“Proposed Development of Integrated Industrial Township” at Pen by Karanja Infrastructure Pvt. Ltd.

May 2015

PRE-FEASIBILITY REPORT

Proposed Development of Integrated Industrial Township at Pen, Dist. Raigad, Maharashtra
Sector 7 (C) Category A Project

Submitted to
Expert Appraisal Committee (EAC), New Delhi

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1. EXECUTIVE SUMMARY

There is an overriding need to substitute Mumbai’s existing urban situation as it will not be able to cope with the future population growth & the expected massive influx of people. The only sustainable solution is to create smart, Greenfield cities. Therefore M/s Karanja Infrastructure Pvt. Ltd. has planned to develop an ‘Integrated Industrial Township’ at Pen, Dist Raigad, Maharashtra. This will be an integrated industrial township envisaged to become a ‘City of Opportunity’ that prides in providing Smart services for all, Employment for all & Accommodation for all (SEA). It is planned on the 3P principle – People, Profit, Planet – to effectively address the social, economic & environmental concerns. It is committed to create a city that enrich, uplift, & inspire the human spirit.

Salient Features of the project:

- Purpose-built, strategically located in close proximity to Navi Mumbai and Mumbai & with a master plan that incorporates all green, smart, sustainable features from the design stage itself, to create intelligent physical, social, economic & institutional infrastructure.
- It is done in a holistic manner & with environmental sustainability plan approval from professional agency, thus, incorporating the smart city vision in its entirety.
- Transit oriented development principle, where people walk to work, & each area is planned with amenities & jobs located close by.
- Building from ground up provides maximum flexibility to meet project requirements. Devices & systems required for digital control are integrated at the time of construction to cover the three important aspects - people, planet & profit.
- Incorporates state-of-the-art infrastructure, world-class services, energy-conscious city planning, intelligent city systems, common command centre & utility corridors, & disaster-proof architecture. It also provides a pleasant environment & space to expand.

A. Utilities

i. Power: Electricity will be sourced from MSEDCL. The estimated power demand for entire township is 505 MVA:

<table>
<thead>
<tr>
<th>S.N.</th>
<th>Land Parcel</th>
<th>Power Demand</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>T1</td>
<td>350</td>
</tr>
<tr>
<td>2</td>
<td>T2</td>
<td>85</td>
</tr>
<tr>
<td>3</td>
<td>T3</td>
<td>24</td>
</tr>
<tr>
<td>4</td>
<td>T4</td>
<td>46</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>505</strong></td>
</tr>
</tbody>
</table>
ii. **Water:** The site is in the vicinity of water bodies. The estimated total water requirement for the project would be about 19 MLD.

<table>
<thead>
<tr>
<th>S.N.</th>
<th>Land Parcel</th>
<th>Water Requirement (MLD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>T1</td>
<td>10</td>
</tr>
<tr>
<td>2</td>
<td>T2</td>
<td>3</td>
</tr>
<tr>
<td>3</td>
<td>T3</td>
<td>2</td>
</tr>
<tr>
<td>4</td>
<td>T4</td>
<td>4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>19</strong></td>
</tr>
</tbody>
</table>

iii. **Manpower:** The expected population for ‘Integrated Industrial Township’ would be about 1,45,000.

**B. Pollution Control**

i. **Wastewater Management:** Sewage from various sources shall be sent to the STP and treated sewage would be used for gardening and non-potable purposes. STPs with combined capacity of about 18 MLD with suitable technology viz, MBR, MBBR or Constructed Wetland will be installed depending on the site conditions and requirement.

