes in Phase 2 	<ul style="list-style-type: none"> To link western part of NIMZ Site to proposed external link in Item 7
9.	Greenfield road link from central part of NIMZ Site to Kandukur-Yacharam Road near Nazdik Singaram	Nil	<ul style="list-style-type: none"> 1.5 km stretch to be developed to 4 lanes in Phase 1 and 6 lanes in Phase 2 	<ul style="list-style-type: none"> To link central part of NIMZ Site to Kandukur-Yacharam Road

PRE FEASIBILITY REPORT

S No	Name of Link	Existing Status	Proposed Upgradation/ Development Plan	Remarks
10.	Greenfield road link from eastern part of NIMZ Site to Nagarjunasagar Highway at Takkellapalli Tanda	Nil	<ul style="list-style-type: none"> 5.3 km stretch to be developed to 4 lanes in Phase 1 and 6 lanes in Phase 2 	<ul style="list-style-type: none"> To link eastern part of NIMZ Site to Nagarjunasagar Highway
11.	Greenfield road link from Srisailem Highway to R&D and Ancillary Hub	Nil	<ul style="list-style-type: none"> 1.5 km stretch to be developed to 4 lanes in Phase 1 and 6 lanes in Phase 2 	<ul style="list-style-type: none"> To link R&D and Ancillary Hub to Srisailem Highway

6.5.2 Rail Connectivity

It is proposed to develop a greenfield rail spur line from Shadnagar Railway Station (on SCR rail line) to the NIMZ Site near Vaikunta Tanda as shown in **Drawing 3**. The tentative alignment measure 38.2 km in length. This shall be fine-tuned during the Detailed Site Master Planning Stage of the project.

6.5.3 Air Connectivity

The Rajiv Gandhi International Airport (RGIA) is located 21 km to the north of Pharma City Site (32 km distance by road from site boundary) at Shamshabad. **RGIA houses India's first Pharma Zone that offers temperature-controlled Truck-Dock to airside environment.** Apart from this, a heliport is proposed to be developed within Pharma City for efficient air connectivity.

6.6 Drinking Water Management

(Source and Supply of water)

As discussed in **Section 3.8.1**, Krishna Water Supply Scheme is the identified water source for the project.

GoTS proposes to tap water for Pharma City from Phase III of the Krishna Water Supply Scheme. As part of the Krishna Water Supply Scheme, two Master Balancing Reservoirs of 22.5 ML capacity each are constructed at Gunagal, from where water is proposed to be tapped for Pharma City. It is located at 12 km (distance by road) to the north east of the Project Site along Nagarjunasagar Highway.

Preliminary estimate of gross water demand of Hyderabad Pharma City is 200 MLD. After considering recycling and reuse of wastewater, the net fresh water demand is around **123 MLD**. It is proposed to treat the wastewater generated at Pharma City to tertiary level (Zero Liquid Discharge) thus enabling its reuse and recycle at the site. Hence, the total net fresh water demand for Pharma City has been reduced from 200 MLD to 123 MLD (including losses at 15%).

6.7 Sewerage System

The estimated domestic wastewater (Sewage) from Hyderabad Pharma City in the ultimate phase of project development is **24 MLD**. It is proposed to treat the sewage in Sewage Treatment Plant (STP) which will be established in modules.

6.8 Industrial Waste Management

6.8.1 Industrial Wastewater Management

The estimated industrial wastewater from Hyderabad Pharma City in the ultimate phase of project development is **47 MLD**. It is envisaged to treat the industrial wastewater in the proposed Zero Liquid (ZLD) based Common Effluent Treatment Plant (CETP) which will be developed in modules as per the demand.

Design of an industrial CETP is highly sector-specific. Major and essential considerations are wastewater characteristics. Pre-treatment standards for raw effluent entering the collection system serving the CETP, and treatment standards for effluent discharged from the CETP are the essential parameters for the design. Within this framework of site, treatment process would be decided based on wastewater characteristics and treatment standards. There are various other factors which are involved and could be grouped into treatment efficiency, reliability and cost.

Clear understanding to the process and the similarity in the characteristics, makes the treatment relatively clear for the purpose of attaining the consistent treated quality. Besides, many safe guards have also been considered including flexibility for attaining the desired concentrations of the treated quality.

The CETP facility is to be designed to treat effluents generated from pharmaceutical industries based on ZLD – physico-chemical treatment, biological treatment, evaporation and filtration. Prior to release of effluents into the CETP, segregation of low TDiS & High TDiS contaminated streams shall be done at individual industry unit level. Further, preliminary treatment should be done at individual industry unit as per MoEF&CC/TSPCB guidelines. As per the stipulations of TSPCB, all the civil units shall be considered above ground level. A typical treatment process scheme is given as below.

High TDS Stream:

Raw effluent shall be first collected in inlet chamber after screening, from inlet chamber effluent is passed to oil traps for removal of oil and scum and then to collection and equalization tank, where effluent is stored and mixed to uphold hydraulic and organic variations. To avoid suspended solids settling in the equalization tank one number of floatable /submersible mixer is provided for mixing of effluents.

From this unit effluent is transferred to flash mixer tank by pump. Here suitable chemical solutions are added to neutralize the effluent. Then after effluent is sent to primary clarifier for settling, where settled sludge is sent to sludge holding tank. Over flow from clarifier is collected in stripper feed tank.

PRE FEASIBILITY REPORT

Effluent is pumped to stripper column and the solvents are collected in solvent collection tank. From stripper column effluent is fed to Multiple Effect Evaporation (MEE) system. From MEE, Condensate is collected in condensate water tank and the Concentrate is sent to Agitated Thin Film Dryer (ATFD), from where the dried salt powder is collected and sent to TSDF. Condensate from MEE and ATFD shall be sent to balancing tank.

MEE Process Description:

The three different systems may be considered for CETP are Stripper Column, Multiple Effect Evaporator and ATFD Plant. To optimize the cost and flexibility in operations, MEE installation shall be done in phases. Stripper column is used to recover solvent present in feed and steam is used as heating media for column reboiler. The recovered solvent is stored in storage tank and concentrate bottom product from column is used as a feed for MEE plant. The concentrate from MEE plant is used as a feed of ATFD plant for complete evaporation of water. Steam shall be used as a heating media of ATFD Plant. Boiler & Cooling Tower is provided in the CETP System to provide steam for MEE System.

