

Contents

Executive Summary	7
Title and Location of Project.....	7
Location.....	7
Project Proponent	8
Brief Outline of the Project	8
Major Impacts	10
During Construction Phase	10
During Operation Phase	12
Proposed Environmental Monitoring	15
Ambient Air.....	15
Noise.....	15
Water Quality	15
CHAPTER # 1	17
INTRODUCTION.....	17
Purpose of the Report	17
Identification of the Project and Proponent	17
Project Proponent	17
Details of Consultant.....	18
Brief Description of Nature, Size & Location of the Project.....	19
Screening.....	19
CHAPTER # 2	20
ALTERNATIVE CONSIDERATION	20
Location alternative	20
Project alternative	20
Demand Alternative	20
Process / Design alternative.....	20
Location and site layout of the project site	20
CHAPTER # 3	21
DESCRIPTION OF PROJECT.....	21
Type and Category of the Project.....	21
Objective of the Project	21
Road Access	21
Vegetation features of the project site	21



Cost and Magnitude of operation:	21
Schedule of implementation	21
Description of the project	22
Water Requirement:	22
Source of Water	22
Wastewater, its treatment, and final disposal:	22
Sewerage system	22
Solid Waste	22
Solid Waste Management Plan	23
Steps involved in waste management:	23
Atmospheric Emissions	24
Mitigation measures to control emissions from generator	24
Health, Safety and Environment	25
Fire Protection System	25
Security	25
Nearest Institutions	25
Parking	25
Traffic Issues	25
Power Sources and Transmission	25
Mitigation measures for the installation of Generators:	25
Suggestions to make the buildings environmentally friendly and energy efficient	25
Design and Orientation:	26
Insulate and Seal the Building Envelope	26
Increase Heating and Cooling Efficiency	26
Alternate Cooling Methods	26
Decrease Other Energy Requirements	26
Install efficient lighting	26
Install efficient appliances	26
Increase Heating and Cooling Efficiency:	26
Plantation plan	27
Budget allocated	27
Species of plants and trees selected for plantation	27
Restoration / Rehabilitation Plan	27
Government approvals required by the project	27
CHAPTER # 4	28



DESCRIPTION OF ENVIRONMENT	28
PHYSICAL ENVIRONMENT/ RESOURCES.....	28
TOPOGRAPHY.....	28
SOIL	28
CLIMATE AND METROLOGY	29
WIND:	29
AMBIENT AIR QUALITY	31
NOISE LEVEL MONITORING	32
BASIC ENVIRONMENTAL CONDITIONS.....	32
METROLOGICAL CONDITIONS:	32
MONITORING INSTRUMENT:	32
METHODOLOGY ADOPTED:	32
GROUNDWATER.....	32
ECOLOGICAL RESOURCES.....	32
FLORA	32
FAUNA	32
SOCIOECONOMIC ENVIRONMENT	33
DEMOGRAPHIC CHARACTERISTICS OF THE PROJECT AREA.....	33
RELIGION	33
EDUCATION	33
HEALTH FACILITIES.....	34
QUALITY OF LIFE VALUES	34
CIVIC AMENITIES	34
GAMES	34
WELFARE OF EMPLOYEES	34
HISTORICAL BUILDINGS NEAR THE PROJECT SITE	34
AESTHETIC VALUES	34
CHAPTER # 5.....	35
SCREENING OF POTENTIAL ENVIRONMENTAL IMPACTS & THEIR	
MITIGATION MEASURES	35
ENVIRONMENTAL PARAMETERS	35
Project Location	35
Mitigation Measures and Recommendations:	35
Project design.....	36
Stability of the Proposed Project.....	36



Soil structure and soil bearing capacity	36
Road infrastructure design	36
Emergency exit points for the emergency situations	36
Firefighting system	36
Wastewater disposal system design.....	36
Rain water harvesting capacity of the drainage system.....	36
Electricity hazards	37
Mitigation measures and recommendations	37
During the construction phase	38
Grubbing and stripping	38
Leveling and compaction of the land	38
Demarcation of project building and other facilities	38
Generation of dust during loading and unloading of construction materials.....	38
Generation of noise on account of vehicular use and construction activities.....	38
Gaseous emission due to the vehicles and stand by generator (if any)	38
Health and safety issues during the constructional activity	38
Local flooding due to over-use of water and leakage of pipes	38
Safety of construction workers, people in the surroundings and passersby	38
Any outbreak of fire due to electrical and other failures.....	39
Solid waste generation due to domestic and construction activities	39
Wastewater generation from the domestic and constructional activities.....	39
Ground water quality.....	39
Impacts on Fauna and Flora.....	39
Security threat.....	39
Impact on land value	39
Dislocation of the people	39
Loss of public and private infrastructure.....	39
Mitigation Measures and Recommendations	40
During Operational Phase	41
Heavy Traffic	41
Parking Facilities	41
Vehicular Emissions	41
Solid Waste Generation Due to Domestic and Project-Related Activities	41
Waste Water Due to Domestic Activities.....	41
Fire Due to Short Circuits and Other Activities	41



Gaseous Emissions from the Generators.....	41
Health and Safety Issues	42
Mitigation Measures & Recommendations.....	42
Potential Environmental Enhancement Measures.....	42
Purpose of Mitigation measures.....	43
What is the problem i.e. in terms of “major environmental impacts” which may arise by the subject project activity?	43
When the problem will occur and when it should be addressed?	43
Where and how the problem should be addressed?	44
Ways of Achieving Mitigation Measures	44
Changing in Planning and Design	44
Improved Monitoring and Management Practices	44
Compensation in Money Terms	44
Replacement, Relocation and Rehabilitation:.....	44
CHAPTER # 6	45
ENVIRONMENTAL MANAGEMENT PLAN & MONITORING PROGRAM	45
Purpose and Objectives of the EMP	45
Management Approach	45
Institutional Capacity	45
Training Schedules.....	46
Training of Building Contractor.....	46
Responsibility of EMP	46
Summary of impacts and their mitigation measures	46
Equipment Maintenance Details.....	49
Environmental Budget.....	49
ENVIRONMENTAL MANAGEMENT PLAN FOR IBADAT EDUCATIONAL INSTITUTE	51
CHAPTER # 7	60
STAKEHOLDER PARTICIPATION	60
Methodology of Consultation	60
Proponent.....	60
The Responsible Authority	60
Other Departments and Agencies.....	60
Environmental Practitioners and Experts	61
Affected & Wider Community.....	61



Sample Size	61
Statistical Analysis.....	61
CHAPTER # 8	66
CONCLUSION AND RECOMMENDATION	66
Conclusions	66
Recommendations	66



Executive Summary

Title and Location of Project

The subject project is the Proposed Construction of Teaching Complex Including Institute and Teaching Hospital under the Name of Ibadat Educational Trust, located at 1-Km Bhoptian Chowk Defence Road Lahore, intends to get the environmental approval for the subject project by the submission of EIA Report for the compliance of section 12 of PEPA 1997 (Amended 2012). The educational institute has multiple buildings.

The proposed project falls under Schedule II, Category H, Review of IEE and EIA Regulations, 2022. TORs of the study under clause 5 (f) of policy and procedure for the filing, review and approval of environmental assessment are annexed as **Annexure – A**.

Location



The project site is located at 1 km Bhoptian Chowk Defence Road, Lahore

Land coordinates of the project site are as follows:

North: Main Road

South: Road

East: Hudiara Drain

West: Road

Project Proponent

Name	Mr. Umar Farooq Butt
CNIC	38403-5587277-9
Address	House#103, Shamsheer Road Civil Line Sargodha

For further details, a Copy of the CNIC of the proponent and other relevant documents are attached as **Annexure-B** with the amended EIA report.

Environmental Consultant:

Pak Green Enviro-Engineering (Pvt.) Ltd, as independent consultant, has been appointed by the proponent to conduct Environmental Impact Assessment (EIA).

Environmental Consultant	Pak Green Enviro Engineering Pvt Ltd
Contact	042-35441444, 0303-4442335.
Address	46-M, Gulberg III, Lahore

For a detail company profile see the *Chapter # 1 “Introduction”*

Brief Outline of the Project

Name of the project	Teaching Complex under the name of Ibadat Educational Trust
Location of the project	1-km Bhothian Chowk Defence Road Lahore
Status of the project	Proposed Construction of Teaching Complex Including Institute and Teaching Hospital
Total plot area	2,078,951 SFT
The initial cost of the project:	Rs. 2 Billion approx.



Objective s of the project:	Objectives of the subject project include: • Community Health and Education Improvement • Increase the literacy rate • job opportunities for teachers and workers • Innovation, Research, and Education • Patient & Employee safety • Work Effectiveness
Power Requirement:	Power requirements will be fulfilled by WAPDA and a diesel-fired generator of 500 KVA will be installed to cope with any emergency situation.
Labor	Approx. 50-60 people will work at the project site during construction. During the operation phase of the project, approx. a staff to 850 1200 .
Water Requirement:	During the construction phase of the project approx. 3000 gallons/day of water will be required for construction and domestic purposes. During the operational phase of the project approx. 80 gallons/person/day of water will be required for domestic and other purposes
Wastewater generation:	60-70% of the used water will be the wastewater
Wastewater treatment technique	A treatment Facility will be installed within the premises of the project to treat the wastewater.
Solid waste:	During the construction phase of the project approx. 1000-1200 kg of solid waste will be generated per day from construction and domestic sources. During the operation phase of the project approx. 2.2 kg/person/day solid waste will be generated from domestic and project-related sources.



Major Impacts

In order to identify all the activities associated with the project during the construction and operation phase with the potential to cause adverse environmental impacts and harm, a thorough review has been conducted and the following impacts have been identified:

During Construction Phase

Summary of Environmental and social impacts of the project during the construction phase and mitigation measures suggested:

Potential Impact	Criteria for determining Significance	Key Mitigation Measures
Dust Emissions—Particulate matter emitted during construction activities and gaseous emissions from site generators and transportation vehicles can result in deterioration of ambient air quality in the vicinity of the project site, and be a nuisance to the surrounding communities.	An increase in visible dust beyond the boundaries of the construction site; or Concentration of PM ₁₀ in excess of 150 µg/m ³ PEQS for Ambient Air	Sprinkling of water on dusty tracts is recommended; Use of wind shield around stockpiles is recommended; Speed limit of 10 km/h will be maintained on the access road; Transportation of material in covered trucks.
Health & Safety Issues- Health and safety issues may arise at the project site during the constructional work.	OSHA standards	HSE Trainings of persons/labors involved in the construction and



		planning of the project is recommended. PPEs should be provided to workers during constructional activities.
Construction Noise- Disturbance to surrounding communities due to operation of construction machinery at the project site.	PEQS for Noise	Precautionary measures should be adopted to avoid the noise generation at the construction site. PPEs should be provided to the workers in case of high noise. Use of noise abatement devices is recommended wherever practicable.
Solid waste Management— Improper waste management may generate health and aesthetic issues	Generation of excessive waste; Recyclable waste and reusable waste is discarded; Littering; Improper disposal.	Constructional waste should be utilized for road filling and maintenance. Domestic waste should be disposed of properly, handed over to contractors, placed in bins.
Vegetation Loss/ Soil erosion— Loss of vegetation as a result of land clearance for the construction purposes	Unnecessary or excessive removal of trees and shrubs	Felling of trees and clearing of vegetation should be avoided; Plantation of trees of 6 feet height is recommended.
Water Resources— The extraction of water for the project construction activities can affect the groundwater	Water extracted for the project has directly affected the ability of the community to meet their water needs	No impact on the community groundwater needs is envisaged as a result of the project.



availability for the project area communities		
Soil Contamination— Oil and chemical spills can contaminate the soil	Presence of visible amount of hydrocarbon in soil	Provision of spill prevention and control kits; Use of impermeable surfaces in workshops, and storage areas.
Socioeconomic Issues Workers Safety— Safety hazards associated with the construction activity, particularly with the increase in traffic at the project site.	No specific guidelines exist. A significant impact will be interpreted if there are complaints from the community or the occurrence of any injury or loss	Speed limit of 10 km/h will be maintained on the access road; Traffic controller will be stationed on the access road; Night driving will be kept to a minimum.
Project and Community Interface—Inter-cultural differences between the project staff from other areas and the local community	No community complaints	Training of the non-local project staff on local culture and norms; Avoidance of unnecessary interaction of local population with the non-local project staff

During Operation Phase

Potential Impact	Criteria for Determining Significance	Key Mitigation Measures
Structure stability- If structural stability of the building will not be ensured, it may cause a collapse of the building	Uniform Building Code	Structure stability of the building should be ensured and the proponent should obtain the structure stability certificate for the college building.



