

**PRE-FEASIBILITY REPORT (PFR)**  
*for*  
**“Hisar Integrated Manufacturing Cluster”**

**2021**

at

**Hisar District Haryana**

|                                                                  |                                                                                                                                                                                                                                                                        |
|------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Type of Project</b>                                           | Greenfield Project                                                                                                                                                                                                                                                     |
| <b>Total Plot Area</b>                                           | 649.52 Ha (1605 Acres)                                                                                                                                                                                                                                                 |
| <b>Total Cost of Project</b>                                     | Rs. 1800 Crores                                                                                                                                                                                                                                                        |
| <b>Category as per EIA notification 2006 and its amendments:</b> | <b>7(c)</b><br>Industrial Estates/Parks/complexes/areas, export processing zones (EPZs), Special Economic Zones(SEZs), Biotech Parks, Leather Complexes;<br><br><b>Category- A</b><br>Industrial estates of area> 500 ha. and housing industry belonging to Category B |
| <b>NABET Acc. No.:</b>                                           | NABET/EIA/1922/RA 0197 valid till 23.11.2022                                                                                                                                                                                                                           |

**PROJECT PROPONENT**

**Civil Aviation Department Government of Haryana**

|                                              |                        |
|----------------------------------------------|------------------------|
| <b>UID No.:</b> EQMS/PFR/HIMC/7(C)B/02072021 |                        |
| <b>Report Release Date:</b> 02.07.2021       | <b>Revision No:</b> 00 |

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## **1 EXECUTIVE SUMMARY**

The proposed project is development of ‘**Hisar Industrial Manufacturing Cluster**’(Hisar IMC) at District Hisar, Haryana as a part of Amritsar Kolkata Industrial Corridor (AKIC). The proposed Industrial Manufacturing Cluster being a part of National Industrial Corridor programme which aims for the development of industrial cities, creating business opportunities and employment generation for socio economic upliftment at regional level leading to overall socio-economic development of India.

The proposed IMC is a part of Hisar Airport Master Plan admeasuring total 2913.73 Ha (7200 acres) area. Out of which 1273.95 Ha (3148 acres) land has been planned for Industrial/ Commercial Development. The proposed IMC, 649.52 Ha (1605 acres) shall be developed as IMC phase and balance land of about 624.43 Ha (1543 acres) shall be developed in future as IMC phase II. Detailed Airport Master Plan attached as **Annexure I**. The current proposal is for IMC phase I which will have industries related to Aerospace & Defence, Food Processing, Engineering and Fabrication, Manufacturing of Lithium-Ion Battery, Readymade Garment Industry and Logistic Park with other supportive infrastructure development. The detailed industry categorization and their assumed production capacity attached as **Annexure II**.

The current land use of the site is mostly agriculture, having some sparse settlement (structures), rana minor canal and vegetation.

Currently about 370.7 Ha (916 acres) of land has been transferred to CA, Government of Haryana (GoH), and the transfer of the balance land of about 278.83 Ha (689 acres) is under the process of transfer and mutation by GoH. The construction works would involve boundary wall construction, security fencing, industrial plots development, drainage system, power lines, street lighting, facility for municipal solid waste management, firefighting systems, rainwater harvesting, construction of roads, infrastructure for power supply, substation, water storage tank, greenbelt development and construction of site office of Hisar IMC.

The proposed project is an industrial area development which will have multiple manufacturing and engineering industries none of falling under Category A or Category B industries as per EIA notification 2006 and amended till date however the Industrial Estate will have Common Effluent Treatment Plant proposed to be constructed and commissioned by project proponent which falls under activity 7(h), category B project thus the proposed industrial estate falls under 7 (c) category A project as per EIA notification 2006 and amended till date. **The total area for Industrial Estate is more than 500 ha, the project will come under activity listed at Serial no. 7(c) (Industrial Estates/Parks/complexes/areas, export processing zones (EPZs), Special Economic Zones (SEZs), Biotech Parks, Leather Complexes) under Category A (Industrial estates with area greater than 500 ha. and housing at least one category B industry) in the Schedule of EIA Notification 2006 and subsequent amendments. Although the industries**



are not covered under category A or B but the industrial estate comprise of project activity which comes under category B. The application for Environmental Clearance for IMC Hisar is being proposed as 'Integrated Environmental Clearance'.

**List of Upcoming Industries in IMC (Phase I) and their category as per CPCB**

| Industry                                                                                                                                                                                                                                                                   | CPCB Category          |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|
| <b>Aerospace and Defence</b>                                                                                                                                                                                                                                               |                        |
| A&D - Light Engineering & Fabrication units with spray painting                                                                                                                                                                                                            | Orange                 |
| A&D - Engineering and fabrication units (dry process without any heat treatment / metal surface finishing operations / painting)                                                                                                                                           | White                  |
| A&D - Light Engineering & fabrication units without spray painting (Dry process only)                                                                                                                                                                                      | White                  |
| <b>Food Processing</b>                                                                                                                                                                                                                                                     |                        |
| Fruits & Vegetable Processing - Food and food processing including fruits and vegetables processing                                                                                                                                                                        | Orange                 |
| Dairy Products - Packing of powdered milk                                                                                                                                                                                                                                  | White                  |
| Dairy Products - Milk processes and dairy products (integrated project) (Large & Medium scale)                                                                                                                                                                             | Red                    |
| Grain Mill and related Products - Steeping and processing of grains                                                                                                                                                                                                        | Green                  |
| Vegetable & Animal Oil / Fats - Vegetable oil manufacturing including solvent extraction and refinery /hydrogenated oils having wastewater generation 100 KLD and above                                                                                                    | Red                    |
| Vegetable & Animal Oil / Fats - Vegetable oil manufacturing including solvent extraction and refinery /hydrogenated oils having wastewater generation < 100 KLD                                                                                                            | Orange                 |
| <b>Engineering &amp; Fabrication</b>                                                                                                                                                                                                                                       |                        |
| <b>Auto-Components</b> <ul style="list-style-type: none"><li>• Tyre, tube &amp; rubber components with boiler</li><li>• Tyre, tube &amp; rubber components without boiler and rubber reclaim industry</li><li>• Electronic Components without use of chemicals</li></ul>   | Red<br>Orange<br>White |
| <b>Steel Products</b> <ul style="list-style-type: none"><li>• Light Engineering &amp; Fabrication units with spray painting</li><li>• Engineering and fabrication units (dry process without any heat treatment / metal surface finishing operations / painting)</li></ul> | Orange<br>White        |

| <b>Industry</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | <b>CPCB Category</b>         |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|
| <ul style="list-style-type: none"> <li>• Light Engineering &amp; fabrication units without spray painting (Dry process only)</li> </ul>                                                                                                                                                                                                                                                                                                                                                | White                        |
| <b>Medical / electronics Equipment</b> <ul style="list-style-type: none"> <li>• Surgical and medical products assembling only (not involving effluent / emission generating processes)</li> <li>• Surgical and medical products including prophylactics and latex</li> <li>• Electronic Components without use of chemicals</li> </ul>                                                                                                                                                 | White<br><br>Orange<br>White |
| <b>Readymade Garments</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                              |
| Hosiery /Garment manufacturing with washing only (without bleaching and dying) with discharge less than 2 KLD                                                                                                                                                                                                                                                                                                                                                                          | Green                        |
| Hosiery /Garment manufacturing with washing only (without bleaching and dying) with discharge greater than or equal to 2 KLD                                                                                                                                                                                                                                                                                                                                                           | Orange                       |
| <b>Logistic Park</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                              |
| <ul style="list-style-type: none"> <li>• Truck Parking Facility</li> <li>• Warehousing</li> <li>• Cold Storage</li> <li>• Office Complex for Truck Operators</li> <li>• Service Centre</li> <li>• Vehicle Testing Centre</li> <li>• Accommodation Facilities, persons</li> <li>• Restaurants/ Dhaba</li> <li>• Fuel Station</li> <li>• Administrative/ Statutory Offices</li> <li>• Commercial space</li> <li>• Electronic Weighing Bridge</li> <li>• Primary Health Centre</li> </ul> | -NA-                         |
| <b>Area/Infrastructure Development Project including educational institutions, community hall, IT Park, Theme Park (Not covered under EIA notification 2006)</b>                                                                                                                                                                                                                                                                                                                       | Orange                       |

Above mentioned industries does not comes under the purview of EIA notification 2006, proposed IMC is categories under 7(c) category B.

**Development Strategy:** the development of IMC phase I projected to be developed in further subdivisional phase wise manner which has been projected to be developed with full potential in year of 2050. The estimated project components in terms of infrastructure has been given considering 100% potential in terms of capacity. The project details including the infrastructure and requirement has been given in **Table 1.1**

**Table 1.1 Details of Proposed Project**

| S.no                                                                 | Particulars                                                   | Unit        | Details      |
|----------------------------------------------------------------------|---------------------------------------------------------------|-------------|--------------|
| 1                                                                    | Project Cost                                                  | Rs.         | 1800 Crores  |
| <b>AREA DETAILS</b>                                                  |                                                               |             |              |
| 2                                                                    | Total Plot Area                                               | Hectares    | 649.52       |
| 3                                                                    | Area Under Road                                               | Hectares    | 79.80        |
| 4                                                                    | Area Under Greenbelt                                          | Hectares    | 104.03       |
| 5                                                                    | Area under Industrial, Service and Supportive Infrastructures | Hectares    | 428.34       |
| <b>POPULATION/EMPLOYMENT</b>                                         |                                                               |             |              |
| 6                                                                    | Employees                                                     | Nos.        | 58602        |
| 7                                                                    | Visitor (10% of employees)                                    | Nos.        | 5860         |
| 8                                                                    | <b>Total Population</b>                                       | <b>Nos.</b> | <b>64462</b> |
| <b>SERVICE DETAILS &amp; ENVIRONMENTAL ASPECTS</b>                   |                                                               |             |              |
| 9                                                                    | Total Water Demand                                            | MLD         | <b>32.25</b> |
| 10                                                                   | Fresh Water Demand including Fire Water Demand                | MLD         | 15.75        |
| 11                                                                   | Fire Water Demand                                             | ML          | 0.75         |
| 12                                                                   | Effluent Generation*                                          | MLD         | 12           |
| 13                                                                   | Sewage Generation*                                            | MLD         | 6            |
| 14                                                                   | Effluent Treatment Capacity*                                  | MLD         | 12           |
| 15                                                                   | Sewage Treatment Capacity*                                    | MLD         | 6            |
| 16                                                                   | Recycled Water                                                | MLD         | 16.5         |
| 17                                                                   | Power Requirement*                                            | MVA         | 170-200      |
| *Quantities are based on estimated 100% capacity of IMC in year 2050 |                                                               |             |              |

### 1.1 Project location and Area Breakup

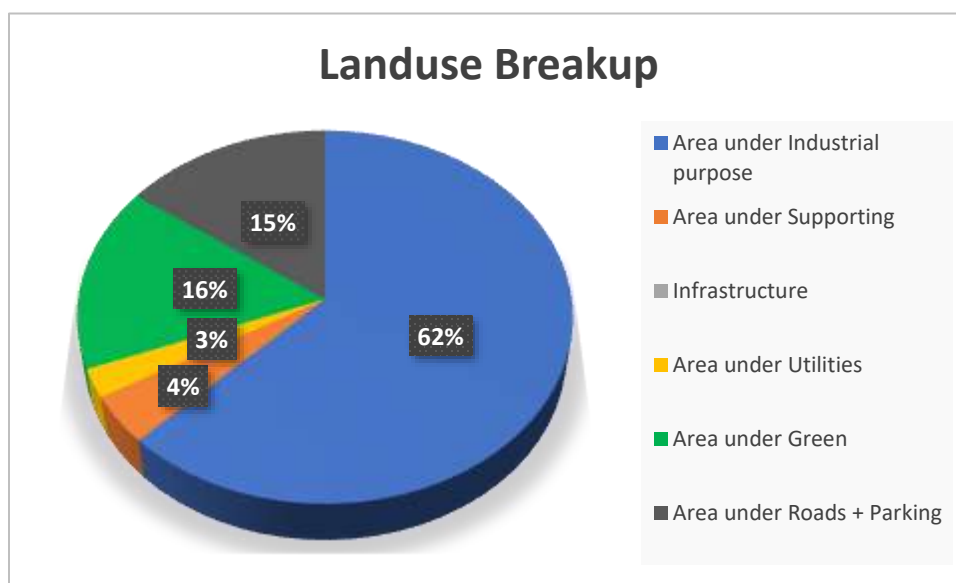
The project is located at Village- Bir Distt. Hisar, Haryana by Special Purpose Vehicle (SPV) between IAHH and National Industrial Corridor Development Corporation (NICDC).

