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# Initial Environmental Examination- Industrial Housing Facility for Women, Siruseri, Chennai, Tamil Nadu

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*Submitted on: June 2023*

*Submitted by:*



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Prepared by Tamil Nadu Infrastructure Fund Management Corporation (TNIFMC), Government of Tamil Nadu for the Asian Development Bank.

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# Table of Contents

Abbreviations.....	4
Executive summary .....	5
<b>1 Project Overview .....</b>	<b>7</b>
<b>1.1 Background &amp; Scope .....</b>	<b>7</b>
1.1.1 Report Structure .....	7
<b>1.2 Description of the Project.....</b>	<b>8</b>
1.2.1 Land.....	8
1.2.2 Connectivity .....	10
1.2.3 Social Infrastructure.....	11
1.2.4 Current Status of Project.....	11
<b>2 Policy, Legal and Legislative Framework.....</b>	<b>11</b>
<b>2.1. ADB Safeguard Policy Statement, 2009 .....</b>	<b>11</b>
2.1.1 ADB Categorization .....	11
2.1.2 National and State Environmental Regulations .....	12
2.1.3 Applicable International Standards and Best Practices .....	13
<b>2.2 Applicable EHSS regulations .....</b>	<b>13</b>
2.2.1 Legal Compliance - Environment .....	13
2.2.2 Legal Compliance - Occupational Health & Safety.....	14
2.2.3 Legal Compliance - Labour & Working Conditions .....	16
<b>2.3 Clearances and Permissions Required by TNIHPL/Contractor for Project Construction... 18</b>	
<b>3 Description of Existing Environment .....</b>	<b>20</b>
<b>3.1 Description of Physical Environment.....</b>	<b>20</b>
3.1.1 Study Area.....	20
3.1.2 Land use .....	20
3.1.3 Meteorology and Climate .....	21
3.1.4 Air, Water and Noise Quality Standards .....	21
<b>3.2 Description of Physical Environment.....</b>	<b>24</b>
3.2.1 Protected Areas / Reserve Forests.....	24
<b>3.3 Description of Socio-cultural Environment .....</b>	<b>24</b>
<b>4. Potential Environment impacts and mitigation measures .....</b>	<b>25</b>
<b>4.1. Potential impacts due to project activity .....</b>	<b>25</b>
<b>5. Analysis of alternatives.....</b>	<b>30</b>
<b>6. Institutional Arrangements .....</b>	<b>31</b>
<b>7. Environmental Monitoring &amp; Management Plan (EMP) .....</b>	<b>32</b>
<b>7.1. EMP.....</b>	<b>33</b>
<b>8. Information Disclosure, Consultation and Participation.....</b>	<b>56</b>
<b>9. Grievance Redressal Mechanism.....</b>	<b>57</b>
<b>10 Conclusions and Recommendations .....</b>	<b>60</b>
<b>Annexure 1 – Photos .....</b>	<b>61</b>

<b>Annexure 2 - Rapid Environmental Assessment Checklist .....</b>	<b>62</b>
<b>Annexure 3 - List of documents reviewed .....</b>	<b>68</b>
<b>Annexure 4 - Sample Grievance Form .....</b>	<b>69</b>
<b>Annexure 5 – Informal Public Consultation .....</b>	<b>70</b>

## Abbreviations

<b>BMTPC</b>	Building Materials and Technology Promotion Council	<b>INR</b>	Indian National Rupees
<b>CPCB</b>	Central Pollution Control Board	<b>KWH</b>	Kilo Watt Hour
<b>BUA</b>	Built-up Area	<b>KVA</b>	Kilo Volt Ampere
<b>DG set</b>	Diesel Generator set	<b>KWH</b>	Kilo Watt Hour
<b>EIA</b>	Environmental Impact Assessment	<b>LPG</b>	Liquified Petroleum Gas
<b>E&amp;S</b>	Environmental and Social	<b>NABL</b>	National Accreditation Board for Testing and Calibration Laboratories
<b>EHS</b>	Environmental, Health & Safety	<b>NOC</b>	No Objection Certificate
<b>EMC</b>	Environmental Management Centre Pvt. Ltd	<b>NGO</b>	Non-Governmental Organization
<b>EPC</b>	Engineering, Procurement, and Construction	<b>OHS</b>	Occupational Health and Safety
<b>EPF</b>	Employee Provident Fund	<b>PPE</b>	Personal Protective Equipment
<b>ESAP</b>	Environmental and Social Action Plan	<b>PM</b>	Particulate Matter
<b>ESGDD</b>	Environmental Social and Governance Due Diligence	<b>PMC</b>	Project Management Consultants
<b>ESMS</b>	Environmental and Social Management System	<b>PUC</b>	Pollution Under Control
<b>ESI</b>	Employee State Insurance	<b>RCC</b>	Reinforced Cement Concrete
<b>EWS</b>	Economically Weaker Section	<b>SIPCOT</b>	State Industries Promotion Corporation of Tamil Nadu Ltd
<b>FSI</b>	Floor Space Index	<b>SPCB</b>	State Pollution Control Board
<b>HR</b>	Human Resources	<b>TNIFMC</b>	Tamil Nadu Infrastructure Fund Management Corporation
<b>HSE</b>	Health, Safety and Environment	<b>TNIHPL</b>	Tamil Nadu Industrial Housing Private Limited

## Executive summary

The 'Industrial Housing Project at Siruseri' is a residential project, to be developed by M/s Tamil Nadu Industrial Housing Private Limited (TNIHPL), a State Industries Promotion Corporation of Tamil Nadu Ltd, (SIPCOT) SPV in Egattur Village, Thiruporur Taluk, Kanchipuram District, Tamil Nadu. The project involves the construction of a G+12 floor structure with designated commercial areas on the ground floor over a land of 4,046.86 sq. m (1 acre). The total built-up area proposed (FSI + non-FSI) is 1,38,000 sq. ft. The overall project shall comprise of 807 beds for women employees working in SIPCOT and in the nearby localities.

The project is proposed to be located within the State Industries Promotion Corporation of Tamil Nadu (SIPCOT) Siruseri Industrial Park. SIPCOT acts as a Nodal Agency of Government of Tamil Nadu in the sanction / disbursement of structured package of assistance to large industrial units and provides basic and comprehensive infrastructure facilities. The allotted land parcel with Survey No.76 has been designated as a hostel in the master plan submitted to the Directorate of Town and Country Planning, Government of Tamil Nadu. SIPCOT will be leasing this 1 acre land to TNIHPL for the project.

The project is currently at a pre-construction stage. Earth filling is being carried to raise the land level to the road height. The construction will commence once the necessary approvals have been obtained. As reported by SIPCOT during the site visit, a Project Management Consultant (PMC) will be engaged to manage the project. A tender will be issued to select an Engineering, Procurement, and Construction (EPC) contractor for the construction. The Superintending Engineer, SIPCOT will oversee the tendering process.

TNIHPL will engage a Project Management Consultant (PMC) to manage the construction of the project. The PMC shall identify and shortlist a contractor for the Engineering, procurement and construction (EPC) of the project through tendering process. The EPC contractor will make a site-specific Environmental Management Plan. The PMC will oversee the activities of the project as per the EMP requirements. The project is proposed to be divided in three phases, pre-construction, construction & operational phase. The pre-construction phase would require EPC Contractor to procure all the legal clearances and permissions prior to construction. It is recommended that regular monitoring of air, ground water, noise and the mitigation measures be carried out prior to construction and during the construction phase of the project.

The Tamil Nadu Shelter Fund (TNSF) adopted its Environmental, Social, and Governance Management System (ESGMS) in 2020. The key components of TNSF's ESGMS includes an Environmental, Social, and Governance (ESG) Policy, implementation procedures presented as tools, process flowcharts, formats & templates, and a resource library. The ten tools which are part of the ESGMS are designed to enable compliance with the ESG requirements established for the TNSF.

TNSF's ESGMS outlines the screening, categorization, and due diligence (including identification of environmental and social impacts and mitigation) for potential investments under TNSF. Subprojects meeting the subproject eligibility criteria can be included under the project. Subprojects listed in the appendix 5 of the Prohibited Investment Activities List (PIAL) will not be included. Category A subprojects will not be considered for investment. In addition to the ESGMS, an action plan has been agreed with TNIFMC that applies to Asian Development Bank (ADB)-funded investments under the TNSF to ensure compliance with ADB Safeguard Policy Statement (SPS).

The methodology used for conducting the study includes collection of secondary information, site observation by EMC team, meetings with TNIFMC and TNIHPL and meeting with local community around the project in the project area. The project shall obtain all applicable and necessary approvals from regulatory authorities. A robust stakeholder engagement plan and grievance redressal mechanism is proposed to be implemented for the project.

Reporting of the ESGMS and agreed action plan shall be submitted to ADB on a semi-annual basis during project implementation; these semi-annual reports on ESGMS and action plan implementation will be shared with ADB and publicly disclosed.

The chapter-1 provides a detailed overview of the project including the construction status, building details, site connectivity, social infrastructure in the site vicinity, and the associated facilities of the project.

The chapter-2 throws light on the policy regulations and legal requirements for the project as per the ADB framework. The compliance of the project has been reviewed against the applicable National and State EHSS regulations including Environmental regulations, Occupational health and safety, and labour and working conditions requirements.

The chapter-3 includes the description of the existing environment in and around the project. This has been broadly categorised into the physical environment, biological environment, and socio-economic and cultural environment. There are no major impacts from the project activities.

Chapter-4 describes the potential environmental impacts due to project activities and suggested mitigation measures to minimize any negative impacts. It has been observed that there are no major adverse environmental impacts expected to arise from the project activities.

Chapter-5 presents the analysis of alternatives considering the 'Without project' scenario for comparison. It is concluded that the without project scenario alternative is not feasible, and the potential socio-economic benefits of implementation of such project far outweigh the limited moderately adverse impacts, all of which can be controlled and minimized to an allowable level.

Chapter-6 presents details on the institutional arrangements for the execution of the project. TNIHPL's shall be responsible for the construction activities of the project and development and implementation of Environmental Management Plan (EMP). This also includes requirement for a Safety Health and Environment (SHE) officer along with brief description of their roles and responsibilities.

Chapter-7 presents the Environmental Monitoring and Management Plan (EMP) which anticipates the potential environmental and social impacts and mitigation measures for establishing project's compliance to EHS legal requirements.

As established in Chapter-8, the project does not require public consultation as per the Government of India's requirement (EIA notification 2006 and its amendment thereon). However, an informal local consultation has been done for the project with the neighbouring residents and the residents were informed about the project activities and feedback collected during the site visit.

Chapter-9 describes the grievance redressal mechanism required to be adopted during the project construction. A sample grievance redressal form has also been included in the Annexure 4.

Chapter-10 gives the final conclusions and recommendations. It has been suggested that the project should follow the recommendations provided in the EMP with due diligence.

# 1 Project Overview

## 1.1 Background & Scope

1. The Tamil Nadu Infrastructure Fund Management Corporation (hereafter referred to as TNIFMC), is an Asset Management Company (AMC) promoted by the Government of Tamil Nadu (GoTN) for the purpose of raising and managing alternative investment funds focused on sectors like infrastructure, affordable housing etc. TNIFMC is managing Tamil Nadu Shelter Fund (TNSF) which is registered as a Category I (Social Venture) Alternative Investment Fund, with a mandate to invest in affordable housing projects in Tamil Nadu.

The primary focus of TNSF is:

- Affordable housing – with focus on housing for the Economically Weaker Sections (EWS) and Low-Income Groups (LIG),
- Hostels - for Working Women from all sections of the society.
- Industrial Housing for workers in and around Industrial Complexes/ Parks/ Clusters
- Senior and Assisted Living

2. Tamil Nadu Industrial Housing Private Limited (“TNIHPL” or “Company”) is developing an affordable industrial housing project in Kanchipuram district, Tamil Nadu. The TNSF is planning to invest in the proposed project and is committed to integrate ESG principles into this project. As per the TNSF ESG screening tool, this project has been categorized as a B<sup>1</sup>.

### Purpose of the Report

3. This Initial Environment Examination (IEE) report is prepared based on categorization of the project and the study is carried out to understand the environmental impacts and associated mitigation measures of the project. Also, it satisfies the requirement of ADB’s Safeguard Policy Statement (SPS), 2009. The information collection for preparation of this report includes collection of secondary information, site observation by EMC team, meetings with TNIFMC and TNIHPL and meeting with project beneficiaries around the project.

### 1.1.1 Report Structure

5. This report contains the following ten (10) sections and the Executive Summary at the beginning.  
Executive summary

1. Project overview
2. Policy, Legal, and Legislative Framework
3. Description of Existing Environment
4. Potential environmental impacts and mitigation measures
5. Analysis of Alternatives
6. Institutional arrangements
7. Environmental Monitoring and Management Plan (EMP)
8. Information disclosure, consultation, and participation
9. Grievance Redress Mechanism
10. Conclusion and Recommendations

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<sup>1</sup> The project may result in specific environment and social impacts, that are site specific for which mitigation measures need to be developed.



## 1.2 Description of the Project

6. The 'SIPCOT Industrial Housing Project' project is a residential project to be developed by M/s Tamil Nadu Industrial Housing Private Limited (TNIHPL) in Egattur Village, Thiruporur Taluk, Kanchipuram District, Tamil Nadu.

7. The project involves the construction of a G+12 floor structure with designated commercial areas on the ground floor over a land of 4,046.86 sq. m (1 acre). The total built-up area proposed (FSI + non-FSI) is 1,38,000 sq. ft. The overall project shall comprise of 807 beds for women employees working in SIPCOT and in the nearby localities.

8. The project is proposed to be located within the State Industries Promotion Corporation of Tamil Nadu (SIPCOT) Siruseri Industrial Park. SIPCOT acts as a Nodal Agency of Government of Tamil Nadu in the sanction / disbursement of Structured Package of Assistance to large industrial units and provides basic and comprehensive infrastructure facilities. The allotted land parcel with Survey No.76 has been designated as a hostel in the master plan submitted to the Directorate of Town and Country Planning, Government of Tamil Nadu. SIPCOT will be leasing the 1 acre land to TNIHPL for the project.



**Figure 1: Project location**

9. The project is located Siruseri SIPCOT area, near TCS office, Siruseri, Thiruporur Taluk, Kanchipuram District, Tamil Nadu. **Location:** (<https://goo.gl/maps/YGBzjyo74BZEGbhp8>). Refer to Figure 1.

### 1.2.1 Land

10. Land Status- The land to the total extent of 1 acre is currently registered in name of SIPCOT and the project will be taken up for development by M/s TNIHPL. The land can be classified as a dry land. The land does is not barricaded, however during the observations there wasn't encroachment or stray grazing. As reported by the SIPCOT project office the land does not have any voluntary/involuntary resettlement or displacement. The land currently is not encroached or has the presence of grazing cattle.





