

EXECUTIVE SUMMARY

for

Proposed Industrial Estate

at

Plot A1 of SIPCOT, Eraiyur, Eraiyur Village, Veppanthattai Taluk,
Perambalur District, Tamil Nadu

Project Sector – 31, Schedule 7(c) – Industrial Estates/parks/complexes/areas,
export processing zones (EPZs), Special Economic Zones (SEZs), Biotech
Parks, Leather Complexes - Category B

ToR Identification No: TO25B3102TN5698049N dated 19/08/2025

Baseline Period: March 2025 to May 2025

Project Proponent

M/s. Phoenix Kothari Footwear Limited
Kothari Building, 114, Box No. 3332,
Mahatma Gandhi Salai, Nugambakkam,
Chennai - 600 034.

December 2025

EIA Consultant: Eco Services India Pvt. Ltd., Chennai

NABET Certificate No.: NABET/EIA/24-27/RA 0332

	Eco Services India Pvt. Ltd. No. 1/134, Dhanakotiraja Street, Sundar Nagar Ekkaduthangal, Guindy, Chennai – 600032 Tel: +91-44-30683067/43102232			
---	---	--	---	---

1.0 Introduction

M/s. Phoenix Kothari Private Limited has proposed to develop an Industrial Estate at Plot A1 of SIPCOT, Eraiyur comprising Survey Nos. 231pt, 232pt, 233, 234, 235pt, 241pt, 259, 261 pt, 266, 267, 268, 269, 270 pt, 271pt, 272, 273pt, 274pt, 275pt, 276 pt, 277pt, 278, 279 pt, 280pt, 281, 282pt, 283pt of Eraiyur village, Veppanthattai taluk and Perambalur district in a total land extent of 72.12 Ha (178.21 Acres).

The proposed Industrial Estate is a Greenfield project exclusively for non-leather footwear industries and comprises both EC category and Non-EC category units. The EC category includes Footwear Adhesive and Auxiliary Chemicals Manufacturing Industry classified under Sector 5(f) – Synthetic Organic Chemicals Industry as per the EIA Notification, 2006 and its subsequent amendments (Category B). The Non-EC category includes non-leather footwear manufacturing units and their allied industries. The project falls under Schedule 7(c) – Industrial Estates/parks/complexes/areas, export processing zones (EPZs), Special Economic Zones (SEZs), Biotech Parks, Leather Complexes - Category B and requires Environmental Clearance from the State Environmental Impact Assessment Authority, Tamil Nadu (SEIAA-TN). ToR was issued vide ToR Identification No. TO25B3102TN5698049N / File No. 12402, dated 19.08.2025.

The zoning of the industrial estate for EC and Non EC category industries is given in Table 1.

Table 1: Zonation of the Industrial Estate

S.No	Type of Industries	Non Leather Footwear Industry Type	Percentage of Allocation
1	5 (f) - Synthetic Organic Chemical Industries	Footwear adhesive manufacturing unit	5%
2	Other Non EC Category:	Non Leather Footwear manufacturing, Lace manufacturing unit and other allied products	95%

2.0 Project Description

The Industrial Estate is proposed at Plot A1 of SIPCOT, Eraiyur of Eraiyur Village, Veppanthattai Taluk and Perambalur District. It is located 1.8 km from the National Highway (NH) 38 connecting Ulundurpet and Perambalur and is well connected by roads. The site is surrounded by built-up land (Industries and Settlement) in the North and all other sides by agricultural and vacant lands.

2.1 Environmental Setting of the Project Site

The environmental setting of the project site is given in Table 2.

Table 2 – Environmental Setting of the Project Site

S. No.	Particulars	Details			
1.	Latitude	11°20'49.07"N			
2.	Longitude	78°58'36.73"E			
3.	Total Land Area	72.12 Ha (178.21 Acres)			
4.	Present Land Use	The proposed project site is a vacant land. The project site has settlements and industrial establishments. The land use is now allotted for industrial development.			
5.	Nearest Town	Perambalur (15 km SW)			
6.	Nearest Highway	National Highway (NH) 38 Ulundurpet – Perambalur highway (1.8 km W)			
7.	Nearest Railway Station	Ottakovil Railway Station (19.23 km SE)			
8.	Nearest Airport	Thiruchirapalli International Airport (70 km SW)			
9.	Nearest Harbor	Chennai Port (258 km NE)			
10.	Water Bodies				
		S.No.	Name of watercourse / water bodies	Distance (Km)	Direction
		1.	Vellar River	5.23	North
		2.	Mangalam Lake	0.75	West
		3.	Eraiyr Lake	2.15	North West
		4.	Mettucheri Lake	6.09	North West
		5.	Chinnar River	1.11	North
		6.	Keeranur Lake	4.50	North
		7.	AyyanPeraiyur Lake	4.23	North West
8.	Elumur Lake	6.75	South		
9.	Ayikudi Lake	7.70	South East		
11.	Eco-sensitive areas as notified under EP Act 1986	Nil within 10 km			
12.	Protected areas notified under Wild Life Protection Act, 1972 (53 of 1972)	Nil within 10 km			
13.	Critically Polluted Area as notified by CPCB	Nil within 10 km			
14.	Reserve Forest				
		S.No	Name of Reserve Forest	Distance (km)	Direction
		1	Peraiyur RF	2.15	North West
2	Sirukudal RF	3.55	South West		
15.	Interstate Boundary	Nil within 10 km			
16.	Defense Installation	Nil within 10 km			

17.	Areas occupied by sensitive man-made land uses (<i>hospitals, schools, places of worship, community facilities</i>)	S.No	Description	Distance (km)	Direction
		1	Nehru Higher Secondary School	0.48	North
		2	St. Josephs Global School, Eraiyur	2.12	West
		3	Wisdom Matriculation Higher Secondary School	3.29	North
		4	Venkateshwara Temple	1.84	East

2.2 Magnitude of the operation

Land area breakup for the Industrial Estate is given in Table 3. The total no. of the industrial plots and the area breakup are given in Table. 4.