<table>
<thead>
<tr>
<th>S.N.</th>
<th>Land Parcel</th>
<th>Sewage Quantity (MLD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>T1</td>
<td>8</td>
</tr>
<tr>
<td>2</td>
<td>T2</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>T3</td>
<td>2</td>
</tr>
<tr>
<td>4</td>
<td>T4</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>15</strong></td>
</tr>
</tbody>
</table>

ii. **Air Pollution Control:** As the proposed Integrated Industrial Township will be housing residential and commercial buildings & various industries from different sector, there will be air emissions from their activities. However, these emissions will last for a very short period and the same will be temporary & restricted within the plant boundary. Also individual industries coming in Integrated Industrial Township will comply with the norms. The process emissions are maintained within the limit prescribed by MPCB. Also the DG sets will be installed with stacks of sufficient height as directed by MPCB to disperse the pollutants effectively so that the flue gas emissions will be strictly within the norms stipulated by MPCB.
iii. Solid Waste Management

Construction Waste:

The construction debris will be collected and suitably used on site for leveling purpose. Some of the debris would be converted into building blocks by using appropriate technology. Remaining waste if any would be sent to MIDC approved dumping site. Inorganic waste generated during the construction phase like waste concrete, mortar, left over aggregate and debris etc shall be recycled for use in the base layers of paved area i.e. parking pavement. The overall impact of waste disposal during construction phase is insignificant.

Waste Generated during Operation Phase:

The expected population for ‘Integrated Industrial Township’ would be about 1,45,000. The estimated quantity of solid waste would be about 32 Metric tons per day.

<table>
<thead>
<tr>
<th>S.N.</th>
<th>Land Parcel</th>
<th>Solid Waste (MT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>T1</td>
<td>15</td>
</tr>
<tr>
<td>2</td>
<td>T2</td>
<td>5</td>
</tr>
<tr>
<td>3</td>
<td>T3</td>
<td>4</td>
</tr>
<tr>
<td>4</td>
<td>T4</td>
<td>8</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>32</strong></td>
</tr>
</tbody>
</table>

Source segregation is proposed for recyclables (30%) and the other waste would be treated and disposed as per MSW Rules. The solid waste will be treated with the help of suitable technology in compliance with the site conditions.

The Hazardous substances used during different phases of project would be paints, solvents, varnishes and waste oil, paints, cleaners, batteries and pesticides and petroleum products., Asbestos containing Dust, Glass, Plastics, steel are used .The quantity of waste generated would be very low. The waste oil generated from DG sets will be stored in sealed containers and will finally be sold to authorized recycling agency. Other hazardous waste will be handled as per Hazardous Waste Handling (2003) rules.

iv. Noise: The project will contribute traffic growth and thus increased noise level associated with it during the construction & operational stage. However, it will not pose significant negative
impact because of proper measures provided for traffic management and noise control will be followed.

C. Background Study

Environmental Monitoring is planned for better understanding the baseline conditions and pollution levels so that impacts can be assessed and addressed in environment management plan. The detailed report will be furnished in EIA.

i. Environmental Attributes

The baseline data collection will be carried out as per EIA notification 2006, CPCB guidelines and EIA Guidelines Manuals 2010. The proposal for sampling will be as given below –

- Drinking Water: 1 Location, 26 Parameters, 3 Months
- Surface Water: 4 Location, 26 Parameters, once in a season
- Ground Water: 4 Location, 26 Parameters, once in a season
- Soil Quality: 6 Locations, 21 Parameters, once in a season
- Air Quality: 12 Locations, 5 Parameters, 3 Months, For PM$_{2.5}$, PM$_{10}$, SOx, NOx, CO
- Noise: 12 Locations, 3 Months
- Ecology and Biodiversity: on project site, within 5 km from project site, within 5 to 15 km
- Socio-economic: on project site, within 5 km from project site, within 5 to 15 km

Results will be depicted in EIA report.

ii. Air Dispersion Modeling

Air Modeling will be done with the help Industrial Source Complex (ISC) Version 3 software procured from Envitrans for dispersion assessment of pollutants from stack emissions. Results will be depicted in the EIA report.

D. Safety

Employee’s safety is well maintained by good working practices. PPE will be provided to workers during construction phase. A well-planned Security Service will be hired. The general safety rules to be followed by all staff and workers will be documented and made aware to all personnel by the Safety Officer.
Training will be given at a regular interval to the employees & workers in First Aid, Fire-fighting, and for action during the emergencies. The records of all accidents will be maintained and cause of the accident will be investigated and preventive measures will be taken to prevent reoccurrences.