Low TDS & Condensate Stream:

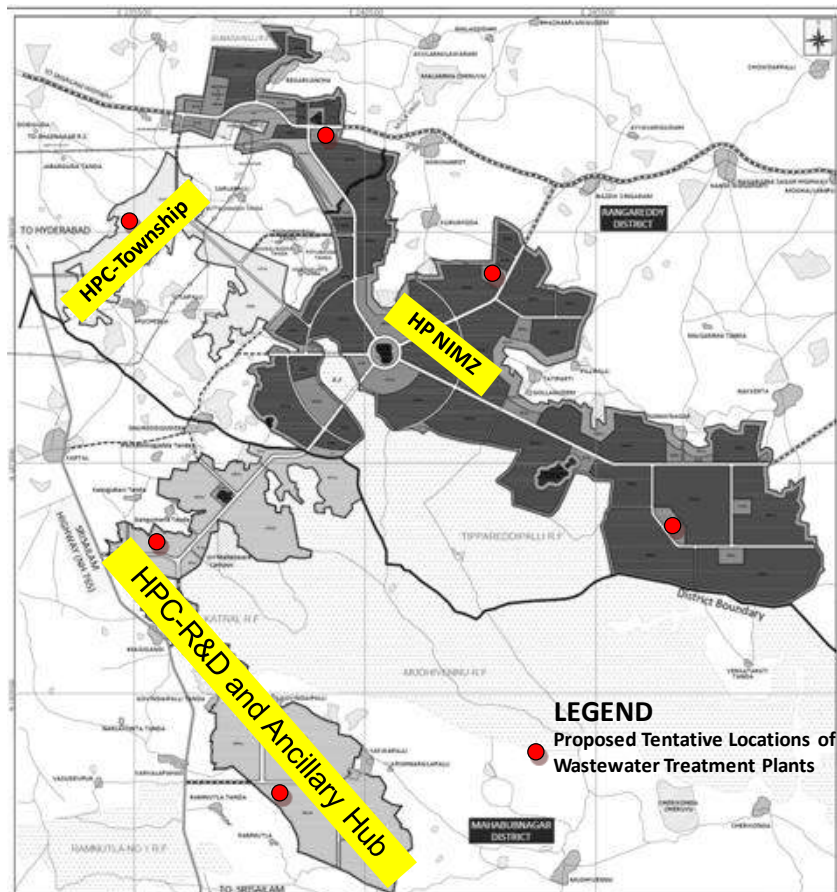
Condensate water and LTDS effluent is mixed together in Balancing tank and fed to Anoxic tank and Two stage Aerobic Treatment i.e., Activated Sludge Process (ASP). ASP comprises of Aeration tank followed by Secondary Clarifier, which are proposed to meet the requirements. In aeration tank organic load as BOD will be degraded with the help of cultivated microbial culture. Constant Mixed Liquor Suspended Solids (MLSS) will be maintained in aeration tank in definite proportions by recycling the bio sludge trapped by the secondary clarifier. At aeration tank air is supplied from air blower to supply oxygen for the microorganisms. Recycling of bio-sludge from secondary clarifier will be done by non-clog, centrifugal, semi open type continuous duty & suitable capacity sludge recirculation pump. The Clarified Effluent collected is first Pumped to Dual Media Filter and Activated carbon filters then sent to RO plant for reuse of treated wastewater.

Sludge Treatment:

The solid waste generated from CETP comprises of boiler ash and other hazardous waste. The boiler ash can be used in brick manufacturing and sold to brick manufacturer. The hazardous waste generated from the process i.e., sludge from primary clarifier, salt from MEE, etc. would be disposed initially at authorized TSDF located at Dundigal near Hyderabad. Sludge generated from biological process would be used as manure for greenbelt.

After analysing contour map of the area three locations have been identified for locating proposed wastewater treatment plants as shown in the following figure.

Figure 6-1: Proposed Location of Common Wastewater Treatment Plants at Pharma City



6.8.2 Domestic Wastewater

The estimated domestic wastewater (Sewage) from Hyderabad Pharma City in the ultimate phase of project development is **24 MLD**. It is proposed to treat the sewage in Sewage Treatment Plant (STP) which will be established in modules.

6.9 Solid Waste Management

6.9.1 Municipal Solid Waste

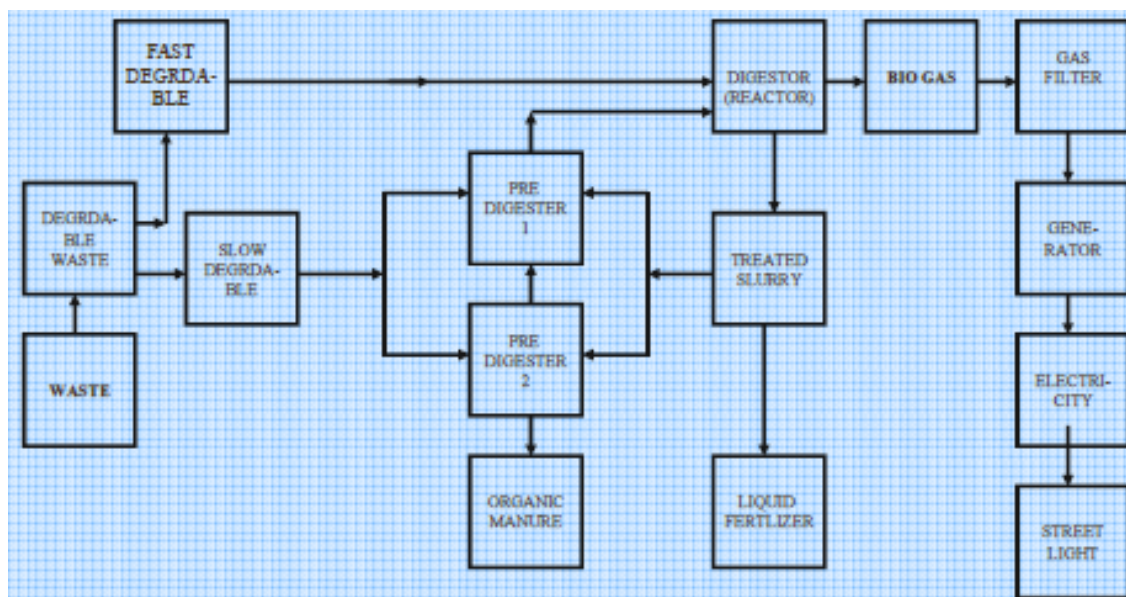
Total municipal solid waste (MSW) generation from the Project has been estimated at about **70 TPD**. Standard waste generation rate of 0.4 kg/cap/day for residential area and 0.05 kg/cap/day for commercial area/institutional area has been considered to arrive at this estimation.