Table 3 - Land area break-up

S.No	Description	Extent	Extent	Percentage Coverage
		Acres	Hectares	
a	Industrial Estate Area (a=b+c+d+e)	178.21	72.12	100.00
b	Industrial Plot area including Green Belt Area	145.47	58.87	81.63
c	Common Amenities (Solid Waste Management Yard)	0.19	0.08	0.11
d	Road Area	11.34	4.59	6.36
e	Common Green Belt Area	21.21	8.58	11.90

Table 4: Land area break-up – Industrial Plots

S.No	Plot Description	Area in Acres	Area in Hectares
Industrial Plots			
1	Plot 1	29.09	11.77
2	Plot 2	19.44	7.87
3	Plot 3	51.71	20.93
4	Plot 4	36.45	14.75
5	Plot 5	8.78	3.55
Total		145.47	58.87

A green belt of 15 m width is proposed along the periphery of the industrial plots and as common green belt area. The break-up is given in Table 5

Table 5: Green belt area break-up

S.No	Plot Name	Plot Area in Acres	Green Belt Area in Acres	Green Belt Area in Hectares
1	Green belt area of individual plots (15%)	145.47	21.82	8.82
2	Common green belt area	-	21.21	8.58
Total green belt area provided			43.03	17.41

2.3 Water requirement

a. Construction Phase: The water requirement during the construction phase for both construction and domestic requirements totals to be 100 - 150 KLD and will be met through SIPCOT water supply scheme/Private Tankers.

b. Operation Phase: Total water requirement during the operation phase will be 2,238 KLD of which daily fresh water requirement for domestic use, green belt and industrial use will be 831 KLD, which will be sourced through SIPCOT water supply scheme. Apart from fresh water requirement recycled water requirement for flushing, gardening, industrial use are

Toilet Flushing : 300 KLD (STP treated water)

Gardening : 553 KLD (STP treated water)

Industrial Use : 553 KLD (ETP treated water)

The detailed water requirement and wastewater generation from the industrial estate is estimated in Table 2.14 and the water balance chart is shown in Figure 2.10 of the EIA report.

2.4 Wastewater Generation and Management

a. Construction Phase: The sewage generated during the construction phase will be treated in the mobile STP.

b. Operation Phase: The sewage generated from the individual industry will be treated in the individual STP's and the treated sewage will be reused for flushing and greenbelt development as applicable.

The effluent generated from the individual industry will be treated in their own individual ETP's and the treated effluent will be reused for process and utilities. The water balance chart is given in Figure 1.

2.5 Solid Waste Management

2.5.1 Municipal Solid Waste generation and Management

a. Construction Phase: The Municipal Solid waste generation during the construction phase will be 0.3kg/capita/day for 100 to 150 persons. This will be collected in bins and disposed through Municipal / Local Body bins. The C&D waste during construction of individual

industries is estimated to be of 64.50 kg/day which will be used for backfilling and level rising within individual industrial plots.