Traffic issues- Traffic congestion may be caused at the project site during the operation phase of the institute which may be a nuisance for the routine traffic	TEPA rules	A traffic impact assessment study of the proposed project site has been conducted. The speed limit of 10 km/h should be maintained on the access road; Traffic controller should be hired to manage the traffic at the project site.
Parking Issues- Unavailability of proper parking may be a nuisance at the project site	TEPA rules	Ample parking should be provided within the premises of the project building. Traffic controller should be hired to manage the traffic at the project site.
Health and safety issues- Health and safety issues may arise due to insufficient facilities at the institution e.g. poor ergonomics, lux, improper ventilation and from the laboratory chemicals	OSHA standards	Good ventilation, good ergonomics, and proper lighting must be ensured at the institution. Training of students should be conducted regarding Health and Safety issues. Standard procedures should be adopted during instrument handling and lab instruments and chemicals should be handled carefully. First-aid measures should be available at the college building.

		Adequate firefighting system and equipment should be installed (fire management system) Security guards should be present at the project site. The speed limit of 10 km/h should be maintained on the access road;
Firefighting issues- loss of life and property may be caused in case of any fire accident if proper fire management plan will not be devised and implemented in the building	OSHA standards	Fire safety management plan should be devised and implemented in the college building (fire management system is shown the map attached as Annexure-).
Emergency exits- absence of emergency exits in the project building may cause the loss of life in case of any emergency	OSHA standards	Emergency exits should be present at the project site and they should be made available in the college building in case of any emergency situation.
Solid waste management- Improper solid waste management may cause health problems and aesthetic issues	Exposure to potentially hazardous waste; Generation of excessive waste; Recyclable waste and reusable waste is discarded; Littering; Improper disposal	Waste bins should be placed at suitable places. Domestic and laboratory waste should be stored in separate bins and must be handed over to certified contractors. Periodic cleaning of septic tank will be done and sludge will be handed over to the certified contractors.



Noise- Noise during the project operations may be a nuisance in the project area and in its surroundings	OSHA standards	No activity producing extraordinary levels of noise will be allowed as a policy matter.
Discharge of wastewater- The discharge of untreated wastewater can have negative impacts.	PEQS for Municipal and Liquid Industrial Effluents (mg/l, unless otherwise defined)	Wastewater will be treated in the septic tank before its final disposal. Compliance of PEQS for Municipal Effluents will be ensured. Monitoring will be conducted as per PEQS and reports will be submitted to EPA.

Proposed Environmental Monitoring

To oversee the environmental performance of the project through its lifecycle enforcing the PEQS an Environmental Monitoring Program should be formulated which ensures effective surveillance of the

environmental parameters at various stages of the project development and compliance with PEQS and legal obligations. Monitoring for Environmental Parameters is recommended:

Ambient Air

Regular monitoring for Ambient Air should be conducted during the construction and operational phase of the project and a report should be submitted to EPA Punjab. The lab reports are attached as **Annexure-C**

Noise

Regular monitoring for noise levels should be conducted during the construction and operation phase of the project and a report should be submitted to EPA Punjab

Water Quality

Regular monitoring for water quality should be conducted and report should be submitted to EPA Punjab.

Impact	Project activity	Monitoring mechanism	Frequency	Monitoring Authority
Air emissions and dust	The air quality will deteriorate due to transportation and construction activities	Monitoring for the air quality as per PEQS,	Quarterly	Proponent/ Contractor
Water pollution	Water quality will deteriorate due to construction and operational activities	Monitoring for wastewater & drinking water quality as per EPA PEQS,	Quarterly	Proponent/ Contractor
Noise pollution	Construction activities, utilities and transportation activities	Monitoring for noise as per EPA PEQS,	Quarterly	Proponent/ Contractor

Recommendation: Environmental Monitoring data logbook should be maintained by the project proponent.



CHAPTER # 1

INTRODUCTION

Purpose of the Report

Environmental Impact Assessment (EIA) report is being submitted to the Environmental Protection Agency (EPA), Government of the Punjab, Lahore in compliance with the legal requirement for Punjab Environment Protection Act-1997 (Amended 2012), Section 12- for obtaining No Objection Certificate (NOC) for the subject project. The other relevant regulations and guidelines considered while preparing this EIA report include:

- Policy and procedures for filing, review, and approval of environmental assessments.
- Guidelines for the preparation and review of environmental reports.
- Guidelines for public participation.
- Guidelines for sensitive and critical areas.
- Detailed sectorial guidelines

Various aspects like environmental, social, physical, and other aspects of the project both during construction and its regular occupancy are highlighted in this EIA report. Measures necessary to be adopted to mitigate any environmental impacts on any part of the environment around are also described. All the important information is also provided as described under the format used to help decision-makers, EPA Punjab in the present case, before issuing the desired Environmental Approval.

Identification of the Project and Proponent

The proposed project falls under Schedule II, Category H, Review of IEE and EIA Regulations, 2022.

Project Proponent

Name	Mr. Umar Farooq Butt
CNIC	38403-5587277-9

For further details, a Copy of the CNIC of the proponent and other relevant documents are attached as **Annexure-B** with the EIA report.



Details of Consultant

Pak Green Enviro-Engineering (Pvt.) Ltd is an independent company, that conducts IEE, EIA, EMP, and other environmental investigations through its panel of environmental consultants, public participation practitioners, and experienced environmental managers. The company has its own recommended instruments to check the baseline environmental data/PEQS and lab analysis facility for water, wastewater priority parameters.

Contact: Pak Green Enviro-Engineering (Pvt.) Ltd.

Office No. 46 M, Gullberg III, Lahore

Tel: 042-35441444, 03034442335

Email: info@pakgreen.pk; pak.green@hotmail.com

URL: www.pakgreen.pk

The current study was carried out by the following professionals:

Sr. No.	Designation	Name/Qualification	Experience
1	Chief Environmentalist/ Director/ Ecologist/LEP*	Abdul Hafeez Nasir PhD Scholar (Environment)	12 years experience as an Environmentalist
2	Senior Environmentalist Deputy Director Lab/AEP**	Iftikhar Ahmad M.Phil. Environmental Science	5 years of experience as an environmentalist
3	Chief Analyst/SMS****	Muhammad Raza Ullah M.Sc. Analytical Chemistry	20 years of experience as a chemist analyst
4	Senior Environmentalist General Manager	Umair Rasheed M.Phil. Environmental Science	5 years of experience as an environmentalist
5	Environmentalist	Muhammad Hassan Afzal M.Phil. Environmental Sciences	4-year experience as an Environmentalist
6	Environmentalist/ coordinator	Sabeera Tauheed M.Phil. Environmental Sciences	2-year experience as an Environmentalist



7	Environmental/ AEP	Nageen Qayum BSC, Environmental Engineering	1-year experience as an Environmentalist
8	Environmental Engineer/ AEP	Muhammad Imran	1-year experience as an Environmentalist
9	Lab Analyst/SMS***	Quratulain M.Sc. Analytical Chemistry	5 years of experience as a Chemist

Brief Description of Nature, Size & Location of the Project

The subject project is the Proposed Construction of Teaching Complex Including Institute and Teaching Hospital under the Name of Ibadat Educational Trust, located at 1-Km Bhoitian Chowk Defence Road Lahore, intends to get the environmental approval for the subject project by the submission of EIA Report for the compliance of section 12 of PEPA 1997 (Amended 2012). The educational institute has multiple buildings. The said project area will be 2,078,951 SFT. The cost of the project will be approximately 2 Billion rupees.

Screening

The proposed project falls under Schedule II, Category H, Review of IEE and EIA Regulations, 2022.



CHAPTER # 2

ALTERNATIVE CONSIDERATION

Location alternative

The project owner has considered many sites for the construction of the subject project but they were rejected due to some reasons. Selected site has been considered after the rejection of two other sites.

Project alternative

There were three options for the owner regarding the investment i.e. food sector, industrial sector, and educational sector. The proponent has chosen the educational sector due to the best response by the existing educational institute of the project owner.

Demand Alternative

Pakistan is a developing country in the South Asian region with the population of 192826502 in the year 2016. Annual growth rate of population is 2.07% and literacy rate is 60%. The increasing population demands better education facilities to meet its basic education needs so subject project will help to meet these demands and will be a source of standard and quality education in the region.

Process / Design alternative

The subject project building will be built according to the best engineering designs. All provisions have been incorporated in the design of the building for sustainable development. Keeping these requirements and their feasibility and other basic infrastructural requirements at the site, the present building will be ideally suited for its purposes.

Location and site layout of the project site

The project site is located at Bhoptian Chowk 1-KM Defence Road, Lahore.

For further details, a Google map of the project clearly indicates the distance of residential, commercial, and industrial areas and roads from the project site, and the layout map of the project is attached as Annexure-C with the EIA report.

CHAPTER # 3

DESCRIPTION OF PROJECT

Type and Category of the Project

The subject project is the Proposed Construction of a Teaching Complex Including an Institute and Teaching Hospital under the Name of Ibadat Educational Trust, located at 1-Km Bhoptian Chowk Defence Road Lahore over an area of 2,078,951 SFT. The cost of project will be approximately 2 Billion rupees.

The proposed project falls under Schedule II, Category H, Review of IEE and EIA Regulations, 2022.

Objective of the Project

Objectives of the subject project include:

- Community Health and Education Improvement
- Increase the literacy rate
- job opportunities for teachers and workers
- Innovation, Research, and Education
- Patient & Employee safety
- Work Effectiveness

Road Access

The project site is situated at bhoptian chowk Lahore. The main access road at the front side of the project location.

Vegetation features of the project site

Small grasses and few trees are present at the project site which will be cleared for the purpose of construction. Pictorial view of the project site has been provided in the report.

Cost and Magnitude of operation:

Total area for the project is 2,078,951 SFT and cost of the construction will be approx. 2 Billion rupees.

Schedule of implementation

Necessary legal, administrative and financial formalities are being finalized. Further Construction will be started after getting the Environmental Approval. Estimated completion time will be Eighteen (04) calendar months from the date of environmental approval.