Management of MSW:

As per general composition of municipal solid waste, 35% of total waste will be biodegradable waste. Recent green technology - bio-digester may be provided to convert this waste into electricity. Digestate generated from this treatment serves as a very good biofertiliser.

PRE FEASIBILITY REPORT

Based on perusal of available literature, about 1.5 kW of electricity can be produced from one cubic metre of biogas. The size of the generator can be fixed depending upon the availability of gas, the quantity of gas and the duration for the requirement of the power. The main advantage of waste to electricity project is that, no external power is required for the operation of the plant. The power generated in the treatment plant can be utilised to meet the in-house requirements completely. Excess quantity can be utilised for any type of application, like street lighting, providing lights to the commercial zones/open areas etc. Typical waste to energy process flow diagram is the following figure.



Other recyclable wastes 30% of total waste like paper, plastic, glass, metal shall be sent to nearest recycling facility. Remaining inert waste 35% shall be sent to nearest landfill facility.

6.9.2 Industrial Solid Waste

The estimated solid waste from the Project (as per the consultations held with BDMA¹²) would be in the order of **3 lakh TPA**. Based on the published literature by CPCB, the composition of Hazardous Waste (HW) includes recyclable portion (30%-40%), land disposable portion (50%-60%) and incinerable portion (5%-10%). Initially, the solid waste generated from Pharma City is proposed to be sent to existing TSDF at Dundigul. Further, it is proposed to establish an integrated solid waste management facility (secured landfill, treatment/stabilization, recycling facility, incinerator and waste to energy facility) for ultimate stage requirements of the project. The indicative cost for establishing such integrated solid waste management facility is around **Rs 200 Cr**.

Management of Non Hazardous Industrial Waste:

The non-hazardous industrial waste consists of both recyclable and non-recyclable waste. The non-recyclable waste includes biodegradable waste and inert waste. The likely biodegradable waste from sectors like food processing can be mixed up with MSW. The inert waste is to be sent to nearest landfill

¹² Bulk Drug Manufacturers Association (India)

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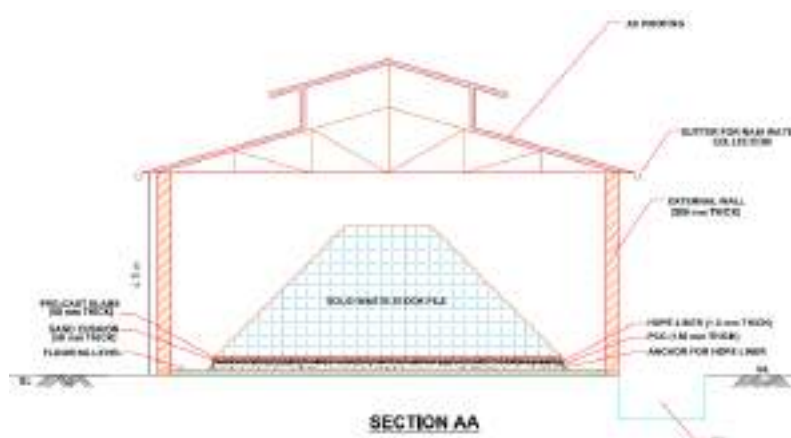
facility. Other recyclable wastes like packaging material, plastic, glass, metal shall be sent to nearest recycling facility for reuse. The details of quantity and classification and disposal method shall be further evaluated during the detailed planning stage of HP NIMZ implementation.

Management of Hazardous Industrial Waste:

The hazardous industrial wastes shall be disposed off on a regular basis into a hazardous waste disposal site as per the Hazardous Waste (Management and Handling) Rule, 1989 and subsequent amendments. The nearest CHWTSD¹³ from HP NIMZ site is located at Dundigul (1.5 lakh TPA, Incinerator: 1.5 TPH) in Ranga Reddy District, which is being operated by the M/s Hyderabad Waste Management Project (Ramky Enviro Engineers (P) Ltd).

Temporary Storage Facility: It may not be possible that the waste generated is sent to the treatment facility everyday and during monsoon months, it may not be possible to send the wastes. Hence, the need arises for the establishment of a temporary storage facility where the wastes can be stored before being transported to the waste disposal facility. A temporary storage facility shall be provided onsite for a capacity equivalent to 90 days of daily waste generation from HP NIMZ.

This temporary storage facility would be carefully designed to store the waste in a safe and scientific manner. The facility shall also be designed to collect the possible leachate coming out of the wastes. The collected leachate may be pumped to the effluent treatment plant proposed onsite. It would be advantageous to have storage with longer spans and height in order to enable trucks carrying the waste to



enter into the store directly and unload the waste. The flooring should be constructed by providing a 1.5 to 2.0 mm thick HDPE liner before concreting the floor. This would ensure that no leachate percolates into the ground water. The facility shall be flame proof and the roof should be designed in a way to prevent the entry of any rainwater into the facility. The preliminary estimate of such Temporary Storage Facility (including equipment for collection) is **Rs. 5 Crores**.

Management of E-Waste:

E-Waste Management shall be practiced in conformity with the e-waste (management and handling) Rules, 2010 of Ministry of Environment and Forests (MoEF), GoI, vide S.O. 1125 (E), dated 14th May, 2010. The e-waste management contractor designated by the NIMZ SPV shall get registered and authorised by the concerned authorities as per the e-waste management Rules, 2010. Necessary approvals from State Pollution Control Board shall also be obtained for the purpose.

