

ENVIRONMENTAL IMPACT ASSESSMENT EXECUTIVE SUMMARY *(English)*

Karnataka Industrial Area Development Board (KIADB)

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Prepared for:

**Avverahalli Industrial Area at Dobaspet 4th Phase In
the villages Yedehalli, Chandana Hosahalli,
Honnenahalli, Kengal Kempohalli, Avverahalli,
K.G.Srinivasapura, Billanakote, Nelamangala Taluk,
Bangalore Rural District, Karnataka.**

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EXECUTIVE SUMMARY

1.0 Introduction

Karnataka Industrial Areas Development Board (KIADB) is a wholly owned infrastructure agency of Government of Karnataka, set up under Karnataka Industrial Areas Development Act of 1966. This Board functions as per statutory provisions, rules and regulations enacted there under. The Board comprises of senior government officers in their ex-officio capacities. KIADB holds pride in being the first government organisation in Karnataka to obtain ISO 9001 certification in the year 1997.

The KIADB is following now ISO 9001:2000 module covering its functions of Land Acquisition, Development and Allotment functions in Nelamangala taluk and Bangalore district.

KIADB has so far developed 141 industrial areas in 28 districts of the State. KIADB has proposed to develop **Avverahalli Industrial Area 844.23 acres plot area at Dobaspet 4th Phase** in the villages of Yedehalli, Chandana Hosahalli, Honnenahalli, Kengal Kempohalli, Avverahalli, K.G.Srinivaspura, Billanakote, Nelamangala Taluk, and Bangalore rural District. KIADB has also acquired lands to cater the specific needs of individual industrial units (Single Unit Complexes).

Every anthropogenic activity has some impact on the environment that often has a harmful effect on the environment. However, mankind as it is developed today cannot live without taking up these activities for their food, security and other daily needs. Therefore, harmonious developmental activities with proper environmental consideration are essential for any developmental activity. Environmental Impact Assessment (EIA) is an important tool and essential technique available with the planners by which information about the environmental effects of a project is clearly understood. This Environmental Impact Assessment (EIA) study undertaken is mainly focused on identification of environmental aspects of the project site, its impact on pre and post commissioning. A detailed prediction of all environmental impacts associated with the various activities during the construction and operation phases of the proposed plant and suggesting suitable measures to navigate the observed adverse environmental impacts.

The Executive Summary summarizes the findings of the EIA study undertaken in accordance with the EIA guidelines on similar developmental projects. The summary is intended to provide an overview of the prevailing baseline conditions, key environmental issues and their likely impacts and also list the major recommended mitigation measures to attenuate the impacts.

2.0 Salient Features of the Project

The proposed site of highlights and salient features is given below in **Table 1**

Table 1: Site Salient Features

Selection criteria	Details
Total Existing Land Area of the project	360.57 Hectares (891.25 Acres)
Total Allotted Land Area for project	341.65 Hectares (844.23 Acres)
Total Cost of the project	Rs 677.33 Crores
Nearest Highway	NH 4 adjacent to Eastern side, SH 3 adjacent to Western side
Nearest Railway station	Dobaspet -1.3 Km (N)
Nearest airport	Bangalore Airport- 44.0 Km (E)

Nearest Town / City	<ul style="list-style-type: none"> Nelamangala – 15.0 Km Bengaluru – 35.0 Km
Rainwater harvesting	Provision made to charge groundwater aquifers
Energy consumption	63.3 MVA (75 kVA/acre.)
Water Requiremen	During Operation Phase– 11.5 MLD
Source of water supply	Drawn from Hemavathi River

3.0 Project Location & Setting

The project site is located in the villages of Yedehalli, Chandana Hosahalli, Honnenahalli, Kengal Kempohalli, Avverahalli, K.G.Srinivaspura, Billanakote, Nelamangala Taluk, and Bangalore rural District. The area lies in the northern latitude of 13°12'56.1" and eastern longitude of 77°14'27.5".