The total plot area of the project will be 1605 acres. Out of total which, 257.07 acres about i.e. 16.0 % of total plot area will be developed as green area. Detailed land-use breakup of the project is shown in **Table 1.2.** and **Figure 1-1.** Project location (Google Earth Image) has been depicted as **Figure 1-2.**

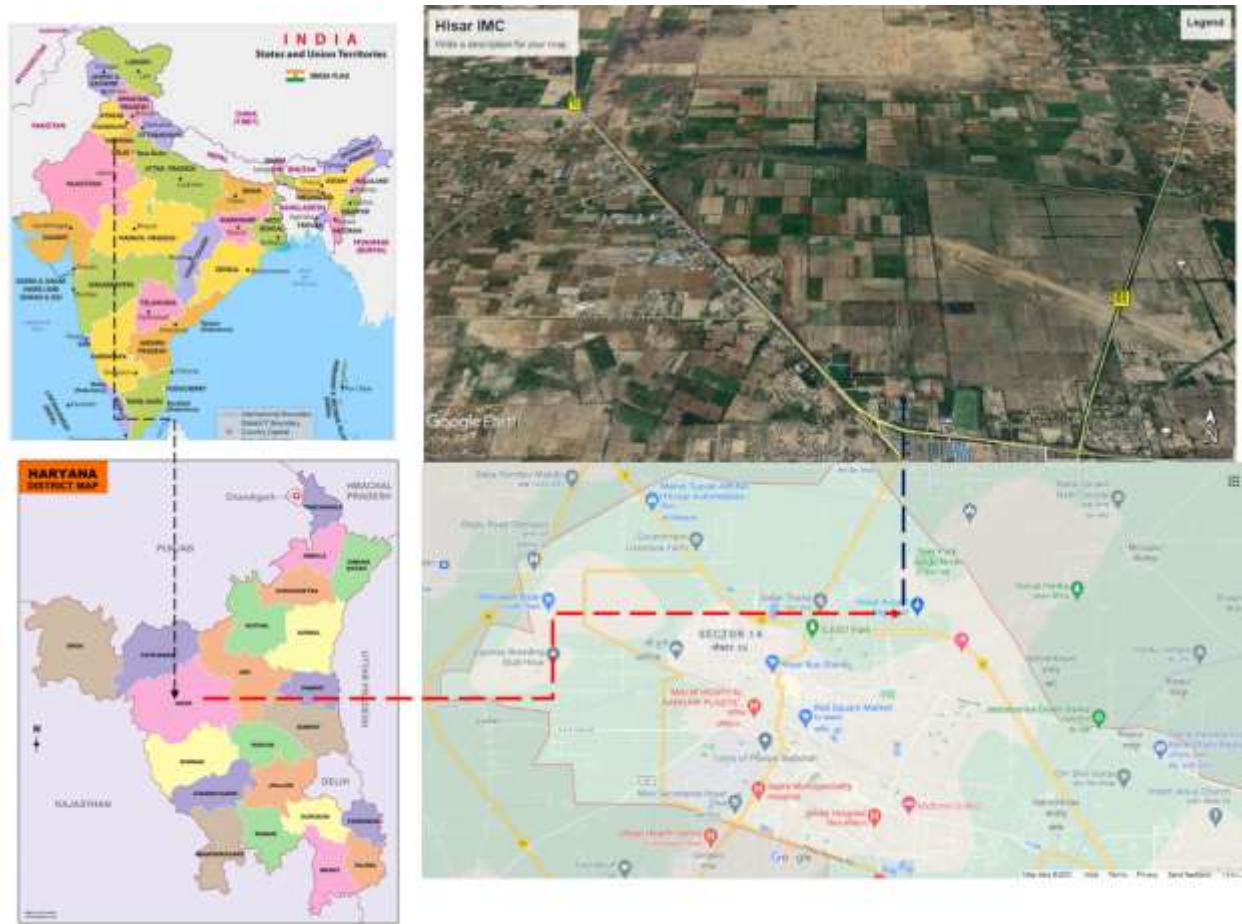
**Table 1.2 Land-use Breakup of Project Site**



| Land Use                             | Area (Acre) | Area (Sqm)      | Area (Ha)    | Area (%)    |
|--------------------------------------|-------------|-----------------|--------------|-------------|
| Area under Industrial purpose        | 1002.5      | 4056977         | 405.69       | 62.41%      |
| Area under Supporting Infrastructure | 67.24       | 272110.9        | 27.21        | 4.19%       |
| Area under Utilities                 | 39.45       | 159648.6        | 15.96        | 2.46%       |
| Area under Green                     | 257.07      | 1040326         | 104.03       | 16%         |
| Area under Roads + Parking           | 238.74      | 966146.5        | 96.61        | 14.87%      |
| <b>Total Area</b>                    | <b>1605</b> | <b>64995209</b> | <b>649.5</b> | <b>100%</b> |



**Figure 1-1 Land Use Breakup Diagram**



**Figure 1-2 Project Location at Glance**

## **1.2 Water Requirement**

**During Construction Phase:** Approximately 85 KLD (Domestic- 35 KLD and Construction purpose- 50 KLD) of water will be required out of which fresh water for Domestic purpose will be met through tanker supply and construction water requirement will be met through Rana Minor canal or authorized water suppliers through tanker.

**During Operation phase:**

**Source (Fresh Water): Rana Minor Irrigation Canal**

The approximate water requirement will be 32.25 MLD which will be met from canal and recycled water (ETP & STP). Fresh water requirement will be 15.75 KLD including Fire Water Demand. The water supply through canal will be intermittent (8 days continuous in month) as per the information by Irrigation department GoH. Water demand for operation period of IMC upto year 2030 shall be dependent upon intermittent source by having infrastructure in terms of storage reservoir.

### **1.3 Power requirement & supply/ source**

#### **During Construction Phase:**

During Construction phase, the power requirement during construction phase shall be procured by electricity distribution company HVPNL and IAH.

#### **During Operation Phase:**

During operational phase the power requirement will be approximately 168 MVA, which will be provided by Haryana Vidyut Prasaran Nigam Limited (HVPNL). The existing 400/220/33kV Kirori Substation shall be tapped for ultimate power sourcing available at site vicinity.

### **1.4 Waste Water Management**

#### **During Construction Phase,**

About 28 KLD of waste water will be generated which will be treated in modular STP of 30 KLD and treated water will be reused for construction purpose.

#### **During Operation Phase,**

Wastewater from domestic activity (6 MLD) shall be connected to sewerage network and shall be treated in common sewage treatment plant. The entire treated water shall be reuse for flushing and landscaping purpose.

Effluent of approximate 12 MLD shall be treated in proposed CETP capacity of 12 MLD. Treated effluent shall be recycle by industries. No discharge to any water bodies or land shall be practiced. Total 12 MLD effluent generation have been envisaged for entire industrial estate development.

### **1.5 Air Emission & Management**

No significant air pollution is anticipated to be generated from the project as it is an industrial plotted development project. Following measures will be followed in order to avoid any impact on the environment due to dust generation during construction phase.

#### **Construction Phase:**

- Transportation of material in covered vehicles only.
- Barricading the construction area
- Water sprinkling at site and haulage road
- Storage of loose construction material in covered conditions.
- Provision of stacks with DG set as per CPCB norms and usage of Low Sulphur fuel in DG set.
- Initiation of the green area development in construction stage itself
- Carrying out ambient air quality monitoring at the site every six monthly to record the ambient air quality at the site
- Roads leading to or at the site to be paved and blacktopped (Metallic roads).



- Windbreaker of appropriate height (maximum 10m) to be provided.
- Grinding and cutting of building materials in open area to be prohibited.
- Prohibition of uncovered vehicles carrying construction material and waste
- Regulation of vehicular movement of transportation vehicles around the project premises.

#### **Operation Phase:**

- Maintenance of green area.
- Provision of stacks with DG sets as per CPCB norms and usage of the Low Sulphur Diesel.
- Water sprinkling on roads for dust suppression.
- Carrying out ambient air quality monitoring at the site every six monthly to record the ambient air quality at the site.
- Process emission and stack emission of individual industry if any shall be as per emission standard of Central Pollution Control Board. Industries having such emission shall provide appropriate air pollution control measures in process. Individual industry would be responsible to take care to restrict such emissions of air pollution.

The major sources of pollutant in the vicinity of the proposed project will be line sources due to vehicular exhausts and point source (proposed DG set) at the Airport.

### **1.6 Solid & Hazardous Waste Management**

#### **During Construction Phase: -**

Approximately 125 kg of solid waste will be generated from the construction site out of which 75 kg/day of biodegradable waste will be collected and disposed of in a fenced composting pit at the site and covered properly after completion of construction activity, remaining 50 kg/day of non-biodegradable waste will be disposed of through the authorised agency in the area.

#### **During Operation Phase: -**

Approx. **64462** persons will be involved during the project including approx. 5860 no. of visitors. Waste generated would be 19.33 MTPD out of which around 10.0 MTPD will be biodegradable waste and remaining 9.33 MTPD will be non-biodegradable waste. Biodegradable waste will be sent to common waste management facility provided by Hisar IMC, Non-Biodegradable waste will be given to authorised vendor in the area.

The sludge generated from the treatment of waste water shall be utilized as manure at green area and nearby agriculture land.

Other waste to be generated from site includes E-waste and biomedical waste and used oil from DG sets and industrial machinery.



Industrial waste such as hazardous waste, plastic waste, E waste shall be managed by respective industries as per the various notified waste management rules time to time by MOEF&CC.

### **1.7 Noise Management**

#### **Construction Phase**

To mitigate the impacts of noise from construction equipment during the construction phase on the site, the following measures are recommended for implementation.

Time of Operation: Noisy construction equipment would not be allowed to use at night time.

Job Rotation and Hearing Protection: Workers employed in high noise areas will be employed on shift basis. Hearing protection such as earplugs/muffs will be provided to those working very close to the noise generating machinery.

Use of Noise Reduction devices for machines.

As the site is vast and open the noise intensity would dissipate and not affect the nearby settlement.

#### **Operation Phase:**

To mitigate the impacts of noise from diesel generator set during operational phase, the following measures are recommended:

- Adoption of Noise emission control technologies
- The source of noise will be DG sets and pumps & motors. Afforestation will be done in the premises, other measures for the control of noise pollution from industries will be the responsibility of individual industries in the operation phase. Individual industries shall have their own green belt in their respective plots to reduce the noise generation. DG sets in individual industry shall be provided with acoustic enclosure.

## **2 INTRODUCTION**

Govt. of India is developing various Industrial Corridor Projects as part of National Industrial Corridor programme which is aimed at development of futuristic industrial cities in India which can compete with the best manufacturing and investment destinations in the world. The same will create employment opportunities and economic growth leading to overall socio-economic development.

There are 11 Industrial Corridors Projects are being taken for the development (details given below) the proposed Hisar IMC is a part of Amritsar Kolkata Industrial Corridor (AKIC).

1. Delhi Mumbai Industrial Corridor (DMIC);
2. Chennai Bengaluru Industrial Corridor (CBIC);
3. **Amritsar Kolkata Industrial Corridor (AKIC);**
4. East Coast Industrial Corridor (ECIC) with Vizag Chennai Industrial Corridor (VCIC) as Phase 1;
5. Bengaluru Mumbai Industrial Corridor (BMIC);
6. Extension of CBIC to Kochi via Coimbatore;
7. Hyderabad Nagpur Industrial Corridor (HNIC);
8. Hyderabad Warangal Industrial Corridor (HWIC);
9. Hyderabad Bengaluru Industrial Corridor (HBIC);
10. Odisha Economic Corridor (OEC);
11. Delhi Nagpur Industrial Corridor (DNIC).



**Figure 2-1 An Overview of 11 industrial Corridors**

## **2.1 Identification of Project & Project Proponent**

### **2.1.1 Identification of Project Proponent:**

The project proponent for the development of IMC is Civil Aviation Department Government of Haryana.

### **2.1.2 Identification of Project**

The project will be spread over an area of 1605 Acres at District Hisar Haryana. The proposed IMC is a part of Hisar Airport Master Plan admeasuring total 7200 acres (2913.73 Ha) area. Out of which 3148 acres land has been planned for Industrial/ Commercial Development. The proposed IMC, 1605 acres shall be developed as IMC phase and balance land of about 1543 acres shall be developed in future as IMC phase II.

The construction works would involve boundary wall construction, security fencing, industrial plots development, drainage system, power lines, street lighting, facility for municipal solid waste management, firefighting systems, rainwater harvesting, construction of roads, infrastructure for power supply, substation, water storage tank, greenbelt development and construction of site office of Hisar IMC.

**The total area for Industrial Estate is more than 500 ha, the project will come under activity listed at Serial no. 7(c) (Industrial Estates/Parks/complexes/areas, export**

**processing zones (EPZs), Special Economic Zones (SEZs), Biotech Parks, Leather Complexes) under Category A (Industrial estates with area greater than 500 ha. and housing at least one category B industry) in the Schedule of EIA Notification 2006 and subsequent amendments. Although the industries are not covered under category A or B but the industrial estate comprise of CETP i.e 7(h) project activity which comes under category B. The application for Environmental Clearance for IMC Hisar is being proposed as 'Integrated Environmental Clearance'.**

## **2.2 Need for the project and its importance to the country:**

Government of Haryana (GoH) has taken up the mega project of Integrated Aviation Hub-Hisar (IAH) with a vision to strengthen the Industrial & Economic base along the Rohtak-Hisar-Sirsa Corridor. Hisar airport is envisaged as an integral part of NCR air mobility solutions in the coming decade. The airport is in NCR's counter magnet region has potential to cater to the demand of the districts surrounding Hisar district as well as other regions of the Punjab, Haryana, Rajasthan, and Delhi-NCR. Hisar Airport is also expected to decongest IGI airport, Delhi. Since the IMC-Hisar is a part of the overall development of the Hisar Airport area, it is important that IMC should leverage the development of the airport as one of the key drivers of its sustainable business. Since IMC and IAH are being developed concurrently, it is important to assess the linkages between the two for developmental synergies.