¹³ Common Hazardous Waste Treatment Storage and Disposal Facility

PRE FEASIBILITY REPORT

Adequate area and facilities shall be provided for the purpose of e-waste management within the Pharma City as part of its Common Utilities. Provision for segregation of recyclables from electronic waste shall be provided. Such recyclables shall be sent and the inert materials, if any, shall be safely disposed in conformity with the e-waste (management and handling) rules, 2010. The e-waste management may be outsourced to a registered/ authorised firm considering the revenue potential from recyclable e-waste.

Electronic waste management involves a series of activities which are performed in a specified order. These distinct activities need to be seamlessly integrated to create an efficient and robust electronic waste management process. The entire process is broadly divided into the following:

- Collection, Tagging and Primary Transportation
- Warehousing and Secondary Transportation
- Processing Facility

The various aspects include the following components:

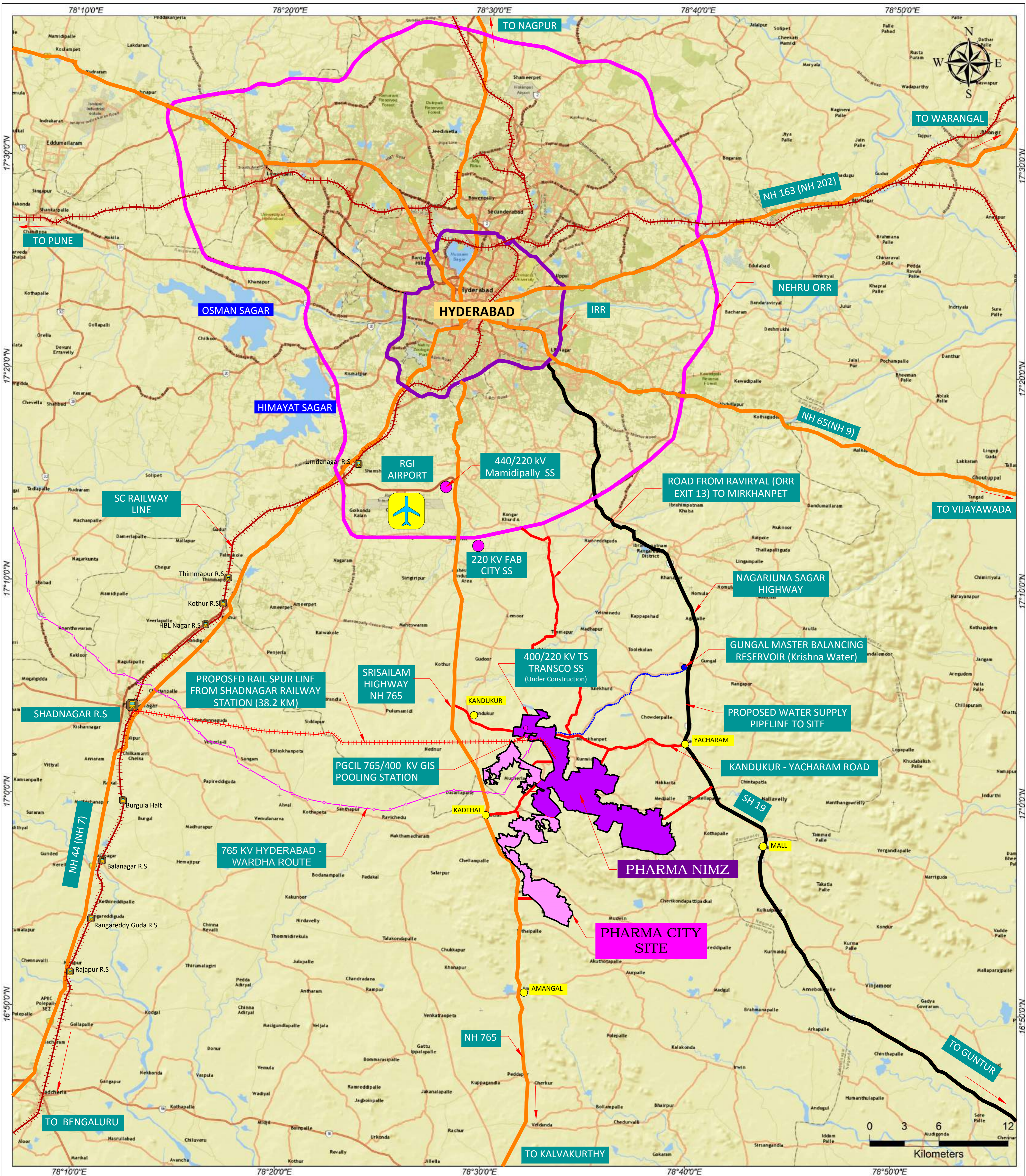
- Collection of e-Waste from various sources
- Tagging of equipment for identification, recording and reporting purposes
- Primary transportation of e-Waste from pick up location to nearest warehouse
- Segregation of e-Waste according to item type at the warehouse and packaging for transportation
- Secondary transportation of e-Waste from the warehouse to the integrated facility
- Reception and storage of incoming material
- Testing and auditing to ascertain refurbishment potential of incoming equipment. Such items would be moved to the refurbishment centre
- Dismantling and segregation of e-Waste into metals, plastics, non-recyclable material and items such as Cathode Ray Tubes (CRT) and fluorescent tubes destined for specialised recycling
- Shredding and downstream separation of metals and plastics to obtain clean fractions
- Downstream sale of recovered commodities to authorized processors
- Proper disposal of non-recyclable material

6.10 Power Requirement & Supply/Source

The total estimated power demand for the Pharma City ultimate phase development is about **900 MW**.

PGCIL's 765/400 kV GIS Pooling Station is located adjacent to the northern part of the Site, near Vaalkunta Tanda (under Mirkhanpet Village, Kandukur Mandal) as shown in **Drawing 1**. Transmission Corporation of Telangana Limited (TSTRANSCO) is currently constructing a 400/220 kV substation within the Project Site (close to PGCIL Station) for power evacuation from the PGCIL Station. GoTS proposes that Pharma City shall source power from this substation, with further power transmission infrastructure to be developed within Pharma City.