Figure 2: Project map with the surroundings

### 1.2.2 Connectivity

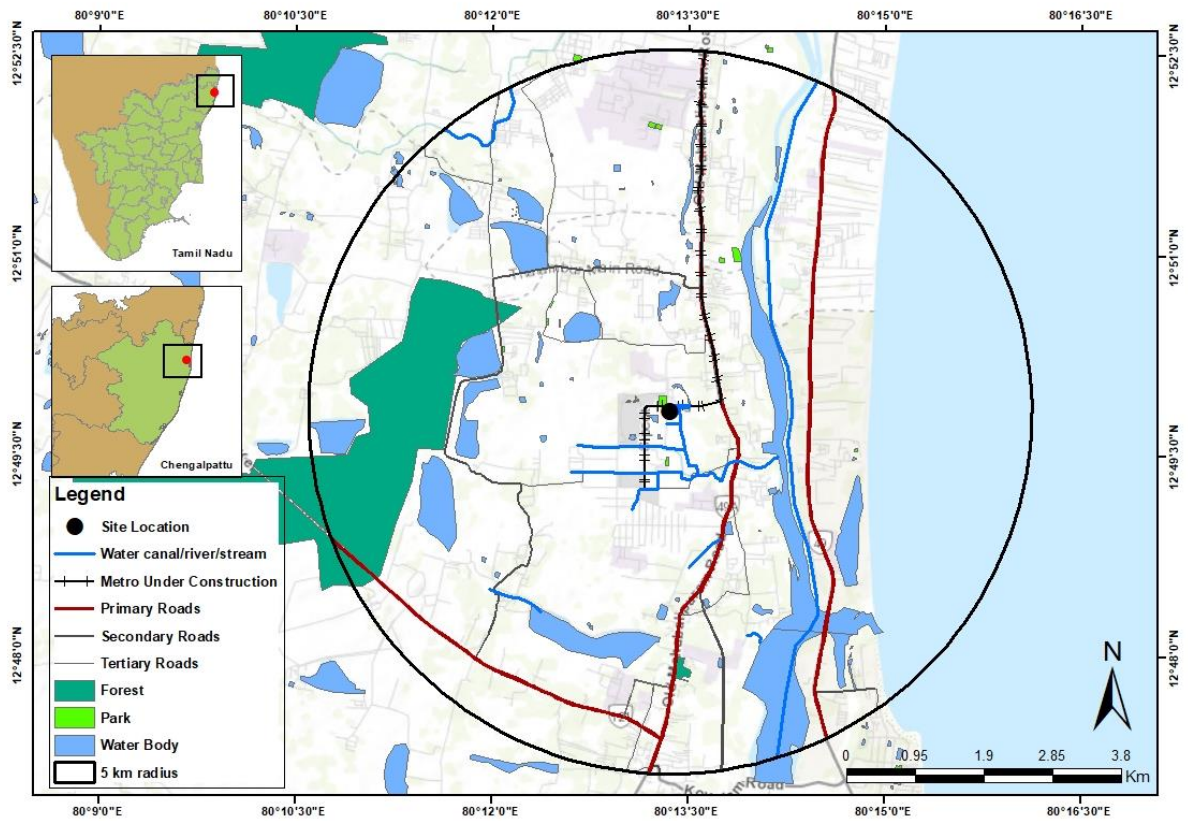


Figure 2: Connectivity of the Site

11. The site is well connected through a primary road, the Rajiv Gandhi Salai Road. The nearest railway station is Velachery Railway Station at an aerial distance of 15.31 km towards the north direction and Vandalur Railway Station at an aerial distance of 16.45 km towards north-west direction. The nearest airport is Chennai International Airport that is located at a distance of approximately 20 km from the project site in the north direction.

Project immediate surroundings	The project site is located Siruseri SIPCOT area, surrounded majorly by various IT & ITes companies. The project has Rajiv Gandhi Salai Road towards the east, TCS campus towards the west, and mixed land use development (Office, educational institutes & apartments) towards north & south of the project site.
Highways	The project site is connected to the State Highway 49A, also called Rajiv Gandhi Salai Road towards the east of project site.
Railway Stations	The nearest railway station from the project location is Vandalur Railway Station located at an aerial distance of approx. 16.45 km north-west direction.
Bus Stations	S.I.P.C.O.T. (Muttukadu) Bus stop is the closest bus stop to the project at an aerial distance of approx. 0.7 km east.
Airport	Chennai International Airport is located at an approx. aerial distance of approximately 20 km North of project.

### 1.2.3 Social Infrastructure

Hospitals	Swaram Hospital & Specialty Clinic (approx. 9.0 km North) is the nearest hospital to the project. Other nearby medical facilities (LIMAT- Multi Specialty Clinic, Annai Hospital, Unittas Hopital, Arshan Speciality Hospital, Sri Isari Velan Mission Hospital, Tafe Health Centre, Govt. Child Care Centre, Siruseri, ABC Medical Clinic, SV Medical, Madhura Hospital) are located within 5 km radius of the project.
Schools & Colleges	The schools and colleges located within 5 km radius of the project site include MSAJAA Architecture College, Mohamed Sathak A.J. College of Engineering, Mohamed Sathak A J College of Nursing, Chennai Mathematical Institute, Anand Institute of Higher Technology, SRR Engineering College, Jeppiaar College of Arts and Science, Dr Ambedkar Govt Law College, Avichi College, Vruksha International School of Montessori, Panchayat Union Primary & Medium School and St.John's Public School
Police Station	The nearest police station is Thalambur Police Station located at an aerial distance of approximately 1.8 km north from the project site.

### 1.2.4 Current Status of Project

12. The project is currently at a pre-construction stage. Construction will commence once all the necessary clearances are obtained.

## 2 Policy, Legal and Legislative Framework

### 2.1. ADB Safeguard Policy Statement, 2009

13. ADB's Safeguard Policy Statement (SPS), 2009 governs the environment and social safeguards of ADB's operations. The requirements for environmental safeguards support the integration of environmental considerations into the project decision making process. These requirements arise if a proposed project is likely to have environmental impacts and risks to the physical, biological, socioeconomic, and/or physical cultural resources in the project's area of influence.

16. Project screening and categorization using the sector-based rapid environmental assessment (REA) checklists determines the categorization of the project based on the significance of the project's potential environmental impacts and risks.

#### 2.1.1 ADB Categorization

15. ADB assigns one of the following environmental categories to the proposed project

- i. Category A- The project is likely to have significant adverse environmental impacts that are irreversible, diverse, or unprecedented. Impacts may affect an area larger than the sites or facilities subject to physical works. A full-scale environmental impact assessment (EIA), including an environmental management plan (EMP), must be prepared by the borrower/client.
- ii. Category B- The project's potential environmental impacts are less adverse and fewer in number than those in category A. Impacts are site-specific, few of which, if any, are irreversible. Impacts can be readily addressed through mitigation measures. An initial environmental examination (IEE), including an EMP, must be prepared by the borrower/client.

- iii. Category C- The project is likely to have minimal or no adverse environmental impacts. An EIA or IEE is not required, but ADB will conduct a desk review of the project's environmental implications.

16. Initial screening using the REA checklist (given in Annexure 2 - Rapid Environmental Assessment Checklist) and the ESG Screening tool developed by TNSF under the ESGMS indicates that the project will not cause any significant negative environmental impacts and that most impacts are site specific, temporary, and therefore the project is classified as **B** as per ADB SPS, 2009 and TNSF ESGMS. Accordingly, an IEE and EMP has been prepared for this project.

### 2.1.2 National and State Environmental Regulations

17. The Government of India EIA Notification of 2006 and its amendment thereon sets out the requirement for Environmental Assessment in India. This states that Environmental Clearance (EC) is required for specified activities/projects, and this must be obtained before any construction work or land preparation (except land acquisition) may commence. Projects are categorized as 'A' or 'B' depending on the scale of the project and the nature of its impacts.

- i. Category A projects require Environmental Clearance from the central Ministry of Environment, Forests and Climate Change (MoEF&CC). The proponent is required to provide preliminary details of the project in the prescribed manner with all requisite details, after which an Expert Appraisal Committee (EAC) of the MoEF&CC prepares comprehensive Terms of Reference (TOR) for the EIA study. On completion of the study and review of the report by the EAC, MoEF&CC considers the recommendation of the EAC and provides the Environmental Clearance if appropriate.
- ii. Category B projects require environmental clearance from the State Environment Impact Assessment Authority (SEIAA). The state-level EAC categorizes the project as either B1 (requiring EIA study) or B2 (no EIA study) and prepares TOR for B1 projects within 60 days. On completion of the study and review of the report by the EAC, the SEIAA issues the Environmental Clearance based on the EAC recommendation. The Notification also provides that any project or activity classified as category "B" will be treated as category "A" if it is located in whole or in part within 10 km from the boundary of protected areas, critically polluted areas, eco-sensitive areas or interstate or international boundaries.

18. The projects requiring an Environmental Impact Assessment report termed Category 'B1' and remaining projects termed Category 'B2' and will not require an Environment Impact Assessment report. For categorization of projects into B1 or B2 except item 8 (b), the Ministry of Environment and Forests should issue appropriate guidelines from time to time. All projects and activities listed as Category 'B' in Item 8 of the Schedule (Construction / Township / Commercial Complexes /Housing) shall not require scoping and will be appraised based on Form 1/ Form 1A and the conceptual plan.

19. The project involves the construction of industrial housing facility in Siruseri. The project is being constructed over a total land area of 4,046.86 sq. m (1 acre). The total built-up area (FSI + non-FSI) is 1.38 lakh sq. ft. **Therefore, no Environment Clearance is required for the project.** The project shall comprise of 807 bed units of different typologies in a G+12 structure.

### 2.1.3 Applicable International Standards and Best Practices

20. During the design, construction, and operation of the project, TNIHPL/PMC will apply standards and performance levels consistent with international good practices, as reflected in internationally recognized standards such as the IFC EHS guidelines and standards of the World Health Organization (WHO) and Government of India regulations.

21. The project shall also incorporate Core Labour Standards for the project. The Central Pollution Control Board notifications and guidelines for operation of DG sets<sup>2</sup> in the project. The clearances and permissions required by the developer for the project during the construction stage is given below. The potential risks and impacts of the project shall be identified, and an Environmental Management Plan shall be developed for the project and included in the contract documents.

## 2.2 Applicable EHSS regulations

22. The national and state level (Tamil Nadu) EHSS regulations applicable to the Company are listed below

### 2.2.1 Legal Compliance - Environment

#	Regulation	Reason for Application	Legal Requirements
1.	Water (Prevention and Control of Pollution) Act, 1974; and Rules 1975 Air (Prevention and Control of Pollution) Act, 1981; and Rules 1982	The project shall generate wastewater and air emissions and is required to obtain Consent to Operate from the SPCB.	Consent to Establish and Consent to Operate from SPCB u/s 25 Water Act and u/s 21 of the Air Act. The CTE and CTO shall also be obtained separately for the batching plant, if planned to be used on site.  Comply with conditions of Consent to Establish and Consent to Operate.
2.	Noise Pollution (Regulation and Control) Rules, 2000	The project construction shall result in noise pollution	No horn shall be used in silence zones or during night-time in residential areas except during a public emergency.  Sound emitting construction equipment shall not be used or operated during night-time in residential areas <sup>3</sup> and silence zones

<sup>2</sup> <https://cpcb.nic.in/genset-notifications/> 22

<sup>3</sup> Ambient Air Quality Standards in respect of Noise for Residential area:

Day Time (6.00 a.m. to 10.00 p.m.) = 55 Db(A) Leq\*; Nighttime (10.00 p.m. to 6.00 a.m.) = 45 Db(A) Leq\*

\* dB(A) Leq denotes the time weighted average of the level of sound in decibels on scale A which is relatable to human hearing

#	Regulation	Reason for Application	Legal Requirements
3.	Hazardous Wastes (Management, Handling and Transboundary Movement) Rules 2016	The project construction may result in generation of hazardous waste.	Occupier shall be responsible for safe and environmentally sound management of hazardous and other wastes u/r 4(2)
4.	Construction and Demolition Waste Management Rules, 2016	The project construction shall generate C&D waste.	Mode of disposal of C&D waste u/r 4
5.	Solid Waste Management Rules, 2016	The project generates solid waste in the marketing office and shall also generate it in the labour camps post commencement of construction.	Every waste generator shall segregate and store the waste generated by them in three streams, namely, bio-degradable, non-bio-degradable and domestic hazardous wastes in suitable bins and handover segregated wastes to authorized waste pickers or waste collector as per the direction or notification by the local authorities from time to time u/r 4(a)
6.	Central Ground Water Authority Guidelines to regulate and control Ground Water Extraction in India dated 1 June, 2019 Tamil Nadu Groundwater (Development and Management) Act, 2003	The project has one closed 250 feet deep borewell and one open well at the project site.	Registration of existing bore wells/ NOC for new bore wells Installation of digital water flow meter (conforming to BIS standard) in the abstraction structure(s)
7.	Environmental Protection Second Amendment Rules 2002 (DG Set) & 2004	The project uses DG sets for power generation.	a) Stack Height of DG set should be as per the regulations. b) The DG set should be housed in an acoustic enclosure

### 2.2.2 Legal Compliance - Occupational Health & Safety

#	Regulation	Reason for Application	Legal Requirements
1.	The Building and Other Construction Workers' (Regulation of Employment and Conditions of Service) Central Rules, 1998	The project under assessment shall enter the construction phase. Further the regulation provides requirements on	a) Safety & Health – General Provisions (Chapter IV) – physical hazards, PPE, electrical hazards, vehicular traffic b) Fire Protection (u/s 35 & u/r 62)



#	Regulation	Reason for Application	Legal Requirements
		Occupational, Health and Safety measures pertaining to construction activities.	<p>c) Stability of structures (u/s 49 &amp; u/r 76)</p> <p>d) Lifting appliances and gear (Chapter VII) – testing, safe load indicators, ropes,</p> <p>e) Reporting of Accidents (u/r 237)</p> <p>f) Medical examination – crane operators, exposure to special occupational hazard (u/r 250)</p>
2.	Central Electricity Authority (Measures relating to Safety and Electric Supply) Regulations, 2010	The project uses electricity for various activities at the project site	<p>a) General safety requirements for:</p> <ul style="list-style-type: none"> <li>- Electric supply lines and apparatus safety</li> <li>- Cut-out</li> <li>- Earthed terminal</li> <li>- Dangerous Notice</li> <li>- Flexible Cables</li> </ul> <p>b) Fire buckets filled with clean dry sand and ready for immediate use for extinguishing fires, in addition to fire extinguishers suitable for dealing with electric fires shall be kept at site</p>
3.	Fire NOC from Municipal Corporation under the Development Control Regulations	The project classifies as high-rise buildings and needs approval for more than 17.25 m in height	a) Obtaining Fire NOC from the Municipal Corporation
4.	Central Motor Vehicle Act 1988 and Rules 1989 (amended 2016)	The project may lease vehicles from third party vendors used for transportation and construction.	<p>a) Driver to obtain a driving license authorizing him to drive/operate the vehicle.</p> <p>b) Owner to obtain Certificate of Registration for the vehicle.</p> <p>c) For valid registration, a transport vehicle should have a Certificate of Fitness.</p> <p>d) Owner to obtain insurance policy for the vehicle.</p>
5.	Ministry of Civil Aviation (Height Restrictions for Safeguarding of Aircraft Operations) Rules, 2015.	The project is located within the 20 kms radius of the Chennai International Airport at Meenambakkam.	a) Obtain NOC for the height clearance under the Rules.