3.1 Site Accessibility

The site is well connected with the surrounding area

East: NH4 mumbai to Chennai

West: SH 3 Kanankapura – Ramamagara- Magadi- Pavagadi Road

South: The road which is connecting the NH4 and SH3

3.2 Project Components

This will be a multi-product project with facilities like Engineering, Automobile and Autoancillaries, Drugs and Pharmaceuticals, Apparel and Readymade Garments, Agro and Food Processing, Gems and Plastics, Chemical, Leather Products, Educational facilities and Residential facilities for the people working in the area. The spread of the project will be 844.23 acres.

The proposed industrial area will include following infrastructure facilities:

- Industrial Plots
- Power supply and street lighting
- Water supply network
- STP
- Power Sub-Station
- Commercial
-
- Rain Water Harvesting System
- Public utilities
- Parking
- Housing complex
- Green Belt Development/Buffer zone area
- Landscape
- Approach roads and internal roads with storm water drains

3.2.1 Landuse Distribution & Area Statement

The project land use details are given below in **Table 2**.

Table 2: The project land use details

S.No	Description	Acres	% of Land Use
1	Industries	416.65	49.35
2	Commercial	24.54	2.91
3	Amenity	19.03	2.25
4	Utility	23.89	2.83
5	Residential	43.24	5.12
6	Park	77.97	9.24
7	Buffer	183.96	9.95
8	Truck Parking	41.38	4.90
9	Road	113.57	13.45
Total Area		844.23	100

3.2.2 Workforce

The total workforce for 844.23 Acres of Avverahalli Industrial Area at Dobaspet 4th Phase is expected to be more than 20,000 persons (Direct Employment). The development of the Avverahalli Industrial Area at Dobaspet 4th Phase and the setting up of various units in a plethora of industries would result in a large number of indirect employment opportunities being created in the zone. This is expected to surge further as the development of the zone and region progresses. The Non-processing area and adjoining region shall cater to the residential demand rising out of the zone.

3.2.3 Water Requirement & Supply

As per the initial estimation, the average water requirement for the proposed project will be 250 KLD during the construction phase and 11.5 MLD during the operation phase. KIADB provides water to the units from the Hemavath River.

Water conservation and rain water harvesting plan will be implemented to conserve the resources. 60% of water supply is considered as treated effluent flow from the industries. 80% of water supply is considered as sewage flow.

3.2.4 Power Requirement and Supply

The total estimated power requirement for the project development is 63.3 MVA and 10.2 Ac provided for Sub Station. The source of power will be from **KIADB**.

3.2.5 Internal Road Network

The development of industrial area includes construction of 45m wide roads, 30m wide roads, 24m wide roads, 18m wide roads, 15m wide roads and 12m wide roads. Three main major of roads are proposed for the internal road transportation network and four miners. The major 30 m wide road is connecting NN4 and SH3 and 45 m wide road is connecting 30 m wide road and NH4 and Proposed STRR BMRDA 90 m wide for the project, which is adjacent to the project site. The miner roads 24 m, 18m, 15 m wide and 12m wide roads are connected to major roads.

4.0 Environmental Setting of the Study Area

The baseline environmental status was assessed based on primary and secondary data collected either through in-site field observation or obtained from agencies such as IMD, Geological Survey of India, State Ground Water Department, Central Ground Water Board, State Pollution Control Board, Census of India and Local Forest Department. The proposed site of Environmental Setting of the Study Area is given below in **Table 3**.