During initial stages of the project, the Pharma City would source power from the existing 220 kV substation at Fab City (16 km to the north of Project Site).



LEGEND <div><div></div> NATIONAL HIGHWAY</div> <div><div></div> STATE HIGHWAY</div> <div><div></div> NEHRU ORR</div> <div><div></div> INNER RING ROAD</div> <div><div></div> SC RAILWAY LINE</div>	<div><div></div> PHARMA NIMZ</div> <div><div></div> EXTERNAL ROAD CONNECTORS</div> <div><div></div> PROPOSED RAIL SPUR LINE FROM SHADNAGAR RAILWAY STATION (38.2 KM)</div> <div><div></div> PROPOSED WATER SUPPLY PIPELINE FROM GUNGAL MBR (~18.5 KM)</div> <div><div></div> 765 KV HYDERABAD - WARDHA ROUTE</div>	PROJECT NAME	HYDERABAD PHARMA CITY
		DRAWING TITLE	PROPOSED EXTERNAL LINKAGES
		DRAWING NO	3
		<div>0 KM6 KM</div> <div>SCALE IN KILOMETRES</div> <div></div>	

Chapter 7. REHABILITATION AND RESETTLEMENT PLAN

Existing settlements have largely been excluded from the delineated boundary of the project. However, there are two settlements within the southern part of the site, i.e., in the proposed R&D and Ancillary Hub Zone (Ganugamarla Tanda and Marripally). These two settlements are proposed to be retained and integrated within the Pharma City. The GoTS has issued Orders for acquisition of Patta/Assigned Lands surrounding Government lands through negotiations and the extract of the same is as follows:

G.O.MS. No. 45 Dated 22.07.2015 - Acquisition of Patta/Assigned Lands surrounding Government lands through negotiations – Constitution of Committee

Government of Telangana State vide G.O.MS. No 45 dated 22.07.2015 constituted the Committee with the following members to expedite the process of land acquisition from the Pattadar/land owners by way of private negotiations to save delays and litigations wherever possible and to determine the valuation of the lands proposed to be acquired (Patta/Assigned) and where the lands owners are not willing to negotiate, the procedure under Land Acquisition Act shall be followed, in the interest of development of Industrial Projects/Parks and to make Industrial Land readily available for setting up of industries by the Entrepreneurs for the rapid Industrial Development of the State

- Joint Collector of the concerned District – Chairman
- Revenue Divisional Officer of the respective division – Member
- Tahsildar Concerned – Member
- Representative of TSIIC/head Office – Member
- Zonal Manager, TSIIC - Member/Convener

The Committee shall go into the previous guidelines and procedures of the Government in vogue and take action to acquire the lands by giving a notification in the local newspapers ensuring itself about the proper ownership. It should be ensured that in case of ownership disputes or any other disputes, it shall not resort to the direct purchases.

G.O.MS. No. 123 Dated 30.07.2015 - Procurement of land and other structures thereon from Willing Land Owners by the Procuring Agencies for public purposes

Government of Telangana State vide G.O.MS. no 123 dated 30.07.2015 issued orders to expeditiously procure land for public projects by allowing land owners to participate in the development process by willingly sell their land and properties thereon, for a consideration on the basis of an agreement between land owners and the user department/undertaking/society/authority, herein- after called as Procuring Agency, as approved by the District Level Land Procurement Committee (DLLPC).

The following procedure is prescribed to procure land from willing land owners.

- The Procuring Agency will inform the District Collector about the land required for public developmental purpose along with necessary details.
- On receipt of such information, the District Collector will ascertain the willingness of the land owners for sale of land and property thereon.

PRE FEASIBILITY REPORT

- Subject to getting willingness from the land owners/authorised representatives for voluntarily selling their land and property, the District Collector shall inform about the number of such sellers, extent of land out of total indent, and likely consideration to the Procuring Agency.
- On receiving confirmation from the Procuring Agency, the District Collector shall place the matter before the District Level Land Procurement Committee.
- The Land Procurement Officer shall place all connected records of enquiry, valuation statements, encumbrances of preceding (12) years and other relevant records duly verified by him before the District Level Land Procurement Committee.
- The District Level Land Procurement Committee may take up local inspections, where deemed necessary.
- The consideration as agreed by the individual land owner/owners and Procuring Agency before the District Level Land Procurement Committee shall inter-alia, include the value of land and property, perceived loss of livelihood, equivalent costs required for rehabilitation and resettlement of willing land owners and others.
- Land owner will give an affidavit that she/he will not have any right to further enhancement of consideration finalised by the Committee to any other forum.
- While determining the consideration, the District Level Land Procurement Committee shall take into account all taxes as admissible under various Central/State/Local Laws.
- On signing of agreement, the District Collector shall ensure registration of Conveyance Deed / Sale Deed in favour of Procuring Agency duly making on-line payment of consideration.

Based on the above two G.Os, the Government of Telangana State (GoTS) has been carrying out the acquisition of patta/assigned lands for the HPC project. The total estimated cost of land acquisition is around Rs 1,550 Cr. So far, the chief promoter of the HPC project, i.e., TSIIC has incurred Rs. 178.29 Cr towards land acquisition/alienation of 3326.05 acres. Based on the consultations with the concerned land owners, the land acquisition rate has been finalised at an average rate of Rs 7.7 lakhs for Assignees/Encroachers and Rs 8.5 lakhs / acre for other areas. TSIIC has obtained a loan of Rs. 550 Cr towards land acquisition from Housing and Urban Development Corporation Limited (HUDCO) (A Government of India Enterprise). As on date 3326.05 acres of land is in possession of TSIIC and requisitions were filed with revenue department for the balance land which is in progress.

GOVERNMENT OF TELANGANA

ABSTRACT

Industries & Commerce Department - Development of Industrial Projects/Parks in the State of Telangana - Acquisition of Patta/Assigned Lands surrounding Government lands through negotiations - Constitution of Committee to determine the valuation of the land and acquire by way of private negotiations - Orders -Issued.