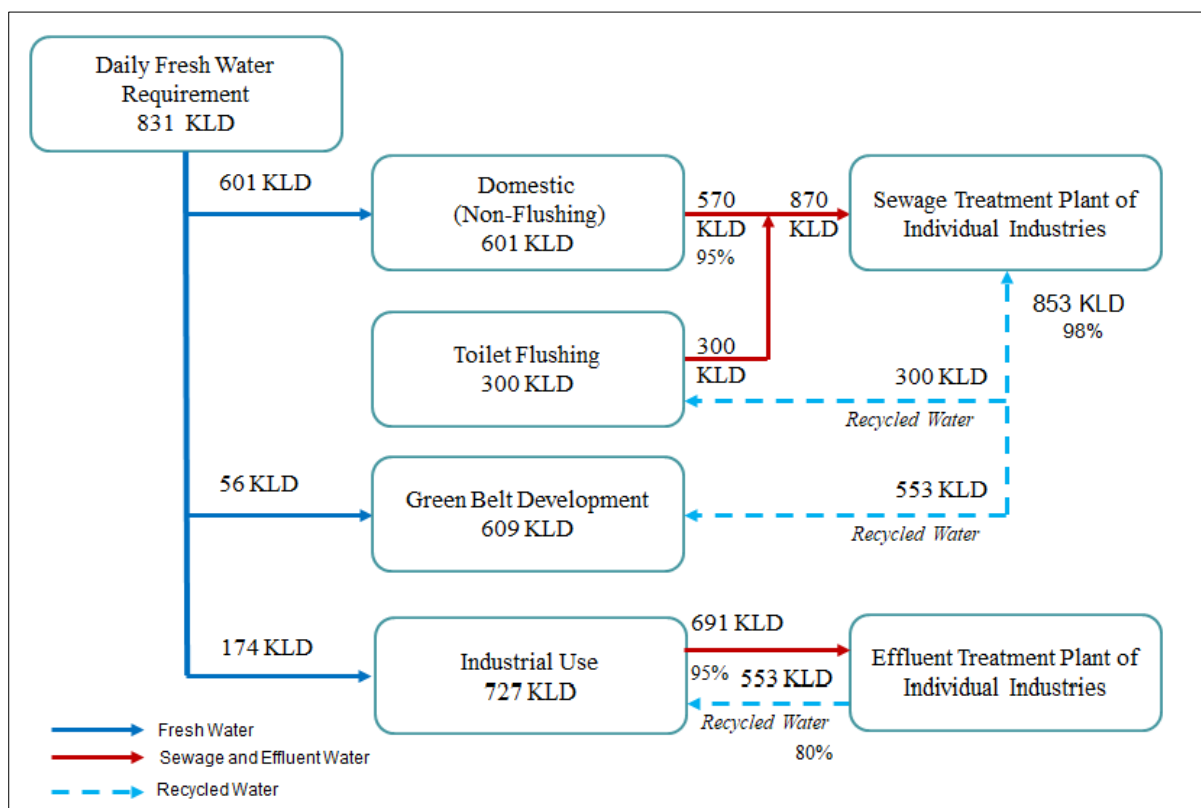


Figure 1: Water Balance Chart

b. Operation Phase:

The solid waste (i.e biodegradable and non-biodegradable) generation from the industrial estate during the operation phase is estimated as per CPHEEO norms as in Table 6. The disposal method of the solid wastes are summarized in Table 7.

Table 6: Solid Waste Estimation

Project Component	Total Occupancy (Nos.)	Per capita generation (kg/c/day)	Total waste generation (kg/day)	Total Biodegradable waste generation (kg/day)	Total Non-biodegradable waste generation (kg/day)
Industries	20,000	0.3	6,000	3,600	2,400
Maintenance Staff	20	0.3	6	4	2
STP Sludge	10 % of Sewage generated		57	57	-
ETP Sludge	5% of Effluent generated		34	-	34
ETP Salt	15% of the reject generated		21	-	21
Total	20,020	-	6,118	3,661	2,457

Table 7: Solid Waste Disposal

Description	Generation (kg/day)	Disposal
Biodegradable waste	3,604	Treated in an Organic Waste Converter (OWC) within individual industries and used as manure for green belt
Non-biodegradable waste	2,402	Handed over to authorized recyclers.
STP Sludge	57	Dewatered and processed along with biodegradable waste in OWC and used as manure for green belt
ETP Sludge	34	Through authorized hazardous waste disposal facility
ETP Salt	21	As per TNPCB norms

2.5.2 Hazardous waste generation and management

The hazardous wastes such as ETP sludge, Spent Oil from DG sets etc. generated from the individual industries will be disposed through authorized hazardous waste disposal facility in accordance with the rules.

2.6 Power requirement

The power requirement of the project will be about 3000 KVA and which will be sourced from the proposed substation. Additionally, DG sets as source of backup for the industries will be provided by the individual industries upon necessary permission from TNPCB. No DG sets proposed as source of power backup for the common amenities such as project office.

2.7 Project Cost

The tentative project cost for the development of the industrial estate is estimated as 116.99 Crores.

3. Environmental Baseline Data

The baseline study was conducted from March 2025 to May 2025. Summary of the environmental baseline data is as follows

3.1 Land Environment

Land Use/Land Cover (LULC) analysis of the 10 km study area indicates that the region is predominantly agricultural lands (fallow and plantation) accounting for the largest share of the landscape at 38%. This reflects the dependence on agriculture and associated activities in the region. Water bodies, primarily rivers and streams, occupy 21%, suggesting the presence of significant surface water networks that contribute to local hydrology and support irrigation and ecological functions.

Built-up areas, including rural/urban settlements and transport infrastructure, together constitute 20% of the study area, highlighting moderate levels of human habitation and connectivity. Wastelands, comprising open scrub and fairly dense scrub, together account for 14%, indicating the presence of degraded or underutilized land with limited vegetation cover. Forest areas represent 6%, predominantly reserve forests, signifying patches of natural vegetation that contribute to local biodiversity and ecological balance.

Overall, the LULC pattern reflects a mixed rural landscape with a agricultural base, moderate settlement, notable water resources and limited forest cover.

3.2 Geology and Hydrogeology

The study area forms part of an undulating terrain shaped by denudational, structural and fluvial processes featuring hills, plains, uplands and pediments. Geologically, it is underlain by Archean Charnockites, Granites and Gneisses, traversed by Quartz and Pegmatite veins. The study area is underlain by hard rock aquifers (Charnockites, Granites and Gneisses), where groundwater occurs in weathered and fractured zones with shallow water levels ranging from 2–10 m bgl.

3.3 Air Environment

- The micro-meteorological data shows of the project site that wind speed in the season of the year 2025 is minimum 8 kmph and maximum of 14 kmph.
- Wind rose diagram prepared for the same is shown as Figure 2
- Average temperature recorded for the season was 29.9°C with maximum temperature of 41.3°C and minimum of 20.0°C which is a characteristic of the study area.
- Average relative humidity recorded for the season was 62% with maximum humidity of 98% and minimum of 71% which is a characteristic of this study area.