Portable Fire Extinguishers will be provided at prominent places. Signs indicators for all fire safety, safe evacuation plan will be provided. Under ground water storage tank of adequate capacity will be provided exclusively for Fire Fighting. On-site emergency plan will be in place. Accordingly, Personal protection equipment will be given and use will be insisted. Consulting Physician will be retained to attain the site. Safety measures will be considered in storage and in transportation of construction materials as well.

E. Conclusion

M/s Karanja Infrastructure Ltd, proposes an Integrated Industrial Township consisting of Industrial, residential & Commercial zone. The project will contribute the growth of Indian economy as well as strengthen the socio-economic values in the area. Being an Integrated Industrial Township equipped with all smart features, it will contribute to the Government of India’s vision of “Make in India” & “Smart City”.
2. INTRODUCTION OF THE PROJECT / BACKGROUND INFORMATION

The proposed “Integrated Industrial Township” by Karanja Infrastructure (P) Ltd. will be developed in Pen region of Raigad district in four land parcels, namely, T1, T2, T3 & T4. It is envisaged to become a ‘City of Opportunity’ that prides in providing Smart services for all, Employment for all & Accommodation for all (SEA). It is planned on the 3P principle – People, Profit, Planet – to effectively address the social, economic & environmental concerns. It is committed to create a city that enrich, uplift, & inspire the human spirit.

The aforesaid development falls in the Category A of Projects and Activity Number 7(c) – “Industrial Estates/Parks/Complexes/Areas, Export Processing Zones (EPZs), Special Economic Zones (SEZs), Biotech Parks, Leather Complexes” as per the “List of Projects or Activities requiring Prior Environmental Clearance” given in the EIA Notification dated 14th September, 2006 & subsequent amendments.

The Environmental Impact Assessment (EIA) will be based on one season environmental monitoring data. A comprehensive EIA will be carried out as per the EIA guidelines and requirements of Ministry of Environment and Forests and Maharashtra Pollution Control Board (MPCB). The impacts from the proposed Integrated Industrial Township will be investigated by establishing baseline conditions, identification, prediction and evaluation of impacts from the component of the project.
3. PROJECT DESCRIPTION

M/s Karanja Infrastructure Pvt. Ltd. has planned to develop an ‘Integrated Industrial Township’ at Pen, Dist Raigad, Maharashtra. This will be an integrated industrial township spread over on four land parcels, namely, T1, T2, T3 & T4 admeasuring total plot area of 44,51,700 Sq.m. The site will be developed under “Integrated Industrial Area” Policy of Government of Maharashtra which is being implemented through Maharashtra Industrial Development Corporation (MIDC), State Government’s Industrial Infrastructure Agency. This Integrated Industrial Township comprises of Industrial (various sectors), Residential & Commercial components. The project site is irregular in shape and overlooks the River Bhogeshwari & Balganga. The site is highly contoured and has a rocky terrain, with a little vegetation cover.

i. Location Details

The site is located in Pen Taluka, Raigad District. It partly falls in the municipal council limits of Pen town and partly in Mumbai Metropolitan Region (MMR) & majorly in Raigad RP boundary. It is located in the villages Govirle, Davre in MMR and Walak, Belavade, Khurd-Budruk, Mungeshi, Boregaon, Shene and Virani of Raigad RP which lend a rural character to the site surroundings. The latitude & longitude details of the site are:

**T1:**
Latitude: 18°42’14.11” N
Longitude: 73°08’37.90” E

**T2:**
Latitude: 18°46’23.80” N
Longitude: 73°07’17.44” E

**T3:**
Latitude: 18°46’53.73” N
Longitude: 73°07’28.52” E

**T4:**
Latitude: 18°47’26.51” N
Longitude: 73°05’27.74” E
The site surrounding features are given below:

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Surrounding Features</th>
<th>Distance in kilometers from the project site (These are aerial distances as measured on Google earth)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Hetawane Dam</td>
<td>5 kms</td>
</tr>
<tr>
<td>2.</td>
<td>Mhatre hospital</td>
<td>4 kms</td>
</tr>
<tr>
<td>3.</td>
<td>Pen Private High school</td>
<td>~ 4 kms</td>
</tr>
<tr>
<td>4.</td>
<td>Ram laxman Mandir</td>
<td>~3 kms</td>
</tr>
</tbody>
</table>

ii. Connectivity:

Site (T3) is readily accessible through the National Highway 17. The site (T1) is adjacent to SH 87 (Pen - Khopoli Highway) through the proposed access via 18-metre wide road, which shall bridge the water body. Apart from this, the subject-site region (T2 & T4) is also connected by about 6 km. of road length fall under major district roads and other district roads which are maintained by PWD and Zilla Parishad. The nearest railway station of central railway (Konkan railway) is Pen 4.5 Km from Borgiaon location. The major National, State Highways, Railways and expressway in vicinity to the subject site are provided in the following tables:

National Highways and Expressway in site surroundings:

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Name of Road</th>
<th>From - To</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Mumbai Pune Expressway</td>
<td>Kalamboli (Navi Mumbai) to Pune</td>
</tr>
<tr>
<td>2</td>
<td>NH 4</td>
<td>Mumbai to Pune further down to</td>
</tr>
<tr>
<td>3</td>
<td>NH 4 B</td>
<td>Panvel to JNPT</td>
</tr>
<tr>
<td>4</td>
<td>NH 3</td>
<td>Mumbai to Nashik further down to</td>
</tr>
<tr>
<td>5</td>
<td>NH 8</td>
<td>Mumbai to Ahmedabad</td>
</tr>
<tr>
<td>6</td>
<td>NH 17</td>
<td>Mumbai to Goa</td>
</tr>
</tbody>
</table>

The Major State Highways in the immediate surroundings:

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Name of Road</th>
<th>From - To</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>SH 87</td>
<td>Pen-Khopoli</td>
</tr>
<tr>
<td>2</td>
<td>SH 85</td>
<td>Khopta - Sai</td>
</tr>
<tr>
<td>3</td>
<td>SH 88</td>
<td>Wadkhal - Alibaug</td>
</tr>
<tr>
<td>4</td>
<td>SH 81</td>
<td>Ghavan Phata to SH 85</td>
</tr>
</tbody>
</table>
Distance of various landmarks/towns/ activity magnets from the subject site:

<table>
<thead>
<tr>
<th>Landmarks/ towns</th>
<th>Distance from the subject site (Kms)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mumbai</td>
<td>80</td>
</tr>
<tr>
<td>Pen Town</td>
<td>2</td>
</tr>
<tr>
<td>Chhatrapati Shivaji International Airport</td>
<td>40</td>
</tr>
<tr>
<td>Proposed Navi Mumbai International Airport</td>
<td>22</td>
</tr>
<tr>
<td>Maha Mumbai SEZ</td>
<td>8</td>
</tr>
<tr>
<td>Panvel</td>
<td>35</td>
</tr>
<tr>
<td>Alibaug</td>
<td>30</td>
</tr>
<tr>
<td>Khopoli</td>
<td>26</td>
</tr>
</tbody>
</table>

Location of the project site in MMR is depicted below:
iii. Details of Alternative Site Considered

Alternative Site Assessment Report

Pen Sub region of MMR is the untapped area from development perspective in spite of the existing connectivity by National Highway, proximity to the Jawaharlal Nehru Port (JNPT) and proposed Navi Mumbai International Airport. It also falls on the proposed Multi-modal Corridor from Virar to Alibaug proposed by MMRDA and within the influenced zone of the proposed Delhi Mumbai Industrial Corridor (DMIC). Considering all the above the Karanja Infrastructure Pvt Ltd proposed to establish an Integrated Industrial Township in the Pen Tehsil keeping in view the new policy of Integrated Industrial Area of the Government of Maharashtra. In connection with the same the reconnaissance survey of the entire Pen Tehsil area was carried out to locate suitable parcels of land which were ideal for the development of an Integrated Industrial Area without any detrimental influence on the surrounding environment. A total number of three sites were shortlisted for further study and finalization. The list of the same are as follows:

Location No.1: (Tarankhop Ramraj and Dhavate):
The site admeasures 480 Acres approximately. The same is located to the North of Pen-Khopoli by-pass road (SH-104). This site is situated directly on the National Highway No.17 on the West side and the SH 104 towards the South and ODR 25 (Pen to Belawade-Khurd) of Pen Tehsil. The site has a gradual slope towards the West and South and appears flat and buildable.
The Hetawane canal passes along the eastern side of the site. Though the site appears to be strategically located, it is also inherent with the following drawbacks. Being adjacent to the irrigation canal it will fall under the command area of Irrigation and therefore permission for conversion from Agriculture to other land uses will be difficult. Also the land acquisition for the Project area is also difficult since only between 60% to 70% of the land owners are willing to part with their land holdings. The existing settlement of Tarankhop village is situated between the site and the National Highway 17 and as such it is difficult to derive access from the same.

**Location No.2: (Meleghar And Kashmire):**

This site admeasures 633 Acres approximately. This site derives access from a narrow land parcel connecting to NH-17 and is situated to the South of Pen-Khopoli by-pass road (SH-104). The site is also separated from the NH-17 by the Konkan rail and can derive access from NH-17 only by means of a flyover. The site is also bounded to the East, West and the South by Hetawane canal. As such the accessibility of the site appears to be severely restricted. The land is relatively sloping from south east to north-west direction. The land is also divided by two village roads and as such the land parcel is split into three parcels which needs to be connected either by shifting the village roads or bridging the parcels by means of ROBs (Road over bridges). The entire parcel of land is irrigated land. Hence the
same is costlier. Being adjacent to the irrigation canal it will fall under the command area of Irrigation and therefore permission for conversion from Agriculture to other land uses will also be difficult. Also the land acquisition for the Project area is also difficult since only between 40% to 50% of the land owners are willing to part with their land holdings.

**Location No.3:**
The Total project area for T1, T2, T3 and T4 is approx 1100 acres. These pockets are spread at close intervals and connected by arterial roads as indicated below and together constitute the Integrated
Proposed Development of Integrated Industrial Township at Pen by Karanja Infrastructure Pvt. Ltd.

Industrial Township project. The Project Area Map as also the satellite imagery for the same are shown below:

The site is in four parcels which are closely located and internally connected by proposed ODR 25 of Pen Tehsil. Together the four parcels add to 1100 Acres which is almost double to the earlier locations. The villages falling within this site area area Borgaon, Virani, Shene, Ambeghar, Belawade Khurd, Belawade Budruk, Mungeshi, Govirle, Belvali and Hamarapur. The site is approached from SH-87 (Pen to Khopoli) highway at an RL of around 25 – 39 m from MSL. The major part of the site is situated at a contour of 200 – 220 which is developable. The site is divided into four parts and situated at different villages which are located nearby. Also none of the land parcels are below 100 acres and as such is considered a good parcel from Integrated Industrial Township development point of view and each parcel can function as a self-sustaining unit. This also facilitates the location of different types of Industry on different parcels lending a unique character to each parcel. Considering other lands in Pen Tehsil, these parcels identified are observed to be non fertile and non irrigated and therefore more suitable for industrial development. The eastern part of the site stretches from North to South from Bhogeshwari river to the North to Mahal Mira Hill station village to the South. The western part extends around village Virani. The Western portion is relatively flat as compared to the Eastern portion. Due to the undulating features on the site which includes hill slopes as well as valley portion which are found to be undevelopable due to the steep slopes, almost 35% of the gross area is being left open. However these spaces can be well developed by landscaping and afforestation to augment the Open space requirements of the Integrated Industrial Township.