### 2.2.3 Legal Compliance - Labour & Working Conditions

#	Regulation		Legal Requirements
1.	Building and Other Construction Workers (Regulation of Employment and Conditions of Service) Act 1996 and Rules 1998	The Company will employ more than ten building workers in building or other construction work on daily basis.	<p>a. Registration of establishment and workers under the Building and Other Construction Workers (BOCW) Act 1996 and Rules 1998</p> <p>b. Hours of work, rest intervals &amp; weekly off (Chapter XXVI)</p> <p>c. Welfare of Building workers (Chapter XXVIII) – latrine, urinal, canteens</p>
2.	The Contract Labour (Regulation and Abolition) Act, 1970; and Contract Labour (Regulation & Abolition) Central Rules, 1971	The Company shall appoint contractors who may have appointed sub-contractors for various project activities	<p>a. Registration of principal employer</p> <p>b. Contractor's license for workers more than 50.</p>
3.	Minimum Wages Act 1948	The Company, through its sub-contractors will engage unskilled, semi-skilled and skilled personnel in the project	<p>a. Payment of minimum wages as per latest circular. u/s 5&amp;12</p> <p>b. Copy of minimum wages abstract issued by the respective state</p>
4.	Employee Compensation Act 1923 and Amendment Act 2009	The Company may employ workers directly and through Contractors whose remuneration is more than INR 21,000/- per month and are not covered under ESI	Payment of compensation to employee. Obtaining insurance policy for the same. u/s 4(2)
5.	Employees' State Insurance Act (ESI), 1948	The Company through its contractors engages personnel whose remuneration is less than INR 21,000/-	Deduction of employee contribution and deposit of employee and employer contribution with the ESI Corporation. u/s 40(1)
6.	Employees' Provident Funds (EPF) and Miscellaneous Provisions Act, 1952 amended upto 1996's	The Company, if itself and through its contractors employs more than 20 persons at the project,	Deduction of employee contribution and deposit of employee and employer contribution with the authority. u/s 6

#	Regulation		Legal Requirements
		shall be considered for compliance under this Act.	
7.	Inter-State Migrant Workers Act 1979	The project may employ migrant construction labourers	<ul style="list-style-type: none"> <li>a. Registration of Establishment as principal employer (u/s 4)</li> <li>b. Contractor's license for engaging migrant workers (u/s 8)</li> </ul>
8.	The Child and Adolescent Labour (Prohibition & Regulation) Act, 1986 amended in 2016	The Company, through its sub-contractors may engage unskilled, semi-skilled and skilled personnel in the project	Prohibit the engagement of children in all occupations and to prohibit the engagement of adolescents in hazardous occupations and processes
9.	Private Security Agencies (Regulation) Act, 2005	If the company employs a private security agency to provide security at the project.	<ul style="list-style-type: none"> <li>a. Private Security Agency to obtain a license. u/s 4</li> </ul>
10.	The Sexual Harassment of Women at workplace (Prevention, Prohibition and Redressal) Act 2013	The project employs female employees at site and may employ female workers at site during construction phase.	<ul style="list-style-type: none"> <li>a. Constitution of Internal Complaints Committee (ICC). u/s 4</li> <li>b. Receive complaints of sexual harassment. u/s 9</li> <li>c. Conduct enquiry on receipt of complaint. u/s 11</li> </ul>

## 2.3 Clearances and Permissions Required by TNIHPL/Contractor for Project Construction

#	Construction Activity	Statutory Authority	Statute under which Clearance is required	Implementation	Current Status	Supervision
1.	Batching plants (if used), Crushers and Hot mix plants, & DG sets - If used	Tamil Nadu Pollution Control Board (TNPCB)	Consent to operate (CTO) under the Air (Prevention and Control of Pollution) Act, 1981; and Rules 1982	Contractor	To be obtained	TNIHPL/PMC
2.	Discharges from Sewage	TNPCB	Consent to operate (CTO) under the Water (Prevention and Control of Pollution) Act, 1974; and Rules 1975	Contractor	To be obtained	TNIHPL/PMC
3.	Storage, handling, and transport of hazardous materials	TNPCB	Hazardous Wastes (Management, Handling and Transboundary Movement) Rules 2016 Manufacturing, Storage and Import of Hazardous Chemicals Rules, 1989	Contractor	To be obtained	TNIHPL/PMC
4.	Sand mining, quarries and borrow areas	Department of Geology and Mining, Government of Tamil Nadu	Material to be obtained from the existing government licensed mines/quarries;	Contractor	To be obtained	TNIHPL/PMC
5.	Disposal of Construction and Demolition waste	TNPCB	Construction and Demolition Waste Management Rules, 2016	Contractor	To be obtained	TNIHPL/PMC
6	The Building and Other Construction Workers' Registration	Directorate of Industrial Safety and Health- Tamil Nadu	Regulation of Employment and Conditions of Service- Central Rules, 1998	Contractor	To be obtained	TNIHPL/PMC
7	Registration of principal employer	TN Labour Department	The Contract Labour (Regulation and Abolition) Act, 1970;	Contractor	To be obtained	TNIHPL/PMC

#	Construction Activity	Statutory Authority	Statute under which Clearance is required	Implementation	Current Status	Supervision
			and Contract Labour (Regulation & Abolition) Central Rules, 1971			

### ADB SPS Requirements

22. During the design, construction, and operation of the project TNIHPL will apply pollution prevention and control technologies and practices consistent with Indian regulatory requirements, wherever available. In instances when Indian regulations are not available acceptable international good practices, as reflected in internationally recognized standards such as the World Bank Group's Environmental, Health and Safety Guidelines (both General Guidelines and sector specific guidelines of water and sanitation projects to be referred, [https://www.ifc.org/wps/wcm/connect/topics\\_ext\\_content/ifc\\_external\\_corporate\\_site/sustainability-at-ifc/policies-standards/ehs-guidelines](https://www.ifc.org/wps/wcm/connect/topics_ext_content/ifc_external_corporate_site/sustainability-at-ifc/policies-standards/ehs-guidelines)).

These standards contain performance levels and measures that are normally acceptable and applicable to projects. As suggested in the ADB SPS 2009, capacity building exercises to cover all stakeholders are conducted on a periodic basis to ensure consistent implementation of the environmental regulations.

## 3 Description of Existing Environment

23. Environment facts to be considered in relation to building construction are (i) Description of Physical Environment (ii) Biological Environment and (iii) Socio-cultural Environment. Hence it is necessary to ascertain the baseline data of these environmental facts.

### 3.1 Description of Physical Environment

#### 3.1.1 Study Area

24. The project is located Siruseri SIPCOT area, near TCS office, Siruseri, Thiruporur Taluk, Kanchipuram District, Tamil Nadu. For further investigation of the site a 5 km buffer around the site was created. Refer to Figure 3.

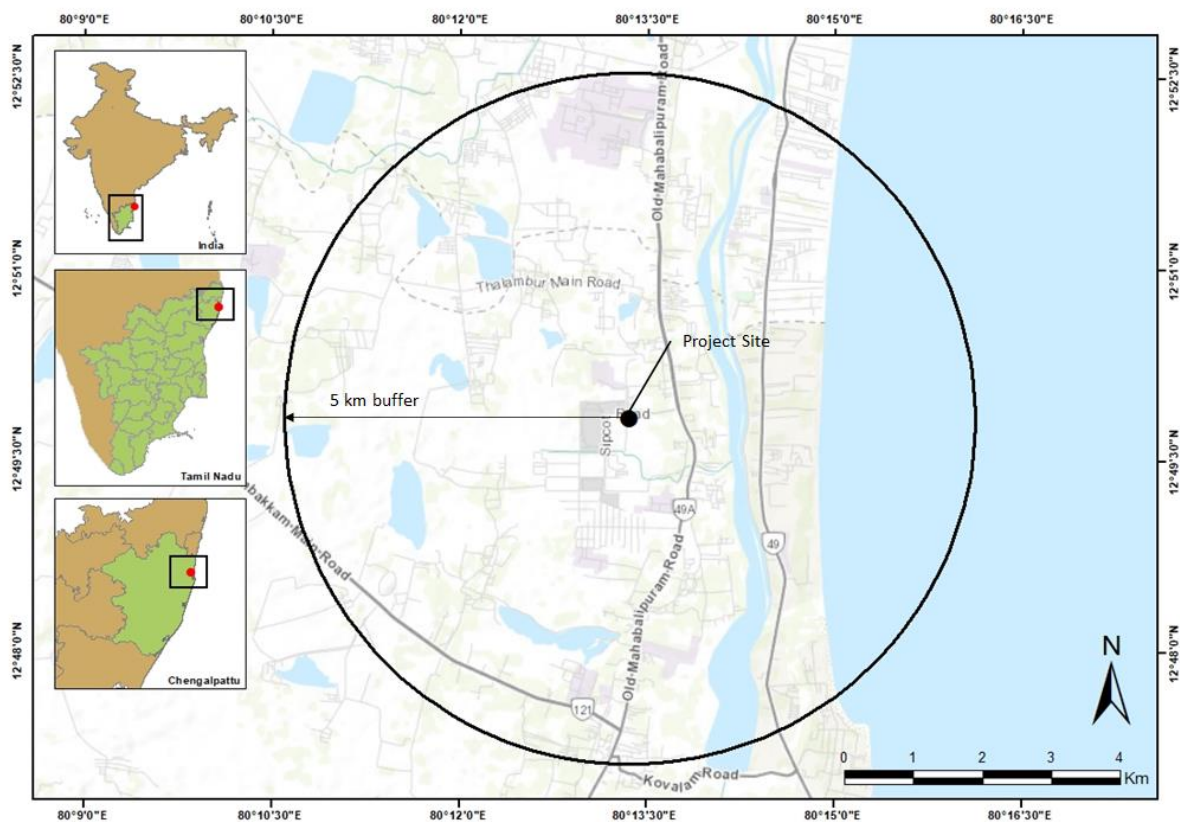


Figure 3: 5km buffer around the site

#### 3.1.2 Land use

25. The map in Figure shows land use and land cover map of the area around site. The maximum area around the site is occupied by tree cover & water bodies, both accounting for 23% each, followed by grassland and built-up, which are 21% and 20%, respectively. The lowest area percentages have been recorded in terms of herbaceous wetland, shrub land and bare/ sparse vegetation, 1% each. The cropland, about 10%, is uncultivated land consisting primarily of bushes and shrubs.

26. As per the Directorate of Town and Country Planning (DTPC) approved for SIPCOT Siruseri IT Park, the land is classified as a dry land.

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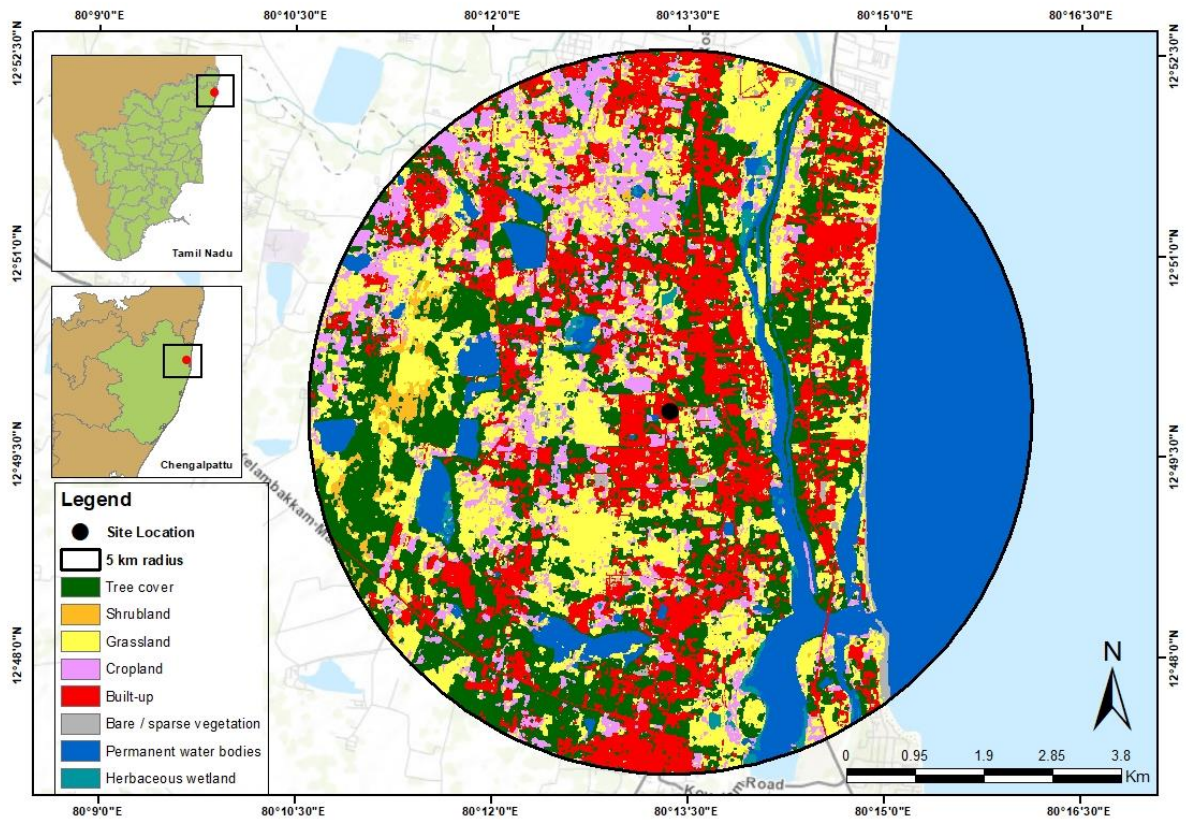


Figure 4: Map showing land use land cover map around Site

### 3.1.3 Meteorology and Climate

27. Kanchipuram district experiences a tropical savannah climate. The average normal rainfall in the district is 96.94 mm. The average high temperature in Kanchipuram is 34.31°C, and the average low temperature is 25.15 °C. According to Forest Survey of India's State of Forest Report 2019, in Kanchipuram district, approximately 4.86% of the total geographical area is covered by forests.

### 3.1.4 Air, Water and Noise Quality Standards

28. TNIHPL/Contractors will have to undertake a baseline assessment of the existing air, water, and noise quality standards prior to construction of the project. The applicable National ambient air quality standards, noise standards, and drinking water quality standards have been provided below:



Table 1: National Noise Standards and WHO guidelines

Receptor/ Source	Noise Level Standards <sup>4</sup> (dBA)		WHO Guidelines Value for Noise Levels Measured Out of Doors <sup>5</sup> (One Hour LAeq in dBA)		Applicable Per ADB SPS <sup>6</sup> (dBA)	
	Day	Night	07:00 – 22:00	22:00 – 07:00	Day time	Night time
Industrial area	75	70	70	70	70	70
Commercial area	65	55			65	55
Residential Area	55	45	55	45	55	45
Silent Zone	50	40			50	40

Table 2: Ambient Air Quality Standards (for Residential, Rural, and other areas)

Parameter	National Ambient Air Quality Standards <sup>7</sup>	WHO Air Quality Guidelines ( $\mu\text{g}/\text{m}^3$ )		Applicable Per ADB SPS ( $\mu\text{g}/\text{m}^3$ ) <sup>8</sup>
		Global Update 2005 <sup>9</sup>	Second Edition 2000 <sup>10</sup>	
Particulate Matter PM10 ( $\mu\text{g}/\text{m}^3$ )	100 (24-hr)	50 (24-hr)		50 (24-hr)
Particulate Matter PM2.5 ( $\mu\text{g}/\text{m}^3$ )	60 (24-hr)	25 (24-hr)		25 (24-hr)
Sulfur Dioxide SO <sub>2</sub> ( $\mu\text{g}/\text{m}^3$ )	80 (24-hr)	500 (10-min)		20 (24-hr) 500 (10-min)
Nitrogen Dioxide NO <sub>2</sub> ( $\mu\text{g}/\text{m}^3$ )	80 (24-hr)	200 (1-hr)		80 (24-hr) 200 (1-hr)
Carbon Monoxide CO ( $\mu\text{g}/\text{m}^3$ )	4,000 (1-hr)		100,000 (15- min)	4,000 (1-hr) 100,000 (15-min)
Ozone (O <sub>3</sub> ) ( $\mu\text{g}/\text{m}^3$ )	180 (1-hr)			180 (1-hr)
Lead (Pb) ( $\mu\text{g}/\text{m}^3$ )	1.0 (24-hr)			1.0 (24-hr)

<sup>4</sup>Noise Pollution (Regulation and Control) Rules, 2002 as amended up to 2010 (<http://cpcb.nic.in/displaypdf.php?id=Tm9pc2UtU3RhbmRhcmRzL25vaXNlX3J1bGVzXzlwMDAucGRm>)

<sup>5</sup>Guidelines for Community Noise. WHO. 1999

<sup>6</sup> As per ADB SPS, the project proponent shall achieve whichever of the ambient air quality standards is more stringent. If less stringent levels or measures are appropriate in view of specific project circumstances, the project proponent will provide full and detailed justification for any proposed alternatives that are consistent with the requirements presented in ADB SPS, 2009.