Development of IMC Hisar is conceived as a green field dynamic urban growth centre, with multimodal transportation infrastructure (air, highway, rail) efficiently connecting IMC's businesses, accelerating trade in high-value goods and services and enhancing local, regional, national, and global economy. The location of IMC Hisar and the Hisar Airport is strategic on connectivity. This strategic location offers easy access from NCR region, all parts of Haryana and its neighboring states and industrial corridors, thereby enabling efficient supply chain management resulting in benefits of faster turn-around time and maximization of productivity.

## **2.3 Demand/supply Gap**

The project will reduce the elevated demand supply gap of aerospace and defence, food Industry product and various engineering solution. Indigenous manufacturing of aerospace & defence, automobile products will subsequently reduce the demand supply gap in the region.

## **2.4 Imports Vs Indigenous Production**

The proposed industrial estate will house various type of industries capable of producing multiple indigenous products related to aerospace and defence, food processing, engineering and

fabrication, lithium-ion battery and readymade garments. Indigenous production through various type of industries shall reduce the import of such products in region.

## **2.5 Export Possibility**

The proposed industrial estate shall increase the export of indigenous products to various region of the country as well as international markets.

## **2.6 Domestic/Export Markets**

The products shall cater into majorly domestic market in defence, aerospace, food processing, engineering and fabrication sector.

## **2.7 Employment Generation (Direct and Indirect) due to the project**

The Proposed project will generate direct and indirect employment.

**Construction Phase:** The project will provide employment to 250 no. of local labours for construction works and establishment of the infrastructure for Industrial Estate.

**Operational Phase:** Approx. 58602 persons will be involved during the operation phase after the establishment of industries. It will aid in development of surrounding area and there will be upliftment of Socio-economic standards. People from nearby villages will be preferred. This will enhance the employment generation for local people. Detailed employment generation through various proposed industrial sector further elaborated below.

**Aerospace & Defence Industry Sector** – In the Aerospace and Defence sector, the anchor industry will employ about 5000 employees, in one shift the MSME players will employ around 100 worker per unit, and total 75 units will employ 7500 workers The Aerospace and defence training centre will also employ about 50 staff members. Approximate employment generation in this sector shall be 12,750 No's.

**Food Processing Sector:** It is also expected that the proposed agro-processing / food-processing zone should act as an enabler to the local economy and that should enable local farmers to diversify their crop pattern. Employment generation in this sector expected to be around 7,765 No's.

**Engineering and Fabrication:** The presence of largest stainless-steel producer and metal industry at Hisar should provide a locational advantage to the sector. The employment numbers have been taken from general trend of MSME industries. The total number of workers under Engineering, auto component and fabrication Industries will be about 12,700 No's.

**Readymade Garments:** The ready-made-garment industry is expected to grow fast as a result of



growth in end-use industry base, government of India's focus on export growth in this segment and emergence of various industrial corridors and SEZs along with these corridors. Total no of employment in this sector would be around 6456 No's.

**Lithium-Ion Battery:** The Lithium-Ion industry will cater to emerging market of electric vehicles along with mobiles, laptops and other electronic products. This industry will employ about 11,419 No's workers.

**Common Ready Built Sheds:** Its been envisaged that some of industrial units would like to start their operation with immediate effect on the operation phase of IMC before establishment of their own permanent facility. The total no of workers in ready built sheds will be around 761 No's.

**Allied Services:** these services inclusive of financial institutes, shared office spaces, cultural / heritage centre, IMC administrative block and space administered by technical, management and HR consultants will employ around 1615 No's

**Logistic Park:** Logistics industry is considered as one of the most important and largest industries operating in any industrial zone, as it serves deliveries of both raw material as well as end product. About 70 Acres of land area has been reserved for logistic park facility in the IMC. This area has provisions for 1000 trucks. The logistic park will have 899 employees working in multiple shifts. The said figure have been derived from various operational multimodal logistic park around different countries. The logistic park will employ about 10% skilled labor, 40% semiskilled and 50% unskilled labour.

**Hotels:** Being in immediate vicinity of airport the proposed industrial estate shall have 1 hotel of five star category and three star category (1 no's). the number employees in these hotels have been envisaged around 483 no's.

**Medical Hospital:** The proposed IMC shall have Medical Hospital which will generate the employment of around 858 no's

**Employee Breakup:** The Topmost management and higher management form about 10% of the total staff, the middle management about 20% and the junior staff and labors about 70%.

### **3 PROJECT DESCRIPTION**

The proposed site is for the development of Hisar Integrated Manufacturing Cluster which will have industries (not covered under category B as per EIA notification 2006, spread over an area of 649.52 HA. The industries involve manufacturing of different Aerospace and Defence, Food Processing, Engineering and Fabrication, Lithium Ion Battery, Readymade Garments. Type of industries likely to come in proposed industrial estate:

#### **Aerospace and Defence**

- A&D - Light Engineering & Fabrication units with spray painting
- A&D - Engineering and fabrication units (dry process without any heat treatment / metal surface finishing operations / painting).
- A&D - Light Engineering & fabrication units without spray painting (Dry process only).

#### **Food Processing**

- Fruits & Vegetable Processing - Food and food processing including fruits and vegetables processing.
- Dairy Products - Packing of powdered milk
- Dairy Products - Milk processes and dairy products (integrated project) (Large & Medium scale)
- Grain Mill and related Products - Steeping and processing of grains.
- Vegetable & Animal Oil / Fats - Vegetable oil manufacturing including solvent extraction and refinery /hydrogenated oils having wastewater generation 100 KLD and above.
- Vegetable & Animal Oil / Fats - Vegetable oil manufacturing including solvent extraction and refinery /hydrogenated oils having wastewater generation < 100 KLD.

#### **Auto-Components**

- Tyre, tube & rubber components with boiler
- Tyre, tube & rubber components without boiler and rubber reclaim industry.
- Electronic Components without use of chemicals.

#### **Steel Products**

- Light Engineering & Fabrication units with spray painting
- Engineering and fabrication units (dry process without any heat treatment / metal surface finishing operations / painting)
- Light Engineering & fabrication units without spray painting (Dry process only)
- Medical / electronics Equipment
- Surgical and medical products assembling only (not involving effluent / emission generating processes)
- Surgical and medical products including prophylactics and latex.



- Electronic Components without use of chemicals.

#### **Lithium-Ion Battery**

#### **Readymade Garments**

- Hosiery /Garment manufacturing with washing only (without bleaching and dying) with discharge less than 2 KLD
- Hosiery /Garment manufacturing with washing only (without bleaching and dying) with discharge greater than or equal to 2 KLD.

#### **Logistic Park**

- Truck Parking Facility
- Warehousing
- Cold Storage
- Office Complex for Truck Operators
- Service Centre
- Vehicle Testing Centre
- Accommodation Facilities, persons
- Restaurants/ Dhaba
- Fuel Station
- Administrative/ Statutory Offices
- Commercial space
- Electronic Weighing Bridge
- Primary Health Centre

**Area/Infrastructure Development Project including educational institutions, community hall, IT Park, Theme Park (Not covered under EIA notification 2006).**

### **3.1 Type of Project including interlinked and interdependent projects if any**

The proposed project is industrial estate, area having more than 500 HA not containing Category A or B industries, however, the CETP has been proposed to be constructed and commissioned by Project Proponent which is 7(h) category B project activity, the project will come under activity listed at Serial no. 7(c) (Industrial Estates /Parks /complexes /areas, export processing zones (EPZs), Special Economic Zones (SEZs), Biotech Parks, Leather Complexes) under **Category A** (Industrial estates of area> 500 ha. and housing at least one category B industry) in the Schedule of EIA Notification 2006 and subsequent amendments. There is no interlinked project.

### **3.2 Location (specific location and project boundary & project layout) with coordinates**

The proposed project Industrial Estate is proposed at District Hisar, Haryana. The total land area for the establishment of Industrial Estate shall be 649.52 ha. The geographical coordinates of center of the site are Latitude: 29°11'56.91"N and Longitude: 75°42'0.49"E.

The Google image showing Project boundary and 10 km area map is shown in **Figure 3-1**, respectively. Master layout is shown in **Figure 3-2**.