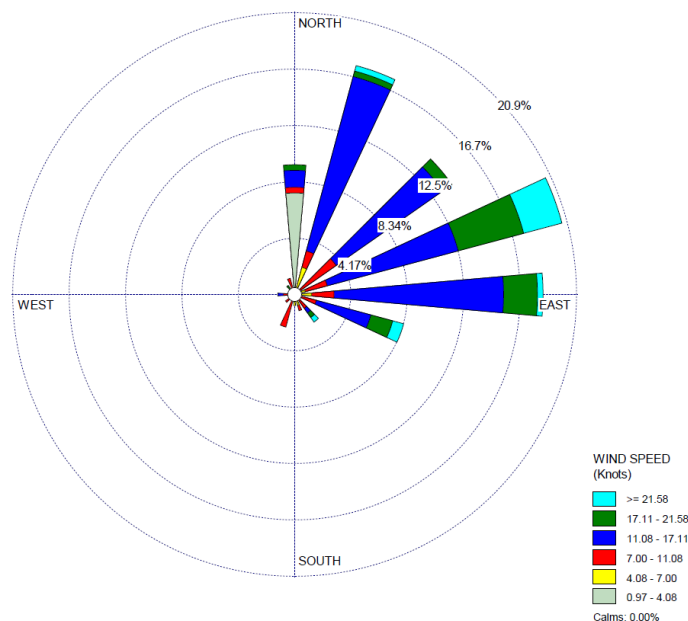


Figure 2: Combined Wind Rose diagram for the period March to May 2025

Accordingly, eight sampling stations were established at the project site (Core zone) and in Pennankonam, Perumathur, Athipattu Pudhunagar, Keelapuliyur, Mettupalayam, Chinnar and Peraiyur (Buffer zone)

The Core zone:

AAQ1 (Onsite): the 98th percentile concentrations of air pollutants were recorded as follows: PM₁₀ - 65 µg/m³, PM_{2.5} - 27.7 µg/m³, SO₂ - 4.7 µg/m³, NO₂ - 22.7 µg/m³ and CO - below the detection limit (Detection Limit: 1.14 mg/m³). All measured values are within the limits prescribed by the National Ambient Air Quality Standards (Refer Figures 3.9, 3.10, 3.11 and 3.12).

The Buffer zone:

The air quality monitoring results for the buffer zone (locations AAQ2 to AAQ8) are

- PM₁₀: Concentrations ranged from a minimum of 52.1 µg/m³ at AAQ8 - Peraiyur to a maximum of 65.7 µg/m³ at AAQ3 - Perumathur.
- PM_{2.5}: The lowest concentration of 22 µg/m³ was recorded at AAQ8 - Peraiyur, while the highest concentration of 30.7 µg/m³ was observed at AAQ3 - Perumathur.
- Sulphur Dioxide (SO₂): Levels varied from 4.5 µg/m³ at multiple locations to a maximum of 5.6 µg/m³ at AAQ2 - Pennankonam.
- Nitrogen Dioxide (NO₂): Concentrations ranged from a minimum of 19.7 µg/m³ at AAQ8 - Peraiyur and AAQ4 - Ezhumor, to a maximum of 25.4 µg/m³ at AAQ3 - Perumathur.

The Air Quality Index (AQI) at all ambient air quality monitoring locations are within the "Satisfactory" category (51-100), indicating minimal health impacts with only minor breathing discomfort possible for sensitive individuals.

3.4 Ambient Noise quality

Ambient Noise level at ANL1 (Project Site), situated in proximity to National Highway NH 38 (Ulundurpet – Perambalur road), recorded noise levels 47.4 dB(A) during the daytime and 40.6 dB(A) at night.

Several other monitoring points fall under designated Silent Zones, including:

- ANL2 - Nehru Primary School, Eraiyur
- ANL3 - Government Primary School, Nallur
- ANL4 - Near Health and Wellness Centre, Namaiyur
- ANL8 - R.C. St. John's High School, Perumathur

In these silent zones, noise levels were observed to be well within the ambient noise standards prescribed by the Central Pollution Control Board (CPCB). During the daytime, values ranged from a minimum of 48.3 dB(A) at ANL2 to a maximum of 49.3 dB(A) at ANL3. At night, the levels ranged between 37.2 dB(A) at ANL2 and 38.5 dB(A) at ANL3.

Monitoring locations categorized as Residential Areas—namely:

- ANL5 - Near Ankanvadi Maiyam, Keelapuliyur

- ANL6 - Near Mariyamman Temple, Mettupalayam
- ANL7 - Near Mariyamman Temple, Pennakonam are located approximately 2 to 5 kilometers from the project site.

Across all zones - Industrial, Residential and Silent, the noise levels recorded were found to be within the permissible limits for ambient noise.

3.5 Surface water quality

Surface water samples were collected from Mettuchery Lake (SW1), Eraiyur Lake (SW2), Ogalur Lake (SW3), Perumathur Lake (SW4) and Elumur Lake (SW5)

Water sampling results are compared with CPCB designated best use Surface Water Criteria.