INDUSTRIES & COMMERCE (IP&INF) DEPARTMENT

G.O.MS.No. 45

Date: 22- 07-2015.

Read the following:

- 1) G.O.Ms.No.477,Ind. & Com (DSK.IP) Department, dt.21.10.1998
- 2) G.O.Rt.No.146. MA & UD (M2) Department, dt.17.04.2015.
- 3) From the VC&MD, TSIIIC, Lr.No.25415/Lands/NEG-CMT/TSIIC/15, dt.01.05.2015

ORDER:

In the G.O 1st read above, orders were issued in the united Government of A.P accepting the recommendations of the Committee on Infrastructure facilities to be provided to the entrepreneurs by the APIIC and permitting APIIC to purchase lands from the land owners through private negotiations wherever possible and to determine the valuation of the land for the lands proposed to be acquired under private negotiation and where the land owners are not willing to negotiate, the procedure under Land Acquisition Act will be followed.

2. In G.O.2nd read above, orders were issued constituting a committee under the Chairmanship of the Joint Collector, Nalgonda and other offices to acquire lands by negotiations at the request of the Vice Chairman & Chief Executive Officer, Yadagirigutta Development Authority, to develop the Yadagirigutta and its immediate environs by following guidelines and procedures of the Government in vogue.

3. The Vice Chairman & Managing Director, Telangana State Industrial Development Corporation (TSIIC) in the letter 3rd read above has stated that important and prestigious projects announced by the State and Central Governments require large chunks of lands for development of the projects viz., National Investment Manufacturing Zone (NIMZ) in Medak District, Solar Projects at Gattu Mandal in Mahaboobnagar District, Hyderabad Green Pharma City at Mucherla in Ranga Reddy District, Aerospace (Expansion) in Adibatla , Multi-Product Industrial Park, Plastic Park etc., which involves considerable extent of Patta lands for development of the projects apart from the Government and Assigned lands, which are to be procured in time bound manner. He has further stated that on enactment of "The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act (No.30), 2013" the process of acquisition of patta land and other lands are time consuming and section 2(2) (b)(i) of the said Act seeks prior consent of at least 80 per cent of those effected families will make the land acquisition long drawn process which escalates the projects costs and affects the project development.

4. The Vice Chairman & Managing Director, Telangana State Industrial Infrastructure Corporation (TSIIC) has therefore, requested the Government to issue orders for procurement of patta/assigned lands on the lines of the orders issued in the United Government of Andhra Pradesh and orders issued in respect of Yadagirigutta Temple Development Authority, so as to expedite the process of land acquisition for development of Industrial Projects/Parks and where the lands owners are not willing to negotiate, the procedure under Land Acquisition Act shall be followed.

5. Government, after careful examination of the matter, hereby constitute the Committee with the following members to expedite the process of land acquisition from the Pattadar/land owners by way of private negotiations to save delays and litigations wherever possible and to determine the valuation of the lands proposed to be acquired (Patta/Assigned) and where the lands owners are not willing to negotiate, the procedure under Land Acquisition Act shall be followed, in the interest of development of Industrial Projects/Parks and to make Industrial Land readily available for setting up of industries by the Entrepreneurs for the rapid Industrial Development of the State.

(P.T.O)

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- | | | |
|---|---|-----------------|
| 1. Joint Collector of the concerned District | - | Chairman |
| 2. Revenue Divisional Officer of the
respective division | - | Member |
| 3. Tahsildar concerned | - | Member |
| 4. Representative of TSIIIC/Head Office | - | Member |
| 5. Zonal Manager, TSIIIC | - | Member/Convener |

6. The Committee shall go into the previous guidelines and procedures of the Government in vogue and take action to acquire the lands by giving a notification in the local news papers ensuring itself about the proper ownership. It should be ensured that in case of ownership disputes or any other disputes, it shall not resort to the direct purchases.

(BY ORDER AND IN THE NAME OF THE GOVERNOR OF TELANGANA)

**ARVIND KUMAR
SECRETARY TO GOVERNMENT & CIP**

To
All the District Collectors in the state.
All the Joint Collectors in the State
The Vice Chairman & Managing Director, Telangana State Industrial
Infrastructure Corporation (TSIIC), Hyderabad

Copy to :
The Chief Commissioner of Land Administration, Hyderabad
The Prl.Secretary to Govt. Revenue (Assign/LA) Department.
P.S. to Prl.Secretary to Hon'ble Chief Minister
P.S. to Hon'ble Minister for Industries
P.S. to Secretary to Government & CIP,
SF/Sc

//FORWARDED::BY ORDER//

SECTION OFFICER

GOVERNMENT OF TELANGANA
ABSTRACT

Procurement of land and other structures thereon from Willing Land Owners by the Procuring Agencies for public purposes - Orders – Issued.

REVENUE (JA&LA) DEPARTMENT

G.O.MS.No. 123

Dated 30.07.2015.

ORDER:

In order to expeditiously procure land for public projects, Government deem it fit to come out with a framework that allows the land owners to participate in the development process by willingly sell their land and properties thereon, for a consideration on the basis of an agreement between land owners and the user department/undertaking/society/authority, here-in-after called as Procuring Agency, as approved by the District Level Land Procurement Committee (DLLPC).

2. To procure land from Willing Land Owners and others, the following procedure is prescribed:-

- i) The Procuring Agency will inform the District Collector about the land required for public developmental purpose along with necessary details.
- ii) On receipt of such information, the District Collector will ascertain the willingness of the land owners for sale of land and property thereon.
- iii) Subject to getting willingness from the land owners/authorised representatives for voluntarily selling their land and property, the District Collector shall inform about the number of such sellers, extent of land out of total indent, and likely consideration to the Procuring Agency.
- iv) On receiving confirmation from the Procuring Agency, the District Collector shall place the matter before the District Level Land Procurement Committee, as constituted below:

(a) The District Collector of the concerned District	- Chairperson
(b) The Joint Collector of the District	- Member
c) Land Procurement Officer i.e., SDCs/RDO	- Convener
d) S.E./E.E. of Roads & Buildings	- Member
e) Representative of the Procuring Agency	- Member
f) District Registrar	- Member
- v) The Land Procurement Officer shall place all connected records of enquiry, valuation statements, encumbrances of preceding (12) years and other relevant records duly verified by him before the District Level Land Procurement Committee.
- vi) The District Level Land Procurement Committee may take up local inspections, where deemed necessary.