Description of the project

The subject project is the Proposed Construction of a Teaching Complex Including an Institute and Teaching Hospital under the Name of Ibadat Educational Trust, located at 1-Km Bhoptian Chowk Defence Road Lahore. The total area of the project is 2,078,951 SFT Initial cost of the project is approx. 2 Billion rupees.

Water Requirement:

During the construction phase of the project approx. 3000 gallons/day of water will be required for construction and domestic purposes.

During the operational phase of the project approx. 10,000 gallons/day of water will be required for domestic and other purposes.

Source of Water

Underground water will be used as a source of water to fulfill the water requirements at the project site. For the storage of water, overhead water tanks will be constructed at the project site,

Provision of safe drinking water to staff/ students:

A water filtration plant will be installed in the proposed project building to ensure the supply of clean drinking water to students/ staff.

Wastewater, its treatment, and final disposal:

About 60-70% of the used water will be wastewater, which will be treated in the septic tank, which will be installed within the premises of the subject project. Water will not be disposed off without treatment in the wastewater treatment facility.

Sewerage system

A proper sewerage system exists at the project site.

Solid Waste

During the construction phase of the project approx. 1000-1200 kg per day of solid waste will be generated from construction and domestic sources.

During the operation phase of the project approx. 0.45kg/person/day of solid waste will be generated from domestic and project-related sources.



Solid Waste Management Plan

For the handling and management of this domestic waste, sanitary workers will be hired by the proponent during the operation phase of the project; they will mop up and manage the solid waste within the premises of the project building. The hospital waste is handed over to the waste management company for proper disposal. One specific point will be designated within the premises of the project where the solid waste will be collected, and from that site, solid waste will be handed over to certified contractors. The waste management agreement is attached as **Annexure-D**

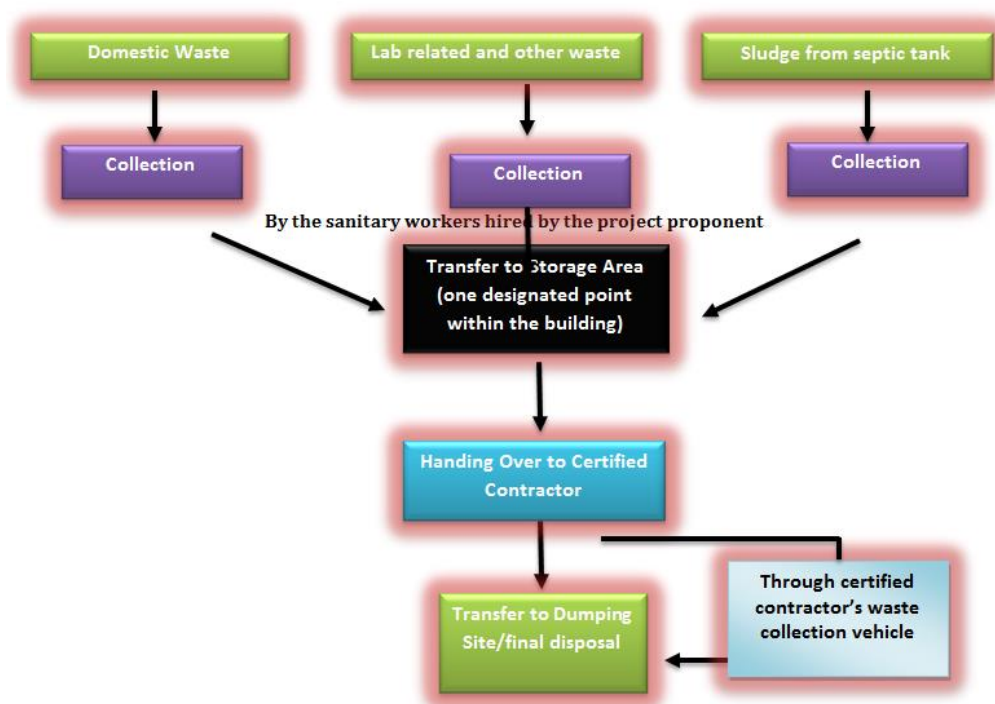
Steps involved in waste management:

The major type of solid waste generated during the operation phase of the subject project will be domestic solid waste. Other will be the sludge from the wastewater treatment facility and also minor amount of waste from laboratory practices will be generated.

- Placement of separate waste bins for different types of wastes at all the designated points in the project building.
- Collection of waste from every point on daily basis at one designated point by the sweepers hired by the project manager.
- Collection of waste by the certified company from the point allocated for solid waste collection within the building.
- Sludge will be removed on daily basis and will be handed over to the certified contractors.
- Further handling (dumping or landfilling) of waste will be the responsibility of the Company who will collect the solid waste from the project site.



SWMP flow chart:



Atmospheric Emissions

Dust and particulate matter will be generated during the construction activities. The sprinkling of water will be done on dusty tracks, stockpiles; raw material will be covered by plastic sheets, loading and unloading of raw material will be done at night, etc.

During the operation phase of the project, the only source of atmospheric emissions will be the generators at the project site and the vehicular traffic (whose impacts will be outside of the project site). For the control of emissions from the generators at the project site PEQS compliance of the generators will be ensured.

Mitigation measures to control emissions from generator

- Firstly, the generator made up of latest and environmental friendly technology will be used.
- Standard fuel will be used in the generator.
- Proper and regular tuning of the generator will be done.

All these measures will ensure the PEQS compliance of generators and emissions will not exceed the limits.

Health, Safety and Environment

Fire Protection System

An addressable fire protection system/ firefighting plan containing fire extinguishers, fire hydrants, fire alarms, smoke detectors, sand buckets etc. would be installed at suitable places to protect against any fire hazard.

Security

Project site will be secured by the presence of the security guards round the clock which will improve the security of the project site and also in its vicinity.

Nearest Institutions

Different commercial and educational institutions are present in the area near the project site.

Parking

Ample parking facility will be provided at the project site. The area designated for the parking and its design has been provided on the map attached as Annexure-C with the EIA report.

Traffic Issues

Traffic controller will be hired by the project proponent and they will be responsible for the traffic management and proper parking at the project site.

Power Sources and Transmission

Electricity will be fed by WAPDA. For emergency situations one standby diesel fired generator of 500 KVA will be installed.

Mitigation measures for the installation of Generators:

Following mitigation measures are suggested to control the noise and gaseous emissions of the generator.

- Firstly, for the control of emissions from the generator at the project site PEQS compliance of the generator will be ensured.
- Secondly, the generator will be installed in specially constructed room, which will help to avoid noise pollution.

Suggestions to make the buildings environmentally friendly and energy efficient

Following steps are suggested to make building environmental friendly and energy efficient.

Design and Orientation:

Roof overhangs, window size and placement, and overall building shape have a major impact. Consider the direction of prevailing winds and how to manage solar gain. The placement of porches, garages, trees, and nearby buildings also have an effect.

Insulate and Seal the Building Envelope

Most of the energy is spent heating and cooling the interior. Minimizing heating and cooling requirements is the most important step in building manufacturing.

Increase Heating and Cooling Efficiency

The heating and cooling systems need to be carefully matched to the high-efficiency building envelope. Standard-sized equipment will "short-cycle," turning on and off so frequently that it will negate any energy savings. Buying properly sized equipment will ensure maximum efficiency. Another benefit: smaller equipment will cost less.

- Buy as high-efficiency equipment as affordable.

Alternate Cooling Methods

Where appropriate, consider alternative cooling systems such as ventilation only or evaporative coolers.

Decrease Other Energy Requirements

Decrease energy needs as much as possible throughout the whole building.

Install efficient lighting

Use compact fluorescent bulbs where possible, and consider installing permanent fluorescent fixtures throughout the home

Install efficient appliances

Use the most energy-efficient models available.

Turn off lights, computers, and appliances when not in use

Increase Heating and Cooling Efficiency:

The heating and cooling systems need to be carefully matched to the high-efficiency building envelope. Standard-sized equipment will "short-cycle," turning on and off so frequently that it will negate any energy savings. Buying properly sized equipment will ensure maximum efficiency. Another benefit: smaller equipment will cost less.



Plantation plan

Plantation will be done within the premises of the subject project along the boundary walls, roadsides, and in the green belt.

Budget allocated

A budget of 4 million yearly for the safety procedures, plantation, and environmental management has been allocated by the proponent.

Species of plants and trees selected for plantation

- Alstonia Trees
- Palm trees:
- Ashoka trees
- Shehtoot (Morus nigra)
- Jaman (Syzygium cumini)
- Native flora of Lahore and ornamental plants

These plants will be planted in the initial three years of operation of the project.

Restoration / Rehabilitation Plan

The project construction activities will be confined to the project site. Boundary walls will be constructed first. However, on completion of the construction and commissioning phase, the construction contractor will demobilize from the site and the construction camp will be removed. Temporary infrastructure will be decommissioned and the site will be restored. This will involve:

- Removing the temporary construction camp
- Closing all the temporary waste pits
- Removing all waste and leftover construction materials from site
- Leveling and restoration of areas

Government approvals required by the project

The subject project is a proposed Construction of a Teaching Complex Including an Institute and Teaching Hospital. Project proponent has committed to obtain all the concern certificates/ approvals from concerned department prior to the operational activity of the project.



CHAPTER # 4

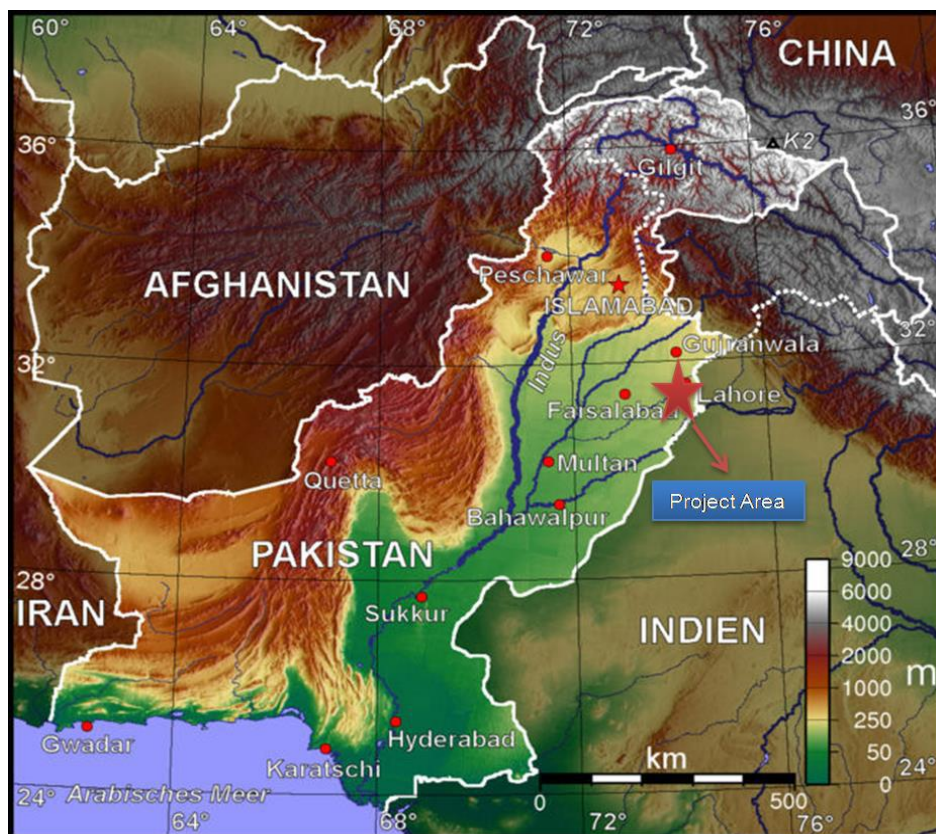
DESCRIPTION OF ENVIRONMENT

This section describes the baseline conditions, which cover the existing physical, ecological and socio-economic environment of the project as well as a study area. Data were collected by reviewing secondary data and field surveys.