The valley portion also provides the opportunity for creation of a water retention pond especially during monsoon where in the runoff simply flows into the creek and completely wasted and unutilized. This proposed water retention pond will not only conserve water but also provide as a valuable resource for the sustenance of the Integrated Industrial Township. In addition this water retention pond can also be used for recreational purposes and contribute to the Imagery and
microclimate of the non Industrial Land Use area. The water retention pond also satisfies the stipulation of the MOEF guidelines with regard to water retention from rainfall runoff and also contribute to environmental conservation. It will also facilitate the afforestation of the hill slopes which are maintained as Open Spaces. The hill slopes are also proposed to be utilized for solar farming and other sources of renewable energy which could contribute to the energy requirements of street lighting, pumping etc. The entire Integrated Industrial Township is serviced by a major arterial road 20 M wide which extends to the corners of the layout. Care has been taken to ensure that the internal roads (15m wide) are provided as loops as far as possible for providing alternate access at times of emergencies. Since some of the land parcels are abutting creeks and also the railway and National Highway, the accessibility of the land parcels are greatly enhanced due to the availability of multi-modal transport and connectivity.

**Comparative Analysis Table For Above Alternate Sites**

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Location</th>
<th>Area in Acres Approx.</th>
<th>Accessibility</th>
<th>Quality of land</th>
<th>Cost of land</th>
<th>Ease of Acquisition</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Tarankhop &amp; Ramraj</td>
<td>480</td>
<td>From state Highway and indirectly from National Highway</td>
<td>50% Irrigated and 50% Fallow Land.</td>
<td>High</td>
<td>Moderate</td>
</tr>
<tr>
<td>2</td>
<td>Meleghar &amp; Kashmire</td>
<td>633</td>
<td>Access from ODR 28 of Pen Tehsil Required ROB on Railway for access from NH-17.</td>
<td>80% Irrigated and 20% Non-irrigated</td>
<td>Unaffordable</td>
<td>Difficult</td>
</tr>
<tr>
<td>3</td>
<td>Borgaon, Virani, Shene, Ambeghar, Belawada,Khurd, Belawada Budruk, Mungeshi, Govirle</td>
<td>1053</td>
<td>Very good multi point access on National Highway and State Highway. Also feasible to have railhead and water transport connect near Hamarpur</td>
<td>80% Barren land and nearly 20% irrigated.</td>
<td>Relatively Affordable</td>
<td>Relatively Easy</td>
</tr>
</tbody>
</table>

**Conclusion**

From above description and table it may be concluded that location no 3 is highly suitable for locating the Integrated Industrial Township proposal by Karanja Infrastructure Pvt Ltd.
iv. **Size or Magnitude of Operation**

The proposed project is an Integrated Industrial Township. It will have Industries of various sectors, Residential & commercial buildings. The Integrated Industrial Area will have Industrial shed, warehouse/logistics, Pharma & Healthcare, Food & Agro sector, Fashion/Apparel & Textile, Light Engineering, Gems & Jewellery, Entertainment, Defense & Electronics Park. The commercial building will include IT/ITES, Financial sector, Services sector, Offices, Malls, Hotels, Health & wellness centre.

v. **Project Area Details**

- Total Plot Area: 44,51,700 Sq.m
- Undevelopable Area: 14,22,278 Sq.m
- Total BUA: 30,29,422 Sq.m

vi. **Process Details**

The proposed Integrated Industrial Township will house industries of various sectors. The Integrated Industrial Area will have Industrial shed, warehouse/logistics, Pharma & Healthcare, Food & Agro sector, Fashion/Apparel & Textile, Gems & Jewellery, Light Engineering, Entertainment & Defense & Electronics Park. The exact process details of these industries cannot be explained at this early stage.

vii. **Flow Chart Showing Project Layout**

Not Applicable.

viii. **Power**: Please refer for the details which are already given in Chapter 1 ‘Executive Summary’ Section A.

ix. **Water**: Please refer for the details which are already given in Chapter 1 ‘Executive Summary’ Section A.

x. **Manpower**: Please refer for the details which are already given in Chapter 1 ‘Executive Summary’ Section A.

xi. **Raw Material Requirement**

Not Applicable.
xii. **Waste Management/ Disposal**

Please refer for the details which are already given in Chapter 1 ‘Executive Summary’ Section B.