(PTO)

- vii) Conduct of the business by the District Level Land Procurement Committee will be as follows:-
- a) The Chairman shall preside over all meetings of the Committee.
 - b) The Committee shall hold negotiations with the persons interested or authorized by them.
 - c) The Chairperson shall fix the date, time and place of the meetings.
 - d) The Committee may hear any oral/written representations made in respect of any claim/objection by the interested persons or their authorized representatives.
 - e) The proceedings or deliberations of the Committee shall be recorded/minuted.
 - f) Agreement in Form-I shall be attested by all the members.
 - g) After attesting Form-I, the Convener shall obtain affidavits from concerned interested persons on the same day in Form- II.
 - h) Once the agreement is reached, the Collector after executing agreements in Form-I and II shall publish the details of land owners including others and their respective share in two news papers inviting claims and objections within (15) days of publication of such notification.
 - i) After receipt of objections/claims, if any, the District Level Land Procurement Committee shall examine and approve the consideration as detailed at para-2 (viii) below, for sale of land by individual land owners.
 - j) The District Collector shall requisition necessary funds from the Procuring Agency.
- viii) The consideration as agreed by the individual land owner/owners and Procuring Agency before the District Level Land Procurement Committee shall inter-alia, include the value of land and property, perceived loss of livelihood, equivalent costs required for rehabilitation and resettlement of willing land owners and others.
- ix) Land owner will give an affidavit that she/he will not have any right to further enhancement of consideration finalised by the Committee to any other forum.
- x) While determining the consideration, the District Level Land Procurement Committee shall take into account all taxes as admissible under various Central/State/Local Laws.
- xi) On signing of agreement, the District Collector shall ensure registration of Conveyance Deed / Sale Deed in favour of Procuring Agency duly making on-line payment of consideration.
- xii) The Government may from time to time issue such guidelines or executive instructions as may be deemed necessary.

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3. The Chief Commissioner of Land Administration, Telangana State, Hyderabad/ District Collectors shall take necessary action in the matter accordingly.

(BY ORDER AND IN THE NAME OF THE GOVERNOR OF TELANGANA)

**B.R. MEENA
PRINCIPAL SECRETARY TO GOVERNMENT**

To

The Chief Commissioner of Land Administration, Telangana, Hyderabad.

All the District Collectors.

The Commissioner, Rehabilitation & Resettlement and LA, I&CAD Dept., Hyd.

Copy to:

All Departments in the Secretariat.

All HODs in the State of Telangana.

P.S to all Ministers.

P.S to Chief Secretary.

The Accountant General, Telangana.

The DTO, TS/ PAO, Hyderabad.

SF/SC

// FORWARDED :: BY ORDER //

SECTION OFFICER

FORM-I

Agreement to be executed for selling land /property voluntarily for public purpose through negotiation by the land owner to the Procuring Agency.

An agreement made this _____ day of _____ 20_____ between _____ hereinafter called the "Owner" (Which expression shall unless repugnant to the context or meaning thereof include his heirs, executors and administrators) and _____ hereinafter called the "Interested Party" (Which expression shall unless repugnant to the context or meaning thereof include their successors and assignees (to be scored out if there is no interested party on the one part) and the Procuring Agency based on the agreement approved by the DLLPC.

AND WHEREAS the right, title and interest of the owner/owners and the interested party/parties in the following land/lands are as specified below:

A: Persons being the absolute owner/owners of the Property or having an interest therein capable of leading ownership ultimately hereinafter mentioned and hereby conveyed in the following shares, that is to say:

- (1) _____ S/o _____ Share _____
(2) _____ S/o _____ Share _____
(3) _____ S/o _____ Share _____

B: Where the land/lands are held by the interested party/parties under the owners named herein above with respective terms and nature of interest:

- (1) _____ S/o _____ Definite
Term and nature of interest _____
(2) _____ S/o _____ Definite
Term and nature of interest _____
(3) _____ S/o _____ Definite
Term and nature of interest _____

AND WHEREAS the owner and the interested party and the Procuring Agency have agreed for payment of consideration towards the value of land and property, perceived loss of livelihood, equivalent costs required for rehabilitation and resettlement of willing land owners etc. at Rs. _____ for an extent covering-----Acres including any building/structures/trees/aperturment, perceived loss of livelihood, equivalent costs required for rehabilitation and resettlement in _____(vlg) _____(Mandal) _____(District).

(PTO)

AND WHEREAS the owner/ interested parties have no intention to raise any dispute with regard to the contents and manner of this Agreement and the owner/interested parties have no intention of making a reference to any court or authority, as far as the sale consideration, contents and manner of this Agreement are concerned.

Signatures of the owners/interested parties

FORM-II

**Affidavit to be executed by the interested person before the DLLPC on
Rs.10/- Non-Judicial Stamp Paper.**

I/We, Sri/Smt./Kum _____ S/o, W/O,
D/O _____ owner/owners/interested parties over the
land in Sy.No. _____ of Village _____ Mandal
_____ District, hereby agree for the voluntary sale of my/our land
by the Collector for the purpose of _____.

I/We solemnly affirm that I/We am/are the absolute owner/owners of the
land mentioned above and the land is not encumbered. The sale consideration
payable for this land may be paid to me/may be paid to
_____.

I/We am/are agreeable to the payment of all inclusive sale consideration
including perceived livelihood loss/equivalent costs for Rehabilitation and
Resettlement etc., agreed to in the District Level Land Procurement
Committee.

I/We hereby declare that I/We will not claim for payment of higher
consideration in any court of law or in any other forum and I shall abide by
the sale agreement finalised in the District Level Land Procurement
Committee.

Signature and date of interested person.

Attestation of Collector:

Name and Designation:

Chapter 8. PROJECT SCHEDULE & COST ESTIMATES

8.1 Project Schedule

The Project is proposed to be developed in two Phases - Phase 1 between the years 2017 to 2020 and Phase 2 between the years 2021 to 2025.