<sup>7</sup> [http://cpcb.nic.in/uploads/National\\_Ambient\\_Air\\_Quality\\_Standards.pdf](http://cpcb.nic.in/uploads/National_Ambient_Air_Quality_Standards.pdf)

<sup>8</sup> As per ADB SPS, the government shall achieve whichever of the ambient air quality standards is more stringent. If less stringent levels or measures are appropriate in view of specific project circumstances, the executing agency of the government will provide full and detailed justification for any proposed alternatives that are consistent with the requirements presented in ADB SPS.

<sup>9</sup> WHO Air quality guidelines for particulate matter, ozone, nitrogen dioxide and sulphur dioxide. Global update 2005. WHO. 2006.

<sup>10</sup> Air Quality Guidelines for Europe Second Edition. WHO 2000

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Parameter	National Ambient Air Quality Standards <sup>7</sup>	WHO Air Quality Guidelines (µg/m <sup>3</sup> )		Applicable Per ADB SPS (µg/m <sup>3</sup> ) <sup>8</sup>
		Global Update 2005 <sup>9</sup>	Second Edition 2000 <sup>10</sup>	
Ammonia (NH <sub>3</sub> ) (µg/m <sup>3</sup> )	400 (24-hr)			400 (24-hr)

**Table 1: National Drinking water quality standards and WHO guidelines**

Group	National Standards for Drinking Water <sup>11</sup>			WHO Guidelines for Drinking Water Quality, 4th Edition, 2011 <sup>12</sup>	Applicable Per ADB SPS <sup>13</sup>
	Parameter	Unit	Max. Concentration Limit		
Physical	Turbidity	NTU	1 (5)	-	1 (5)
	pH		6.5 – 8.5	None	6.5 – 8.5
	Color	Hazen Units	5 (15)	None	5 (15)
	Taste and Odor		Agreeable	-	Agreeable
	TDS	mg/l	500 (2,000)	-	500 (2,000)

<sup>11</sup> <http://cgwb.gov.in/Documents/WQ-standards.pdf>.

Bureau of India Standard 10500: 2012 (Indian Standard, Drinking Water — Specification (Second Revision)).

<sup>12</sup> Health-based guideline values

<sup>13</sup> As per ADB SPS, the government shall achieve whichever of the drinking quality standards is more stringent. If less stringent levels or measures are appropriate in view of specific project circumstances, the executing agency of the government will provide full and detailed justification for any proposed alternatives that are consistent with the requirements presented in ADB SPS, 2009. Figures in parenthesis are maximum limits allowed in the absence of alternate source.

## 3.2 Description of Physical Environment

### 3.2.1 Protected Areas / Reserve Forests

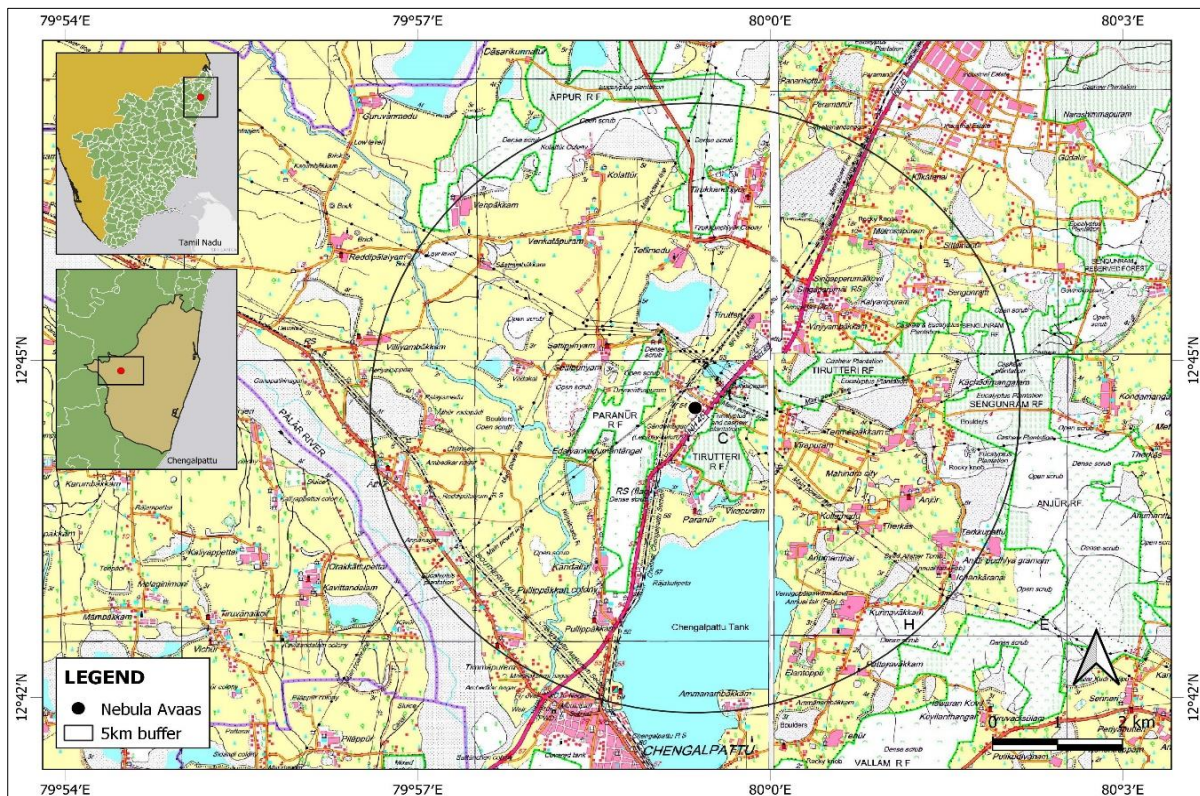


Figure 5: Map showing SOI Toposheet data around the Site area

29. As per the analysis of the Survey of India (SOI) topographic sheet, it is observed that Part of Sonallor reserved forest and Kulattur Reserved Forest are located within the study area, while Mambakkam Reserved Forest and Maduraipakkam Reserved Forest are in close proximity to the study area(5kms) and may be affected by the project activities. For instance, the construction activities could generate noise pollution, emissions, discharges, and pollution which might cause harm to the ecosystem of the surrounding areas. Therefore, the company needs to conduct periodic environmental tests such as noise monitoring, ambient air quality monitoring, etc. (Refer to Chapter-4 for requirements).

## 3.3 Description of Socio-cultural Environment

30. The proposed project falls in the Kanchipuram district of Tamil Nadu state. The project land is an empty land and was not inhabited, as observed during the site visit. Kanchipuram district has a total population of 3,998,252 as per the Census 2011 data. The project surroundings mostly include a residential neighbourhood, with all the basic facilities available within a radius of 5km. This includes hospitals, schools, colleges, police stations, etc.

31. There are three worship places nearest to the project site: 1) Sri Kailasanathar Temple, 2) Hameed Fathima Jumma Masjid, 3) Mohamed Sathak AJ Masjid. None of these sites are on the project site or have access through the project site. Henceforth, the project will not have an impact on any cultural activities or on the temple or vice versa.

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## 4. Potential Environment impacts and mitigation measures

### 4.1. Potential impacts due to project activity

32. The potential impacts due the project activity have been identified in the table below and mitigation measures for the same have been identified.

Potential Impacts	Mitigation measures
<b>Pre-construction</b>	
Clearing of trees/ vegetation and excess earth disposal	There are currently some trees present adjoining the project site. As reported by the project representatives, the tree covers would be retained in the site.
Consents/ permits/ clearances	The company is required to obtain an Environmental Clearance and Consent to Operate (CtO) for the project. The CtE and CtO shall be separately obtained for batching plant if it is planned to be installed on site.
<b>Construction</b>	
Noise pollution from construction vehicles, equipment, and machinery	This is anticipated but will be temporary during construction phase and limited to the project site. The monitoring of the ambient noise levels should be performed regularly on the project site during the construction phase.
Use of ground water	The water source for the project activities cannot be determined at this stage. The project site is in Egattur Village, Thiruporur Taluk, Kanchipuram District, which is classified as 'Safe' in terms of Ground Water Development Status by the Central Ground Water Board (CGWB). Therefore, the risk to the project from depleting ground water levels is low.
Maintain slope for natural drain	It was observed that the land parcel and adjoining plot areas are at a lower height than the road. Earth filling activities are currently operational. Post construction, the elevated level of the project should not create stagnation and inundation in surrounding low-lying areas. Proper drainage connected to the rainwater harvesting pit needs to be maintained.
Impacts due to stockpiling of construction materials; spillage due to stockpiling of materials	Storage of construction material should be confined to work sites in a way to ensure that there is no obstruction to natural drainage pattern, efficient drainage is maintained. Existing stockpiles should be covered to reduce dust generation.
Impact on drinking water availability and water arrangement	The water source for the project activities cannot be determined at this stage. The project office at SIPCOT

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Potential Impacts	Mitigation measures
	<p>reported that in usual cases water is provided by SIPCOT, sourced from 17 open wells.</p> <p>Therefore, the risk from the project activities to the water resources is low.</p> <p>Further the project is proposed to receive a green building rating as per the requisites set by TNIFMC. This would encourage use of water in a self-sustainable manner through reduce, recycle, and reuse strategies.</p>
Impact on safe passage for local people; traffic congestion	<p>The SIPCOT roads will be utilized for the transportation of material and personnel during construction phase.</p> <p>The impact on traffic disturbance will be temporary during construction phase only. During the construction activity, utmost care should be taken to control the noise levels within the standards. The traffic movement should be preferably carried out in the off-peak hours.</p>
Occupation and community health and safety	<p>Occupational health and safety hazards from construction works need to be mitigated through the OHS measures, many of which are mandatory by regulation.</p> <p>The project shall comply with IFC EHS Guidelines on Occupational Health and Safety.</p> <p>A comprehensive site-specific health and safety (H&amp;S) plan should be developed and implemented. The overall objective is to provide guidance to the developer on establishing a management strategy and applying practices that are intended to eliminate, or reduce, fatalities, injuries and illnesses for workers performing activities and tasks associated with the project.</p> <p>TNIHPL should undertake a COVID risk assessment of project area and prepare a COVID Response and Management Plan.</p>
Impact on communities due to prolonged construction	<p>The impact on communities should be minimal by barricading the project site during the construction phase.</p> <p>The only impact during the construction is the vehicular traffic caused by the construction activities.</p>
Safety hazard	<p>Safety measures should be adopted during the transportation of construction material to the construction site.</p>
Impacts due to Batching Plant operation	<p>Batching plant, if used, should comply with the requirements of the current emission control regulations.</p>
Soil & water pollution	<p>The pollution preventive and control measures mentioned in the CtO should be applied and should comply with prescribed statutory norms.</p> <p>The wastewater shall be discharged to the SIPCOT sewer line.</p>
Emissions from construction equipment & vehicles	<p>This is anticipated during the construction phase. The sources of air pollution will be from trucks transporting materials to the site, operation of diesel engine, and machinery use. The project should conduct regular ambient air quality monitoring tests.</p>

Potential Impacts	Mitigation measures
Erosion hazards and dust generation	<p>Since the construction has not yet started, it is recommended that topsoil during excavation shall be protected and stored by covering it with gunny bags etc. and shall be used to reclaim disturbed areas as soon as it is possible.</p> <p>Use of erosion controls (e.g., silt traps) along the drainage leading to the water drains.</p> <p>Maintenance of vegetative cover within unused land to prevent erosion and periodically monitor the area to assess erosion. TNIHPL and the contractor should take every precaution to reduce the levels of dust at construction sites. All earth works to be protected / covered to minimize dust generation.</p> <p>Construction site shall regularly be wetted by sprinkling of water during dusty conditions especially during summer seasons and winds. Ambient Air Quality monitoring has to be performed as per the EMP</p>
Waste disposal	The construction waste should be reused to the maximum and the excess shall be disposed to through authorized vendors.
Malaria risk	<p>Solid waste and wastewater will be generated on site, which if not managed or treated properly might increase the risk of Malaria spread on site. This might cause a risk to the on-site personnel and construction workers.</p> <p>Proper solid waste management should be ensured on site and preventive measures should be adopted to ensure safety against malarial diseases.</p>
Influx of migrant workers	The project may hire migrant workers; however, no issues are anticipated. In case of any adverse events, they shall be dealt with adequately by the contractor.
Impacts on Air/GHG Emissions	The project during construction phase should use a low sulfur diesel, ensure regular air, and noise emission and use acoustically enclosed DG set with sufficient height.
Impact on social and cultural resources like heritage sites and communities	There shall be no impact on social and cultural resources as this is a residential project. The nearest site of cultural importance is Mohamed Sathak AJ Masjid that is located approximately 0.9 kms Northwest from the project site. Therefore, there is no risk from the project activities to the heritage sites and communities.
Impact on site clearance activities	All areas used for construction and camp activities shall be restored to their former conditions to the maximum extent possible after project completion
Impacts on flora and fauna	<p>Sonallor reserved forest and Kulattur Reserved Forest are located within the site area, while Mambakkan Reserved Forest and Maduraipakkam Reserved Forest are in close proximity to the study area.</p> <p>Construction activities may affect the flora and fauna during the project activities.</p>
Presence of Municipal Dump Site/ Hazardous Waste Landfills:	The nearest active dumpsite from the project area is Perungudi Municipal Solid Waste Dumpsite and Perungudi

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Potential Impacts	Mitigation measures
	Garbage Yard, which is located at an aerial distance of approx. 14 km towards the North of the Project. Thus, risk of exposure to pollution from dump sites to the project is negligible.
Critically Polluted Area	The project site is not located near (within 5 km distance) any Notified Polluted areas as per Revised CEPI Concept and directions issued in April 2016. The nearest notified polluted area to the project location is Manali, Tamil Nadu, which is located at an aerial distance of approximately 40 km from the project site. Therefore, the risk from the critically polluted areas to the project is low.
Sources of pollution around the project location:	There is no major industrial area in close proximity to the project site. The project site is located in SIPCOT IT Park and have various IT & ITeS companies, academic institutes and institutional housing in immediate surroundings. The few small-scale industries located within the 5km radius of the project include engineering units, pharmaceutical formulation, and plastic industry. Thus, risk of exposure to pollution from the nearby industries to the project is 'Low'.
Impacts on Protected Area	Vedanthangal and Karikili Bird Sanctuary is the nearest notified Eco-Sensitive Zone (ESZ) as per the Ministry of Environment, Forest, and Climate Change (MoEFCC) from the project site and is located at an approx. aerial distance of approximately 50 km south-west from the project site. Therefore, the risk from the project activities to the protected area is 'High'.
<b>Post-construction</b>	
Odour/ smell from Sewage Treatment Plant	The wastewater shall be discharged to the SIPCOT sewer line.
Use of ground water	The water source for the project activities cannot be determined at this stage. The project office at SIPCOT reported that in usual cases, water is provided by SIPCOT, sourced from 17 open wells. The project site is in Egattur Village, Thiruporur Taluk, Kanchipuram District, which is classified as 'Safe' in terms of Ground Water Development Status by the Central Ground Water Board (CGWB). Therefore, the risk to the project from depleting ground water levels is low. However, the developer is required to obtain an NOC from the local district committee for digging the Borewell and using groundwater on project site during construction period.
Risk caused by Force Majeure	The study area is not much susceptible to floods, landslides, cloud bursts, and cyclones. The project lies in the Zone III i.e., Moderate Damage Risk Zone according to the Building Materials and Technology Promotion Council (BMTPC)

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Potential Impacts	Mitigation measures
	<p>Earthquake Hazard Map. Therefore, suitable earthquake design needs to be followed.</p> <p>Apart from this, all the necessary precaution should be taken to ensure the safety of workers including the provision of first aid kits.</p>



## 5. Analysis of alternatives

33. From a purely physical environmental point of view, the **Without project scenario** is preferable to any project implementation, since it would avoid creation of any of the adverse impacts associated with the project.

34. However, the project under consideration is an industrial housing project for SIPCOT women workers. The project during the construction phase will create many direct and indirect employment opportunities for local people. It is concluded that the **Without project scenario** alternative is not feasible, and the potential socio-economic benefits of implementation of such project far outweigh the limited adverse impacts, all of which can be controlled and minimized to an allowable level.