xiii. **Schematic Representation of Feasibility**

Environmental Impact Assessment (EIA) is a well planned process to predict the environmental consequences of any kind of development, which is a result of human activities and to suggest appropriate measures in order to reduce adverse effects and also to augment positive effects. The EIA procures a rational and ethical approach for sustainable development. However, it is more scientific
process because it not only tells the past, present and the future consequences of going on development, but also predicts the future events which likely to change due to some reasons. In terms of the EIA notification of the MoEF dated 14th September 2006, the generic structure of EIA documents shall be as under:-

- Introduction
- Project Description
- Description of the Environment on the basis of Baseline data
- Analysis of Alternatives (Technology & Site)
- Anticipated Environmental Impact & mitigation Measures
- Environmental Monitoring Program
- Additional studies
- Project benefits
- Environmental Cost benefits Analysis
- EMP
- Summary & Conclusion
- Disclosure of Consultant Engaged
- CSR Activity
4. SITE ANALYSIS

i. Connectivity

Please refer for the details which are already given in Chapter 3 ‘Project Description’.

ii. Land form and Land Use

The land at present is open and vacant. The site is highly contoured and has a rocky terrain, with a little vegetation cover. After the development there will be permanent change in land use. There will be industries of various sectors, commercial and residential buildings. The land use pattern will be under mixed-use category.

iii. Land Ownership

Land is acquired on willing buyer - willing seller basis & is in control/possession of the group.

iv. Existing Land Use Pattern

The land at present is open and vacant. This will be studied in detail and depicted in EIA report.

v. Existing Infrastructure

The site surroundings are quite undeveloped and the immediate catchment is largely rural in character. But the site has excellent connectivity in terms of Rail, Road and Water transport.

vi. Soil Classification

Not Available

vii. Climate data secondary source

The climate is tropical in Pen. Most months of the rainy season are marked by significant rainfall. The short dry season has little impact. The temperature here averages 26.9°C. Precipitation here averages 3207 mm.

Climate: The driest month is January. There is 0 mm of precipitation in January. The greatest amount of precipitation occurs in July, with an average of 1247 mm.
**Temperature:** With an average of 30.0°C, May is the warmest month. The lowest average temperatures in the year occur in January, when it is around 23.6 °C.

viii. **Social Infrastructure Available**

The social infrastructure in the Integrated Industrial Township will be developed based on the guidelines being issued by Government of India for development of Smart Cities & the guidelines under Integrated Industrial Area (IIA) policy of Government of Maharashtra.
5. **PLANNING BRIEF**

i. **Planning Concept**

The Integrated Industrial Township will be developed based on the guidelines being issued by Government of India for development of Smart Cities & the guidelines under Integrated Industrial Area (IIA) policy of Government of Maharashtra. The overall planning will be benchmarked with the best Smart City developments from across the world.

ii. **Population Projection**

The expected population for ‘Integrated Industrial Township’ would be about 1,45,000

iii. **Land use planning**

The proposed ‘Integrated Industrial Township’ will comprise of industries of various sectors, commercial & residential buildings. The proposed land use pattern will be under mixed-use category.

iv. **Assessment of infrastructure demand**

v. **Amenities or facilities**

- Smart Urban Development
- Smart Connectivity
- Smart Mobility
- Smart Health care
- Smart Education
- Smart Citizen & Smart Living
- Smart Economy
- Smart Outreach
6. PROPOSED INFRASTRUCTURE

The proposed project is an Integrated Industrial Township. It comprises of Industries, Residential & Commercial buildings.

i. **Industrial area (60% Industrial component)** - The project aims at establishing an Industrial Township with state of the art Infrastructure & Utilities at sites T1, T2 & T3, Taluka: Pen, Dist: Raigad, Maharashtra, India. The area will be developed for various industries along with basic infrastructure and common facilities required for the target industries. The developed plots will be allotted to these industries. The target industries for the proposed Industrial Township are:
   - Electronics,
   - Telecom equipments manufacturing
   - Heavy Engineering and ancillary industry,
   - Food and agro-processing industry,
   - Gems & Jewellery Industry
   - Healthcare based Industries including Pharmaceuticals
   - Plastics & Plastics Processing Industry,
   - Telecom Equipment Manufacturing,
   - Others including Toys, Camera, Watches, Furniture, Light Fittings etc.