- The pH of surface water samples ranges from 7.05 to 9.06, indicating neutral to alkaline conditions, with higher alkalinity at SW5.
- TDS and EC values range from 440–674 mg/L and 740–1215 $\mu\text{mhos/cm}$, with higher levels at SW2 and SW3, indicating increased dissolved salts.
- Total hardness varies between 126 and 348 mg/L, showing moderately hard to hard water, mainly at SW2 and SW3.
- Nutrients and organic pollution indicators show ammoniacal nitrogen (1.3–4.2 mg/L), nitrate (4.3–14 mg/L) and BOD (BDL–4.0 mg/L), with higher values at SW3.
- Coliform bacteria were detected at all locations, indicating faecal contamination and the need for treatment before any domestic or recreational use.

3.6 Ground water quality

Groundwater samples were collected from Project Site (GW1), Karugudi (GW2), Keelapuliur (GW3), Mettupalayam North (GW4) and Murukkangudi (GW5)

- Groundwater pH ranges from 6.82 to 7.15, complying with IS 10500:2012 standards.
- TDS values vary between 383 and 924 mg/L, indicating moderate mineralization, with GW4 within permissible limits.
- Total hardness ranges from 313 to 716 mg/L, showing hard to very hard groundwater at GW3 and GW4
- Major ions including chloride, sulphate, nitrate and fluoride are within drinking water limits at all locations.
- Heavy metals and microbiological parameters were absent or below detection limits, indicating safe groundwater quality.

3.7 Soil quality

Soil samples were collected from SQ1 – Project Site, SQ2 – Pennankonam, SQ3 – Karugudi, SQ4 – Ezhumor, SQ5 – Keelapulliyur, SQ6 – Mettupalayam, SQ7 – Chinnaru Eraiyur, and SQ8 – Peraiyur.

- Soils at all locations (SQ-1 to SQ-8) are sandy loam, with pH ranging from 6.68 to 8.04, indicating slightly acidic to mildly alkaline conditions within acceptable ICAR limits.

- Electrical conductivity values (0.076–2.161 dS/m) are well below salinity thresholds, indicating non-saline soils, though SQ-8 shows relatively higher EC.
- Available phosphorus levels (96–240 mg/kg) are significantly higher than ICAR standards, especially at SQ-8, indicating excess phosphorus and potential nutrient imbalance.
- Total Kjeldahl Nitrogen (421–1104 mg/kg) and organic carbon (0.14–0.73%) are generally low, suggesting poor nitrogen availability and low organic matter in most locations.
- Physical properties such as bulk density (1.05–1.27 g/cm³), permeability (1.50–1.73 cm/hr) and porosity (52–60%) indicate good soil structure, suitable for agriculture with proper nutrient management.

3.8 Biological Environment

- The Core Zone (300 m radius) comprises dry deciduous and scrub vegetation, with 67 plant species identified mostly of Least Concern except *Santalum album*, listed as Vulnerable.
- The Buffer Zone (10 km radius) recorded 99 plant species including native trees, fruit-bearing plants, medicinal herbs and crops typical of the semi-arid region. Most species are of Least Concern or Not Evaluated, with a few Nearly Threatened or Data Deficient species.
- The study area supports a variety of fauna, including mammals, reptiles and a rich diversity of birds. Most faunal species fall under the Least Concern category, with a few listed under Schedule I of the Wildlife Protection Act, indicating notable ecological value but no critical or endangered habitats. No ecologically sensitive or protected areas lie in the 10 km study area of the site.
- There are 2 Schedule-I species found within the study area and conservation plan is given in as Section 10.4.8 of the EIA Report.

3.9 Socioeconomic environment

A socio-economic survey was conducted in the villages of Eraiyur, Mangalam, Peraiyur, Thirumandurai, Pennankonam, Keelapuliur (North), Mettupalayam (South), Ogalur (West), Perumathur (South) and Thevaiyur (North). Survey results indicate that facilities such as drinking water supply, electricity, schools, public roads and places of worship are generally adequate across the surveyed villages. Community self-help groups are also active. During the survey, residents across villages have expressed the need for:

- Employment opportunities
- Improved transportation facilities
- Banking and ATM services
- Public toilets
- Primary healthcare centers

- Better drainage and sanitation infrastructure
- Strengthened community resources

No objections were raised against the proposed Industrial Estate. Residents indicated that the project would bring positive socio-economic benefits to the region. The community expects further improvement in livelihood opportunities.

4.0 Anticipated Environmental Impacts and Mitigation Measures

4.1 Construction Phase

The Anticipated impacts and mitigation measures for the construction phase is given in Table 8

Table 8: Anticipated Impacts and Mitigation Measures - Construction Phase

Environmental Component	Impacts Identified	Proposed Mitigation Measures
Air Environment	Generation of dust (PM ₁₀ , PM _{2.5}), emissions from DG sets and vehicles causing respiratory issues, reduced visibility	Water sprinkling (3–4 times/day), covered material storage, tarpaulin-covered vehicles, CPCB-compliant DG sets, regular equipment maintenance, PPE for workers, 5–8 m high barricade walls.
Noise Environment	Increased noise levels (80–90 dB(A)) from machinery and DG sets affecting workers, residents and fauna	Restricted work hours (9 AM–6 PM), acoustic enclosures for DG sets, noise barriers, PPE (earplugs/earmuffs), equipment maintenance, worker shift rotation, grievance redressal mechanism
Land Environment	Loss of topsoil, soil erosion, contamination from fuels/paints and accumulation of C&D waste	Topsoil stripping and reuse for greenbelt, spill prevention, impervious storage areas, segregation and recycling of C&D waste, authorized disposal, soil erosion control measures
Water Environment	Increased water demand, sewage generation, runoff carrying sediments, potential surface and groundwater contamination	Avoid excavation during monsoon, silt traps and sediment fences, water-saving admixtures, Mobile STP, proper storage of chemicals, controlled tanker movement
Biological Environment	Tree felling, habitat disturbance, dust deposition on flora, noise impact on fauna	Compensatory afforestation (1:10), greenbelt development (10–15 m), biodiversity patches, tree transplantation, retention of peripheral trees, noise control measures
Geology & Hydrogeology	Potential aquifer contamination, shallow groundwater interaction during excavation	Seismic-compliant design (IS 1893), impermeable chemical storage, storm water drains with silt traps, groundwater monitoring through piezometers and AWLR
Socio-Economic Environment	Influx of migrant workers, pressure on local utilities, health and safety risks, social friction	Preference to local employment, regulated labor camps, compliance with safety codes, ESI/insurance coverage, local procurement, community engagement programs