35. Consideration of Alternatives

- **Provision of more hostels**

The 'Without project scenario' alternative in the present case would mean that the women employees of will have to stay at hostels/paying guest in Siruseri away from the office location. Hence, the **without project scenario** alternative is unacceptable.

- **Reduction of Travel**

The project shall reduce travel distance and frequent use of buses for employee travel which will reduce pollution and decrease carbon footprint. The project will also decrease commute time. Thereby providing more time for employees for self-development and increasing work life balance.

- **Location**

The proposed site has no forest, no protected areas, no dense vegetation, no water bodies and no culturally important or heritage site. There was no prior human settlement on the land hence the land acquisition involved no resettlement issues. The land is suitably located close to the place of employment. Hence there are no alternative suitable sites with similar minimum risk profile.

- **Design**

The project will be designed as a Green Building. The environmental footprint of the project in terms of water consumption, energy consumption and utilization of materials will be in the most efficient form.

## 6. Institutional Arrangements

36. Tamil Nadu Industrial Housing Private Limited (TNIHPL) will engage a Project Management Consultants (PMC) for the implementation of the project. The PMC shall identify and shortlist a contractor for the Engineering, procurement and construction of the project. The EPC contractor will make a site-specific Environmental Management and Implementation Plan by modifying the EMP provided in the tender document. The PMC shall ensure that the EPC contractor will maintain all relevant permits/approvals including the legal and regulatory compliances. The project head of the PMC will be responsible for the project supervision and execution on site on regular basis.

37. The contractor will depute an on-site safety health and environment (SHE) officer. The officer should have a bachelor's degree in environmental safety, occupational safety and health or any related fields and/or a minimum of five years of relevant experience. The officer shall have good knowledge of environmental regulations and policies. The officer will be responsible for conducting the internal environmental monitoring and provide inputs on compliance checks. The officer will also prepare and implement site specific standard operating procedures manuals. In case new environmental impacts are identified or any compliances are not met, the same will be communicated to the TNIHPL. SHE will also ensure signages with contact information and potential safety risks are displayed at designated places in the local language. The officer will co-ordinate with PMC and EPC contractor and prepare a monthly progress report during the construction phase.

## 7. Environmental Monitoring & Management Plan (EMP)

38. This chapter is based on the anticipated environmental and social impacts and mitigation measures for establishing compliance to EHS legal requirements. The status of compliance will need to be updated in the semi-annual monitoring report from the commencement till closure of the project.

## 7.1. EMP

S. No.	Environmental Issues	Mitigation Measures	Indicators and Targets	Responsibility for Implementation	Responsibility for Supervision
<b>Location Impacts</b>					
1.1	<p>Location impacts pertain to siting of facilities for construction of new buildings/ dwelling units.</p> <ul style="list-style-type: none"> <li>• Clearing of wild vegetation</li> <li>• Maintain slope for natural drain.</li> <li>• Excess earth disposal</li> </ul>	<ul style="list-style-type: none"> <li>• The siting of facilities will be in line with the DTCP approved Master Plan.</li> <li>• The site allotted, for the construction is allotted as a hostel facility. Hence there are no land related issues anticipated.</li> <li>• There are currently no trees present within the project site, as reported. Wild vegetation shall be cleared before construction.</li> <li>• It was observed that the site area is lower than the road height. The excavated excess earth/ soil (cut and filling) from other construction sites in SIPCOT is being used for filling.</li> </ul>	<ul style="list-style-type: none"> <li>• Identification of Disposal site for disposing debris and excavated soil</li> </ul>	Contractor	PMC/TNIHPL
1.2	Long term sustainability of the developments	<ul style="list-style-type: none"> <li>• In accordance with the provisions in the project selection criteria, the project design shall include adequate provisions for ensuring effective maintenance and protection of the assets created so to ensure the long-term sustainability of the sites.</li> <li>• The designs will be worked out and implemented in accordance with the provisions.</li> <li>• No construction activity of any kind shall be taken up in the OSR area</li> </ul>	<ul style="list-style-type: none"> <li>• Designs Approvals</li> <li>• Work plan prepared.</li> </ul>	Contractor	PMC/TNIHPL

S. No.	Environmental Issues	Mitigation Measures	Indicators and Targets	Responsibility for Implementation	Responsibility for Supervision
1.3	Land acquisition (Socio economic Impacts)	<ul style="list-style-type: none"> <li>No additional land will be required.</li> <li>Also, the sites are free without any inhabitation.</li> <li>Resettlement and/or land acquisition problems are not applicable since construction activities are in vacant site.</li> </ul>	<ul style="list-style-type: none"> <li>NA</li> </ul>	Contractor	PMC/TNIHPL
1.4	Clearing of trees/ Removal of vegetation	<ul style="list-style-type: none"> <li>There are currently no trees present within the project site. As reported, the tree covers adjacent to the site would be retained in the site.</li> <li>All reasonable measures shall be undertaken to ensure that no native fauna is harmed or placed at risk during the clearing activities.</li> </ul>		Contractor	PMC/TNIHPL
2.	<b>Design and Pre-Construction Impacts</b>				
2.1	Increased storm water runoff from alterations of the site's natural drainage patterns due to excavation works in the sites, construction of residential units, addition of paved surfaces and approach roads.	<ul style="list-style-type: none"> <li>Design of proposed building components will enable efficient drainage of the sites and maintain natural drainage patterns. The siting of the project components, involving physical construction shall be done to ensure no disruption of natural drainage patterns or flows into the nearby drain/nallah.</li> <li>Adequate size and number of Recharge pits will ensure that no storm water is drained out of the site.</li> </ul>	<ul style="list-style-type: none"> <li>Site drainage plan to be prepared and applied.</li> <li>Construction of drains and recharge pits to prevent water logging at site during rains</li> </ul>	Contractor	PMC/TNIHPL

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2.2	Consents, permits, clearances, NOCs, etc.	<ul style="list-style-type: none"> <li>All the necessary approvals/ permissions/ clearances/ NoCs as required from DTCP/Local bodies should be obtained before the start of the construction activities.</li> <li>The company is required to obtain Environment Clearance and Consent to Operate (CtO) for the project. The CtE and CtO shall be separately obtained for batching plant if it is planned to be installed on site.</li> </ul>	<ul style="list-style-type: none"> <li>To get all the required approvals</li> </ul>	Contractor	PMC/TNIHPL
2.4	Integration of energy/water efficiency and energy/water conservation programs in design of building components	<ul style="list-style-type: none"> <li>The project shall be designed to be a Certified Green Building. The environmental footprint of the project in terms of water consumption, energy consumption and utilization of materials will be in the most efficient form.</li> <li>Use of water-efficient fixtures and dual-flushing systems.</li> </ul>	<ul style="list-style-type: none"> <li>DPR and designs approved from competent authority.</li> <li>Use of energy efficient and ISO certified equipment in construction works.</li> </ul>	Contractor	PMC/TNIHPL
2.5	Odour / smell from Sewage Treatment Plant (wherever provided), Solid waste collection area	<ul style="list-style-type: none"> <li>The detailed design/ layout should have designated wastewater pipeline and the MSW areas, which should be located away from the main buildings to prevent the odour nuisance.</li> </ul>	<ul style="list-style-type: none"> <li>Designs approved by the competent authority.</li> <li>MSW is designed for daily collection.</li> <li>Wastewater lines shall ensure negligible breakdowns with routine maintenance</li> </ul>	Contractor	PMC/TNIHPL
2.6	Noise pollution from the pumps used for lifting water	<ul style="list-style-type: none"> <li>Pump house should be acoustic proof.</li> </ul>	<ul style="list-style-type: none"> <li>Regular maintenance is required.</li> <li>Conducting frequent Noise monitoring</li> </ul>	Contractor	PMC/TNIHPL

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2.7	Sourcing of water for construction activities	<ul style="list-style-type: none"> <li>• TNIHPL proposes to utilize water provided by SIPCOT for construction purposes.</li> <li>• Use of groundwater for construction purposes should be avoided/ restricted.</li> <li>• Water demand during construction should be reduced by use of premixed concrete, curing agents and other best practices prevalent.</li> </ul>	<ul style="list-style-type: none"> <li>• Regular monitoring is required.</li> <li>• Complaints, if any, from the local communities</li> <li>• Ground water level monitoring</li> </ul>	Contractor	PMC/TNIHPL
2.8	Installation of Diesel Generators	<ul style="list-style-type: none"> <li>• As per the CPCB norms, place the Diesel Generators (DG's) in an acoustic enclosure or other sound insulation.</li> <li>• Low Sulphur Diesel should be used for operating diesel generator.</li> <li>• Ensure Diesel gensets comply with the noise standards prescribed by the CPCB</li> </ul>	<ul style="list-style-type: none"> <li>• Standards prescribed by the CPCB</li> </ul>	Contractor	PMC/TNIHPL
<b>3.</b>	<b>Pre-Construction Activities by TNIHPL</b>				
3.1	EMP implementation and reporting	<ul style="list-style-type: none"> <li>• Appoint Environment, Health, and Safety Supervisor to ensure EMP implementation.</li> <li>• Timely submission of monthly monitoring reports including documentary evidence on EMP implementation such as photographs and consultation records.</li> <li>• EMP documents shall include information about site restoration, noise and dust control, wastewater management, spills response, community and site health and</li> </ul>	Compliance with EMP	Contractor	PMC/TNIHPL

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		safety, traffic control, tree cutting, construction of labour camps, storage areas, hauling roads, regulatory permissions, disposal areas for solid and hazardous wastes, sensitive features like schools and hospitals.			
3.2	Consents, permits, clearances, NOCs, etc.	<ul style="list-style-type: none"> <li>• Obtain all necessary consents, permits, clearance, NOCs, etc. prior to the start of the respective work.</li> <li>• Ensure that all necessary approvals for construction to be obtained by TNIHPL are in place before the start of construction.</li> <li>• Acknowledge in writing and provide a report on compliance of all obtained consents, permits, clearance, NOCs, etc.</li> </ul>	All the project related clearances should be obtained	Contractor	PMC/TNIHPL
3.3	Sources of construction materials (Impact on natural land contours, vegetation, disturbance to natural drainage patterns, water logging, and water pollution.)	<ul style="list-style-type: none"> <li>• Maximize the re-use of earth-cut materials, spoils, and construction &amp; demolition debris / waste.</li> <li>• Specify materials that are recycled, have recycled content or are from sustainable sources.</li> <li>• Obtain construction materials only from government-approved quarries</li> </ul>	Prepare a list of sources of materials	Contractor	PMC/TNIHPL
3.4	Construction Camps – Location, Selection, Design and Layout	<ul style="list-style-type: none"> <li>• The construction labour camps shall include separate female and male sanitation facilities, shelter, electricity, canteen, potable water (as per IS 10500), first aid, health care, and day crèche facilities. The</li> </ul>	<ul style="list-style-type: none"> <li>• Labour camp to be provided by TNIHPL/PMC.</li> <li>• Construction camp having all the basic amenities with proper</li> </ul>	Contractor	PMC/TNIHPL

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		<p>premises must be adequately drained and must not be subject to periodic flooding.</p> <ul style="list-style-type: none"> <li>• The camps must be located such that the drainage from and through the camps will not risk any domestic or public water supply.</li> <li>• All sites must be graded, ditched, and rendered free from depressions such that water may not get stagnant and cause a nuisance.</li> <li>• Dispenser Shall be provided for the disposal of Sanitary Napkins</li> <li>• MSW generated from the construction camp shall be disposed on day to day basis.</li> <li>• Wastewater generated from the construction camp should be properly treated and disposed meeting the PCB requirements.</li> <li>• Comply with the ban on single use plastics under Tamil Nadu Government Order.</li> <li>• First Aid Room shall be provided in the project site during the entire construction phase of the project</li> </ul>	sanitary conditions drainage and watery supply		
3.5	Stockpiling of materials	<ul style="list-style-type: none"> <li>• Storage of construction material confined to work sites in a way to ensure that there is no obstruction to natural drainage pattern, efficient drainage is maintained.</li> <li>• Stockpiles to be covered to reduce dust generation</li> </ul>	• Location of work sites to be identified by TNIHPL/PMC	Contractor	PMC/TNIHPL

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3.6	Establishment of baseline environmental conditions prior to start of civil works	<ul style="list-style-type: none"> <li>Conduct documentation of location of components, areas for construction zone (camps, staging, storage, stockpiling, etc.) and surroundings (within direct impact zones), locations of environmental monitoring (Include photos)</li> <li>The monitoring parameters and the frequency of the monitoring should comply with the Environmental Monitoring Plan</li> </ul>	<ul style="list-style-type: none"> <li>Baseline environmental profile including ambient air, noise, water quality as per the standards indicted in the monitoring plan (Table 3)</li> </ul>	Contractor	PMC/TNIHPL
3.7	Drinking water availability and water arrangement	<ul style="list-style-type: none"> <li>The water source for the project activities cannot be determined at this stage. The project office at SIPCOT reported that in usual cases water is provided by SIPCOT, sourced from 17 open wells.</li> <li>Further the project is proposed to receive a green building rating as per the requisites set by TNIFMC. This would encourage use of water in a self-sustainable manner through reduce, recycle, and reuse strategies.</li> <li>The wastewater shall be discharged to the SIPCOT sewer line.</li> <li>Therefore, the risk from the project activities to the water resources is low.</li> <li>Periodical testing of water as per CPCB norms required.</li> </ul>	<ul style="list-style-type: none"> <li>Records of drinking water supply to workers</li> <li>Feedback from workers</li> </ul>	Contractor	PMC/TNIHPL
3.8	Identification of disposal sites	<ul style="list-style-type: none"> <li>Location of disposal sites shall be identified by the developer, and he will confirm that disposal of the</li> </ul>	<ul style="list-style-type: none"> <li>Disposal site selected by TNIHPL/PMC</li> </ul>	Contractor	PMC/TNIHPL

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		<p>material does not impact natural drainage courses or surface water bodies or low-lying areas and that no endangered / rare flora is impacted by such materials.</p> <ul style="list-style-type: none"> <li>The construction waste should be reused to the maximum and the excess shall be disposed to through authorized vendors.</li> </ul>	<ul style="list-style-type: none"> <li>Records of materials disposed at disposal site</li> <li>Logbook maintained for debris disposal</li> </ul>		
3.9	Shifting of Utilities	<ul style="list-style-type: none"> <li>Identify and include locations and operators of these utilities in the detailed design documents to prevent unnecessary disruption of services during the construction phase.</li> <li>Prepare a contingency plan to include actions to be done in case of unintentional interruption of services.</li> <li>If relocation is necessary, Developer will coordinate with the providers to relocate the utility and communicate the dates and duration in advance to affected communities / persons / businesses.</li> </ul>	<ul style="list-style-type: none"> <li>List showing utilities to be shifted</li> <li>Contingency plan for services disruption</li> </ul>	Contractor	PMC/TNIHPL
3.10	Social and Cultural Resources	<ul style="list-style-type: none"> <li>There shall be no impact on social and cultural resources as this is a residential project. The nearest site of cultural importance is Mohamed Sathak AJ Masjid that is located approximately 0.9 kms Northwest from the project site. Therefore, there is no risk from the project</li> </ul>	<ul style="list-style-type: none"> <li>Chance Find protocol</li> </ul>	Contractor	PMC/TNIHPL