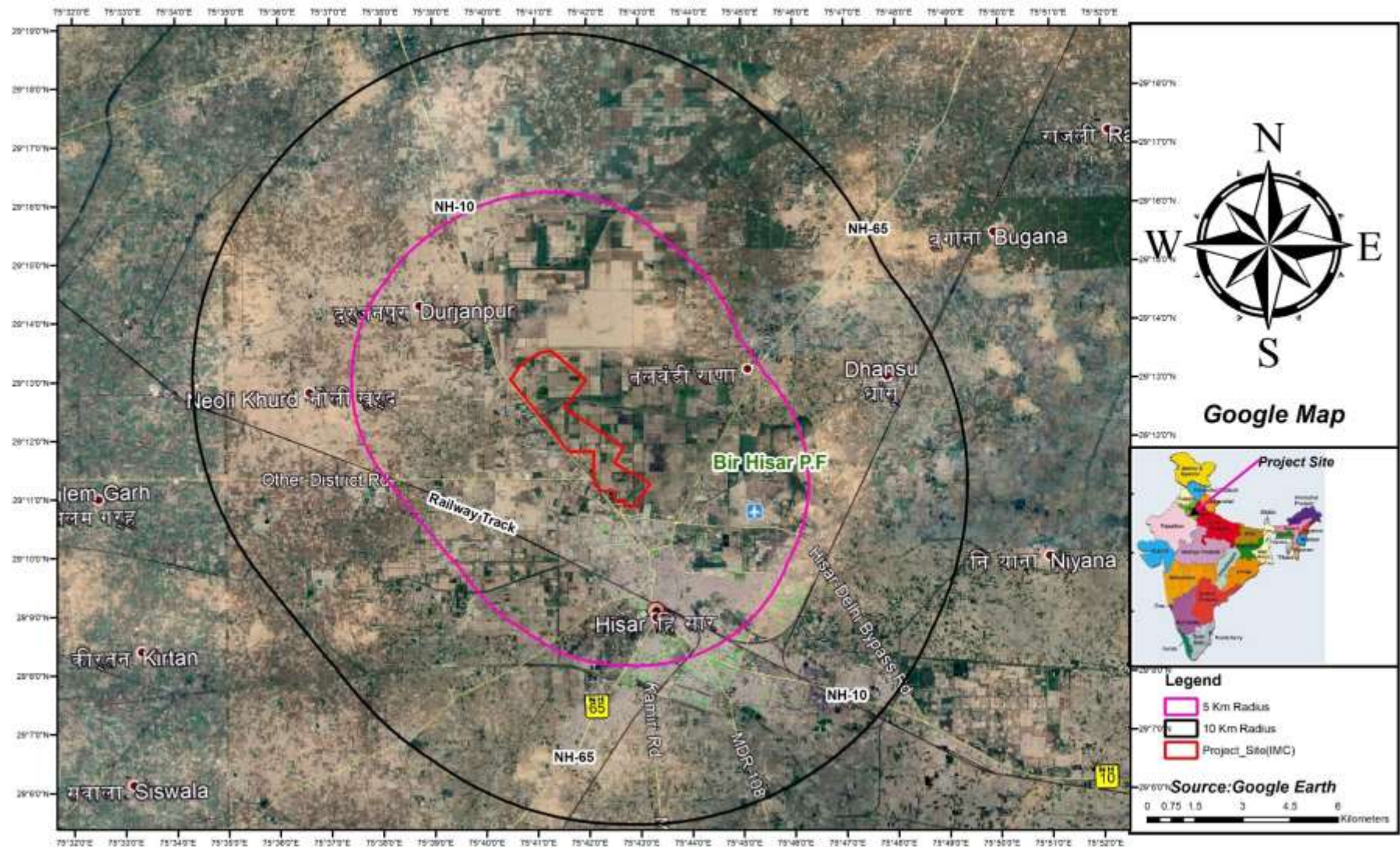


Figure 3-1 Map Covering 0-5km-10 km surrounding the Project Site

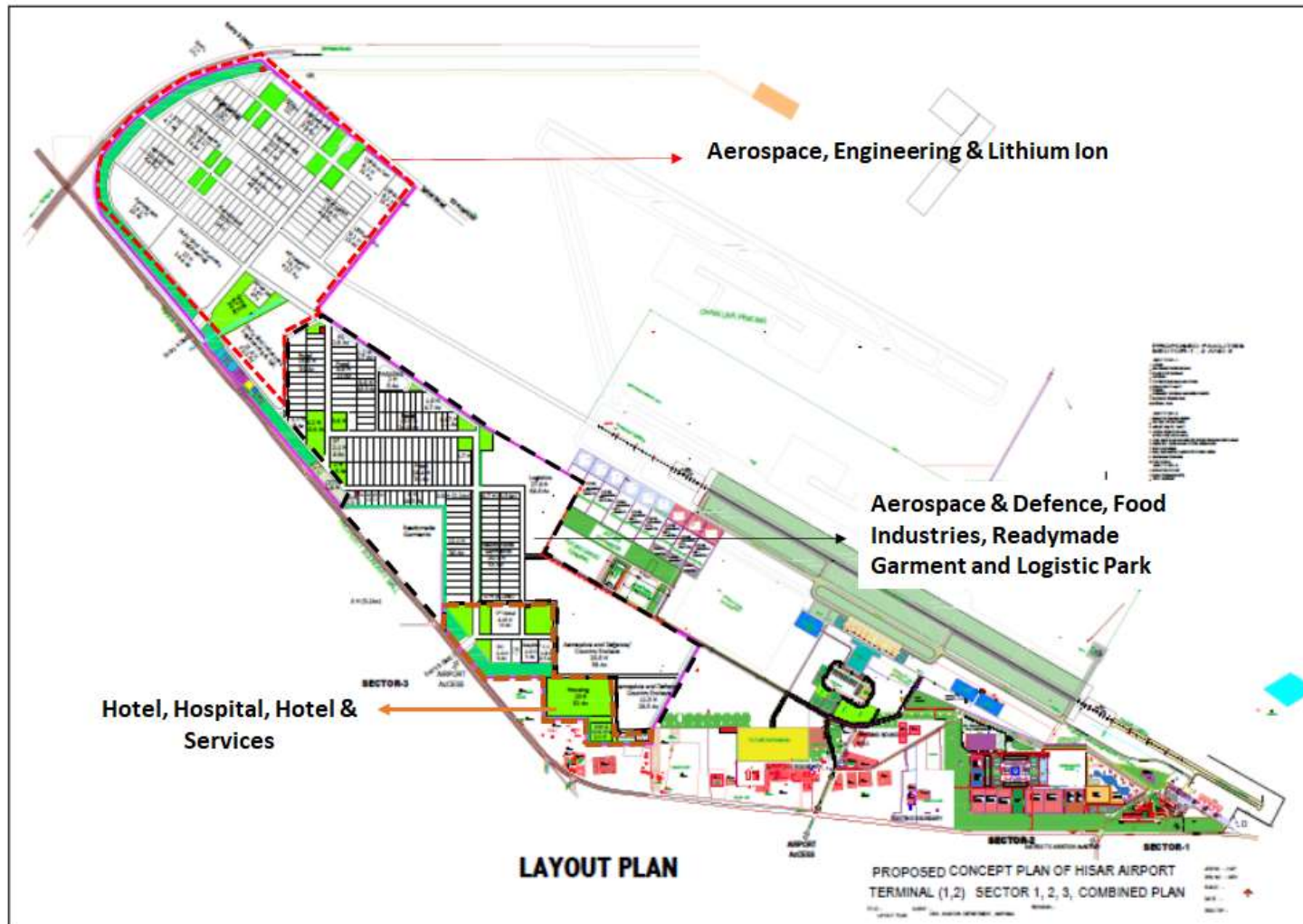


Figure 3-2 Layout plan of proposed IMC

### **3.3 Details of alternate sites considered and the basis of selecting the proposed site, particularly the environmental considerations gone into should be highlighted.**

No alternative sites have been examined. The proposed project is in conformity with the draft master plan of Hisar.

**Road Connectivity:** The proposed project site is located at the junction of two national highways viz: NH9 (Delhi Hisar) and NH52 (Hisar-Chandigarh). Three Entry/Exit points of the site will be connected to these two highways. The NH9 or the Hisar Delhi Bypass is the main highway between the site and Hisar Town. This road also captures the traffic coming from the NCR. Since the longer side of the IMC falls on this road, two entry/exit points have been identified on this road. It is presumed that majority of the workforce will come to the IMC from the Hisar town and will be using this road. The NH9 also has a service lane, two entry-exit points from the service road has been proposed.

The NH52 will also have an Entry/Exit Point, which the IMC will share with the Airport. This road proposed road connected to the NH52 is designated as the Spine Road for the Hisar Airport. This will be a high-capacity road, designed to serve both the freight and passenger traffic. The road is to be designed in a manner that the freight traffic coming inside/going out of the IMC does not pose any hindrance to the passenger traffic coming to the Airport. The planning and alignment of the Spine Road will be detailed in the masterplan stage.

**Connectivity with the Rail Freight Station:** A container freight station is proposed in the northern side of the Airport. Since the rail-based commodity demand/manufacture in the IMC, does not justify planning of a railyard inside the IMC, it is assumed that a peripheral road will be proposed to join the IMC site through the land parcel on the north of the runway and taxiway, where rail freight station is proposed. This road may be used specifically to serve the transfer of rail-based cargo from IMC to the freight station.

**Connectivity with High-Speed Passenger Rail Terminal:** High Speed Passenger Rail Terminal has been proposed in the Airport area. This high-speed rail is envisaged to serve the passengers travelling to and from the Hisar airport from Delhi. The connectivity of the terminal is planned through the proposed spine road, which will act as a common corridor for both the entities of Airport and IMC. The security measures/access control to and for movement of passengers between IMC and Highspeed railway facility needs to be devised.

There have been number of trees present at site which shall be cut / transplanted as per the permission granted by Forest Department during site preparation. Currently the tree survey is in progress as per the prescribed guidelines of Forest Department.



**Table 3.1 Salient Environmental Features of Proposed Project**

| Sensitivity                                  | Within Core Zone   | Study Area- 10 km Radius | Remarks                                                                                                                                                                                                                                                                                                                                                                               |
|----------------------------------------------|--------------------|--------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Wildlife Sanctuary                           | None               | None                     | --                                                                                                                                                                                                                                                                                                                                                                                    |
| National park                                | None               | None                     | --                                                                                                                                                                                                                                                                                                                                                                                    |
| Biosphere reserves                           | None               | None                     | --                                                                                                                                                                                                                                                                                                                                                                                    |
| Ramsar notified wetland                      | None               | None                     | --                                                                                                                                                                                                                                                                                                                                                                                    |
| Bird Sanctuary                               | None               | None                     | --                                                                                                                                                                                                                                                                                                                                                                                    |
| Notified rare and endangered flora and fauna | None               | None                     | --                                                                                                                                                                                                                                                                                                                                                                                    |
| Reserve & protected Forests                  | Yes                | Yes                      | <ul style="list-style-type: none"> <li>• Bir Hisar Protected Forest: abuts site, E</li> <li>• Hisar to Barwala-Chandigarh Road -Within the site</li> <li>• Hisar to Dhansu Road -Within the site</li> <li>• Deer Park &amp; Shatavery Herbal Park (0.5 Km, E)</li> <li>• Forest land on both Side of Rana Minor Canal (rerouting of the same has been proposed)</li> </ul>            |
| Water Bodies                                 | Yes                | Yes                      | <ul style="list-style-type: none"> <li>• Rana Minor (Within the site)</li> <li>• Blue Bird Lake (close to site boundary, S) – It is an artificially created water body for recreation purpose/ tourism by Haryana Tourism Corporation (HTC) which is being partly used for fisheries through commercial contract by HTC.</li> <li>• Talwandi Rana Village Pond (1.2 Km, N)</li> </ul> |
| Seismicity                                   | Falls in Zone- III | Falls in Zone-III        | Moderate Risk                                                                                                                                                                                                                                                                                                                                                                         |
| State Boundary                               | None               | None                     | --                                                                                                                                                                                                                                                                                                                                                                                    |
| Road connectivity                            | Well connected     | Well connected           | <ul style="list-style-type: none"> <li>• NH-9 Delhi -Hisar (covering site in South direction and West direction)</li> <li>• NH 52 Hisar- Chandigarh (North side of the site)</li> <li>• Barwala &amp; Dhansu Road (traverses through site)</li> </ul>                                                                                                                                 |
| Rail connectivity                            | None               | Yes                      | • Hisar Junction Railway Station (2.9 km, SW)                                                                                                                                                                                                                                                                                                                                         |
| Air Connectivity                             | Yes                | None                     | • Existing Hisar Airport                                                                                                                                                                                                                                                                                                                                                              |
| Archaeological Monuments                     | None               | None                     | • None                                                                                                                                                                                                                                                                                                                                                                                |
| Industrial Area                              | None               | Yes                      | • Business and Trade Enclave (1 km, S)                                                                                                                                                                                                                                                                                                                                                |
| Defence Installation                         | None               | Yes                      | • Hisar cantonment (7.5 km, SE)                                                                                                                                                                                                                                                                                                                                                       |

| Sensitivity                               | Within Core Zone | Study Area- 10 km Radius | Remarks                                                                                                                                                  |
|-------------------------------------------|------------------|--------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|
| Settlements                               | None             | Yes                      | <ul style="list-style-type: none"> <li>Hisar City (350 m, South)</li> <li>Dhandhoor Village (1.7 Km, NW)</li> <li>Talwandi Rana (1.91 Km, SE)</li> </ul> |
| Critically Polluted Area notified by CPCB | None             | None                     | <ul style="list-style-type: none"> <li>None</li> </ul>                                                                                                   |

**Source: EQMS**

### 3.4 Size or Magnitude of Operation

The assumed output capacity of different sector industries shall be as follows:

| Industry                                                                                                                                                   | Output Capacity |
|------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| Aerospace & Defence                                                                                                                                        | 208 TPA         |
| Food Processing                                                                                                                                            | 19900 TPA       |
| Engineering & Fabrication                                                                                                                                  | 3500 TPA        |
| Lithium-Ion Battery                                                                                                                                        | 1900 TPA        |
| Readymade garments                                                                                                                                         | 375 to 750 TPA  |
| Logistic Park                                                                                                                                              | -NA-            |
| Area/ Infrastructure Development Project including educational institutions, community hall, IT Park, Theme Park (Not covered under EIA notification 2006) | BUA             |

### 3.5 Project description with process details (a schematic diagram/ flow chart showing the project layout, components of the project etc. should be given)

Layout plan and landuse breakup has been given at **Figure 3.2** and **Table 1.2** respectively.

### 3.6 Raw material required along with estimated quantity, likely source, marketing area of final products, mode of transport of raw material and finished product.

| S. No.    | Components                                       |
|-----------|--------------------------------------------------|
| <b>1.</b> | <b>Walls:</b>                                    |
| <b>a</b>  | Brick: (Fly-ash bricks-Fal G)                    |
| <b>b</b>  | Plastered both side - 114 mm                     |
| <b>c</b>  | Plastered both sides -228 mm                     |
| <b>2.</b> | <b>Floors:</b>                                   |
| <b>a</b>  | Concrete on stilt floor hardcore fill            |
| <b>b</b>  | Vitrified /Ceramic tile finish                   |
| <b>c</b>  | Kota stone /Granite                              |
| <b>3.</b> | <b>Windows: Aluminum</b>                         |
| <b>4.</b> | Exposure all sides                               |
| <b>5.</b> | Single glazed clear glass on inside the building |
| <b>6.</b> | <b>Internal Roads</b>                            |
| <b>a</b>  | Stone Aggregates                                 |
| <b>b</b>  | TAR                                              |

| S. No. | Components          |
|--------|---------------------|
| c      | Cement              |
| d      | Bituminous Material |

Source of above material shall be from local market or nearby area. Transportation mode of such material shall be by road by trucks. Finished product from various industries shall be transported by rail, road and air cargo depending upon the magnitude and demand of importing destination.

**LIST OF MACHINERY USED DURING CONSTRUCTION**

- Dumper
- Concrete mixer with hopper
- Excavator
- Cranes
- Road roller
- Bulldozer
- Hoist
- Concrete pressure pumps
- Mobile transit mixer

**3.7 Resource optimization/recycling and reuse envisaged in the project, if any, should be briefly outlined.**

Waste water from industries and other residential commercial entities shall be treated in proposed common effluent treatment plant and sewage treatment plant respectively. The inlet parameters of effluent from industries shall be ensured by industries before disposal to effluent collection system. The treatment system shall achieve adequate recycle water quality. Treated wastewater shall be utilized for flushing irrigation and other non-potable uses within Industrial Estate. The sludge generated from the treatment of sewage shall be used as a fertilizer in adjoining Agricultural Land.

### **3.8 Availability of water its source, energy/power requirement and source should be given**

#### **3.8.1 Water Source**

**During Construction Phase:** Approximately 85 KLD (Domestic- 35 KLD and Construction purpose- 50 KLD) of water will be required out of which fresh water for Domestic purpose will be met through canal/tanker supply and construction water requirement will be met through treated water from canal or authorized water suppliers through tanker.

#### **During Operation phase:**

**Source (Fresh Water):** The identified source of water for IMC is an existing Irrigation Canal, known as —Rana Minor which is flowing through the site for a length of about 1.1 km, passing through both the IMC and Airport sites. The canal currently caters to the demands of irrigation and drinking water in its command area. The combined demand of water for Hisar Airport, IMC and any future development, is planned to be met from the canal. The Irrigation Department has already initiated planning for diversion/realigning/re-sectioning of the canal stretch within Airport/ IMC site and IAH had allocated fund for carrying out these works. As per the information from irrigation department that the supply of water in the Rana Minor Canal will not be continuous, and it will be governed by water release cycle. Water will be continuously released in the canal for 8 days, followed by closure for 16 Days. In view of this, it will be necessary to create on-site storage reservoir within the IMC. Assuming a storage to cater about 16 days water demand of IMC, the volume of storage is estimated to be 300 ML. Allowing natural losses like evaporation, percolation and considering other operational requirements of the reservoir, the requirement of gross storage of the reservoir will be about 375 ML. It is decided that, a common water storage reservoir will be developed for Hisar IMC and Airport expansion in the Airport premises.