PHYSICAL ENVIRONMENT/ RESOURCES

TOPOGRAPHY

The topography of the project area is flat. The General height of the area is approximately 220 meters above the Mean Sea Level (MSL). The district of Lahore is divided into two parts. The low-lying alluvial soil is along the Ravi River and the upland in the east. Upland is a plain slope from northeast to southwest. The lowlands are generally inundated during the monsoon season by the Ravi River, flowing in the west of the district along its boundary with district Sheikhupura. The below figure is showing the topography of the area.



SOIL

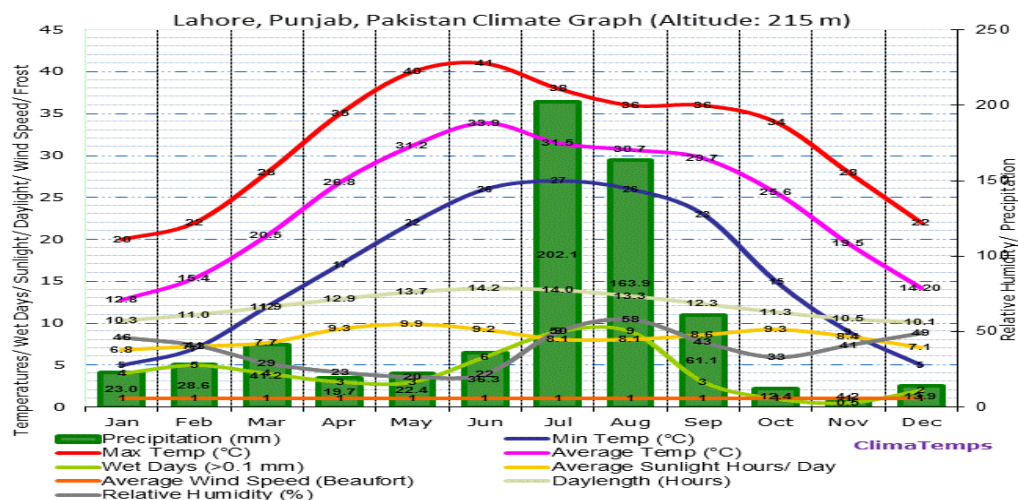
The soil in the Project Area is cohesion less and is of alluvial type. Various soil layers below the ground level includes: silt, silty clay, silty sand, poorly graded sand with silt, lean clay etc. The soil is different in character and generally inclined to be dry. However, it is rich in potential plant nutrients.

CLIMATE AND METROLOGY

Seasonal climatic conditions must be considered for the design and execution of Project. The climate including air, temperature, precipitation, humidity and evaporation is an influencing factor, affecting the construction of project and other engineering structures. However, to determine the overall effect of the climatic stresses, daily and seasonal temperature changes, site altitude, direct solar radiation, and precipitation must be considered. The Project Area has extreme climate: it has hot summer and cold winters. The summer starts from April and lasts till September. May, June, and July are the hottest months. The mean maximum and minimum temperature ranges from 40.4 °C and 27.3 °C respectively for these months.

The winter seasons lasts from November to March. December, January and February are the coldest months. The mean maximum and mean minimum temperature ranges from 19.8°C to 5.9°C in January. Temperatures in the Project Area vary from 5.9 °C to 40.4 °C.

The project area receives rains in all the seasons but monsoon rain is pronounced and constitutes a definite rainy season between the month of July and September. The average rainfall is about 629 millimeters per year. Below figures showing the temperature, precipitation, and relative humidity trends in the study area.



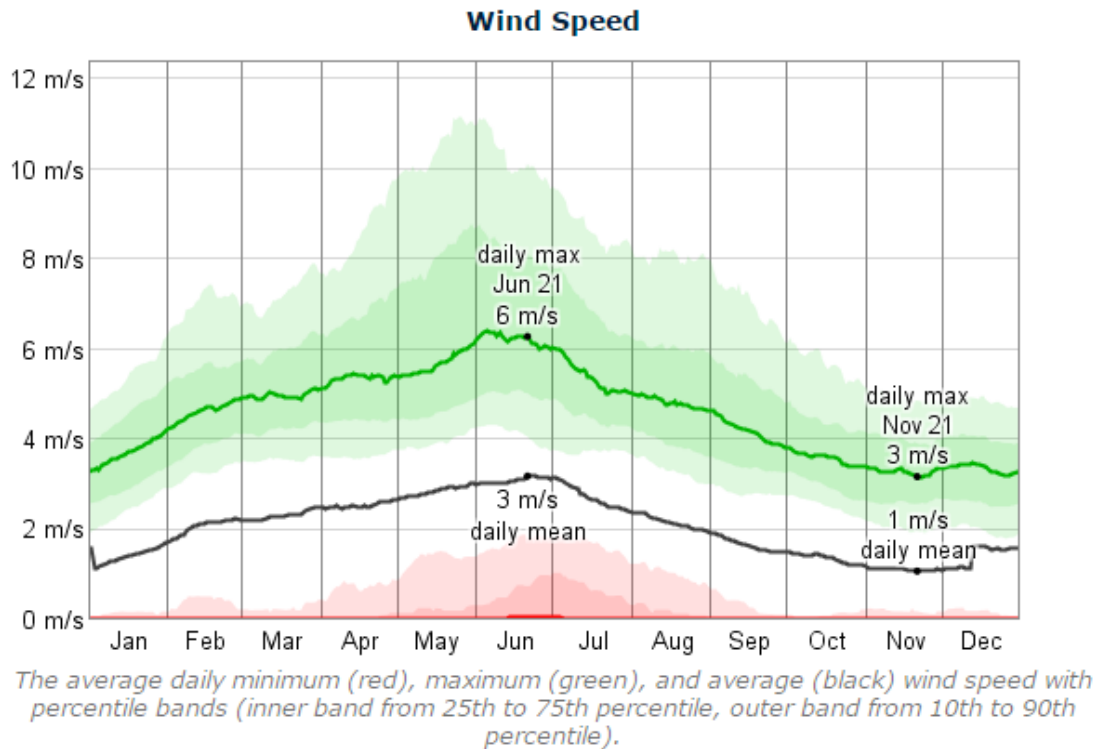
WIND:

Over the course of the year, typical wind speeds vary from 0 m/s to 6 m/s (calm to moderate breeze), rarely exceeding 11 m/s (strong breeze).

The highest average wind speed of 3 m/s (light breeze) occurs around June 21, at which time the average daily maximum wind speed is 6 m/s (moderate breeze).

The lowest average wind speed of 1 m/s (light air) occurs around November 21, at which time the average daily maximum wind speed is 3 m/s (light breeze).

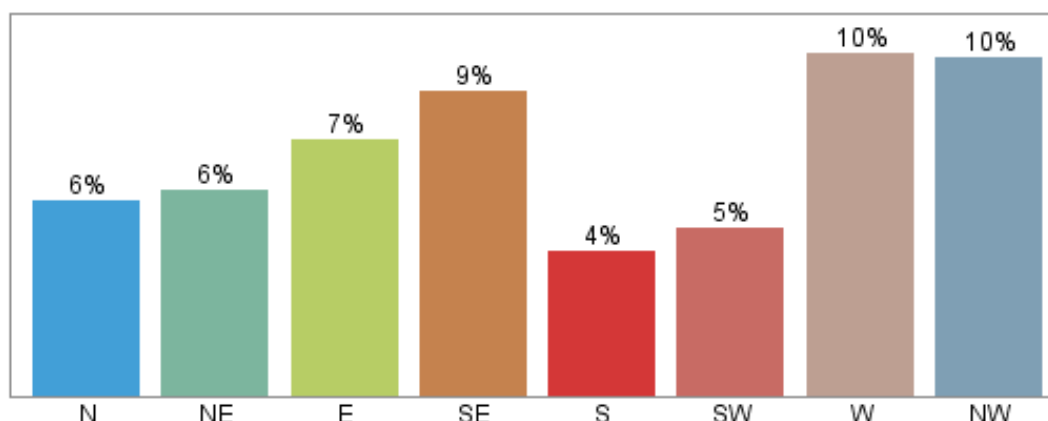




Reference: <https://weatherspark.com/averages/32865/Lahore-Punjab-Pakistan>

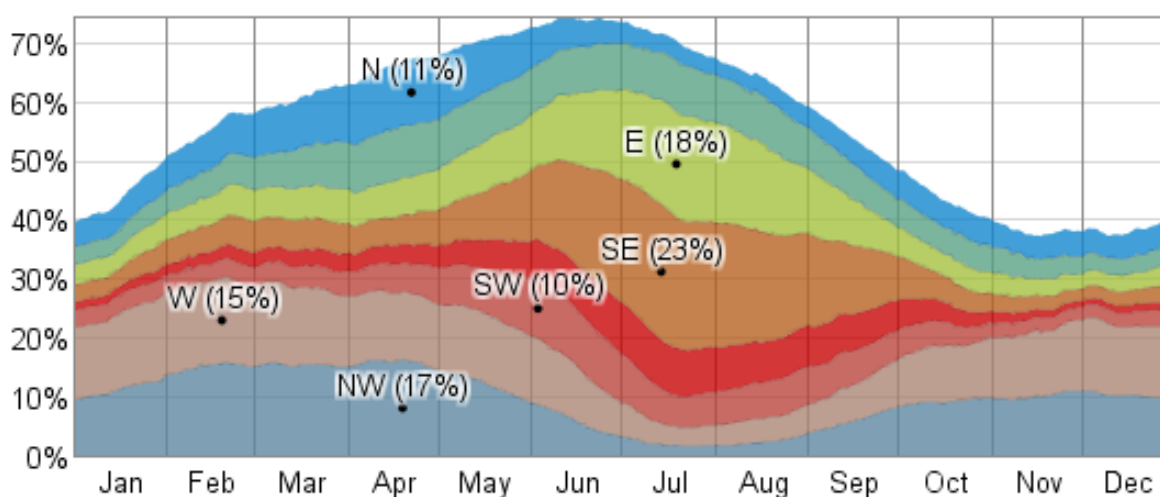
The wind direction is highly variable and is not predominantly from any single direction. The wind is least often out of the south (4% of the time) and south west (5% of the time).

Wind Directions Over the Entire Year



The fraction of time spent with the wind blowing from the various directions over the entire year. Values do not sum to 100% because the wind direction is undefined when the wind speed is zero.

Fraction of Time Spent with Various Wind Directions



The fraction of time spent with the wind blowing from the various directions on a daily basis. Stacked values do not always sum to 100% because the wind direction is undefined when the wind speed is zero.

Reference: <https://weatherspark.com/averages/32865/Lahore-Punjab-Pakistan>

AMBIENT AIR QUALITY

Atmospheric pollution, particularly in urban areas like Lahore, has a strong impact on daily life. Project site is located at Manga Raiwind Road, Lahore. Motor vehicles are a major source of air pollution in the project area. Monitoring was conducted at the project site by using Fine Dust Sampler IPM-FDS 2.5/10 μ and Ambient Air Analyzer.