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		<p>activities to the heritage sites and communities.</p> <ul style="list-style-type: none"> <li>• For any Chance find, consult Archaeological Survey of India (ASI) or Tamil Nadu Archaeology Department to obtain an expert assessment of the archaeological potential of the site.</li> <li>• Develop a protocol for use by the construction workers in conducting any excavation work, to ensure that any chance finds are recognised and measures are taken to ensure they are protected and conserved.</li> </ul>			
3.11	Circulation plan during construction in the densely populated areas	<ul style="list-style-type: none"> <li>• Prior to mobilization and commencement of site activities, TNIHPL shall prepare site work plan approved by Engineer so that no works or activities shall interrupt safe passage of local residents/ road users during construction stage, including development of alternative access routes, traffic regulations, signage etc., during construction.</li> <li>• TNIHPL will carry out dissemination of these information</li> </ul>	<ul style="list-style-type: none"> <li>• Site work plan prepared by TNIHPL/PMC</li> <li>• Traffic plan and records of road signages</li> </ul>	Contractor	PMC/TNIHPL
3.12	Access	<ul style="list-style-type: none"> <li>• Traffic congestion near the entry and exit points from the roads adjoining the proposed project site must be avoided.</li> <li>• Plan transportation routes so that heavy vehicles do not use narrow</li> </ul>	<ul style="list-style-type: none"> <li>• Signages for entry/ exit</li> <li>• Timings</li> </ul>	Contractor	PMC/TNIHPL

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		<p>local roads, except in the immediate vicinity of delivery sites.</p> <ul style="list-style-type: none"> <li>• Schedule transport and hauling activities during non-peak hours.</li> <li>• Locate entry and exit points in areas where there is low potential for traffic congestion.</li> <li>• Keep the site free from all unnecessary obstructions.</li> <li>• Drive vehicles in a considerate manner.</li> </ul>			
3.13	Occupational health and safety	<ul style="list-style-type: none"> <li>• Occupational health and safety hazards from construction works need to be mitigated through the OHS measures, many of which are mandatory by regulation.</li> <li>• The project shall comply with IFC EHS Guidelines on Occupational Health and Safety.</li> <li>• A comprehensive site-specific health and safety (H&amp;S) plan should be developed and implemented. The overall objective is to apply practices that are intended to eliminate, or reduce, fatalities, injuries and illnesses for workers performing activities and tasks associated with the project.</li> <li>• TNIHPL should undertake a COVID risk assessment of project area and prepare a COVID Response and Management Plan.</li> <li>• Develop comprehensive site-specific health and safety (H&amp;S)</li> </ul>	<ul style="list-style-type: none"> <li>• Health and safety (H&amp;S) plan</li> </ul>	Contractor	PMC/TNIHPL

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		<p>plan. The overall objective is establishing a management strategy and applying practices that are intended to eliminate, or reduce, fatalities, injuries and illnesses for workers performing activities and tasks associated with the project.</p> <ul style="list-style-type: none"> <li>• Include in H&amp;S plan measures such as:               <ul style="list-style-type: none"> <li>(i) type of hazards in the construction site</li> <li>(ii) corresponding personal protective equipment for each identified hazard</li> <li>(iii) H&amp;S training for all site personnel (including labours)</li> <li>(iv) procedures to be followed for all site activities; and</li> <li>(v) Documentation of work-related accidents.</li> </ul> </li> <li>• Provide medical insurance coverage for workers.</li> <li>• Developer to nominate an on-site environment, health, and safety officer.</li> <li>• TNIHPL shall undertake a COVID risk assessment of project area and prepare a COVID Response and Management Plan (C-R&amp;MP)</li> </ul>			
3.14	Site clearance activities including delineation of construction areas	<ul style="list-style-type: none"> <li>• Commencements of site clearance activities shall be undertaken to minimize environmental impacts.</li> </ul>	Construction and workers camp sites should be restored as per the original situation	Contractor	PMC/TNIHPL

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		<ul style="list-style-type: none"> <li>All areas used for construction and camp activities shall be restored to their former conditions after project completion and no impact to the baseline environment indicators have been confirmed.</li> </ul>			
3.14	Excessive disturbance to communities due to prolonged construction	<ul style="list-style-type: none"> <li>The impact on communities should be minimal by barricading the project site during the construction phase. The only impact during the construction is the vehicular traffic caused by the construction activities.</li> <li>Meaningful consultations with communities to keep them informed of anticipated activities, in particular those that may result in disruption with respect to area access, utilities, and noisy or dust-generating activities that are likely to result in significant disturbance.</li> <li>Identify and adhere to strict construction schedule.</li> <li>Alert communities and residents if night-time construction work shall occur nearby (no night-time construction within 500 m of the nearest household) and ensure alternative access is provided.</li> <li>Ensure communities are aware of Grievance Redress Mechanism (GRM) entry points.</li> <li>Create awareness of health &amp; safety risks of transmittable diseases</li> </ul>	Community Health and Safety	Contractor	PMC/TNIHPL

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		(HIV/AIDs / COVID-19), child labour, bonded labour or forced labour			
<b>4.</b>	<b>Construction Impacts</b>				
4.1	Improper stockpiling of construction materials cause impacts starting from obstruction of drainage, disturbance/ safety hazard etc.	<ul style="list-style-type: none"> <li>• Adequate safety precautions will be ensured during transportation of quarry material from quarries to the construction site.</li> <li>• Vehicles transporting material will be covered to prevent spillage.</li> </ul>	<ul style="list-style-type: none"> <li>• Proper stockpiling of construction materials</li> <li>• vehicles transporting construction materials covered to prevent spillage</li> </ul>	Contractor	PMC/TNIHPL
4.2	Impacts due to Batching Plant operation	<ul style="list-style-type: none"> <li>• The batching plant, if used, shall comply with the requirements and specifications of the relevant current emission control legislation.</li> <li>• Batching plant shall be located away from residential/ settlements and commercial establishments, as per the PCB norms.</li> <li>• Arrangements to minimize dust pollution through the provision of windscreens, mist spray units, and dust encapsulation shall have to be provided at all such sites.</li> <li>• Specifications of batching plant shall comply with the requirements of the relevant current emission control legislation and Consent</li> </ul>	Batching Plants should be kept away from residential /settlements	Contractor	PMC/TNIHPL
4.3	Stripping, stocking and preservation of topsoil	<ul style="list-style-type: none"> <li>• The topsoil from areas of cutting and areas to be permanently covered (proposed site construction of building) will be stripped to a specified depth, translocated, and stored in stockpiles.</li> </ul>	<ul style="list-style-type: none"> <li>• Topsoil preservation plan prepared</li> <li>• Record of topsoil excavated, preserved and reutilized</li> </ul>	Contractor	PMC/TNIHPL

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		<ul style="list-style-type: none"> <li>• The stockpiles will be covered with gunny bags or tarpaulin. Shall ensure watering at regular intervals.</li> <li>• It should be ensured that the topsoil is not trafficked either before stripping or when in stockpiles. Such stockpiled topsoil shall be used to cover the disturbed area and cut slopes, after completion of the construction activities.</li> </ul>			
4.4	Soil and water pollution due to storage of fuels, lubricants, construction vehicles and construction wastes	<ul style="list-style-type: none"> <li>• Fuel and lubricant storage areas shall be designed in such a way that oil may not contaminate soil or water.</li> <li>• The floor of storage area shall be protected by impermeable membrane and covered by roof so that it is not affected by rain.</li> <li>• Oil pumps should be used to take out the oil from the container and no oil spillage shall take place.</li> <li>• All the construction waste should be disposed properly after end of the day so that it may not create nuisance at site.</li> <li>• Soil and water pollution parameters shall be monitored as per the monitoring plan.</li> <li>• Dispose waste oil and lubricants that have been generated as per provisions of Hazardous Waste</li> </ul>	<ul style="list-style-type: none"> <li>• Proper storage of fuel and lubricants</li> <li>• Impermeable membrane used in flooring of storage yard to prevent soil and water pollution.</li> <li>• Construction waste disposal records</li> <li>• Waste management plan</li> </ul>	Contractor	PMC/TNIHPL

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		<p>(Management and Handling) Rules, 1989.</p> <ul style="list-style-type: none"> <li>Inspect all vehicles daily for fluid leaks before leaving the vehicle staging area, and repair any leaks before the vehicle resumes operation</li> <li>Strictly prohibit open defecation by workers in nearby areas</li> </ul>			
4.5	Siltation of drains/ water bodies due to spillage of construction wastes	<ul style="list-style-type: none"> <li>Silt fencing to be provided at construction sites during rain period to prevent sediments from the construction site to enter the watercourses/ nearby settlements. The number of units of silt fencing to be installed will be decided based on-site conditions.</li> <li>Haul roads on the site and approaches to the watercourse (or drains leading to watercourses) shall be regularly cleaned to prevent the build-up of mud; areas of bare soil will be kept to a practical minimum to reduce silt runoff.</li> <li>Extraneous construction wastes will be transported to the pre-identified disposal site for safe disposal.</li> </ul>	<ul style="list-style-type: none"> <li>Site fencing</li> <li>Numbers of Silt traps constructed at site.</li> <li>Proper drainage system provided at site.</li> <li>Regular cleaning of drains during rain period</li> </ul>	Contractor	PMC/TNIHPL
4.6	Emission from Construction Vehicles, Equipment and Machinery	<ul style="list-style-type: none"> <li>The discharge standards promulgated under the Environmental Protection Act will be strictly adhered to.</li> <li>All vehicles, equipment and machinery used for construction</li> </ul>	<ul style="list-style-type: none"> <li>PUC available for all vehicles</li> </ul>	Contractor	PMC/TNIHPL

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		<p>will conform to the relevant Standards.</p> <ul style="list-style-type: none"> <li>• All vehicles, equipment and machinery used for construction will be regularly maintained to ensure that pollution emission levels comply with the relevant requirements.</li> <li>• All the construction vehicles shall have Pollution Under Control (PUC) certificates to check air pollution.</li> </ul>			
4.7	Erosion Hazards	<p>The existing topography of the sites are to be maintained as far as possible. Other measure include:</p> <ul style="list-style-type: none"> <li>• Save topsoil removed during excavation and use to reclaim disturbed areas as soon as it is possible to do so.</li> <li>• Use dust abatement such as water spraying to minimize windblown erosion.</li> <li>• Provide temporary stabilization of disturbed/excavated areas that are not active under construction.</li> <li>• Apply erosion controls (e.g., silt traps) along the drainage leading to the water drains.</li> <li>• Maintain vegetative cover within unused land to prevent erosion and periodically monitor the area to assess erosion.</li> <li>• Clean and maintain catch basins, drainage ditches and culverts regularly.</li> </ul>	<ul style="list-style-type: none"> <li>• Slope stability</li> <li>• Frequent monitoring during the piling operation</li> <li>• Monitoring noise and vibration</li> </ul>	Contractor	PMC/TNIHPL

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		<ul style="list-style-type: none"> <li>Conduct routine site inspection to assess the effectiveness and the maintenance requirements for erosion and sediment control systems</li> </ul>			
4.8	Generation of Dust	<ul style="list-style-type: none"> <li>Take every precaution to reduce the levels of dust at construction sites.</li> <li>All earth works to be protected / covered in a manner to minimize dust generation.</li> <li>Clearance will be affected immediately by manual sweeping and removal of debris, the road surfaces will be hosed or watered using necessary equipment.</li> <li>Construction site shall regularly be wetted by sprinkling of water during dusty conditions especially during summer seasons and winds.</li> <li>Ambient Air Quality monitoring has to be performed as per the Environmental Monitoring Program.</li> <li>The site shall be barricaded in all the directions leading to the road and adjacent properties.</li> <li>The barricades shall be erected in such a way to prevent dust, debris, etc, not to be carried away from the site.</li> <li>The height of the barricades shall be as required but a minimum of 6m</li> </ul>	<ul style="list-style-type: none"> <li>Records of housekeeping</li> <li>Records of water sprinkling at site</li> <li>vehicles carrying excavated soil covered</li> <li>AAQ parameters (Particulate matter (PM<sub>10</sub> &amp; PM<sub>2.5</sub>), SO<sub>x</sub>, NO<sub>x</sub>, CO) to be monitored (Table 3)</li> </ul>	Contractor	PMC/TNIHPL

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		<ul style="list-style-type: none"> <li>The barricades are to be maintained till the completion of the Works.</li> </ul>			
4.9	Noise from construction activities and equipment	<ul style="list-style-type: none"> <li>This is anticipated but will be temporary during construction phase and limited to the project site. The monitoring of the ambient noise levels should be performed regularly on the project site through a NABL certified third party laboratory during the construction phase.</li> <li>Maintenance of vehicles, equipment and machinery will be regular and to the satisfaction of the Engineer, to keep noise from these at a minimum.</li> <li>All vehicles and equipment used for construction will be fitted with exhaust silencers. During routine servicing operations, the effectiveness of exhaust silencers will be checked and if found to be defective will be replaced.</li> <li>Noise limits for construction equipment used in this project (measured at one metre from the edge of the equipment in free field) such as compactors, rollers, front loaders, concrete mixers, cranes (movable), vibrators and saws will not exceed 75 dB (A).</li> <li>Notwithstanding any other conditions of contract, noise level from any item of plant(s) will</li> </ul>	<ul style="list-style-type: none"> <li>Maintenance record of construction vehicles and equipment</li> <li>Exhaust silencers working properly</li> <li>Records of noise monitoring as per EMP.</li> </ul>	Contractor	PMC/TNIHPL

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S. No.	Environmental Issues	Mitigation Measures	Indicators and Targets	Responsibility for Implementation	Responsibility for Supervision
		<p>comply with the noise standards specified by CPCB.</p> <ul style="list-style-type: none"> <li>If specific noise complaints are received during construction, it may be required to implement one or more of the following noise mitigation measures: <ul style="list-style-type: none"> <li>Shut off idling equipment.</li> <li>Reschedule construction operations to avoid periods of noise annoyance identified in the complaint.</li> <li>Notify nearby residents whenever extremely noisy work will be occurring.</li> </ul> </li> <li>Ambient Noise levels has to be monitored as per the Environmental Monitoring Program</li> </ul>			
4.10	Material Handling at Site	<ul style="list-style-type: none"> <li>All workers employed on mixing asphaltic material, cement, concrete etc., will be provided with protective footwear and protective goggles. Workers who are engaged in welding works, will be provided with welder's protective eye-shields. Workers engaged in stone breaking activities will be provided with protective goggles and clothing and will be seated at sufficiently safe intervals.</li> </ul>	<ul style="list-style-type: none"> <li>use of proper PPEs at work sites</li> <li>records of PPEs procured and issued for use</li> </ul>	Contractor	PMC/TNIHPL
4.11	Disposal of Construction Waste /Debris / Cut Material	<ul style="list-style-type: none"> <li>The waste generated will be reused in the construction activities, either as a fill material or otherwise, based</li> </ul>	<ul style="list-style-type: none"> <li>Records of excavated soil and</li> <li>Records of reuse and disposal of excavated soil</li> </ul>	Contractor	PMC/TNIHPL

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S. No.	Environmental Issues	Mitigation Measures	Indicators and Targets	Responsibility for Implementation	Responsibility for Supervision
		<p>on its suitability of reuse to the maximum extent possible.</p> <ul style="list-style-type: none"> <li>• Safe disposal of the extraneous material will be ensured in the pre-identified disposal locations. In no case, any construction waste will be disposed around the project locations indiscriminately.</li> <li>• Burning of municipal solid waste or hazardous waste shall be prohibited.</li> </ul>	<ul style="list-style-type: none"> <li>• Disposal site identified and approved</li> <li>• AAQ parameters (Particulate matter (PM10 &amp; PM2.5), SOx, NOx, CO) to be monitored</li> </ul>		
4.12	Safety Measures During Construction	<ul style="list-style-type: none"> <li>• Personal Protective Equipment (PPE) for workers on the project and adequate safety measures for workers during handling of materials at site will be taken up.</li> <li>• Compliance with all regulations regarding safe scaffolding, ladders, working platforms, gangway, stairwells, excavations, trenches and safe means of entry and egress.</li> <li>• Appropriate safety measures (including hard barriers) have to be adopted for the construction during the night-time (Lux level shall be equivalent to a minimum of two 500 watt flood lights)</li> </ul>	<ul style="list-style-type: none"> <li>• Use of PPEs</li> <li>• Records of PPEs procured and issued for use</li> <li>• Compliance of all regulations regarding scaffolding, ladders and work at height</li> </ul>	Contractor	PMC/TNIHPL
4.13	Risk caused by Force Majeure	<ul style="list-style-type: none"> <li>• All reasonable precaution will be taken to prevent danger of the workers and the public from fire, flood, drowning, etc.</li> <li>• All necessary steps will be taken for prompt first aid treatment of all</li> </ul>	<ul style="list-style-type: none"> <li>• Records of first aid facilities at site</li> <li>• Records of safety training to workers</li> </ul>	Contractor	PMC/TNIHPL