Table 3: Environmental Setting of the Study Area

Selection criteria	Details
Elevation above Mean Sea Level	900 m
Climatic Conditions	Max. Temp. 34.0° C
	Min. Temp. 15.0° C
	Average Rainfall: 859.6 mm
Topography	Plain
Archaeologically important places	Nil within 15km radius
National parks/ Wildlife Sanctuaries	Nil within 15km radius

Water Bodies/Rivers	<ul style="list-style-type: none"> • Lekkanahalli Kere • Kuluvanahalli Kere • Devara Kere • Muddalinganahalli kere • Thyamagondluamami kere • Tavare kere 	<ul style="list-style-type: none"> • 1.6 Km (E) • 2.4 Km (SE) • 3.3 Km (W) • 5.5 Km (NE) • 4.5 Km (E) • 5.6 Km (E)
Reserved/ Forests	Nil within 15km radius	
Seismicity	The study area falls under seismic zone-III	
Defense Installations	Nil in 10 km radius	
Earthquake zone	Zone II	

5.0 Major Environmental Issues

Before impact assessment of different environmental components is undertaken, it is pertinent to highlight the major issues of concern emerging from the analysis of the prevailing baseline environmental conditions and all project activities planned during construction and operational stage. The major project activities can broadly be categorized under construction and operational phase of the project implementation. The major issues related to this project are summarised below:

5.1 Air Environment

During construction phase, the major air pollutant of prime concern is SPM/ RSPM as impacts of other emissions such as SO₂, NO_x, and CO will not be significant because the nature of sources is such that the emissions are distributed spatially as well as temporal. Monitored average all parameters below NAAQS at all the seven locations.

The main source of air pollution would be vehicular traffic generated due to proposed project and traffic on NH-4 & SH-3. Adequately wide roads to cater to two-way traffic and to meet the fire regulations are planned in the Project area. Water sprinklers will be used to suppress dust during Construction.

5.2 Noise environment

Noise levels were observed at 8 locations within the impact zone. The results of the monitoring program indicated that both daytime and night time levels are with in the prescribed standards in all locations.

The noise emitted from heavy-duty construction equipments during construction period being high shall require occupational preventive measures and temporary noise barriers for noise attenuation.

During operational period the major noise pollution source will be traffic activity inside as well as on the access roads and industrial operations. In order to prevent adverse noise exposure to the people of Project and also the sensitive receptors within the study area, optimal mix of mitigation measures such as low noise generation units, and noise barriers will be essential.

5.3 Water environment

The estimated water demand during the construction phase is **250 KLD** (approx.), 90 KLD for labors and 160 KLD for construction activities and water demand during the operation phase is **11.5 MLD**. During construction phase the water required will be sourced from tanker supply and the water for the operation phase is drawn from Hemavathi River for project needs.

5.3.1 Sewage Generation

Quantity of sewage generated during the construction phase will be 81 KLD. Sewage during construction phase will be treated in smaller size/package (portable type) Sewage Treatment Plant (STP) which will be based on Submerged Aerobic Fixed Film Reactor (SAFF).

During operation phase sewage generated will be treated in the Sewage Treatment Plant (STP) planned and 4.7 Ac is provided for STP. The estimated Sewage generations during operation phase 2.16 MLD. The treated water shall be reused in toilet flushing, gardening etc. and the wastewater generated from the industries is 7 MLD, which is treated in their respective Effluent Treatment Plants (ETP) on the bases of advance and zero discharge concept. The treated water is reuse for industries like cooling, heat exchangers, boilers, cleaning equipment's etc. It's an individual industries responsibility to take care of their own waste upto KIADB STP is allotted.

5.4 Waste Management

The quantities of waste likely to be generated from the industrial and non-industrial phases have been estimated on the basis of population and land use characteristics. Table 5 presents the estimated solid waste quantities from the proposed project.

Table 5: Estimated Solid Waste Quantity from Avverahalli Industrial Area

S. No	Solid Waste	Bio- Degradable, in Kg/day	Recyclable, in Kg/day	Non-biodegradable, in Kg/day	Total waste from different phases, in Kg/day
1.	Industrial Waste	340	91	325	756
2.	Municipal Waste	1199	320	1146	2665
3.	STP Sludge	300			
Total Solid Waste, in Kg/day		1839	411	1471	3721

5.5 Biological environment

The prevailing ecological environment in the study area (terrestrial/ aquatic) is not of significance as no forest of ecological value is located within the study area. However, the project will provide quality ambience with natural setting, well planned green belt and open spaces provide with landscapes so that it not only enhances the quality of life of the residents but also improve the micro-climatic conditions.