To record the baseline ambient air quality of the project area, monitoring was conducted at advised locations to assess the concentration of priority pollutants (Carbon monoxide, Nitrogen dioxide, Sulphur

dioxide, and PM₁₀) in the air. Lab reports of Ambient Air Monitoring are attached as **Annexure-D** with the EIA report.

NOISE LEVEL MONITORING

BASIC ENVIRONMENTAL CONDITIONS

During the measurement following conditions were prevailed on the workplace:

METROLOGICAL CONDITIONS:

During the noise level monitoring weather was dry and the sky was clear. Air was blowing at normal speed

MONITORING INSTRUMENT:

The description of the instrument used for the noise level monitoring is given below:

Name: Digital sound level meter

Model: AR824

Company: Intel Instruments plus



METHODOLOGY ADOPTED:

The noise level was monitored at four points; lab results are attached as **Annexure-D**.

GROUNDWATER

The underground water will be used as a source of water at the project site. The sample was taken from the tube well near the project area to test its parameters. Lab results are attached as **Annexure-D**.

ECOLOGICAL RESOURCES

As the climate of Lahore is semi-arid and subtropical, the vegetation of the district falls under scrub, dry, tropical thorn forest type as per phytogeographical classification of the area but this vegetation is confined to the graveyards in the Lahore city and the project site is free from such type of vegetation.

FLORA

There are small grasses and shrubs present at the project site. Some native trees were observed in the surrounding areas. Native trees and plants 6 feet in height will be planted within the premises of the project by the project proponent with the consultation of the concerned authority

FAUNA

Different birds were observed at the project site during the site visit including sparrow, crow, pigeon, and dove, etc. Other than that, no fauna was observed at the site during the site visit.

SOCIOECONOMIC ENVIRONMENT

The socioeconomic environment of district Lahore has been studied through secondary sources and a brief introduction has been given below:

DEMOGRAPHIC CHARACTERISTICS OF THE PROJECT AREA

The total population of the Lahore District has crossed 10 million.

RELIGION

The population of the district is predominantly Muslim i.e., approx. 95 percent, other minorities like Christians, Sikhs, and Hindus etc. are approx. 5 percent.

EDUCATION

Lahore is known as Pakistan's education capital, with more colleges and universities than any other city in the country. Lahore is Pakistan's largest producer of professionals in the fields of science, technology, IT, engineering, medicine, nuclear sciences, pharmacology, telecommunication, biotechnology and microelectronics. Most of the reputable universities are public, but in recent years there has also been an upsurge in the number of private universities. The current literacy rate of Lahore is 74%. Lahore hosts some of Pakistan's oldest educational institutes: Government College Lahore (now Government College University), established in 1864; Forman Christian College, a chartered university established in 1864; University of the Punjab, established in 1882; Kinnaird College, established in 1913; and University of Engineering and Technology, Lahore (UET Lahore), established in 1921. UET is also Pakistan's oldest technical degree-awarding institute and its first university in the field of engineering and technology.

Lahore's institutes in the fields of computer science, IT, and engineering include the National University of Computer and Emerging Sciences (NUCES or FAST-NU) and Punjab University College of Information Technology. Notable architecture schools include Beaconhouse National University, COMSATS Institute of Information Technology, University of South Asia, National College of Arts, and University of Engineering and Technology, Lahore. Notable business schools include the Lahore University of Management Sciences (LUMS), Lahore School of Economics, Forman Christian College, and, the University of Management and Technology. University of Education, established in 2002, is Pakistan's first specialized university in the field of education.

Lahore also provides education in many fields of health sciences. Notable medical colleges offering MBBS degrees include Allama Iqbal Medical College, Fatima Jinnah Medical College, King Edward Medical University, Lahore Medical and Dental College, Services Institute of Medical Sciences, Shaikh Khalifa Bin Zayed Al-Nahyan Medical and Dental College and Shalimar Medical and Dental College. Important postgraduate institutes are Punjab Institute of Cardiology and University of Health Sciences, Lahore. University of Veterinary and Animal Sciences is the only college in Lahore providing education



in the field of veterinary medicine. De 'Montmorency College of Dentistry is an important college of dentistry. There are many institutes offering education in fields of nursing and pharmacy as well.

Notable schools include Aitchison College, St. Anthony's College, Lahore College of Arts and Sciences, Lahore Grammar School and Salamat School System. Aghaz School System is present near the subject project.

HEALTH FACILITIES

Ample medical and health facilities are available in the Lahore Metropolitan Corporation area and its suburbs. Shaukat Khanam Hospital is the latest addition in the medical care facilities in Lahore for the most dangerous disease in the country. i.e., Cancer. There are also other hospitals of voluntary organizations which provide health cover to the general public. King Zaid Bin Sultan Hospital is also a very advanced addition in the medical care for Lahore. Among the prominent hospitals are General Hospital, Lady Willington Hospital, Mayo Hospital, Fatima Jinnah Hospital, The Children Hospital, Services Hospital, and Ganga Ram Hospital etc. Besides, a number of private medical practitioners, Hakims and homeopathic doctors are also practicing in the city. Some famous Health facilities located in the Project vicinity are Hameed Latif Hospital, Wapda Hospital and Lady Willington.

QUALITY OF LIFE VALUES

All classes of people are present in Lahore City; People lead lives according to their income.

CIVIC AMENITIES

Civic amenities like potable drinking water, dispensary and rest area are available near the project site.

GAMES

Cricket, Football, badminton, Hockey, Volleyball, Kabaddi and Kushti are major sports of Lahore District.

WELFARE OF EMPLOYEES

Management of the project is mindful of the fact that satisfied employees will deliver better output.

HISTORICAL BUILDINGS NEAR THE PROJECT SITE

Pakistan Radio, Agriculture department, and Punjab Public Service Commission are the historical buildings near the project site.

AESTHETIC VALUES

Like the general trend among the citizens of the area, most of the people have low awareness of the environment. Even then, some people take cleanliness and neatness of the environment lightly. Some people throw municipal solid wastes (MSWs) on the streets. Sense of personal responsibility to keep the environment clean as good citizens are even now lacking among a few people



CHAPTER # 5

SCREENING OF POTENTIAL ENVIRONMENTAL IMPACTS & THEIR MITIGATION MEASURES

The following chapter describes the overall possible impacts of said project on the physical, biological and socioeconomic environment due to the location, Design, during construction phase, during operation phase of the project and mitigation measures to minimize the significance of the possible impacts.

ENVIRONMENTAL PARAMETERS

Project Location

The subject project is the Proposed Construction of a Teaching Complex Including Institute and Teaching Hospital under the Name of Ibadat Educational Trust, located at 1-Km Bhoptian Chowk Defence Road Lahore. The project site is situated at defence road, which is the main road of Lahore City. In the surroundings of the project site there are different commercial units and residential areas. Access road is present at the front side of the project site. There is not any sensitive area near the project site. So, if the proponent/Developer fulfills all the HSE conditions and Society development laws and rules than this project will not cause any adverse environmental impacts on the society, in fact the project will increase the employment chances for the local people of the area and the district and will provide nearest and better educational facilities to the residents of nearby areas. Overall the impacts of this development due to the location are positive on the local community of District and country.

Impact significance: very Low or may be positive

Nature of impact: direct

Duration: Long-term

Timing: Construction and Operation phase

Reversibility: NA

Likelihood: Low (unlikely),

Consequences: very low or may be positive

Mitigation Measures and Recommendations:

- Proponent/Developer should firstly build the boundary wall all around the project site.
- Proponent/Developers should place all the safety and location signs and maps at the specific indemnified place.



- Proper parking arrangements should be maintained during the construction and operational phase of the development.
- Location can be considered as positive impact on the community due to the educational and employment facilities provided to the community.

Project design

The subject project is the Proposed Construction of Teaching Complex Including Institute and Teaching Hospital under the Name of Ibadat Educational Trust.

Stability of the Proposed Project

It may be a major negative impact, which may cause collapse of a building and may be a threat for lives of the workers/ employs.

Soil structure and soil bearing capacity

Soil structure and soil bearing capacity may be a major negative impact. If the soil bearing capacity is poor and soil structure is not good for construction of building, it may affect the foundation of building.

Road infrastructure design

Road infrastructure design may be a long-term and major negative impact, which may cause traffic congestion problems and also the noise pollution problem at the project site.

Emergency exit points for the emergency situations

It may be a life threatening hazard in case of any natural or accidental calamity, if emergency exit points will not be incorporated in design for safe evacuation in case of any emergency.

Firefighting system

Fire may also be a major negative impact and a life threatening hazard if proper firefighting system will not be incorporated in the design of the building.

Wastewater disposal system design

It may be serious hazard if wastewater system is not designed properly and proper disposal system design is a necessary aspect which must be considered during the designing phase of the project.

Rain water harvesting capacity of the drainage system

If rain water harvesting capacity of the drainage system is not enough, it may be a serious hazard for the building and may cause many problems.



Electricity hazards

It is a major threat for life and may cause the loss of life and property if electricity hazards will not be addressed properly during the designing phase of the project.

Impact significance: moderate to high or may be negative

Nature of impact: direct

Duration: Long-term

Timing: Constructional phase & Operation phase

Reversibility: NA

Likelihood: moderate to high

Consequences: moderate to high or may be negative

Mitigation measures and recommendations

Following are the mitigation measures and recommendations to minimize the anticipated impacts due to the project design:

- Proponent of the project should obtain the structural stability report and it should be submitted to EPA.
- Geotechnical investigation of the project site should be conducted.
- Road infrastructure should be properly designed and there should be strict application of the laws and regulations, so that traffic congestion problems may not arise.
- Traffic impact assessment should be conducted at the project site.
- Emergency exist points should be designed during the designing phase and should be kept in proper working condition to use in case of any emergency.
- Firefighting system will be installed according to laws and regulations for the emergency situations.
- Wastewater disposal system should be designed and managed properly and wastewater treatment facility should be installed within the design of the project.
- Waste water drainage should be designed vast to bear the rain water capacity of the society.
- Electricity system should be designed safe and sound; electricity wires should be covered by thick plastic/electricity resistant covers.
- All the design should be approved from the local authority to minimize the impacts due to the design of the project.



During the construction phase

The subject project is the Proposed Construction of Teaching Complex Including Institute and Teaching Hospital under the Name of Ibadat Educational Trust, located at 1-Km Bhoptian Chowk Defence Road Lahore

Impacts related to the construction phase of the subject project are discussed below:

Grubbing and stripping

Grubbing and stripping may be a minor and short term impact on the physical environment during the construction phase. It may also be a health and safety hazard for the people at or near the project site.

Leveling and compaction of the land

Leveling and compaction of the land is also a short term and minor impact on the physical environment and it may also be a health and safety hazard for the workers.

Demarcation of project building and other facilities

It may also be a minor impact on the physical environment due to the subject project.

Generation of dust during loading and unloading of construction materials

It is also a minor and short term impact on the physical environment and also for health and safety, which may arise during the construction phase.

Generation of noise on account of vehicular use and construction activities

It is also a minor and short term impact on the physical environment and also for health and safety, which may arise during the construction phase.

Gaseous emission due to the vehicles and stand by generator (if any)

It may also be a minor impact on the physical environment during the construction phase, if vehicles and generators are not properly tuned.

Health and safety issues during the constructional activity

Health and safety issues may arise at the project site due to machinery handling and other constructional activities.