**Probable Alternated Source:** One perennial source could be the Rajali Headworks (of Barwala branch canal) which is located approx. 30-35 km(approx.) from project boundary. While reliability of the source should be studied further, prima facie it appears from the discussion with Irrigation department that water would be available from this source throughout the year barring few days of yearly canal maintenance activities. Water from Rajali Head can be transmitted to the IMC site by a system of water intake, pumping station(s), pipeline and associated appurtenant systems. Irrigation Department indicated that pipeline can be routed within the RoW of the existing Rana Minor distributary canal and can be laid buried along the maintenance road of the canal. The pipeline system can be designed for the ultimate demand of water while pumping machinery can be installed for initial phase of demand and can be augmented as the demand increases. Provision for drawing water from Rajali Head can be planned for the entire development of the IAH including IMC and future developments.

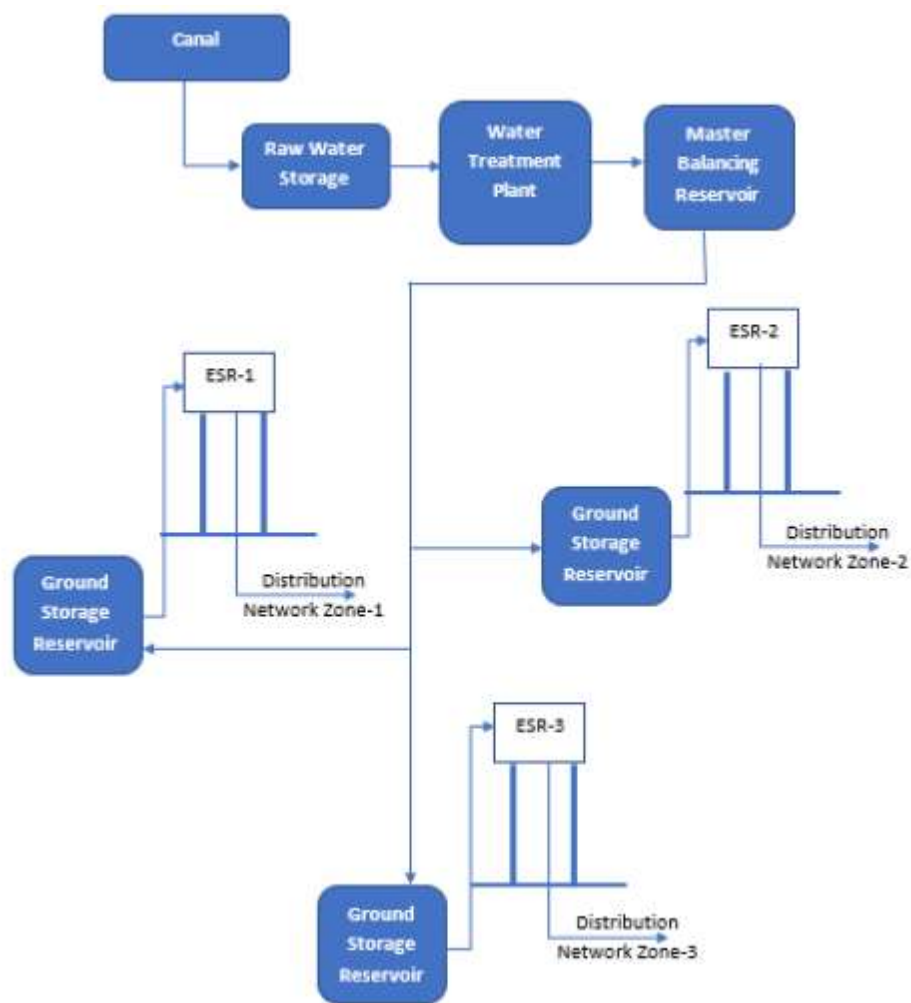
The approximate water requirement will be 32.25 MLD which will be met from canal and recycled water (ETP & STP). Fresh water requirement will be 15.75 KLD including Fire Water Demand (0.75 ML). Water Balance Chart has been attached as **Annexure IV**.

**Potable Water Supply System:** The potable water supply system for IMC will comprise of drawl of raw water from source, conveyance and treatment, storage and distribution. The distribution to end user will be by gravity. At every industrial plot, housing complexes or institutional areas, water will be delivered at a ground level storage reservoir. Further distribution inside the premises will be planned by individual plot owners. For ease of operation and reliability the entire IMC can be divided into several distribution zones (DMAs), each under the command of individual ESRs. Fire Hydrants shall be provisioned on potable water distribution line and will be fixed in the utility corridor at suitable location and separate pumps shall be proposed to provide adequate pressure in the pipeline in case of fire.

**Treatment:** The Water Treatment process will be finalized after obtaining quality of raw water from canal and desired quality of treated water. The acceptable standards for drinking (potable) water quality as per CPHEEO Manual on Water Supply and Treatment (1999), WHO standards and IS 10500 (drinking water) will be adopted.

**Treated Water Storage:** Two days storage shall be provided in the water supply network and one day storage shall be mandated at individual user end by means of Ground Service Reservoir (GSR) in their premises.

**Fire Demand Storage:** Storage for the fire demand (0.75 ML) calculated above will be provided in the treated water storage GSR/ESR. The arrangement will be such that incoming water will first fill the fire compartment and then overflow water will fill the tank so that fire compartment will remain filled at all the time. The separate fire pumps would be provided.



**Figure 3-3 Schematic Diagram of Water Supply System**

### **3.8.2 Electricity & Fuel Requirements**

#### **During Construction Phase:**

During Construction phase, the amount of power require is proposed to be met from 33 kV from HVPNL.DG set of 2 x 250 KVA shall be kept as a backup. DG sets will be installed as per the CPCB norms. DG sets will be provided with the acoustic enclosures with a 25 dBA insertion loss.

#### **During Operation Phase:**

During operational phase the power requirement will be approximately 170-200 MVA, which will be sourced from Haryana Vidyut Prasaran Nigam Limited (HVPNL). Based on site visits, surveys map available online as well as discussions with respective officials of HVPNL, it is proposed that, 400/220/33kV, Kirori Substation can be tapped for ultimate power sourcing and are available in vicinity to the site.

**Main Receiving Substation (MRSS):** The main power supply shall be made available from 400kV Kirori substation at 220kV. It is proposed to build one EHT MRSS (Extra High Tension, Main Receiving Sub Station) within the site. The voltage will be stepped down to sub distribution voltage level at this receiving station through 220/33kV power transformers.

**Supply Redundancy:** To achieve reliable power supply for IMC, it is proposed to have N+1'redundancy, which means. In case of failure of one incoming feeder /transformer or outgoing feeder, the other feeder/transformer shall cater up to 100% of the load. System shall be designed in ring main arrangement to have supply continuity and redundancy.

**Power Backup:** It is proposed to consider decentralized DG set at each plot to cater to a minimum requirement of Life & Safety. As power supply for IMC is being proposed directly from 400kV Kirori substation which is to be considered very good and reliable source, the DGs might operate very rarely on an annual basis.

### **3.9 Quantity of waste to be generated (liquid and solid) and scheme for their management /disposal**

#### **3.9.1 Liquid Waste Generation & Management plan**

##### **During Construction Phase,**

About 28 KLD of wastewater will be generated which will be treated in modular STP of 30 KLD and treated water will be reused for construction purpose.

##### **During Operation Phase,**

Wastewater from domestic activity (6 MLD) shall be connected to sewerage network and shall be treated in common sewage treatment plant. The entire treated water shall be reuse for flushing and landscaping purpose. Effluent of approximate 12 MLD shall be treated in proposed CETP capacity of 12 MLD. Treated effluent shall be recycle by industries flushing purpose, irrigation,

and other non-potable purpose. No discharge to any water bodies or land shall be practiced. Total 12 MLD effluent generation have been envisaged for entire industrial estate development.

### 3.10 Process Description for Different Wastewater Treatment Schemes

The domestic wastewater will be treated in Sewage Treatment Plant (Capacity-6 MLD). The treated water generated will be completely reused in the project itself for flushing, landscaping and non-potable purposes. Suitable treatment technology will be provided and details shall be given in EIA report.

### 3.11 Solid & Hazardous waste generation & Management plan

#### During Construction Phase: -

Approximately 125 kg of solid waste will be generated from the construction site out of which 75 kg/day of biodegradable waste will be collected and disposed of in a fenced composting pit at the site and covered properly after completion of construction activity, remaining 50 kg/day of non-biodegradable waste will be disposed of through the authorised agency in the area.

#### During Operation Phase: -

Approx. 64462 persons will be involved during the project including approx. 5860 no. of visitors. Waste generated would be 19.33 MTPD out of which around 10.0 MTPD will be biodegradable waste and remaining 9.33 MTPD will be non-biodegradable waste. Biodegradable waste will be sent to common waste management facility provided by Hisar IMC, Non-Biodegradable waste will be given to authorised vendor in the area.

The sludge generated from the treatment of wastewater shall be utilized as a manure at green area and nearby agriculture land.

Other waste to be generated from site includes E-waste and Bio-Medical waste and used oil from DG sets and industrial machinery.

Industrial waste such as hazardous waste, plastic waste, E waste shall be managed by respective industries involves such kind of waste as per the various notified waste management rules time to time by MOEF&CC. Detailed calculation for waste generation is given in **Table 3.3**

**Table 3.2: Calculation of Municipal Solid Waste Generation**

| Category             | Capacity | Standard-Kg/capita/day | Total Waste- | Biodegradable Waste | Non-Biodegradable Waste<br>Ton/day |
|----------------------|----------|------------------------|--------------|---------------------|------------------------------------|
|                      |          |                        | Ton/day      | Ton/day             |                                    |
| Domestic Waste       |          |                        |              |                     |                                    |
| Resident Workers     | 10277    | 0.5                    | 19.33        | 10                  | 9.33                               |
| Non Resident Workers | 48325    | 0.27                   |              |                     |                                    |
| Visitors             | 5860     | 0.20                   |              |                     |                                    |

| Category              | Capacity | Standard-Kg/capita/day | Total Waste- | Biodegradable Waste | Non-Biodegradable |
|-----------------------|----------|------------------------|--------------|---------------------|-------------------|
| Total Municipal Waste |          |                        | 19.33        | 10                  | 9.33              |

\*Waste generation for residential employees is 0.5 kg/capita/day, for nonresidential employees is 0.27 kg/capita/day and for floating population 0.20 kg/capita/day is considered as per CPHEEO SWM Manual

### **Disposal**

Onsite segregation of waste shall be done at respective industrial units and other logistic facilities. Waste shall be segregated into biodegradable, Non-biodegradable and inert waste. Inert waste shall be sent to landfill site of Hisar Municipal Corporation at Dhindo. Biodegradable waste shall be sent to centralized waste processing unit in IMC for further treatment and disposal. Non-Biodegradable waste shall be given to recyclers for final disposal. Other wastes such as Hazardous Waste, Plastic Waste, Biomedical Waste and E-waste will be handled by individual industries as per the respective waste rules and handed over to authorized recyclers for further processing.

### **3.12 Air Emission & Management**

*Construction Phase:* The main sources of air pollution will be Construction vehicular movement, emissions from construction machinery and activities as well from DG sets (2 x 250 kVA). DG sets will be installed as per CPCB guidelines and manufacturer's instructions to keep the emissions within limits of CPCB. Stack height will be provided as per CPCB guidelines for adequate dispersion of released pollutants and to have negligible GLCs in the surrounding area. Water Sprinkling shall be carried out to reduce the dust emission due to construction activity. Construction material movement (vehicular movement) shall be planned and carried out during non-peak hours to avoid traffic congestion.

*Operational Phase:* During operational phase the power requirement will be approximately 173 MVA, which will be sourced from Haryana Vidyut Prasaran Nigam Limited (HVPNL). Individual industries will set up their own power back up system as per the need and requirement.

Industries will have their own Air pollution control techniques and systems and will be installed in the industries to reduce the emissions. The industries will be maintaining all emission norms prescribed by MoEF&CC/HPCB/CPCB. Stacks with appropriate pollution control system shall be mandatory for air polluting industries.

### **3.13 Noise Pollution & Management**

*Construction Phase:*

The most common sources of noise pollution will be activities like site preparation, operation of construction vehicle and machinery. However, magnitude of the impact will depend upon the type and nature of the machinery, time schedule of operations, construction method and management practices followed during activities.

To mitigate the impact, following steps will be taken:

- The construction activity will be carried out mostly during daytime.
- Proper maintenance of noise generating transport vehicles.
- Regular maintenance of heavy earth vehicles may be adopted to reduce noise levels.
- All the construction machinery and equipment used shall be provided with adequate noise mufflers and noise suppression equipment. Proper lubrication and maintenance of the machinery & equipment and vehicle will be carried out to minimize the noise generation due to abrasion
- Noise level from loading & unloading of material will be reduced by usage of various types of cranes & placing material on sand or sandy bag beds.
- Noise monitoring shall be carried out to ensure the effectiveness of mitigation measures and develop a mechanism to record and respond to complaints on noise.
- Adequate parking space will be provided at the project site to minimize the honking requirement due to congestion and jams and restricting the speed limits.
- Protection devices (earplugs or earmuffs) shall be provided to those workers who cannot be isolated from the source of noise and reducing the exposure time of workers to the higher noise levels by rotation.
- Construction material vehicular movement shall be planned during non-peak hours to avoid traffic congestion in the area.