4.2 Operation Phase

The anticipated impacts and mitigation measures for the construction phase is given in Table 9

Table 9: Anticipated Impacts and Mitigation Measures - Operation Phase

Environmental Component	Impacts Identified	Proposed Mitigation Measures
Air Environment	- Emissions of PM, SO₂, NO_x and CO from individual industrial processes and DG sets - Potential deterioration of ambient air quality - Fugitive dust from internal vehicular movement	- Mandatory installation of APCs by individual industries as per CPCB/TNPCB norms - Adequate stack height for DG sets as per guidelines - Periodic ambient air quality monitoring - Water sprinkling on internal roads - Development of 43.03 acres greenbelt as pollution buffer
Noise Environment	- Increased noise levels due to continuous operation of machinery, DG sets and vehicular movement - Potential health impacts such as stress, annoyance and sleep disturbance - Disturbance to fauna	- Acoustic enclosures for DG sets and noisy equipment - Use of vibration dampeners - Greenbelt development as noise buffer - Preventive maintenance of machinery - Restriction of noisy operations to daytime - Regular ambient noise monitoring
Water Availability & Quality	- Risk of surface and groundwater contamination from untreated sewage/effluent - Runoff carrying oil, grease and sediments - Increased water demand	- No groundwater abstraction; water supplied through SIPCOT scheme - Individual STPs and ETPs for all industries - Adoption of Zero Liquid Discharge (ZLD) - Reuse of treated sewage for flushing and greenbelt - Oil & grease traps in parking and loading areas - Groundwater monitoring through observation wells
Soil Characteristics, Land Use & Landscape	- Soil contamination due to spills of oil, chemicals and hazardous waste - Improper solid waste and ETP salt disposal affecting soil fertility	- Impervious flooring in chemical and fuel handling areas - Spill containment systems, bunds and drip trays - ZLD to avoid land contamination - Implementation of Solid Waste Management Rules, 2016 - Hazardous waste handling as per HW Rules, 2016 - Periodic soil quality monitoring
Ecology & Biodiversity	- Stress on vegetation due to air pollutants - Disturbance to fauna from noise, light and traffic - Habitat avoidance by birds and small fauna	- Dense greenbelt development along project boundary - Use of wildlife-friendly lighting - Stormwater drains with silt traps - Strict compliance with emission and noise standards - Proper waste management within premises
Socio-Economic Environment	Employment generation and economic growth (positive impact)	- Preference to local employment Skill development and training programs - Internal traffic management plan

	• Pressure on infrastructure due to workforce influx • Increased traffic and minor socio-cultural changes	• CSR/CER initiatives for community development • Periodic health camps and welfare measures • Continuous stakeholder engagement
--	--	--

5.0 Alternative Site Consideration:

The proposed project is located in the SIPCOT-designated industrial area earmarked for footwear and allied industries. The project proponent Phoenix Kothari Footwear Limited selected this site for a non-footwear cluster due to its strategic location, proximity to raw materials and markets and robust infrastructure. Being within a notified industrial zone ensures regulatory compliance and minimal land-use conflicts, so no alternate site was considered. Hence no alternative sites were considered for this project.

6.0 Environmental Monitoring Program

The schedule for monitoring ambient air quality, ambient noise level, groundwater quality, soil quality and waste water quality both during the construction and operation phases of the project and the monitoring parameters is given in Table 6.1 and Table 6.2 of the EIA report.

7.0. Additional Studies

7.1 Public Hearing

The proposed project falls under Category 7(c) – Industrial Estates/parks/complexes/areas, export processing zones (EPZs), Special Economic Zones (SEZs), Biotech Parks, Leather Complexes as per the EIA Notification, 2006. Accordingly the project requires Public Hearing.

7.2 Rehabilitation and Resettlement

The unit is located in SIPCOT Industrial Estate, Eriayur and land use is intended for industrial activity. Hence, R & R is not applicable.