Detailed phasing plans shall be presented in the EIA report.

8.2 Project Cost Estimates

The total project cost estimate is **Rs. 16,395 Crores** with the following break up:

- Land acquisition cost – Rs. 1,550 Crores
- Block cost estimate for external linkages – Rs. 6,145 Crores
- Block cost estimate for internal site development – Rs. 8,700 Crores

8.2.1 Block Cost Estimate for External Linkages

The total estimated block costs for development of external linkages to the Hyderabad Pharma City project is **Rs. 6,145 crores**. The following table gives the item-wise block cost estimates. These are only indicative costs as per the preliminary infrastructure demand assessment and these shall be fine-tuned and submitted in the EIA Report

Table 8-1: Block Cost Estimates for External Linkages to Pharma City Project

External Linkage	Phase-wise Cost (Rs. Crores)		Total Cost in Rs. Crores
	Phase 1	Phase 2	
Roads (New/Upgradation)	994	704	1698
Rail Spur, Sidings & Railway Station	0	400	400
Water Sourcing & Linkage and Construction of Fire Water Reservoirs	66	116	182
Wastewater Management	714	1684	2398
Power Supply Linkages	200	662	862
Soild Waste Management	65	140	205
Steam Supply	60	140	200
Logistics Hub	0	150	150
Heliport	0	50	50
Total Cost (Rs. Crores)	2099	4046	6145

PRE FEASIBILITY REPORT

These costs do not include the cost of internal distribution networks of the respective infrastructure components that are covered under the internal site development costs discussed in the following section.

8.2.2 Block Cost Estimates for Internal Site Development

The internal infrastructure shall be planned and designed during the Detailed Planning and Design Stage of the project. Using a thumb rule of Rs. 45 lakhs per acre, the estimated cost of internal project site development for Hyderabad Pharma City is **Rs. 8,700 Crores**. This cost would include site development, internal road network, internal water supply system (storage and distribution), internal power supply network (transformers and cabling), wastewater conveyance network, storm water drainage network, fire fighting system, development of green belt and green areas, street lighting and common buildings (common amenity, utility and services). This cost is exclusive of technical infrastructure and township (housing and allied social infrastructure) development proposed within the Project since technical infrastructure is proposed to be developed with Govt of India funding under NIMZ Scheme, while housing and allied social infrastructure are proposed to be developed as standalone PPP projects.

Chapter 9. ANALYSIS OF PROPOSAL (FINAL RECOMMENDATION)

The proposed Hyderabad Pharma City project is a first-of-a-kind initiative in India. The project will promote domestic API manufacturing that would help **reduce the current scenario of huge dependence on API imports** which are fraught with risks for the nation. The project would also help relocate the existing unplanned spread of pharmaceutical manufacturing units within Hyderabad urban sprawl to a **planned integrated industrial township**. The project **leverages on the strengths of pharma industry** setting of Hyderabad i.e. as the Bulk Drug Capital of India, as well as an established R&D hub in pharma, bio technology and life sciences segments. The region also has a **captive skilled growing workforce** that would meet the manpower requirement of the proposed Pharma City. The project is planned in tandem with the **Make in India program** of the Government of India. Department of Industrial Policy and Promotion (DIPP, Ministry of Commerce and Industry, Govt of India) accorded In-Principle approval for development of the pharma manufacturing zone of Pharma City as an NIMZ on January 22, 2016. Further, Department of Pharmaceuticals (Ministry of Chemicals & Fertilizers, Govt of India) is considering providing financial support for the project especially for ZLD based CETP and establishment of pharma manufacturing support facilities.

Understanding the environmental implications of a project of this magnitude, the Government of Telangana proposes to develop the Pharma City with all integrated infrastructure specifically aimed at **green initiatives, energy efficiency and resource optimisation**. To enable this, the State Government has taken on board several stakeholders with domestic as well as international expertise to develop the project in line with its vision of sustainable development with regard to **economic, social as well as environmental sustainability**. **All in all, the proposed Pharma City project would be a sustainable Satellite Township that would integrate 'make', 'live', 'learn', 'innovate' and 'excel' - the five cardinal dimensions of the project.**

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TSIIC : HYD

28 JAN 2016

No.15/6/2015-MPS
Government of India
Ministry of Commerce & Industry
Department of Industrial Policy & Promotion
(Manufacturing Policy Section)

Udyog Bhawan, New Delhi
Dated : 22nd January, 2016

To

The Chief Secretary,
(Dr. Rajiv Sharma)
Government of Telangana,
Telangana State Secretariat,
Hyderabad- 500004.

DC
Telangana
c(Raj)
Imp
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Eg
28/1

Subject: Proposal for setting up of National Investment & Manufacturing Zone (NIMZ) at Rangareddy and Mahbubnagar Districts, Telangana- reg.

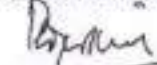
Sir,

I am directed to refer to Telangana Letter No. 41784/TSIIC/Projects/2014 dated 30th November, 2015 on the above mentioned subject and to convey the 'in-principle' approval of the Government of India for setting up of NIMZ in Rangareddy and Mahbubnagar Districts, Telangana.

2. The following actions are required to be taken up by the Government of Telangana within the time frame specified:

- i) Status of land possession of Telangana State Industrial Infrastructure Corporation Ltd. (TSIIC).
- ii) State Government would submit the Application for Final Approval and Detailed Project Report/Techno Economic Feasibility Report cum Development Plan including Agreement of Implementation of the NIMZ at Rangareddy and Mahbubnagar Districts within three months of the issue of this letter;
- iii) State Government would also start simultaneously the formation of Special Purpose Vehicle (SPV) as envisaged in the National Manufacturing Policy for the said NIMZ.

Yours Faithfully,



(PLN Murthy)

Under Secretary to the Govt. of India
Tele: 23062328

✓ Copy to: Shri E V Narasimha Reddy, Vice Chairman & Managing Director (FAC), Telangana State Industrial Infrastructure Corporation Ltd., 6th Floor, Parisrama Bhavan, Fateh Maidan Road, Basheerbagh, Hyderabad - 500 004, Telangana, for information and necessary action. Fax: +91-40-23240205, 23241385.