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S. No.	Environmental Issues	Mitigation Measures	Indicators and Targets	Responsibility for Implementation	Responsibility for Supervision
		injuries likely to be sustained during the course of work.			
4.14	Malaria Risk	<ul style="list-style-type: none"> <li>The Developer will, at his own expense, conform to all anti-malarial instructions; mosquito prevention at site should be done</li> </ul>	<ul style="list-style-type: none"> <li>Records of use of mosquito prevention measures at site and work camps</li> <li>anti-malaria instructions to workers</li> </ul>	Contractor	PMC/TNIHPL
4.15	Clearing of Construction Camps & Restoration	<ul style="list-style-type: none"> <li>Prepare site restoration plans for approval by the Engineer. The plan is to be implemented by the developer prior to demobilization.</li> <li>On completion of the works, all temporary structures will be cleared away, all rubbish should be removed, all rubbish burnt, excreta or other disposal pits or trenches filled in and effectively sealed off and the site left clean and tidy.</li> </ul>	<ul style="list-style-type: none"> <li>Restoration plan for site and work camps prepared</li> <li>Restoration of site and work camps as per plan</li> </ul>	Contractor	PMC/TNIHPL
4.16	Influx of migrant workers	<ul style="list-style-type: none"> <li>Temporary influx of construction workers during the construction phase will happen. Although the project may recruit migrant workers during the construction phase, the number will not be as many.</li> <li>Therefore, this project will not cause significant burden to the infrastructure such as the water supply and sanitation during construction phase. During the Operation phase water requirement will be sourced through municipal/tankers. The</li> </ul>	<ul style="list-style-type: none"> <li>Health and safety risks</li> <li>Chances of spread of sexually transmittable diseases like AIDS</li> <li>Water pollution</li> </ul>	Contractor	PMC/TNIHPL

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S. No.	Environmental Issues	Mitigation Measures	Indicators and Targets	Responsibility for Implementation	Responsibility for Supervision
		<p>wastewater shall be discharged to the municipal sewer line. The developer shall submit an application to the Kanchipuram Municipality for a sewer connection.</p> <ul style="list-style-type: none"> <li>• Local labourer's to be given preference for job opportunities.</li> <li>• Ensure labour-related regulations are met</li> <li>• In case of hiring outside labour, ensure that their working conditions as well as camps meet local regulations and the best practices of the industry.</li> <li>• HIV/AIDS awareness campaign for the workers</li> </ul>			
5	<b>Post- Construction, Operations &amp; Maintenance Stage</b>				
5.1	Damage due to debris, spoils and excess construction materials	<p>(i) Remove all spoils wreckage, rubbish, or temporary structures (such as buildings, shelters, and latrines) which are no longer required; and</p> <p>ii) All excavated roads shall be reinstated to the original condition.</p> <p>(iii) All disrupted utilities restored</p> <p>(iv) All affected structures rehabilitated/compensated</p> <p>(v) The area that previously housed the construction camp is to be checked for spills of substances such as oil, paint, etc. and these shall be cleaned up.</p>	<ul style="list-style-type: none"> <li>• C&amp;D waste management plan and its effective implementation</li> </ul>	Contractor	PMC/TNIHPL

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S. No.	Environmental Issues	Mitigation Measures	Indicators and Targets	Responsibility for Implementation	Responsibility for Supervision
		(vi) All hardened surfaces within the construction camp area shall be ripped, all imported materials removed, and the area shall be top soiled and regressed using the guidelines set out in the revegetation specification that forms part of this document.			
5.2	Waste Disposal	<ul style="list-style-type: none"> <li>• Household waste to be segregated and sent to waste collection centers.</li> <li>• Sewage waste to be treated through sewage treatment plant.</li> <li>• Grey water to be used for watering green belt.</li> <li>• Records of waste disposal</li> </ul>	<ul style="list-style-type: none"> <li>• Records of Waste Disposal</li> </ul>	Contractor	PMC/TNIHPL
5.3	Ambient Air, Noise and Water Monitoring	<ul style="list-style-type: none"> <li>• Regular Monitoring of air, water, and noise levels due to the project</li> </ul>	<ul style="list-style-type: none"> <li>• Test Records</li> </ul>	Contractor	PMC/TNIHPL

## 8. Information Disclosure, Consultation and Participation

39. The project does not require an Environmental Clearance as per the EIA Notification- 2006, and hence, does not require public consultation through SPCB/consultation. However, the active participation of stakeholders including local community, NGOs, etc., in all stages of project preparation and implementation is essential for successful implementation of the project. To improve the engagement with the community, a stakeholder engagement plan and disclosure mechanism will be formulated. This will ensure that the project is designed, constructed, and operated with utmost consideration to local needs, ensuring community acceptance, and will bring maximum benefits to the people.

40. The project does not require public consultation as per the Government of India's requirement (EIA notification 2006 and its amendment thereon). However, an informal local consultation has been done for the project and the local IT/ITES companies were informed about the project activities and feedback collected during the site visit by TNIFMC and EMC teams. The details of the discussion have been captured in **Error! Reference source not found.**

41. TNIFMC for TNSF shall disclose ESGMS performance including the environmental assessment, EMP, and semi-annual EMR in the public domain in line ADB SPS Principle 5, 6 and 7 for environment.



## 9. Grievance Redressal Mechanism

42. A Grievance Redress Mechanism for external stakeholders will be established to address matters related to environmental and social aspects of the project. The main objective of the Grievance Redressal Mechanism is to provide a time bound and transparent mechanism to voice and resolve complaints of the people affected in the project area. It is recognized that the Grievance Redress Mechanism provided does not impede or replace the grievance resolution process offered by the legal system of the country.

43. There will be three levels of Grievance Redressal Mechanisms- a) Site Level b) Project Level and c) Fund Level with a minimum of 3 persons as part of each level needs to be identified and their names, designations and contact details need to be displayed at the site in both English and Tamil. At the site level, the grievance redressal officers and their names along with the contact details shall be displayed at prominent locations in the site, in both English and Tamil. At the project level, the promoter shall nominate the suitable grievance redressal officers and their names and contact details shall be displayed in both English and Tamil at the project site. At the fund level, the fund may nominate suitable grievance redressal officers and their names and contact details may be shared at the project. The GRM team at the site level and the project level will be responsible for handling grievances. They will (i) record the complaints, categorize, and prioritize them; (ii) consult with all relevant stakeholders, visit the project site, and do the required examination; (iii) settle the grievances in consultation with the complainant and the project staff; (iv) report to the aggrieved parties about the decision/solution; and (v) forward the unresolved cases to higher authorities for resolution. At the fund level, there will be a grievance redressal officer nominated who shall handle the grievances at the fund level.

44. The Grievance Redressal Mechanism (GRM) shall be aligned to the World Bank and ADB's approach to grievance redressal in projects.

45. **Procedure** - The GRM shall cover three categories of stakeholders namely external stakeholders at the project site, those affected by the project, and the investors of the Fund.

### I. **Grievance and complaints received from external stakeholders and those affected by the project at project site**

#### **Step 1: Nomination of Field Level Grievance Redressal Officer and Management Level Grievance Redressal Officer**

1. There will be a nomination of one Field Level Grievance Redressal Officer by the developer. In consultation with the ESG Analyst of TNSF who shall conduct a rapid review of contentious issues/ disputes related to the project such as, land ownership/rights, ethnic/community rights, or labor issues, and related stakeholders, relying on existing information from the project, relevant government departments and community around project site.
2. The review will map who the key stakeholders to these issues are and what the nature of the debate is (informed, polarized, etc). Attention will be paid to the local dispute resolution culture and, particularly, to the capacity and track-record of stakeholders to settle disputes through mediation or constructive negotiation.
3. There will be a nomination of one Management Level Grievance Redressal Officer by the Management in consultation with Project Lead and the ESG Team.

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4. The names, positions/designations, contact numbers, email and postal address of the Field Level, Management Level and Fund Level GROs will be displayed prominently in local language as well as in English, at the entrance to the project site.

### **Step 2: Receiving of grievances and complaints**

1. The grievances can be received by any or all the following means; phone, post/courier, SMS, webpage, or face-to-face. The uptake channels should be publicized and advertised at the site and on the website of TNSF, project owner/promoter/sponsor and the portfolio company.
2. A Grievance Register (GR) will be maintained at the main security gate of the site and at Project Site Office for recording the grievances. The Field Level GRO will record the grievance/complaint if communicated verbally by the aggrieved party.
3. It is important that all complaints are logged in writing and maintained in a database. A central log of all the grievances received through the above means will be maintained by the Field Level GRO, in an excel file.
4. Staff members who receive complaints verbally should put them in writing into the central grievance log, for them to be tracked.
5. Any grievances received anonymously should also get recorded in the grievance log.
6. Every grievance received will be identified with a grievance number and the same shall be communicated to the aggrieved party as an acknowledgement verbally or in-writing by the Field Level GRO within 24 hours of the receipt, also telling him/her when to expect further information.
7. The record of communication of the acknowledgement will be maintained by the Field Level GRO in the central grievance log.

### **Step 3: Resolution of grievances and complaints**

1. Grievances will be categorized by the Field Level GRO as high, medium and low priority according to the type of issue raised (e.g. physical and economic displacement, grievance from indigenous population, inconvenience caused by vehicular movements, accidents, near-misses, pollution, etc.) and the impact of the project on the environment/aggrieved party.
2. A high priority grievance may be those that can have an impact beyond the activity period and the impact may be irreversible if not acted upon immediately; medium priority grievances are those where the impact is fairly moderate and can be reversed with corrective measure; low priority grievances are those which are short-term and can be resolved through bare minimum or minor corrections.
3. Based on this categorization and seriousness of the issue raised, the Field Level GRO will prioritize the complaints for appropriate follow up action.
4. The Field GRO will review the grievances / complaints received and direct it to the appropriate function/ department for necessary action, keeping the project site head/ in-charge in loop.

5. It is anticipated that the majority of issues raised will be informational in nature or feedback that requires small course corrections; these should generally be handled at the site by the representatives of project owner/promoter/sponsor or the portfolio company.
6. Issues having to do with governance will be addressed at the Management level, with the involvement of the Management Level GRO.
7. The function/ department will revert to the Field GRO with their response as soon as possible but not later than 7 days of receipt of complaint, including any action deemed necessary, along with the site head's approval for the same.
8. In case, the Field Level GRO is not able to resolve the grievance, the grievance will be submitted to Management Level GRO and the total time to resolve should not more than 7 days (including Field Level and Management Level GRO).
9. In case, after 7 days, if there are any unresolved issues, the complaint will be transferred to the Fund-Level Grievance Redressal Committee for resolution within the next 7 days.
10. The Field Level GRO will be accountable for the timely closure of all the grievances received from the external stakeholders at the site and those affected by the project at project site.
11. The Field Level GRO will communicate the response and action taken to the aggrieved party and obtain their acknowledgement.
12. Basis the acknowledgement received from the aggrieved party, the Field Level GRO will close the complaint in the grievance log.
13. The grievance log will be shared by the Field Level GRO with the Management Level GRO and Project Lead of TNSF on fortnightly basis.
14. The grievance log will also be included in the quarterly project progress reports submitted to TNSF's ESG Team.
15. The Project Lead in consultation with the Field Level GRO, Management Level GRO and Fund Level GRC will ensure that all the grievances are closed within the quarter.
16. The site will maintain at a minimum, a database on the following metrics:
  - a. Number of complaints received
  - b. Number of complaints resolved
  - c. Details of the complaints that have gone to mediation (through arbitration or involvement of other parties like – community representatives, legal representatives, TNSF legal counsel, etc.)
  - d. Grievance and complaints received from investors
17. The names displaying the Grievance Committee Members at Project and Site Level
18. The sample grievance redressal form is provided under Annexure 4 - Sample Grievance Form

## 10 Conclusions and Recommendations

46. This IEE report examined the project in a detailed manner and assessed the various existing environmental parameters in and around the project and the actions planned to minimize any significant negative impact during the construction and operational phase and associated mitigation measures are proposed. The project site is in proximity to a sensitive ecosystem. The project is not significant from a historical and cultural perspective. The project will not cause any significant adverse environmental and social impacts during construction, or operation of the project. They are expected to be limited to the construction phase and will therefore be temporary in nature. Adequate mitigation actions will be undertaken in line with management and monitoring of the set of recommended mitigation measures. No physical and/or economic displacement of people shall not be required for project implementation.

47. Based on the findings of the IEE, the classification of the project as Category B is confirmed i.e. it is likely to have minimal or no adverse environmental impacts. Hence no further special study or detailed EIA needs to be undertaken to comply with ADB SPS (2009).

48. An Environmental Management Plan (EMP) has been suggested for the project. The detailed review of the EMP needs to be undertaken by the promoter and any suitable modifications may be made by the project team in consultation with TNSF.

48. In order to manage the potential adverse environmental impacts, especially in the construction phase of the project, the recommendations provided in the MAP should be followed with due diligence. Some of important actions required are:

- Regular monitoring of the recommended measures shall also be carried out during the construction phase of the project. The MAP should be revisited in case new impacts/non-compliances are identified.
- Obtaining all the listed necessary compliances as specified in the MAP.
- Training of staff on MAP related issues.
- Activation of the Grievance Redress Committee and prompt response to public complaints.
- Develop a comprehensive stakeholder engagement and management plan for smooth disclosure of information.



## Annexure 1 - Photos



Roadside boundary of the site



Presence of tree vegetation adjoining the site



Earth filling activities



Fire station near the site



Roadway connectivity to the project site

## Annexure 2 - Rapid Environmental Assessment Checklist

Country/Project  
Title:

India/ Tamil Nadu, Industrial Housing Project, Siruseri

Sector Division:

Urban Development

Screening Questions	Yes	No	Remarks
<b>A. Project Siting</b> Is the project area			
<ul style="list-style-type: none"> <li>• Densely populated?</li> </ul>		<b>X</b>	The site is located in Egattur Village, Thiruporur Taluk, Kanchipuram District, Tamil Nadu. The project area is at present uninhabited.
<ul style="list-style-type: none"> <li>• Heavy with development activities?</li> </ul>		<b>X</b>	The project location is in SIPCOT IT Park in Kanchipuram taluka and the development in the surrounding areas is commercial IT/ITeS buildings.
<ul style="list-style-type: none"> <li>• Adjacent to or within any environmentally sensitive areas?</li> </ul>			
<ul style="list-style-type: none"> <li>○ Cultural heritage site</li> </ul>		<b>X</b>	The nearest site of cultural importance is Mohamed Sathak AJ Masjid that is located approximately 0.9 kms Northwest from the project site.
<ul style="list-style-type: none"> <li>○ Protected Area</li> </ul>		<b>X</b>	Vedanthangal and Karikili Bird Sanctuary is the nearest notified Eco-Sensitive Zone (ESZ) as per the Ministry of Environment, Forest, and Climate Change (MoEFCC) from the project site and is located at an approx. aerial distance of approximately 50 km south-west from the project site.
<ul style="list-style-type: none"> <li>○ Wetland</li> </ul>		<b>X</b>	There is no wetland in and around the project site
<ul style="list-style-type: none"> <li>○ Mangrove</li> </ul>		<b>X</b>	There are no coastal areas around the site.
<ul style="list-style-type: none"> <li>○ Estuarine</li> </ul>		<b>X</b>	There are no coastal areas around the site.
<ul style="list-style-type: none"> <li>○ Buffer zone of protected area</li> </ul>		<b>X</b>	Vedanthangal and Karikili Bird Sanctuary is the nearest notified Eco-Sensitive Zone (ESZ) as per the Ministry of Environment, Forest, and Climate Change (MoEFCC) from the project site and is located at an approx. aerial distance of approximately 50 km south-west from the project site.
<ul style="list-style-type: none"> <li>○ Special area for protecting biodiversity</li> </ul>		<b>X</b>	There is no special area for protecting biodiversity in and around the area.