6.0 Environmental Assessment Management Plan

Adequate environmental management measures will be incorporated during the entire planning, construction and operating stages of the project to minimize any adverse environmental impact and assure sustainable development of the area. Summary of the EMP is presented in Table 6 along with the corresponding impacts. The EMP planned for the construction and operating stages of the project will include the following elements:

- Air Pollution Control and Management
- Noise Control and Management
- Storm Water Management
- Hazardous and Solid Waste Management

- Plantation and Landscaping
- Sewage Treatment and Management
- Energy Conservation
- Emergency Response Plans for emergency scenarios
- Environmental Management System
- Environmental Monitoring

For the effective and consistent functioning of the campus, an Environmental Management System (EMS) will be established at the site. The EMS will include the following:

1. An Environmental Management cell
2. Environmental Monitoring Program
3. Personnel Training
4. Regular Environmental Audits and Corrective Action
5. Documentation – Standard operating procedures Environmental Management Plans and other records.

6.1 Environmental Management during Operation

EMP for air pollution control: The various control measures adopted at KIADB is summarized in below **Table 6**.

Table 6: Air Pollution Control Measures

Sl.No	Air Pollution	Source	Control
Common facilities			
1.	Dust, SO ₂ , NO _x , Acid Mist	Incinerator	Bag house, Scrubber and Stack height of 30 m minimum will be maintained.
At Industry			
1.	SPM, SO ₂ , NO _x	Boilers (Industries)	Multi clone/Bag filters, Stack height Meeting MoEF regulations. Minimum stack height of 30 m.
2.	SO ₂ , NO _x , Acid Mist etc.	Unit Operations (industries)	Scrubbers
3.	Chemical and Hazardous Air Pollutants	Fugitive in Nature during Material flow	Standardization of Equipments and accessories (Engineering Standards
4.	Odorous compounds	Unit Operations	Collection and Thermal Destruction

6.2 EMP for noise pollution

All the equipment in the proposed industries inside the AveraHalli Industrial Area would be designed to have a total noise level not exceeding 85-90 dB (A).

- There are few potential sources (machinery’s/equipment’s) in the industries that would generate noise levels above 85 dB (A) continuously. Therefore, adequate protective measures in the form of ear muffs/ear plugs to the workers working in high noise areas should be provided.
- The proposed greenbelt within the individual industries will attenuate the noise generated from the respective industries.

- The green belt planted around the perimeter of the proposed Avverahalli Industrial Area and along the corridors of the internal roads will further soothe the noise emitted.
- The noise levels in the workspace environment will be monitored periodically and if necessary corrective action will be taken.
- All necessary modern noise reducing gadgets will be attached like silencers, anti-vibration pads; closed room enclosures will be arranged.

6.3 EMP for water pollution: In order to negate the impacts on the water environment, Infrastructural facilities like provision of adequate storm water drains, effluent collection and conveyance including treatment and disposal have been planned in the Avverahalli Industrial Area.

6.4 Solid and Hazardous Waste Management: With respect to the hazardous waste, industries have to store in temporary onsite storage facilities. The disposal of hazardous waste is undertaken by entering into an agreement with the **Common Hazardous Waste Treatment, Storage and Disposal Facility (CHWTSDF)**. The CHWTSDF will be designed Meeting the hazardous waste treatment and disposal requirements of all its member industries located near by the Avverahalli Industrial Area.

7.0 Conclusion

Based on the environmental assessment, the associated potential adverse environmental impacts can be mitigated to an acceptable level by adequate implementation of the measures as stated in the EIA and the EMP. It can be concluded from the impact matrix that the project will not have any significant negative environmental impacts but would help in improving the socioeconomic conditions of the area surrounding the project site and the city as a whole.