7.3 Risk Analysis and Disaster management

The comprehensive risk and disaster management plan for the Industrial Estate for the Construction Phase and Operation Phase is elaborated in Table 10 and Table 11, respectively

Table 10: Risk/Hazard Assessment - Construction Phase

S.No	Project Activity	Possible Risk / Hazard	Likely Consequences	Level of Risk	Likely Occurrence	Mitigation Measures	Budgetary Allocation (₹)
1.	Transportation of materials	Unauthorized vehicle operation, over speeding, vehicle movement during peak labor hours	Collision, injuries to workers, property damage	Moderate	Moderate to Low	Area survey, speed limit enforcement, authorization of personnel safety training	4,50,000

2.	Material handling	Improper stacking, overloading	Back injuries, slips/trips, fatalities	Medium	Moderate	Limit manual loads to 30 kg, provision of trolleys, pre-medical checks, enforcement of PPE use	3,50,000
3.	Excavation and earthwork	Collapse of trenches, hits on underground utilities	Burial, severe injury, service disruption	Moderate	Moderate to Low	Shore up excavations, mark utilities, restricted access	4,00,000
4.	Concrete pouring and formwork	Formwork collapse, wet concrete contact	Injuries, chemical burns	Medium	Moderate	Use of approved formwork, training of workers, use of PPE	2,80,000
5.	Tower crane / hoist operation	Load swing, overloading, crane collapse	Fatal injury, equipment loss	High	Low to Moderate	Load limits, certified operators, regular inspection	4,50,000
6.	Brickwork / blockwork	Falling bricks, manual handling injuries	Injuries	Medium	Moderate	Safe Stacking, use of mechanical aids	2,20,000
7.	Plastering / painting / finishing	Chemical exposure, inhalation of fumes, slips	Health issues, fall hazards	Medium	Moderate	Ensuring ventilation, provision of masks, use of PPE	2,00,000
8.	Electrical installation	Electrocution, short circuits	Electric shocks, fire	High	Moderate	Insulated tools, shut power during work, licensed electricians	2,00,000
9.	Scaffolding erection/ dismantling	Falls, tool drops, scaffold collapse	Severe injuries, fatalities	High	Moderate to High	Use certified scaffolds, inspection, fall protection	3,20,000
Total							28,70,000

Table 11: Risk/Hazard Assessment - Operation Phase

S.No	Possible Risk / Hazard	Likely-Consequences	Level of Risk	Likely Occurrence	Mitigation Measures	Budgetary Allocation (₹)
1.	Manual Handling & Ergonomics	Musculoskeletal disorders from heavy lifting, repetitive tasks, poor posture.	Medium	Frequent	Use of lifting aids, ergonomic workstations, worker training, job rotation.	3,00,000
2.	Slips, Trips & Falls	Injuries due to wet/slippery floors, uneven ground, or cluttered areas.	Medium	Occasional	Non-slip flooring, good housekeeping, maintenance of pathways, slip-resistant footwear.	2,00,000
3.	Machinery & Equipment	Crush injuries, cuts, entanglement during machine operation.	High	Occasional	Machine guarding, lock-out/tag-out, periodic maintenance, operator training.	5,00,000
4.	Chemical Exposure	Respiratory illness, skin irritation, long-term health effects from solvents/dyes.	High	Occasional	Adequate ventilation, PPE, safe storage, chemical handling training.	4,00,000
5.	Fire & Electrical Hazards	Fires, explosions, electric shocks due to faulty wiring/flammables.	High	Rare–Occasional	Fire alarms/extinguishers, hydrants, electrical inspections, fire drills.	6,00,000
6.	Noise & Vibration	Hearing loss, fatigue, vibration-related disorders.	Medium	Frequent	Noise monitoring, barriers, vibration control, ear protection, work rotation.	2,50,000
7.	Occupational Health & Hygiene	Poor air quality, sanitation issues affecting worker well-being.	Medium	Occasional	Ventilation systems, air monitoring, sanitation facilities, hygiene promotion.	3,50,000
8.	Workstation Ergonomics	Posture-related strain and discomfort.	Low	Frequent	Adjustable seating/furniture, posture awareness, regular breaks.	1,50,000
9.	Biological Hazards	Allergies and respiratory illness due to mold/fungal growth.	Low	Rare	Ventilation improvement, cleaning protocols, regular inspections, PPE.	1,00,000
10.	Security & Violence	Unauthorized entry, theft, workplace violence.	Medium	Occasional	Access control, CCTV surveillance, trained security personnel, emergency drills.	4,50,000
Total						33,00,000

Note: The risks with respect to the individual industries will be spent/taken care by the individual industries during the period of industrial operation, if any.

9.0 Environmental Management Plan

9.1 Construction Phase

The Environmental Management Plan for the Industrial Estate during construction phase is given in Table 12

Table 12: Environmental Management Plan for the Construction Phase

S.No.	Environmental Component	Identified Impact	Mitigation Measures	Responsibility
1.	Air Environment	Increased PM ₁₀ , PM _{2.5} , CO, SO ₂ causing health impacts to workers and nearby habitations	- Regular water spraying (3–4 times/day) - Covered storage for fine materials - Use tarpaulin for transport. - Deploy CPCB Stage-II compliant DG sets. - Maintenance of machinery. - PPE to workers - Temporary barricades (5–8 m)	Site Engineer – Air and Noise environment
2.	Noise Environment	- Elevated noise levels (80–90 dBA) - Hearing loss, stress, resident complaints	- Use of earplugs, earmuffs - Limit work hours (9 AM–6 PM) - Noise barriers (5–8 m) - Acoustic enclosures for DGs - Equipment maintenance - Grievance redressal for complaints	Contractor / Site Engineer – Air and Noise environment
3.	Land Environment	- Soil erosion and compaction - Topsoil loss - C&D waste accumulation causing choking of drains - Soil contamination (chemicals, diesel) hence reduced fertility.	- Strip and store topsoil (25–30 cm) Reuse topsoil in greenbelt. - Maintain equipment to prevent leaks. - Segregation of hazardous/non-hazardous waste. - Disposal of C&D waste. - Impervious flooring in waste zones	Site Engineer – Waste management
4.	Water Environment	- High water demand (100 KLD). - Sewage generation (8 KLD) - Surface runoff flooding risk - Accidental chemical spills into shallow aquifers leading to ground water contamination	- Avoid free water flow for curing Use admixtures, gunny bags - Sewage collection via mobile STP - Provide drains with silt traps - Temporary storm drains with silt traps - Chemical storage on impermeable floors with bunding	Site Engineer – Water and Waste water management