#### **Operational Phase:**

The main sources of noise generation in the proposed project are various types of machines, boilers, moulders, pumps & compressors, grinders, DG sets, vehicular movement etc in upcoming industries. To reduce impact in the project site and nearby habitations, following mitigation measures are recommended to be adopted by industries.

- Equipment meeting standard of noise shall be used.
- All engineering control practice shall be undertaken during installation of machinery to maintain noise level.
- Vibration pads and foundation will be provided at all heavy machinery areas.
- Noise generating units like machinery area, common areas in industries will be well insulated with enclosed doors.
- Earmuffs will be used while in high noise areas. Separate cabins will be provided.
- Acoustic treatment rooms will be provided at appropriate location.

- Well- developed internal roads shall be constructed within industries, for smooth and hassle-free movement of personnel;
- Proper and timely maintenance of machineries and preventive maintenance of vehicles will be done.
- Plantation will be done all around the industrial area as well as within industry premises to act as a noise barrier.
- Important Instructions will be displayed all over the industrial estate area.

## **4 SITE ANALYSIS**

### **4.1 Connectivity**

The proposed project site is located at the junction of two national highways viz: NH9 (Delhi Hisar) and NH52 (Hisar-Chandigarh). Three Entry/Exit points of the site will be connected to these two highways. The NH9 or the Hisar Delhi Bypass is the main highway between the site and Hisar Town. Hisar Junction Railway Station is at 2.9 km, in SW direction.

### **4.2 Land Form, Land Use and Land Ownership**

Land is under the ownership of Government of Haryana. The project will be spread over an area of 1605 Acres. The land use of the site shall be change from agricultural to industrial use. Change in landuse is under process by the Authority.

### **4.3 Topography**

The district has predominantly plain topography and is located 234 mts above mean sea level and having a gentle slope towards south-westerly direction. The district area falls in Yamuna subbasin of Ganga basin. There is no natural drainage in the district area. However, the area is drained by network of canals and the artificial drains (field drains/channels). These artificial drains are mainly confined in Bass, Hansi-I, Narnaund and Barwala blocks. There are a total of 39 drains existing in the area, which run for a length of 126.25 km. The area is irrigated by shallow tubewells and network of Bhakra Canal Systems and Western Yamuna Canal Systems. Project site is surrounded by agricultural fields & villages in North, East and West direction and Hisar city lies in South direction of the project site. Land is flat land and the elevation varies from 217.25 m level to 211 m level, lower at north side and higher at South-East side of project boundary. Contour plan attached as **Annexure III**.

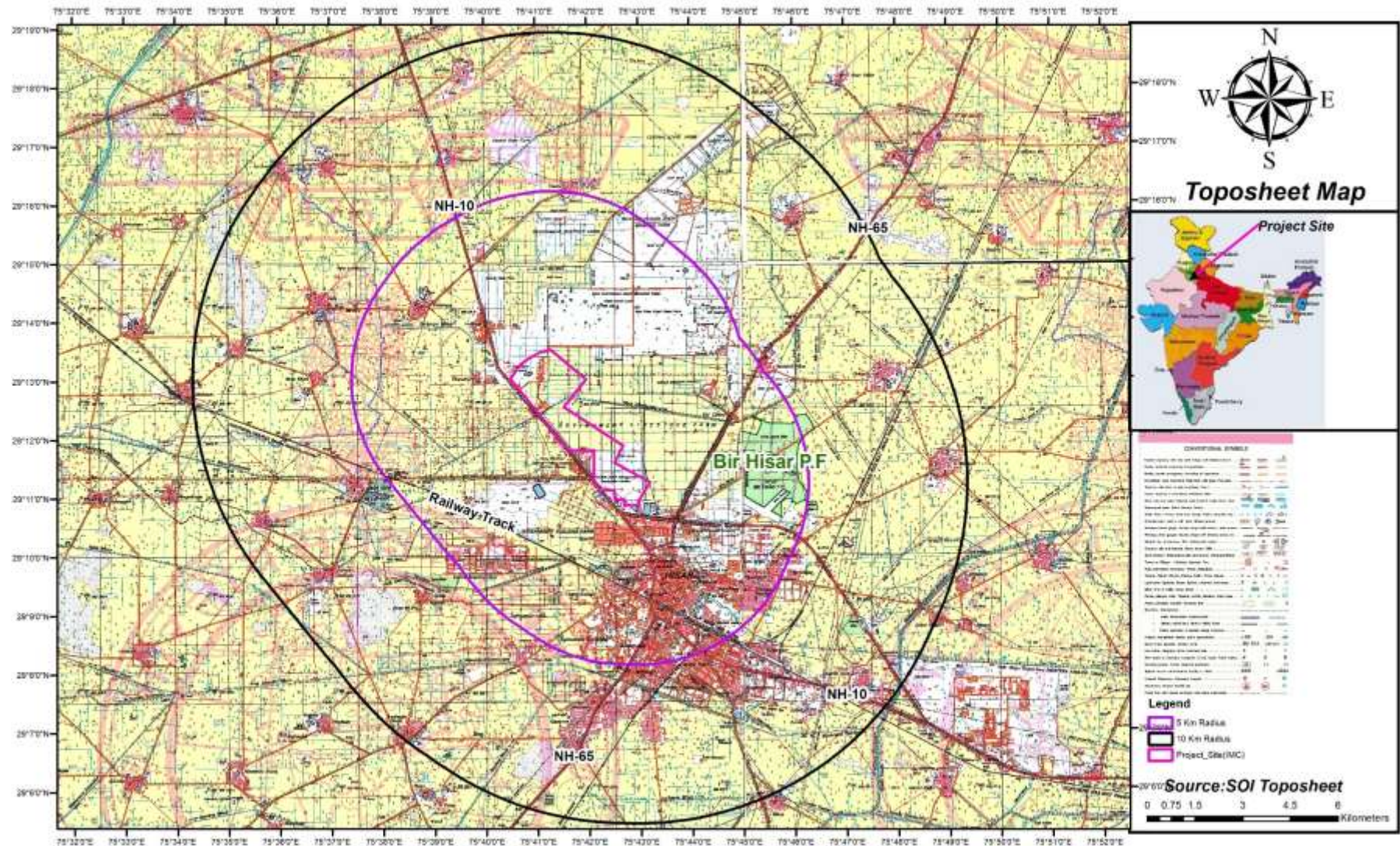


Figure 4-1 Topographical map showing the Project site and area covering 0-5km-10km

#### 4.4 Existing Land Use Pattern

The existing land use of the site is agriculture which shall be change to Industrial.

#### 4.5 Climatic data from secondary sources

The climate of Hisar district can be classified as tropical steppe, semi-arid and hot which is mainly dry with very hot summer and cold winter except during monsoon season when moist air of oceanic origin penetrates into the district. Details of the various Climatological parameters on the basis of long-term data (1981-2010) are given in **Table 4.1**.

**Table 4.1 Long Term Meteorological Data of Hisar (30 Years)**

| Month     | Temperature (°C) Daily |      | Relative Humidity (%) |       | Rainfall (mm) | Rainy Days | Predominant Wind Direction (From) | Calm Period |       | Cloud Amounts (all cloud) |       | Wind Speed<br>Km/hr |
|-----------|------------------------|------|-----------------------|-------|---------------|------------|-----------------------------------|-------------|-------|---------------------------|-------|---------------------|
|           | Max                    | Min  | 08:30                 | 17:30 |               |            |                                   | 08:30       | 17:30 | 08:30                     | 17:30 |                     |
| January   | 25.9                   | 3.6  | 88                    | 56    | 11.7          | 1.2        | W, NW                             | 42          | 17    | 3.4                       | 2.4   | 2.9                 |
| February  | 30.2                   | 5.9  | 82                    | 48    | 20            | 1.6        | W, NW                             | 25          | 4     | 2.6                       | 2.6   | 4                   |
| March     | 36.5                   | 10.4 | 72                    | 40    | 16.2          | 1.6        | NW, W                             | 21          | 1     | 2.3                       | 2.7   | 4.7                 |
| April     | 43.3                   | 15.1 | 51                    | 26    | 11.2          | 1.3        | SW, NW                            | 17          | 6     | 1.8                       | 2.3   | 4.7                 |
| May       | 46                     | 20.4 | 48                    | 28    | 29.3          | 2.1        | SW, W                             | 15          | 6     | 1.5                       | 2.4   | 5                   |
| June      | 46                     | 22.2 | 58                    | 38    | 63.3          | 4          | SW, W                             | 8           | 5     | 2.4                       | 2.9   | 5.3                 |
| July      | 42.5                   | 23.7 | 75                    | 59    | 129.8         | 6.5        | SW, E                             | 11          | 9     | 3.9                       | 4.7   | 4.8                 |
| August    | 39.8                   | 24   | 78                    | 62    | 113.3         | 5.6        | SW, W                             | 16          | 10    | 3.7                       | 4.4   | 4.5                 |
| September | 39.7                   | 21.2 | 76                    | 55    | 81.8          | 3          | SW, W                             | 19          | 8     | 1.9                       | 2.2   | 3.9                 |
| October   | 37.9                   | 15   | 71                    | 43    | 7.9           | 0.6        | SW, W                             | 42          | 25    | 0.7                       | 0.7   | 2.5                 |
| November  | 33.6                   | 9    | 76                    | 48    | 2.2           | 0.2        | SW, W                             | 51          | 57    | 0.9                       | 1     | 2                   |
| December  | 27.9                   | 4.5  | 84                    | 55    | 4.6           | 0.6        | W, SW                             | 50          | 50    | 2.5                       | 2     | 2.1                 |

Source: *Climatological Normals, Hisar, IMD-1981-2010*

#### 4.6 Social Infrastructure available

The Social infrastructure is available within and near the site; details are given below in **Table 4.2**.

**Table 4.2 Environmental and Social Sensitivity near the site**

| S. No. | Particulars                | Details & Aerial Distance                                                                                                                                           |
|--------|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.     | Nearest Highway/Major Road | <ul style="list-style-type: none"> <li>NH-9 (abuts site in South direction and West direction)</li> <li>NH 52 Hisar- Chandigarh (North side of the site)</li> </ul> |

|     |                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-----|----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2.  | Nearest Railway Station                | <ul style="list-style-type: none"> <li>• Hisar Junction Railway Station (2.9 km, SW)</li> </ul>                                                                                                                                                                                                                                                                                                                                                                  |
| 3.  | Nearest Town/Village                   | <ul style="list-style-type: none"> <li>• Hisar City (350 m, S)</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                        |
| 4.  | Major Water Bodies                     | <ul style="list-style-type: none"> <li>• Rana Minor (within the Site)</li> <li>• Blue Bird Lake (Near site, S) – It was an artificially created water body for recreation purpose/ tourism by Haryana Tourism Corporation (HTC) which is being partly used for fisheries through commercial contract by HTC.</li> <li>• Talwandi Rana Village Pond (1.2 Km, N)</li> </ul>                                                                                        |
| 5.  | Seismic Zone                           | <ul style="list-style-type: none"> <li>• Zone III</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                     |
| 6.  | Solid Waste Site                       | <ul style="list-style-type: none"> <li>• Harnam Pansari at Village Dhandhoor<sup>1</sup> (abuts site, W)</li> </ul>                                                                                                                                                                                                                                                                                                                                              |
| 7.  | Defence Area                           | <ul style="list-style-type: none"> <li>• Hisar cant (7.5 km, SE)</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                      |
| 8.  | Nearby Industrial Area/Commercial Area | <ul style="list-style-type: none"> <li>• Business and Trade Enclave (1 km, S)</li> </ul>                                                                                                                                                                                                                                                                                                                                                                         |
| 9.  | Nearby Educational Institute           | <ul style="list-style-type: none"> <li>• Guru Jambheshwar University (150 m, S (1500 m from ARP))</li> </ul>                                                                                                                                                                                                                                                                                                                                                     |
| 10. | Nearby Forests                         | <ul style="list-style-type: none"> <li>• Bir Hisar Protected Forest: abuts site, E</li> <li>• Hisar to Barwala-Chandigarh Road L/R km 0 to 3.6- Within the site</li> <li>• Hisar to Dhansu Road L/R Km 0.2.4 -Within the site</li> <li>• Hisar to Dhansu Road L/R Km 0.2.4 -Within the site</li> <li>• Deer Park &amp; Shatavery Herbal Park (0.5 Km, E)</li> <li>• Forest land on both Side of Rana Minor (rerouting of the same have been proposed)</li> </ul> |
| 11. | Wildlife Sanctuary                     | <ul style="list-style-type: none"> <li>• Nil</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                          |
| 12. | Nearest Hospital                       | <ul style="list-style-type: none"> <li>• Maharaja Agrasen Civil Hospital (900 m, S)</li> </ul>                                                                                                                                                                                                                                                                                                                                                                   |
| 13. | School/College                         | <ul style="list-style-type: none"> <li>• Women Government College (abuts site, W)</li> <li>• GJU University (0.15 Km, S- (1500 m from ARP))</li> <li>• Women Polytechnic (0.15 Km, S- 1500 Km from ARP)</li> <li>• DAV Public School (0.25 Km, S)</li> <li>• Haryana School of Business (1.2 Km, S)</li> <li>• ID DAV Public School (1.5 Km, S)</li> </ul>                                                                                                       |

## 5 PLANNING BRIEF

### 5.1 Planning Concept (type of industries, facilities, transportation etc.) Town and Country Planning/Development authority classification.