Local flooding due to over-use of water and leakage of pipes

It may be a minor and short-term impact on the physical environment if precautionary measures have not been taken.

Safety of construction workers, people in the surroundings and passersby

Health and safety issues may arise during the construction phase if proper precautionary measures will not be taken.



Any outbreak of fire due to electrical and other failures

This issue may arise due to carelessness or improper management, and it may be a serious hazard which may affect the environment or may also cause the loss of property or life.

Solid waste generation due to domestic and construction activities

Solid waste generation due to domestic and construction activities may be a negative impact on environment if not managed properly.

Wastewater generation from the domestic and constructional activities

Wastewater generation due to domestic and construction activities may be a negative impact on environment if proper wastewater treatment and management system will not be implemented.

Ground water quality

Ground water quality may be affected by the development if proper mitigation measures will not be implemented.

Impacts on Fauna and Flora

Construction will impact the flora/ vegetative cover and fauna present at the project site.

Security threat

Security issue is a major socioeconomic impact which may arise during the construction phase.

Impact on land value

Construction of the subject project may cause positive or negative impact on the land value.

Dislocation of the people

Construction of the subject project may cause the dislocation of the local people if any, which is a negative impact on the socioeconomic environment.

Loss of public and private infrastructure

Construction of the subject project may cause loss of public and private infrastructure if any, which is also a negative impact on the socioeconomic environment.

Impact significance: moderate to high or may be negative

Nature of impact: direct

Duration: Short Term

Timing: Construction phase

Reversibility: NA

Likelihood: moderate



Consequences: moderate

Mitigation Measures and Recommendations

- Precautionary measures should be adopted to save the environment from the impacts of grubbing, stripping, leveling and compaction and health and safety of workers should be ensured during these construction phases.
- Demarcation of the project building and other facilities should be according to the laws and regulations.
- Sprinkling of water on dusty tracks is recommended to avoid the generation of dust on dusty tracks.
- Vehicles should be properly tuned to reduce the impacts of dust and noise.
- Mitigation measures should be taken to meet the PEQS at the stack of generators.
- Proper mitigation measures should be taken to reduce the noise generation during the construction activities.
- Training of workers should be conducted regarding health and safety.
- PPEs i.e. ear muffs, helmets and masks etc. should be provided to workers to ensure their health and safety during the construction activities.
- Precautionary measures should be taken to reduce the local flooding due to over-use or leakage of pipes.
- Health and safety of construction workers, people in the surroundings and passersby must be ensured.
- Precautionary measures should be taken to avoid any outbreak of fire due to electrical and other failures.
- Constructional waste should be used for landfilling purposes.
- Domestic solid waste should be kept in dust bins and should be handed over to local contractors.
- Wastewater treatment facility should be incorporated in the design of the project to treat the wastewater produced due to constructional and domestic activities before the final disposal.
- Land should be restored by adding more plantations.
- Essential services like water supply, sewerage disposal and solid waste management must be in working condition.
- Construction timings should be scheduled to cause minimum disturbance to neighbors.



- Because of presence of security guards round the clock the security at the project site will be improved as well as in its vicinity. Impact will be moderate positive.
- Land value in the surrounding area will increase due to completion of the present project. Impact will be moderate positive.
- The project does not involve dislocation of the people. There is no requirement of resettling a single person. Impact is nil.
- No movable or immovable property and infrastructure of public and private sectors will be lost or damaged during construction and operation stages. Impact will be nil.

During Operational Phase

The subject project is the Proposed Construction of Teaching Complex Including Institute and Teaching Hospital under the Name of Ibadat Educational Trust, located at 1-Km Bhoptian Chowk Defence Road Lahore. Main environmental issues associated with Project during its operation phase are as follows.

Heavy Traffic

It may be a major problem if proper traffic management laws will not be implemented.

Parking Facilities

Traffic management may become an important issue if proper parking facilities will not be provided at the project site.

Vehicular Emissions

There will be a rush of traffic at the project site because a lot of vehicles of the students and the staff visit an educational institute, so there could be the issue of vehicular emissions.

Solid Waste Generation Due to Domestic and Project-Related Activities

Management of domestic and other project-related activities will be an important issue.

Waste Water Due to Domestic Activities

Discharge of untreated wastewater from the project activity can be a major negative impact.

Fire Due to Short Circuits and Other Activities

Fire due to short circuits and other activities is a major hazard, which may cause the loss of property and life.

Gaseous Emissions from the Generators

Gaseous emissions from the generators may deteriorate the air quality at the project site.



Health and Safety Issues

Health and safety issues may arise at the project site due to insufficient facilities or any accident.

Impact significance: moderate to high or may be negative

Nature of impact: direct

Duration: Long-term

Timing: operational phase

Reversibility: NA

Likelihood: moderate to high

Consequences: moderate to high or maybe negative

Mitigation Measures & Recommendations

- Traffic management system should be ensured.
- Traffic controller should be hired by the project proponent to manage the traffic.
- Ample parking facility should be provided at the project site.
- Properly tuned vehicles should be used and non-tuned vehicles should be banned.
- A well designed firefighting system should be constructed to cope with fire situations in the area.
- PEQS compliance of generators should be ensured.
- Solid waste bins should be regularly cleaned and solid waste must be handed over to the certified contractors.
- Wastewater treatment facility should be constructed on the reserved place to treat the domestic waste water.
- Health and safety of students and staff must be ensured by the proponent. s

Potential Environmental Enhancement Measures

The proposed project will be installed with all precautionary measures to enhance and safe the environment. Following necessary measures will be adopted during construction and operation:

- Sprinkling of water will be done on dusty road and tracks.
- PPEs will be provided during construction activity.
- Constructional waste and domestic solid waste will be disposed-off or utilized properly.
- Local people will be informed in advance when work is about to start in an area.
- Machinery will never be left unattended.



- Efforts should also be made to discuss traffic conditions so that regular traffic is not disturbed. Transporters engaged for the project would be forced to adhere to the load specifications of the access road. No overloading would be allowed in any case.
- Safety signs and boards will be placed during construction.
- Machinery will be kept maintained.
- Waste water will be treated through septic tank that will be installed within the premises of building.
- Area will be restored with native plants. A proper tree plantation plan will be formulated to save the environment.
- Solid waste will be handed over to contractors and agreement will be made.
- Noise will be controlled by adopting proper measures.
- Firefighting equipment's and system will be installed.
- Safety signs will be placed at all locations where required.
- Hygienic conditions will be ensured and proper quality will be maintained by quality control testing.
- First aid facilities will be made available.
- Any possible measure will be adopted to make the project safe and environmental friendly.

Purpose of Mitigation measures

Purpose of mitigation measures should include:

What is the problem i.e. in terms of “major environmental impacts” which may arise by the subject project activity?

The major impacts may arise by the subject project include particulate matter & dust, noise, odor, solid waste and wastewater. Other impacts are of minor importance. These impacts will arise during construction and operation but precautionary measures will be adopted prior to start the activity, during the activity and post activity.

When the problem will occur and when it should be addressed?

Any impact that would arise due to the subject project activity will be addressed on site. Trainings will be conducted on site prior to start work while other precautionary measures will also be adopted to make the project safe and environmental friendly.



Where and how the problem should be addressed?

HSE manager/environmental manager along with site manager will be appointed to assess any impact that could be arisen during both phases. He would be responsible to address the problem and to mitigate it.

Ways of Achieving Mitigation Measures

Changing in Planning and Design

By adopting proper mitigation measures, any anticipated major or minor environmental impacts could be controlled or mitigated. The details of impacts and mitigation measures have been discussed in previous chapters.

Improved Monitoring and Management Practices

Management of M/s Ibadat Educational Trust shall take appropriate measures to provide pollution free and safe environment during the proposed project activity by implementing improved management practices and monitoring techniques suggested in EMP.

Compensation in Money Terms

M/s Ibadat Educational Trust will adopt such plan that will assure the minimum impact on the environment and health by implementing proper mitigation measures. Design of the project will assure the structure stability and project life in a long run.

Replacement, Relocation and Rehabilitation:

M/s Ibadat Educational Trust will develop Restoration/ reclamation or tree plantation plan to restore the project area. Maximum Plantation will be done with native species within the building, along the boundary wall and along the road side if directed by EPA. Also, in-front of main area, horticulture plan will be formulated and area for this will be kept reserved.



CHAPTER # 6

ENVIRONMENTAL MANAGEMENT PLAN & MONITORING PROGRAM

Purpose and Objectives of the EMP

The primary objectives of the EMP are to:

- Facilitate the implementation of the mitigation measures identified in the EIA.
- Define the responsibilities of the project proponent.
- Define a monitoring mechanism and identify monitoring parameters in order to:
 1. Ensure the complete implementation of all mitigation measures
 2. Ensure the effectiveness of the mitigation measures
 3. Provide a mechanism for taking timely action in the face of unanticipated environmental situations
 4. Identify training requirements at various levels.

Management Approach

The overall responsibility for compliance with the environmental management plan rests with the project proponent.

A certain degree of redundancy is inevitable across all management levels, but this is in order to ensure that compliance with the environmental management plan is crosschecked.

Institutional Capacity

Following functionaries will be involved in the implementation of EMP:

- Project Proponent
- In-Charge Administration
- Supervisor of project and
- Management committee made by the proponent to deal with all these issues.
- Environmental Engineer



Training Schedules

Training for the management/contractors/engineers and workers on environmental aspects of the project will be arranged. It will be imparted by a team of experienced trainers.

Training of Building Contractor

Training of building contractor & workers will be the part of the TORs regarding the construction of the scheme. The provisions given in EIA Report *Chapter 4 Screening of Potential Environmental Impacts & Their Mitigation Measures* will be followed.

TORs will be including the training and submission of reports in the following area:

1. Handling of Machineries in a safe way
2. Use of PPEs
3. Maintenance of vehicles and submission of Environmental Monitoring Reports
4. Maintenance of Water Consumption records
5. Testing of water and waste water and submission of Environmental Monitoring Reports
6. Placement of safety signs/boards during construction
7. Sprinkling of water on the roads and dusty tracks
8. Monitoring of generator emissions

Training regarding all other aspects of HSE will be ensured by the contractor during the construction phase.

Responsibility of EMP

Overall responsibility for implementation of EMP will be that of project proponent. He will appoint a HSE/Project Manager of relevant qualification. HSE/Project Manager will act as Environmental Manager and will manage the all HSE condition at the PEQS.

Summary of impacts and their mitigation measures

Sr.	Environmental Issues/ Impacts	Mitigation Measures
PLANNING, SITE SELECTION AND DESIGN STAGE		
1	Observance of administrative and legal formalities	NOC's from LDA for the construction of the subject project has been obtained. The approved layout map is attached with the EIA report.

	Acquisition of land	The proposed land is the property of the project proponent.
3	Loss of environmentally sensitive areas	There is not any sensitive area near the project site however the project proponent will achieve the PEQS at the boundary wall of the subject project to avoid the environmental impacts on the surrounding area.
4	Changes in traffic pattern	Prepare suitable in/out traffic plans
	Potential conflicts with stakeholders	There is not any conflict at the current stage of the project. It is recommended to Settle the issues through scoping and specific group discussions.
6	Resettlement issues	No resettlement issues
SITE DEVELOPMENT STAGE		
1	Erosion due to stripping and site clearance	Sprinkling of water on road side
2	Generation of dust	Careful loading and unloading of construction materials is recommended. Sprinkling of water on construction site and surrounding areas is recommended.
3	Generation of noise	Avoid suing forbidden horns at the site. Do not throw heavy equipment and construction materials in haphazard manner.
4	Local flooding/ponding	Immediate repair and maintenance of water supply pipes and sewers in case of any defect will be undertaken.