5.	Socio-Economic Environment	• Influx of 100 workers • Pressure on local resources • Informal labor health risks • Cultural friction	• Preference to local labor • Labor screening • Labor camps with water, toilets, waste handling • Procure supplies locally • Periodic community consultations • ESI/insurance for workers	Head – Environmental Health & Safety (Environmental Consultant 2)
6.	Biological Environment	• Habitat loss (flora/fauna) • Tree felling • Dust deposition on surrounding vegetation • Disturbance to avifauna	• Store topsoil for greenbelt • Create bird feeding/watering zones • Minimize noise during clearing • Use silt traps, prevent nallah discharge • Transplant trees; retain non-interfering trees	Landscape Consultant / Site Manager

9.2 Operation Phase

The Environmental Management Plan for the Industrial Estate during construction phase is given in Table 13.

Table 13: Environmental Management Plan for the Operation Phase

S.No.	Environmental Component	Identified Impact	Mitigation Measures	Responsibility
1.	Air Environment	Emissions from DG sets, vehicles, manufacturing process	• Air pollution control at source • DG stacks as per CPCB • Greenbelt development • PPE for workers • Regular monitoring of ambient air and process stack emission monitoring	Individual Industries & Developer
2.	Noise Environment	Noise from machinery, DG sets, Vehicular traffic	• Maintain noise $\leq 75-70$ dB(A) • Acoustic enclosures and dampers • Regular equipment maintenance; • Greenbelt as buffer • Use of PPE	Individual Industries & Developer
3.	Water & Wastewater	Sewage & process effluent contamination	• STPs and ETPs for treatment • Reuse treated water for greenbelt/flushing; • Implementation of ZLD system • Sludge disposal to TNPCB-approved recyclers • Implementation of online monitoring system	Individual Industries
4.	Solid Waste Management	Improper handling of solid waste, E-waste and Hazardous waste	• On-site segregation of organic waste for composting • Inorganic waste to authorized recyclers. • Centralized sheds for collection,	Developer & Individual Industries

			segregation and disposal	
5.	Hazardous Waste & E-Waste	Contamination and health risks	- Storage in designated areas disposal via TNPCB-authorized recyclers/dismantlers; - Follow HW & E-Waste Rules	Individual Industries
6.	Socio-Economic Environment	Worker welfare, local economy pressure	- Local employment - Skill development - CER/CSR initiatives - Tax contribution - Road maintenance - Drinking water/toilets and grievance mechanism for industrial workers	Developer & Individual Industries
7.	Biological Environment	Loss of vegetation, soil erosion, wildlife disturbance	- Greenbelt with native species - Multi-tier plantation - Regular watering and dweeding - Compost-based fertilization - Landscaping along roads/boundaries - Monitor survival and replace dead saplings	Developer & Individual Industries

9.3 Budgetary Allocation for EMP

The budgetary allocation for the various environmental management measures proposed for the Construction Phase and Operation Phase is given in Table 14 and Table 15.

Table 14: EMP Budgetary Allocation – Construction Phase

Environmental Management Plan	Capital Expenses (Rs. in Lakhs)	Annual Operational Expenses (Rs. in Lakhs)
Drinking water and Sanitation Facilities	6.36	9.95
Storm water management	7.00	0.18
Solid waste and debris waste management	10.00	5
Occupational Health & Safety	6.25	5
Total	29.61	20.13

Table 15: EMP Budgetary Allocation – Operation Phase

Environmental Management Plan	Capital Expenses (Rs. in Lakhs)	Annual Operational Expenses (Rs. in Lakhs)
Rainwater Harvesting System	17.0	1.2
Storm Water drain	220.0	1.0
Environmental Monitoring	-	5.0
Solid Waste Management	6.5	4.8
Energy Conservation	20.0	1.1
Greenbelt Development (Gardening & Landscaping)	60.0	2.4
Total	323.5	15.5

9.4 Corporate Environment Responsibilities (CER)

As per the MoEF&CC Office Memorandum No. 22-65/2017-IA.III, dated 25.02.2021, Phoenix will allocate INR 1.16 Crores under Corporate Environment Responsibility (CER). The amount will be spent as listed in Table 16.

Table 16: Budgetary Allocation – Corporate Environmental Responsibility (CER) Activity

Beneficiary	Type of CER Activity	Budgetary Allocation (Rs. In Lakhs)
Government Higher Secondary School, Valikandapuram, Veppanthattai Taluk, Perambalur	Construction of Science Laboratory with laboratory equipment for students of Class 6 to 10	116 Lakhs
	Construction of Biology Laboratory for Higher Secondary Classes	
	Construction of Computer Laboratory with Computers and supporting infrastructure.	