The proposed project is an industrial area development which will have multiple manufacturing and engineering industries none of falling under Category A or Category B industries as per EIA notification 2006 and amended till date however the Industrial Estate will have Common Effluent Treatment Plant proposed to be constructed and commissioned by project proponent which falls under activity 7(h), category B project thus the proposed industrial estate falls under 7 (c) category A project as per EIA notification 2006 and amended till date. **The total area for Industrial Estate is more than 500 ha, the project will come under activity listed at Serial no. 7(c) (Industrial Estates/Parks/complexes/areas, export processing zones (EPZs), Special Economic Zones (SEZs), Biotech Parks, Leather Complexes) under Category A (Industrial estates with area greater than 500 ha. and housing at least one category B industry) in the Schedule of EIA Notification 2006 and subsequent amendments. Although the industries are not covered under category A or B but the industrial estate comprise of project activity which comes under category B.**

#### List of Upcoming Industries in IMC (Phase I)

##### **Aerospace and Defence**

- A&D - Light Engineering & Fabrication units with spray painting
- A&D - Engineering and fabrication units (dry process without any heat treatment / metal surface finishing operations / painting).
- A&D - Light Engineering & fabrication units without spray painting (Dry process only).

##### **Food Processing**

- Fruits & Vegetable Processing - Food and food processing including fruits and vegetables processing.
- Dairy Products - Packing of powdered milk
- Dairy Products - Milk processes and dairy products (integrated project) (Large & Medium scale)
- Grain Mill and related Products - Steeping and processing of grains.
- Vegetable & Animal Oil / Fats - Vegetable oil manufacturing including solvent extraction and refinery /hydrogenated oils having wastewater generation 100 KLD and above.
- Vegetable & Animal Oil / Fats - Vegetable oil manufacturing including solvent extraction and refinery /hydrogenated oils having wastewater generation < 100 KLD.

### **Auto-Components**

- Tyre, tube & rubber components with boiler
- Tyre, tube & rubber components without boiler and rubber reclaim industry.
- Electronic Components without use of chemicals.

### **Steel Products**

- Light Engineering & Fabrication units with spray painting
- Engineering and fabrication units (dry process without any heat treatment / metal surface finishing operations / painting)
- Light Engineering & fabrication units without spray painting (Dry process only)
- Medical / electronics Equipment
- Surgical and medical products assembling only (not involving effluent / emission generating processes)
- Surgical and medical products including prophylactics and latex.
- Electronic Components without use of chemicals.

### **Lithium-Ion Battery**

#### **Readymade Garments**

- Hosiery /Garment manufacturing with washing only (without bleaching and dying) with discharge less than 2 KLD
- Hosiery /Garment manufacturing with washing only (without bleaching and dying) with discharge greater than or equal to 2 KLD.

### **Logistic Park**

- Truck Parking Facility
- Warehousing
- Cold Storage
- Office Complex for Truck Operators
- Service Centre
- Vehicle Testing Centre
- Accommodation Facilities, persons
- Restaurants/ Dhaba
- Fuel Station
- Administrative/ Statutory Offices
- Commercial space
- Electronic Weighing Bridge
- Primary Health Centre

**Area/Infrastructure Development Project including educational institutions, community hall, IT Park, Theme Park (Not covered under EIA notification 2006).**

For the development of IMC approval of Town & Country Planning Hisar Haryana shall be obtained.

## 5.2 Population/Employment Projection

*Construction Phase:* The project will provide employment to 250 no. of local labors for construction works and establishment infrastructure of Industrial Estate.

*Operational Phase:* Estimated population at project is 58602 Details of population are given below in **Table 5-1**.

**Figure 5-1: Estimated Population for Proposed Development**

| Particular              | Population   |
|-------------------------|--------------|
| Resident Workers        | 10277        |
| Non-Resident Workers    | 48325        |
| Visitors                | 5860         |
| <b>Total Population</b> | <b>64462</b> |

*Reference: As per Technical Assessment Report prepared by TCE*

Land use Planning (breakup along with green belt etc.)

| Land Use                             | Area (Acre) | Area (Sqm)      | Area (Ha)    | Area (%)    |
|--------------------------------------|-------------|-----------------|--------------|-------------|
| Area under Industrial purpose        | 1002.5      | 4056977         | 405.69       | 62.41%      |
| Area under Supporting Infrastructure | 67.24       | 272110.9        | 27.21        | 4.19%       |
| Area under Utilities                 | 39.45       | 159648.6        | 15.96        | 2.46%       |
| Area under Green                     | 257.07      | 1040326         | 104.03       | 16%         |
| Area under Roads + Parking           | 238.74      | 966146.5        | 96.61        | 14.87%      |
| <b>Total Area</b>                    | <b>1605</b> | <b>64995209</b> | <b>649.5</b> | <b>100%</b> |

## 5.3 Assessment of Infrastructure Demand (Physical & Social)

All facilities like water supply to upcoming industries, storm water network, sewerage network, roads, street lights, common municipal solid waste management facility sewage treatment plant,

area allocation for common effluent treatment plant, security fencing, electric substation and greenbelt shall be developed by Hisar IMC/ SPV.

#### **5.4 Amenities/Facilities**

Proper site services such as First Aid with Occupational Health Centre, Canteen, Drinking Water, Training Facilities, etc. will be provided to the workers.

Skill development of the local people shall be implemented through the help of upcoming industries to get the maximum potential of employment for local people.

## **6 PROPOSED INFRASTRUCTURE**

### **6.1 Industrial Area (processing area)**

The total plot area of the project will be 1605 Acres, and proposed industrial processing area 1002.5 Acres.

### **6.2 Residential Area (Non-processing area)**

Residential and commercial area along with other logistic services area shall be 67.24 Acres.

### **6.3 Green Belt**

Landscape features proposed at the site varies at peripheral tree plantation areas, avenue tree plantation, lawns and garden. Greenbelt development shall consist native shrubs and trees. Height of shrubs shall be between 1 to 1.5 mt and tree with height of 3 mt to 5 mt. Separate green area will be provided by individual industries in their respective plots to achieve 33% of greenbelt as per the applicable norms.

### **6.4 Social Infrastructure**

All basic social infrastructures will be available within the industrial estate and nearby area as the developmental works begins few facilities will be arranged from nearby project site. Thus, no additional Social Infrastructure is proposed. Additional infrastructure development and environmental social activities shall be undertaken in the buffer zone after assessment.

### **6.5 Connectivity**

Site connectivity details have been elaborated in **section 3.3**.

### **6.6 Drinking water management (source & supply of water)**

Drinking water supply will be met through rana minor canal for the initial phase of operation. Raw water shall be treated to achieve the drinking water standards as per IS 10500:2012. At later stages of the operation ultimate source of water for IMC being identified as Rajali head works.

### **6.7 Sewerage system**

Domestic Sewage will be treated in Sewage Treatment Plant of capacity 6 MLD.

## **6.8 Industrial waste management**

The individual industries shall obtain authorization under Hazardous Wastes (Management, Handling and Transboundary Movement) Rules, 2021 for the waste generated and categorized under hazardous waste as per Schedule of The Hazardous & Other Waste (Management and Transboundary Movement) Amendment Rules, 2021. The generated hazardous waste will be stored in designated Hazardous waste storage room up to maximum of 90 days and shall be disposed to either TSDF or authorized recyclers.

## **6.9 Solid Waste Management**

### **During Construction Phase: -**

Approximately 125 kg of solid waste will be generated from the construction site out of which 75 kg/day of biodegradable waste will be collected and disposed of in a fenced composting pit at the site and covered properly after completion of construction activity, remaining 50 kg/day of non-biodegradable waste will be disposed of through the authorised agency in the area.

### **During Operation Phase: -**

Approx. 64462 persons will be involved during the project including approx. 5860 no. of visitors. Waste generated would be 19.33 MTPD out of which around 10.0 MTPD will be biodegradable waste and remaining 9.33 MTPD will be non-biodegradable waste. Biodegradable waste will be sent to common waste management facility provided by Hisar IMC, Non-Biodegradable waste will be given to authorised vendor in the area.

## **6.10 Power requirement & supply/ source**

### **During Construction Phase:**

During Construction phase, the amounts of power require is proposed to be met from 33 kV from HVPNL. DG set of 2 x 250 KVA shall be kept as a backup. DG sets will be installed as per the CPCB norms. DG sets will be provided with the acoustic enclosures with a 25 dBA insertion loss.

### **During Operation Phase:**

During operational phase the power requirement will be approximately 170-200 MVA, which will be sourced from Haryana Vidyut Prasaran Nigam Limited (HVPNL). Based on site visits, surveys map available online as well as discussions with respective officials of HVPNL, it is proposed that, 400/220/33kV, Kirori Substation can be tapped for ultimate power sourcing and are available in vicinity to the site.

## **7 REHABILITATION AND RESETTLEMENTS (R& R) PLAN**

### **7.1 Policy to be adopted (central/state) in respect of the project affected persons including home oustees, land oustees and landless labors (a brief outline to be given).**

IMC area has almost vacant land of which major part was being used for agricultural purpose, and some of the existing very old buildings of Government Livestock Farm (GLF) area located inside the area. All the buildings in the IMC area shall be demolished, and the Rana minor shall be diverted adjacent to IMC boundary by Irrigation department. No resettlement and rehabilitation involved in proposed project.

## **8 PROJECT SCHEDULE AND COST ESTIMATE**

### **8.1 Likely date of start of construction and likely data of completion (time schedule for the project to be given)**

It is estimated that the project can be made operational in within 3 years. Full potential of the industrial estate has been estimated to around 30 years.

This is a tentative schedule in which flexibility can be exercised depending upon market demand.

### **8.2 Estimated project cost along with analysis in terms of economic viability of the project.**

The expected Cost of the proposed project shall be around ***Rs 1800 Crores.***

## **9 ANALYSIS OF PROPOSAL (FINAL RECOMMENDATIONS)**

### **9.1 Financial and social benefits with special emphasis on the benefit to be local people including tribal population, if any, in the area.**

The project is a part of National Industrial Corridors. National Industrial Corridor is conceived to be developed as a Model Industrial Corridor of international standards with emphasis on expanding the manufacturing and services base and develop DMIC as the ‘Global Manufacturing and Trading Hub’.

The IMC Hisar is a greenfield project of Amritsar Kolkata Industrial Corridor (AKIC) National Industrial Corridor programme. The AKIC will have an influence area across seven Indian states – Punjab, Haryana, Uttar Pradesh, Bihar, Jharkhand and West Bengal. One IMC project in each of these states has been identified and for Haryana, the IMC site is identified at Hisar. Today, Haryana provides tremendous opportunities for business to thrive and is one of the leading states in India.

Hisar is a Counter Magnet City within the National Capital Region inside the influence zone of both Delhi Mumbai Industrial Corridor (DMIC) and Amritsar Kolkata Industrial Corridor (AKIC).

Hisar district, located in the western Haryana, is one of the nine designated counter magnet area to National Capital Region (NCR) as per the NCR Planning Board. Hisar due to its location and connectivity is selected for development of an international airport by Government of Haryana.

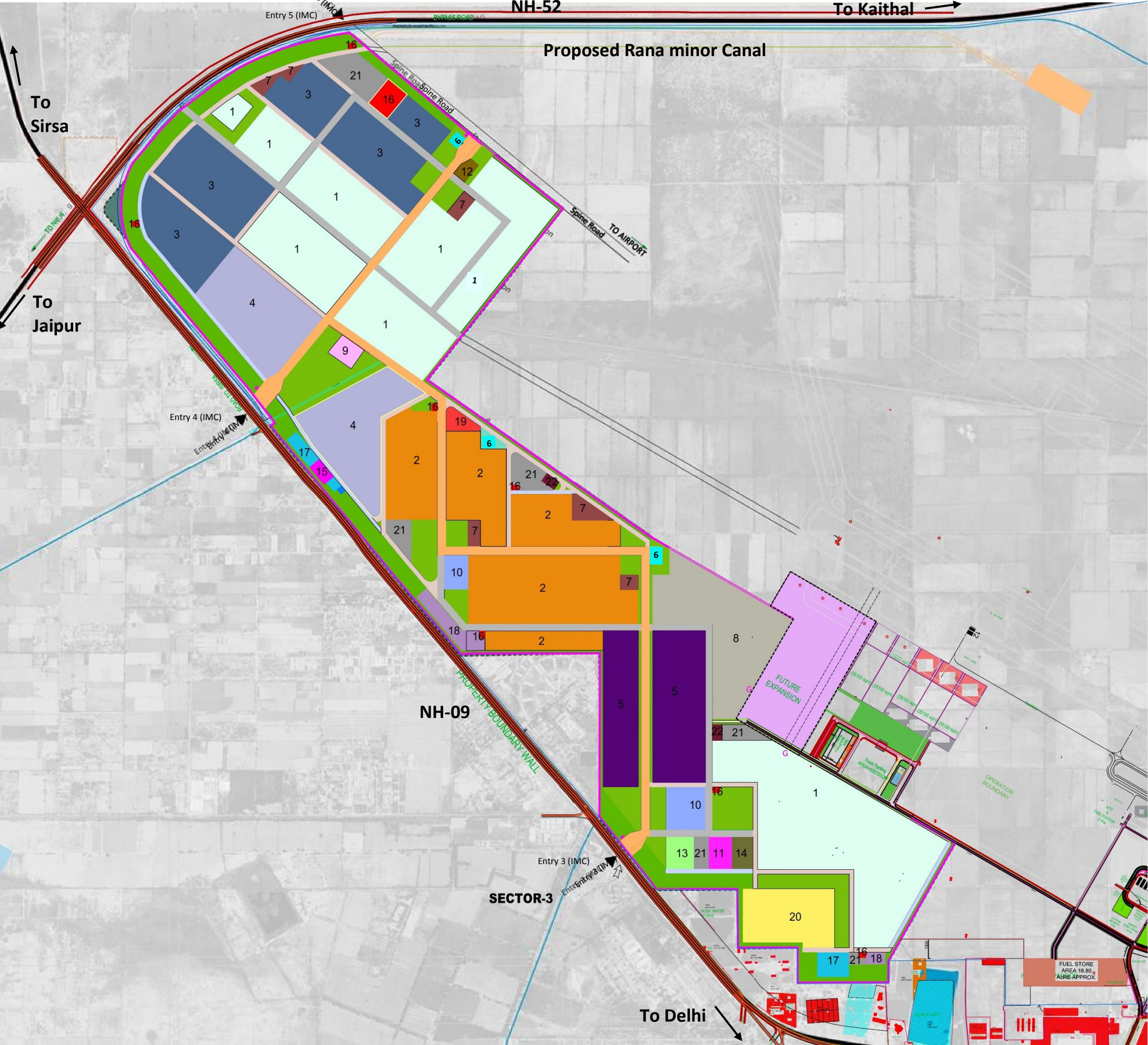
The Hisar district contributes about 7.09% of Haryana’s overall manufacturing unit and has a high potential for Textile, metal and food processing industry. The district also has a wide MSME activities in sectors such as agro based, wood based, chemical based, metal based and engineering goods. The district also has a well diverse MSME segment with about 10,500 registered units, employing about 13,000+ employees.