5	Outbreak of fire	Firefighting equipment must be maintained at the site in good working condition.
6	Safety	Safety of the workers and others must be ensured. Privacy of the neighbors must not be disturbed.
7	Labor issues	Employ the local labor as far as possible
CONSTRUCTION STAGE		
1	Minor erosion of land	Add more vegetation, restore the land by more plantation. Sprinkling of water on dusty tracks is recommended.
2	Contamination of land and water	Essential services like water supply, sewerage disposal and solid waste management must be in working condition.
3	Impacts of dust, noise and smoke on neighbors	Schedule construction timings to cause minimum disturbance to neighbors.
OPERATION STAGE		
1	Fire breakouts	Firefighting equipment must be kept in working condition at specific area
2	Safety/security concerns	Safety of the students and others must be ensured. Privacy of the neighbors must not be disturbed.
3	Malfunction of utilities	It is proposed to appoint maintenance engineer with technicians like plumber and electrician for smooth operation of utility services.
4	Contamination of land and water sources	Continuous vigilance on maintenance of services is recommended.



		Tarpaulin sheets must be placed to avoid leaching of oil into ground.
5	Occupational Health, Safety and Environment	Regular medical check-ups are recommended to improve the working condition and efficiency of workers. Safety of management, students and visitors must be ensured. Observance construction and safety codes must be ensured.
6	Production of Solid Waste	Area for solid waste will be reserved within the subject project. The solid waste must be managed on regular basis. The domestic waste must be disposed in municipal channel.

Equipment Maintenance Details

The subject project is the educational institution under the name of M/s Ibadat Educational Trust. Proponent will maintain the records for Health Safety & Environment and will hire HSE manager to check and deal with the HSE issues. The management of the college building shall maintain medical facilities, firefighting Equipment's as fire buckets, fire hydrants and fire extinguishers and records for their periodic fillings or replacement.

Environmental Budget

The cost which is required to effectively implement the mitigation measures is important for the sustainability of the Project in operational stage of the Project. project proponent will allocate a budget of 4 million every year for the Training, maintenance and management of Environment that will include filling and maintenance of equipment's, restoration, plantation, strategic planning to cope with any emergency situation and formulate the disaster management plan to cope with natural disaster. Any equipment or devices failure or replacement will not be included in this budget.



Summary of Environmental Impacts and Mitigation measures is present in following table in term of Environmental Management Plan



ENVIRONMENTAL MANAGEMENT PLAN FOR TEACHING COMPLEX UNDER THE NAME OF IBADAT EDUCATIONAL TRUST

Sr. No.	Potential Impact	Mitigation measure to be taken:		Responsibility
		During the Construction phase	During the Regular operations	
PHYSICAL ENVIRONMENT				
1	Traffic related problem Traffic issue is a major problem which may arise during the constructional and operational activities of the subject project because both constructional site and educational institutes are sites which are visited by many vehicles in routine.	To minimize the impacts of constructional activities during the construction of M/s Ibadat Educational Trust, vehicles number will be regulated in a way that no stampedes will occur at the project site. As far as possible, large size vehicles in very limited number will be allowed to visit the project site during night time so that it may not disturb the routine traffic of the area.	During the regular operations of the educational institute, additional area will be reserved exclusively for parking of cars and motor cycles within the premises of M/s Ibadat Educational Trust which will help to avoid any traffic related issues due to the subject project in the area. Management of M/s Ibadat Educational Trust will ensure that no vehicle or motor cycle will be parked at the front of the road and project site as well. This	Project Manager

			will minimize the impact of the project on the routine traffic of the area. Traffic controller will be hired by the project proponent to manage the routine traffic. Ample parking facility will be provided at the project site.	
2	Solid wastes Improper disposal of solid waste may be a major issue related to the subject project	Solid wastes produced during the construction activities of the project, will be segregated and duly disposed off i.e. Constructional Solid waste will be used for road repairing and maintenance purpose or will be handed over to the relevant contractors. Domestic solid waste will be handed over to the certified contractors.	Solid waste bins will be placed at suitable places in the whole building. Separate waste bins will be for different types of wastes. Sludge will be replaced on regular basis. Specific area will be allocated in the building for the storage of solid waste; all the waste will be collected at that point. From that point, waste will be handed over to the certified contractor and	Project Manager

			agreement will be made for this purpose. Sanitary workers will be hired by the management of the project for the waste handling and management within the building of institution.	
3	Waste water Disposal of untreated waste water may be an issue related with the subject project.	Sewerage system exists at the project site, in which waste water will be disposed off after treatment in septic tank.	Sewerage system exists at the project site, in which waste water will be disposed off after treatment in septic tank.	Project Manager

4	Health & safety issues Health and safety issues may arise at the project site during the constructional and operational activities of the project	Local people will be informed in advance when work is about to start in an area. This may result in people keeping young children away from work areas. Safe driving practices will be adopted, particularly while passing through settlements. Job opportunity will be provided to local people of the area. Training will be provided to workers to avoid any accidents/ injuries.	Fire Fighting system and emergency exits will be made available in college building to cope with any emergency situation. Basic health facilities will be provided at the institution. Security guards will be hired to ensure the security of the students and employees.	Project Manager
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5	Noise	Basic health facilities will be provided to workers at the site. The project construction activities don't involve any activity which may create high noise levels. In order to avoid noise in the project area, vehicles to carry raw materials, shall be operated during night time as far as possible. Ear plugs will be provided & implemented in case of high noise levels. Noise level monitoring has been conducted by EPA certified lab & results are attached with the report.	Educational facilities and job opportunities will be provided to local people of the area. Health and safety of the students will be ensured by the management. No activity producing extra ordinary levels of noise will be allowed as a policy matter. Generators will be installed in a specially constructed room where its noise will be curtailed within the limiting values of the Punjab Environmental Quality Standards. Monitoring will be conducted by EPA Certified lab as per PEQS if required.	Project Manager
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6	Gaseous emissions and particulate matter/dust emissions	Water will be sprinkled on all exposed surfaces to suppress emissions of dust. Dust emission from dusty tracks and aggregate storage stockpiles will be reduced by keeping the material moist by sprinkling of water at appropriate frequency or erecting windshield walls on three sides of the piles such that the wall project 0.5 m above the pile, or covering the pile, for example with tarpaulin or thick plastic sheets, to prevent emission. All equipment, generators, and vehicles used during the constructional activities will be properly tuned and maintained in good working condition in order to minimize exhaust emissions.	Standby diesel fired generators of 500 KVA shall cater for emergency situation only. Its exhaust will be emitted through an adequately fabricated stack. Monitoring will be conducted as per PEQS rules.	Project Manager
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7	Soil erosion	The clearing of vegetation along proposed site will be minimized as far as possible. Trees necessary to be removed for the purpose of construction will be removed in a way that their roots will not be separated from the trunk, so that they could be planted somewhere else. Open fires will not be allowed anywhere outside the proposed site.	Maximum plantation is recommended within and outside the project site to restore the land. Tarpaulin sheets will be placed under generator (s), and other leaching substances. Land will be restored and rehabilitated by planting indigenous plants. Proper rehabilitation plan will be implemented.	Project Manager
BIOLOGICAL ENVIRONMENT				

8	Fauna and Flora	Proposed site is devoid off any protected species of both fauna & flora	Awareness programs will be planned regarding the protection of fauna & flora. Species of Indigenous plants will be planted at site.	Environmental/ HSE Manager
OTHERS				
9	Enhancement of aesthetic beauty of the building and the area	---	Flower pots containing flowers and plants will be planted within and outside the institution building to add to the improvement of the environment around. Street lights will be provided on the front side of the building to add beauty to the front site and the environment around. All other necessary measures shall also be taken to maintain standards of cleanliness so that the building may add	Project Manager

			to the scenic/aesthetic beauty of the area around.	
10	Staff for catering the Environmental Management Plan	---	Special staff will be recruited by the management of the college to implement this Environmental Management Plan on regular basis.	Management

CHAPTER # 7

STAKEHOLDER PARTICIPATION

Team of M/s Pak Green Enviro-Engineering (Pvt.) Ltd. visited the project site, had discussions with stakeholders and consult with the local people to evaluate the project socio-economic impacts. People provide the massive information about the project and have positive remarks regarding the project development.

Methodology of Consultation

The EIA team carried out public consultations at various locations around the Project Site. The s stakeholder's consultation during this phase of the work targeted the project area, administrative and private offices, Govt. offices, shops, etc. near the Project area:

- Selection of the stakeholders for consultation, reconnaissance of the project site and initial discussions with the neighboring factory workers, residents, shopkeepers, drivers, etc.
- Environmental consultants and social specialists and documenting the opinions of the stakeholders expressed during the meetings etc.

Consultations were held with the followings;

Proponent

Possible impacts and mitigation measures related to the subject project were discussed with the project proponent and management. They assured to take all suggested mitigation measures to control any discrepancy arose by the project and to make the project environmental friendly.

The Responsible Authority

Management of the subject project is the responsible authority to take all measures prior to the activity.

Other Departments and Agencies

For the impact analysis detailed meetings were held with the management of the subject project, local community, education institutes, health institutes and NGOs. Issues were



discussed that may affect the environment and also the implementation of proposed project. All possible mitigation measures were considered and incorporated in the Environmental Management Plan.

Scoping sessions, focused group discussion and way side consultations were held with the relevant stakeholders in the area. The purpose of such consultations is to obtain the feedback from the relevant persons.

Environmental Practitioners and Experts

Team of M/s Pak Green visited the project site, had discussions with stakeholders and consulted with the local people of nearby areas and commercial units to evaluate the project socio-economic impacts. People of the area belong to different professions like mostly belong to employment, own businesses, doctors, some in abroad, in Army, teaching etc. Women were also consulted for their point of view regarding the betterment of the area by this project, some of them communicated but according to social value of the area they mostly hesitate to communicate comfortably and get pictured. People provide the massive information about the project and have positive remarks regarding the project development.

Affected & Wider Community

There is no affected community present in the radius of our study area. PGEE team has consulted with the inhabitants of the nearby areas. They provided positive remarks regarding the subject project.

Sample Size

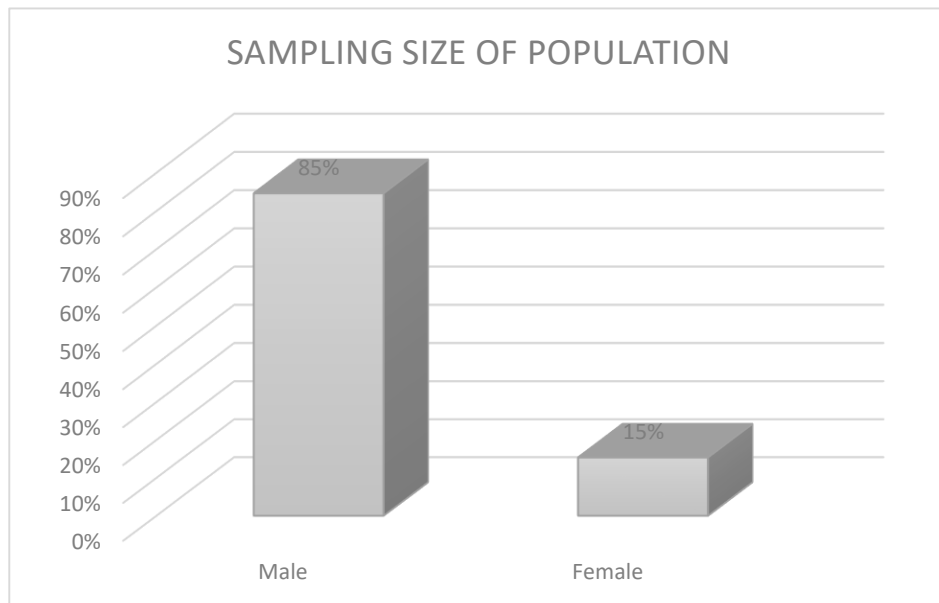
Sample size of 20 respondents was selected by the Team of consultants for conducting the socioeconomic survey. Women were also consulted for the said survey; while most of them were not willing to give personal information. Stakeholders participation Performa's and socioeconomic questionnaire were get filled by the inhabitants to evaluate the project socio-economic impacts. List of respondents and socioeconomic questionnaires are attached as **Annexure E**.