ii. **Residential area** – It will include various buildings, villas or township.

iii. **Commercial area** - The commercial area will include IT/ITES, Financial sector, Services sector, Offices, Malls, Hotels, Health & wellness centre.

iv. **Green belt** - It may be seen that 3 to 26% of the site area is Non Buildable, 8% of the area is Semi Buildable and the remaining 67% is buildable. The Non buildable area can be utilized for creation of green area by undertaking afforestation on the hill slopes and contribute to the open space reservation required to be provided in the Master Plan.

vii. **Drinking water Management**

The site is in the vicinity of water bodies. Hetawane dam lies in close proximity. Water Retention Pond is proposed in the plot to take the advantage of the valley having 8 Mt contour interval and by 100 dyke of earth. This can retain water to make Integrated Industrial Township self-sustainable though project is 5 Km away from Hetawane dam.
viii. **Sewerage System**

Sewage from various sources shall be sent to the STP and treated sewage would be used for gardening and non-potable purposes. STPs with combined capacity of about 18 MLD with suitable technology viz, MBR, MBBR or Constructed Wetland will be installed depending on the site conditions and requirement.

ix. **Industrial Waste Management**

The industrial waste will be handled as per the relevant regulations of Developing Authority. The effluent will be treated by using suitable ETPs & CETPs.

x. **Solid Waste Management**

*Construction Waste:* Please refer for the details which are already given in Chapter 1 ‘Executive Summary’ Section B.

*Waste Generated during Operation Phase:* Please refer for the details which are already given in Chapter 1 ‘Executive Summary’ Section B.

xi. **Power Requirement and Supply**

Please refer for the details which are already given in Chapter 1 ‘Executive Summary’ Section A.
7. REHABILITATION AND RESETTLEMENT PLAN

Land was purchased on willing buyer - willing seller basis & is in control/possession of the Group. No rehabilitation and resettlement is expected. The project positive impacts and changes in employment and income levels will be assessed during socio economic survey.

Socio-economic data collection and assessment is being carried out.
8. PROJECT SCHEDULE AND COST ESTIMATES

i. Project Schedule

The Integrated Industrial Township is a huge infrastructure project which will be built over a period of approx. 10 years.

ii. Project cost estimates - Rs. 14,206 Crores

iii. Break-up Cost of the Project

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<th>Capex Schedule</th>
<th>Phase 1</th>
<th>1 Year</th>
<th>2 Years</th>
<th>3 Years</th>
<th>4 Years</th>
<th>5 Years</th>
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9. ANALYSIS OF PROPOSAL

M/s Karanja Infrastructure Pvt. Ltd. proposed an Integrated Industrial Township at Pen, Raigad. This is spread over nearly 1100 acres at four closely placed locations and integrated with each other by a 20 m wide arterial road from Govirle-Ambivali on NH 17 Mumbai Goa to Ambeghar on SH 87 Pen Khopoli. All components of the Integrated Industrial Township will share a common cyber platform and also administrative and functional protocols. They shall be programmed to complement each other and contribute not only the growth of the Integrated Industrial Township but also catalyze regional development. The Portion of the Integrated Industrial Township located at the Northern most corners serves as a logistical hub with rail, road and waterway connectivity.

The project falls in the Category A of Projects and Activity Number 7(c) – “Industrial Estates/Parks/Complexes/Areas, Export Processing Zones (EPZs), Special Economic Zones (SEZs), Biotech Parks, Leather Complexes” as per the “List of Projects or Activities requiring Prior Environmental Clearance” given in the EIA Notification dated 14th September, 2006 & subsequent amendments.

The Environmental Impact Assessment (EIA) will be based on one season environmental monitoring data. The EIA will be carried out as per the EIA guidelines and requirements of Ministry of Environment and Forests and Maharashtra Pollution Control Board (MPCB). The impacts from the proposed Integrated Industrial Township will be investigated by establishing baseline conditions, identification, prediction and evaluation of impacts of the component of the project.