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○ Bay		X	There are no coastal areas around the site.
<b>B. Potential Environmental Impacts</b> Will the Project cause...			
<ul style="list-style-type: none"> <li>Impacts on the sustainability of associated sanitation and solid waste disposal systems and their interactions with other urban services.</li> </ul>	X		<p>The project shall comprise of 807 bed units of different typologies in a G+12 structure.</p> <p>The project will generate municipal solid waste during the construction phase. The construction waste should be reused to the maximum and the excess should be disposed to through authorized vendors.</p>
<ul style="list-style-type: none"> <li>Deterioration of surrounding environmental conditions due to rapid urban population growth, commercial and industrial activity, and increased waste generation to the point that both manmade and natural systems are overloaded and the capacities to manage these systems are overwhelmed?</li> </ul>		X	The activity is within the permissible development activity and the local area plan.
<ul style="list-style-type: none"> <li>Degradation of land and ecosystems (e.g., loss of wetlands and wild lands, coastal zones, watersheds and forests)?</li> </ul>		X	The project site is far from these types of ecosystems.
<ul style="list-style-type: none"> <li>Dislocation or involuntary resettlement of people?</li> </ul>		X	The project does not involve any dislocation or involuntary resettlement of the people.
<ul style="list-style-type: none"> <li>Disproportionate impacts on the poor, women and children, Indigenous Peoples or other vulnerable group?</li> </ul>		X	The project is not located near any place of cultural importance.
<ul style="list-style-type: none"> <li>Degradation of cultural property, and loss of cultural heritage and tourism revenues?</li> </ul>		X	<p>The site has been proposed to be used for residential purposes.</p> <p>The nearest site of cultural importance is Mohamed Sathak AJ Masjid that is located approximately 0.9 kms Northwest from the project site.</p> <p>However, the impact of the project will not degrade the cultural property, or the loss of cultural heritage and tourism revenues.</p>
<ul style="list-style-type: none"> <li>Degradation of aesthetic and property value loss?</li> </ul>		X	The land is barren and vacant, so any loss of aesthetic and property value is very unlikely
<ul style="list-style-type: none"> <li>Occupation of low-lying lands, floodplains and steep hillsides by squatters and low-income groups, and their exposure to increased health hazards and risks due to pollutive industries?</li> </ul>		X	The project will be used for residential purpose.
<ul style="list-style-type: none"> <li>water resource problems (e.g., depletion/degradation of available</li> </ul>	X		The total water requirement for the proposed housing facility is not yet

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water supply, deterioration for surface and ground water quality, and pollution of receiving waters?			determined. However, likely to be sourced from SIPCOT's 17 open wells. The project site is located Egattur Village, Thiruporur Taluk, Kanchipuram District, which is classified as 'Safe' in terms of Ground Water Development Status by the Central Ground Water Board (CGWB). Therefore, the risk to the project from depleting ground water levels will be low.
• Air pollution due to urban emissions?	X		This is anticipated during construction phase. The sources of air pollution will be from trucks transporting materials to the site, operation of diesel engine, and machinery use. The project should conduct regular ambient air quality monitoring tests and DG stack emission tests at the project site.
• Risks and vulnerabilities related to occupational health and safety due to physical, chemical and biological hazards during project construction and operation?	X		This is anticipated during construction phase. Occupational health and safety hazards from construction works should be mitigated through the OHS measures, many of which are mandatory by regulation. The environmental management plan (EMP) of the project will provide measures to mitigate this impact.
• Road blocking and temporary flooding due to land excavation during rainy season?	X		This could be anticipated during construction. Excavation works should be limited within the site boundary, so it is not expected to cause any roadblock.
• Noise and dust from construction activities?	X		This is anticipated but will be temporary during construction phase and limited to the project site. The monitoring of the ambient noise levels should be performed regularly on the project site through an NABL certified third party laboratory during the construction phase.
• Traffic disturbances due to construction material transport and wastes?	X		The main road for SIPCOT IT Park will be utilized for the transportation of material and personnel during construction phase. The impact on traffic disturbance will be temporary during construction phase only. During the construction activity, utmost care should be taken to control the noise levels within the standards. Negligible noise will be generated during operational phase.
• Temporary silt runoff due to construction?	X		This is anticipated if excavation works are undertaken during the rainy season. The EMP of the project will provide measures to avoid or minimize runoff, such as for example, avoiding or minimizing heavy

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			excavation works during monsoon season, providing silt traps or canals around the site, etc.
<ul style="list-style-type: none"> <li>Hazards to public health due to ambient, household and occupational pollution, thermal inversion, and smog formation?</li> </ul>		X	Not anticipated for a housing development project. The construction activities should be carried out within the site boundaries only.
<ul style="list-style-type: none"> <li>Water depletion and/or degradation?</li> </ul>	X		During construction phase, there will be demand for water use for construction activities as well as for domestic purposes. The treated water can be reused for flushing and watering the OSR, and landscaped areas.
<ul style="list-style-type: none"> <li>Overpaying of ground water, leading to land subsidence, lowered ground water table, and salinization?</li> </ul>		X	The project site is located in Egattur Village, Thiruporur Taluk, Kanchipuram District, which is classified as 'Safe' in terms of Ground Water Development Status by the Central Ground Water Board (CGWB). Therefore, the risk to the project from depleting ground water levels will be low.
<ul style="list-style-type: none"> <li>Contamination of surface and ground waters due to improper waste disposal?</li> </ul>		X	The pollution preventive and control measures as mentioned in EC and CtO will be applied and will comply with prescribed statutory norms. The wastewater shall be discharged to the municipal sewer line. The developer shall submit an application to the Kanchipuram Municipality for a sewer connection.
<ul style="list-style-type: none"> <li>Pollution of receiving waters resulting in amenity losses, fisheries and marine resource depletion, and health problems?</li> </ul>		X	This is not anticipated. The project site is not near receiving bodies of water used for livelihood activities or drinking water supply.
<ul style="list-style-type: none"> <li>Large population influx during project construction and operation that causes increased burden on social infrastructure and services (such as water supply and sanitation systems)?</li> </ul>		X	Temporary influx of construction workers during the construction phase will happen. Although the project may recruit migrant workers during the construction phase, the number will not be as many. Therefore, this project will not cause significant burden to the infrastructure such as the water supply and sanitation during construction phase. During the operation phase water requirement will be sourced through municipal/tankers. The wastewater shall be discharged to the municipal sewer line. The developer shall submit an application to the Kanchipuram Municipality for a sewer connection.
<ul style="list-style-type: none"> <li>Social conflicts if workers from other regions or countries are hired?</li> </ul>	X		Not anticipated as most workers will be local
<ul style="list-style-type: none"> <li>Risks to community health and safety due to the transport, storage, and use</li> </ul>	X		The proposed project is only construction of affordable housing facility and there will

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and/or disposal of materials such as explosives, fuel and other chemicals during operation and construction?			not be any storage of hazardous chemicals (as per MSIHC rules). However, HSD might be used for DG sets and the waste/residue from the DG sets will be stored in the HDPE drums as per the hazardous guidelines.
<ul style="list-style-type: none"> <li>Community safety risks due to both accidental and natural hazards, especially where the structural elements or components of the project are accessible to members of the affected community or where their failure could result in injury to the community throughout project construction, operation and decommissioning?</li> </ul>	X		<p>Anticipated during construction phase. During accidental spills if any, spill contingency plan should be adopted to prevent the release of pollutant into the environment and will be managed as per the MSIHC guidelines.</p> <p>The study area is not much susceptible to floods, landslides, cloud bursts, and cyclones. The project site falls under the Seismic Zone-III (Moderate Damage Risk Zone) according to the Indian Standard Seismic Zoning Map. Therefore, suitable earthquake design will be followed</p>

## Checklist for Preliminary Climate Risk Screening

<b>Country/Project Title</b>	India/ Tamil Nadu, Industrial Housing Facility for Women (Site: Egattur , District: Kanchipuram)
<b>Sector</b>	Urban Development
<b>Sub-sector</b>	Urban Housing

Screening Questions		Score	Remarks
<b>Location and Design of project</b>	Is siting and/or routing of the project (or its components) likely to be affected by climate conditions including extreme weather-related events such as floods, droughts, storms, landslides?	1	The site is not vulnerable to earthquakes, floods, landslides, cloud bursts. However, the project lies in a very high zone for cyclone risk.
	Would the project design (e.g., the clearance for bridges) need to consider any hydro- meteorological parameters (e.g., sea-level, peak river flow, reliable water level, peak wind speed etc)?	0	No such effect envisaged.
<b>Materials and Maintenance</b>	Would weather, current and likely future climate conditions (e.g. prevailing humidity level, temperature contrast between hot summer days and cold winter days, exposure to wind and humidity hydro-meteorological parameters likely affect the selection of project inputs over the life of project outputs (e.g. construction material)?	0	No such effect envisaged.
	Would weather, current and likely future climate conditions, and related extreme events likely affect the maintenance (scheduling and cost) of project output(s)?	0	No such effect envisaged.

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<b>Performance of project outputs</b>	Would weather/climate conditions, and related extreme events likely affect the performance (e.g. annual power production) of project output(s) (e.g. hydro-power generation facilities) throughout their design life time?	0	No such effect envisaged.
<b>Cumulative score</b>		<b>1</b>	

Options for answers and corresponding score are provided below:

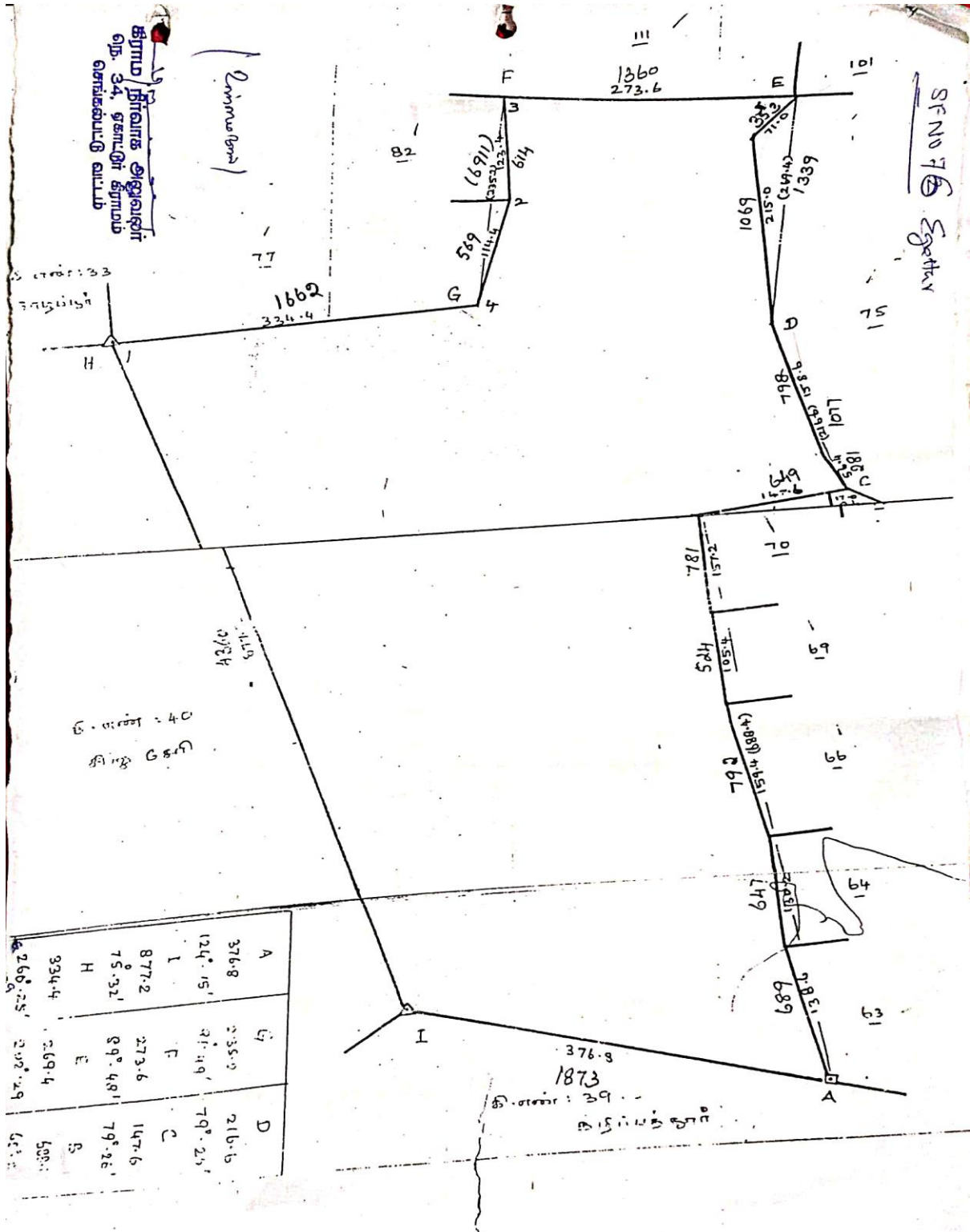
Response	Score
Not Likely	0
Likely	1
Very Likely	2

Responses when added that provide a score of 0 will be considered low risk project. If adding all responses will result to a score of 1-4 and that no score of 2 was given to any single response, the project will be assigned a medium risk category. A total score of 5 or more (which include providing a score of 1 in all responses) or a 2 in any single response, will be categorized as high-risk project.

**Result of Initial Screening (Low, Medium, High): Medium**

**Other Comments:** Exposure of the site to climate change related hazard is medium.

### Annexure 3 - List of documents reviewed



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## Annexure 4 - Sample Grievance Form

(To be made available in Local Language)

The Proposed Housing facility welcomes complaints, suggestions, queries, and comments regarding program implementation. We encourage persons with a grievance to provide their name and contact information to enable us to get in touch with you for clarification and feedback.

In case you want to include your personal details but want information to remain confidential, please type CONFIDENTIAL above your name.

Date	Place of Registration	
Contact Information/Personal Details		
Name	Gender	Age
Home Address		
Village/Town		
District		
Phone no.		
E-mail		
Complaint/Suggestion/Comment/Question Please provide the details (who, what, where and how) of your Grievance below: If included as an attachment/note/letter, please mention here:		
How do you want us to reach you for feedback on your comment/grievance?		

For Official Use only

Registered by: (Name of Official registering grievance)			
Verified through	Letter	E-mail	Verbal/Telephonic
Reviewed by: (Names/Position of Official(s) reviewing grievance)			
Action Taken:			
Whether Action Taken Disclosed:			
Means of Disclosure			

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# Annexure 5 - Informal Public Consultation

## SIPCOT Project by M/s TNIHPL

### CONSULTATION INFORMATION

CONSULTATION SUMMARY							
S. No	Date / Time / Venue of Meetings	Stakeholders	No. of Participants			Issues discussed	Project responses
			Male	Female	Total		
1	23-05-2023 Project site	SASCOM President	1		1	<ul style="list-style-type: none"> <li>• Women Safety and Security</li> <li>• Water Security</li> <li>• Transit facility</li> <li>• Waste management</li> </ul>	No major concerns have been noted.

### Attendance Sheet

S.No.	Name	Occupation / Designation	Gender	Area/ location	Contact No
1	Mr. Prakash Iyer	President of SASCOM i.e., Siruseri Association of Software Companies	Male	Phone Call	

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