Total employment generation is expected from the proposed Industrial estate between 50000 to 60000. Mostly local population will get benefit from the industrial development. Skill development from the upcoming industries will also enhance the livelihood of nearby villages.

## **Annexures**

## **Annexure I – IMC Layout Plan**

MASTERPLAN C | FUNCTIONS



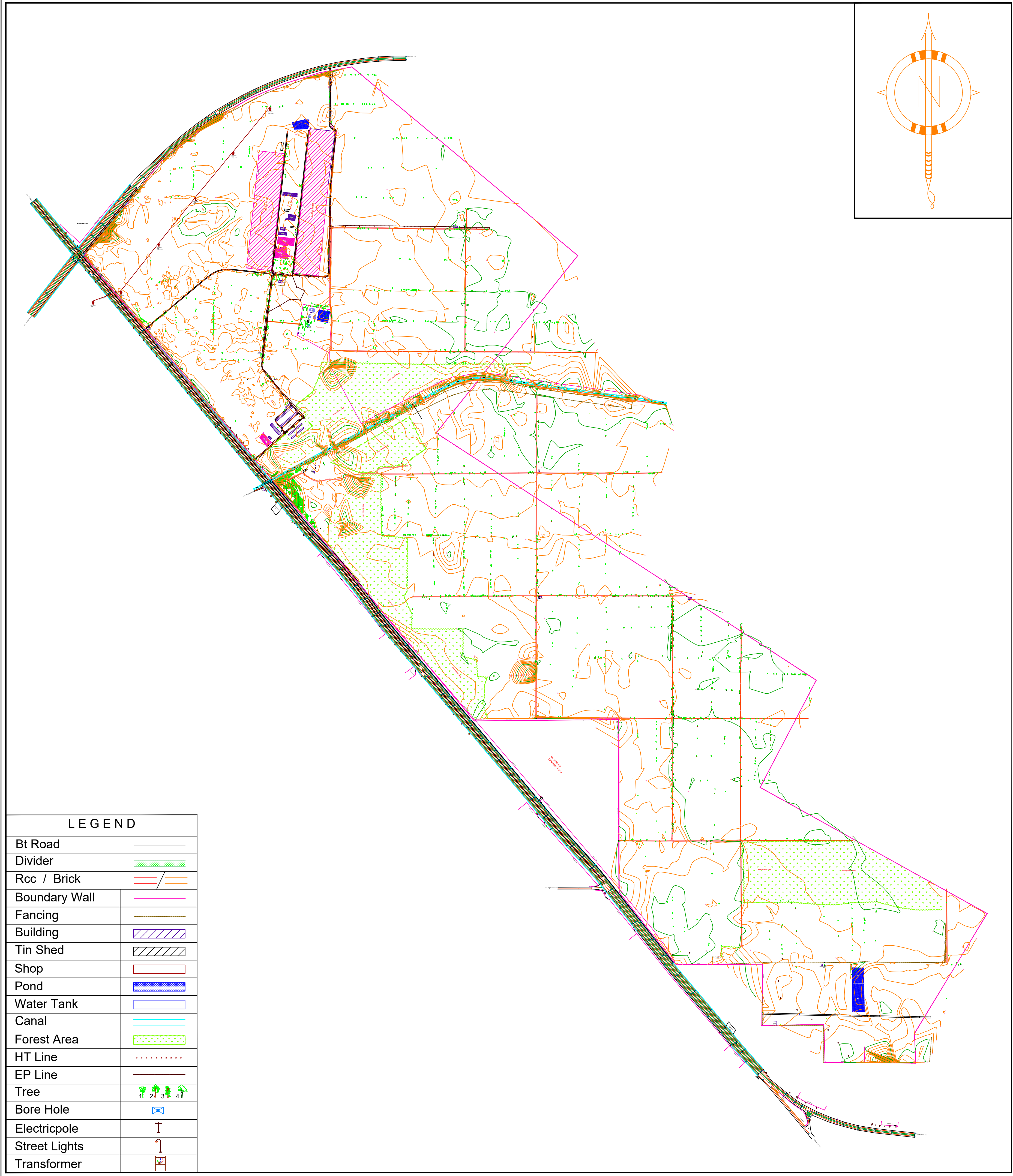
- LEGEND
- 1. Aerospace & defence industry
  - 2. Agro / Food-processing industry
  - 3. Engineering & fabrication industry
  - 4. Early bird industry
  - 5. Readymade Garments / textiles
  - 6. Public Utilities
  - 7. Common-readymade industrial sheds
  - 8. Logistics Park
  - 9. Admin.+CCC
  - 10. Hotels and convention & exhibition halls
  - 11. Multi-speciality hospital
  - 12. Skillset development centre
  - 13. District centre
  - 14. Community centre
  - 15. ESR
  - 16. 200kV substation
  - 17. CWR, GSR and WTP
  - 18. STP / CETP / SWM
  - 19. Fire station
  - 20. Housing
  - 21. Parking
  - 22. Fuel station

MASTERPLAN C | ATTRIBUTES

| Attribute                   | Plot Size (Acres) | Number of Plots | Total Area (Acres) | Sector Area | %     |
|-----------------------------|-------------------|-----------------|--------------------|-------------|-------|
| Aerospace and Defence       | 142.4             | 1               | 142.4              | 351.14      | 62.53 |
|                             | 35.16             | 1               | 35.16              |             |       |
|                             | 40.97             | 1               | 40.97              |             |       |
|                             | 2.59              | 2               | 5.18               |             |       |
|                             | 2.16              | 1               | 2.16               |             |       |
|                             | 2                 | 39              | 78                 |             |       |
|                             | 2.27              | 1               | 2.27               |             |       |
|                             | 45                | 1               | 45                 |             |       |
| Food Processing             | 2.00              | 46              | 92.00              | 189.6       |       |
|                             | 1.50              | 50              | 75.00              |             |       |
|                             | 2.50              | 1               | 2.50               |             |       |
|                             | 1.80              | 1               | 1.80               |             |       |
|                             | 1.40              | 1               | 1.40               |             |       |
|                             | 2.10              | 1               | 2.10               |             |       |
|                             | 1.60              | 1               | 1.60               |             |       |
|                             | 1.10              | 12              | 13.20              |             |       |
| Engineering and Fabrication | 2                 | 55              | 110                | 286.31      |       |
|                             | 2.13              | 2               | 4.26               |             |       |
|                             | 2.18              | 5               | 10.9               |             |       |
|                             | 1.9               | 20              | 38                 |             |       |
|                             | 1.67              | 7               | 11.69              |             |       |
|                             | 3.2               | 1               | 3.2                |             |       |
|                             | 54.34             | 1               | 54.34              |             |       |
|                             | 53.92             | 1               | 53.92              |             |       |
| Readymade Garments          | 2                 | 15              | 30                 | 87.47       |       |
|                             | 1.569             | 30              | 47.07              |             |       |
|                             | 2.5               | 1               | 2.5                |             |       |
|                             | 1.7               | 2               | 3.4                |             |       |
|                             | 1.3               | 1               | 1.3                |             |       |
|                             | 1.6               | 2               | 3.2                |             |       |
| Common Ready Built Sheds    | 1                 | 1               | 1                  | 16.5        |       |
|                             | 1.7               | 2               | 3.4                |             |       |
|                             |                   |                 |                    |             |       |
|                             | 2.2               | 2               | 4.4                |             |       |
|                             |                   |                 |                    |             |       |
|                             | 3.85              | 2               | 7.7                |             |       |
| Logistic park               | 69.37             | 1               | 69.37              | 69.37       |       |
| Allied Services (Admin)     | 4                 | 1               | 4                  | 4           |       |

| Attribute                                        | Plot Size (Acres) | Number of Plots | Total Area (Acres) | Sector Area | %     |
|--------------------------------------------------|-------------------|-----------------|--------------------|-------------|-------|
| Area Under Industrial                            |                   |                 |                    | 1004.39     |       |
| 5-star Hotel with Exhibition & Convention Centre | 11                | 1               | 11                 | 16.34       | 4.90  |
| 3-star Hotel                                     | 5.34              | 1               | 5.34               |             |       |
| Skill Development Institute                      | 2                 | 1               | 2                  | 2           |       |
| Hospital                                         | 5                 | 1               | 5                  | 5           |       |
| District Centre                                  | 6                 | 1               | 6                  | 6           |       |
| Community Centre                                 | 4.5               | 1               | 4.5                | 4.5         |       |
| Fuel Station                                     | 1                 | 2               | 2                  | 4           |       |
| Fire Station+ Police Post                        | 3.59              | 1               | 3.59               | 3.59        |       |
| Public Utilities                                 | 2.2               | 1               | 2.2                | 2.2         |       |
|                                                  | 0.43              | 2               | 0.86               | 1.72        |       |
| Housing                                          | 33.4              | 1               | 33.4               | 33.4        |       |
| Supporting Infrastructure                        |                   |                 |                    | 78.75       |       |
| GSR & ESR & WTP                                  | 5.2               | 1               | 5.2                |             | 1.74  |
| STP                                              | 1.5               | 2               | 3                  |             |       |
| CETP                                             | 4.65              | 1               | 4.65               |             |       |
| SWM                                              | 2                 | 1               | 2                  |             |       |
| CWR                                              | 3                 | 1               | 3                  |             |       |
| WTP                                              | 0.73              | 1               | 0.73               |             |       |
| WSR                                              | 2                 | 1               | 2                  |             |       |
| ESR                                              | 0.25              | 1               | 0.25               |             |       |
| 200 K V Substation                               | 5.01              | 1               | 5.01               |             |       |
| Substations                                      | 0.3               | 7               | 2.1                |             |       |
| Area Under Services                              |                   |                 | 27.94              |             | 16.00 |
| Green Belt                                       | 137.57            | 1               | 137.57             |             |       |
| Masterplan Greens                                | 119.50            | 1               | 119.50             |             | 14.83 |
| Area Under Greens                                |                   |                 | 257.07             |             |       |
| 45 M Road                                        | 69.57             | 1               | 69.57              |             |       |
| 36 M Road                                        | 64.94             | 1               | 64.94              |             |       |
| 24 M Road                                        | 56.42             | 1               | 56.42              |             |       |
| 18 M Road                                        | 15.86             | 1               | 15.86              |             |       |
| 11 M Road                                        | 0.44              | 1               | 0.44               |             |       |
| Parking                                          | 11.1              | 1               | 11.1               |             |       |
|                                                  | 6.4               | 1               | 6.4                |             |       |
|                                                  | 3.76              | 1               | 3.76               |             |       |
|                                                  | 3.5               | 1               | 3.5                |             |       |
|                                                  | 3.18              | 1               | 3.18               |             |       |
|                                                  | 3                 | 1               | 3                  |             |       |
| Area Under Roads                                 |                   |                 | 238.17             |             |       |
| Total Area                                       |                   |                 |                    | 1606.32     | 100   |

## **Annexure II – Contour Map**



| LEGEND        |           |
|---------------|-----------|
| Bt Road       | ———       |
| Divider       | ———       |
| Rcc / Brick   | ——— / ——— |
| Boundary Wall | ———       |
| Fancing       | ———       |
| Building      | ———       |
| Tin Shed      | ———       |
| Shop          | ———       |
| Pond          | ———       |
| Water Tank    | ———       |
| Canal         | ———       |
| Forest Area   | ———       |
| HT Line       | ———       |
| EP Line       | ———       |
| Tree          | ———       |
| Bore Hole     | ———       |
| Electricpole  | ———       |
| Street Lights | ———       |
| Transformer   | ———       |

## **Annexure III – Water Balance Chart**