Statistical Analysis

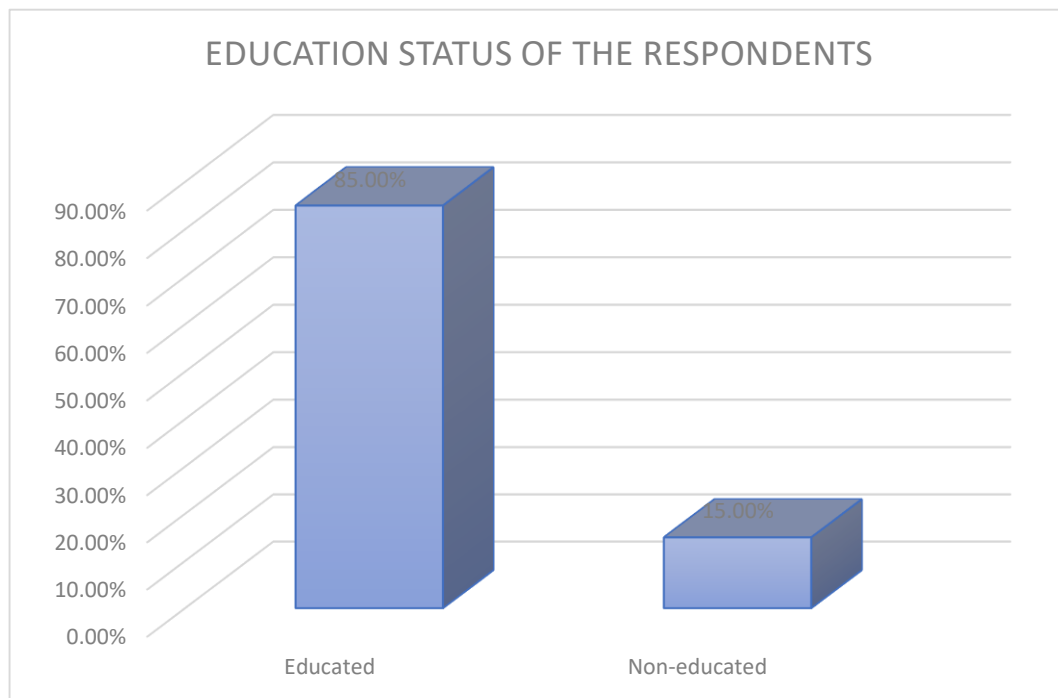
SPSS 19.0 has been used for the statistical analysis of the data collected during the visit of study site area through questionnaires.



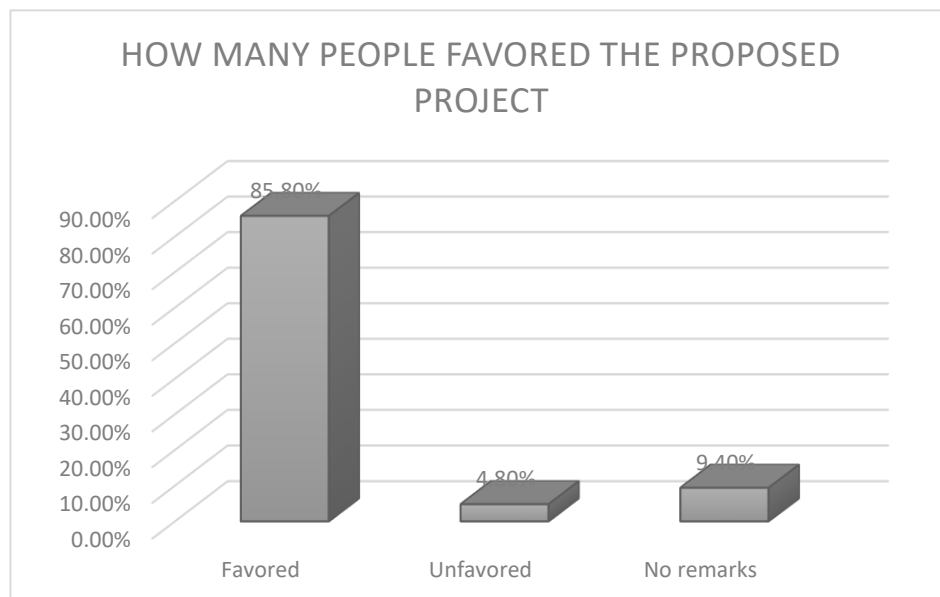
Graphical representation of analysis is given below:



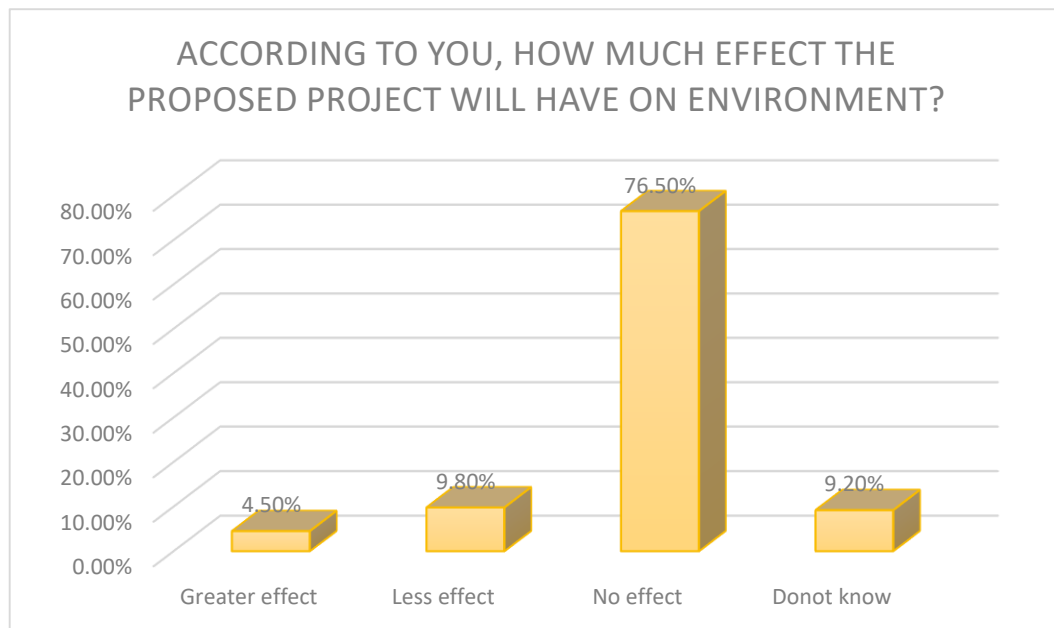
In the sample of 20 people, 17 people were male while 3 were female. The number of female respondents is less as compared to male respondents because according to the social binding female hesitates to respond or communicate comfortably.



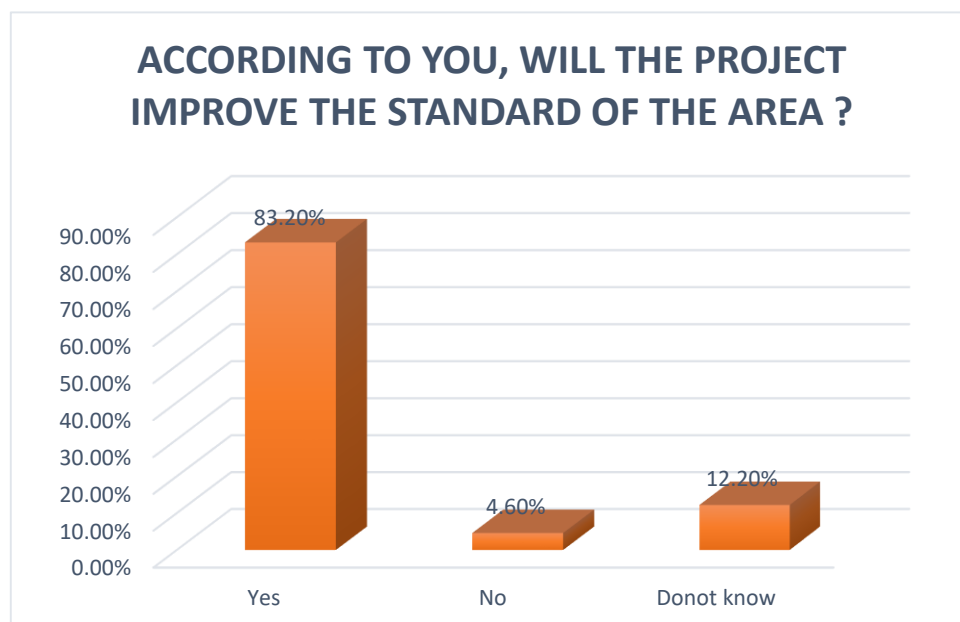
According to above graphical representation, 85 % respondents were educated while 15 % were uneducated. Overall education status of the area is good.



When people were consulted about the construction of subject project in their area, 85.80% of the respondents favored the proposed project and they gave positive remarks regarding the subject project. While 9.40% respondents had no opinion regarding the project and 4.80% respondents were not satisfied with the proposed project because they think that development will affect the natural aesthetics of the area.



As per survey, 4.50% respondents said that subject project will affect the environment of the area, 9.8% said that there will be less effect on the environment, 76.50% respondents said that the project will not affect the environment and 9.20% said that they have no idea regarding the subject project. Most of the population was not aware about the environmental importance; they were giving their remarks according to their own knowledge.



As per survey, 83.2% people said that the project will improve the standard of the area, 4.60% said that it will have no impact on the area while 12.20% respondents gave no remarks.



CHAPTER # 8

CONCLUSION AND RECOMMENDATION

Conclusions

- The EIA study reveals that the project is economically viable, socially acceptable and environment friendly.
- It will generate additional jobs during construction and operation phases.
- Project is environmental friendly and pollution free.
- The proponent has committed to implement the project in the environment friendly manner.
- Project proponent has ensured to install the Waste Water Treatment facility to treat the waste water prior to its final disposal.
- Project proponent has ensured to adopt the proper solid waste management system.
- Proponent has ensured to adopt all the necessary measures to control any impact if resulting from the project.
- Project proponent has ensured to provide the safe drinking water to all workers and staff.
- Project proponent has prepared and implemented very comprehensive Emergency Preparedness and Response Standard Operating Procedures.
- Project proponent has prepared and implemented very comprehensive Security and Fire Fighting Standards Operating Procedures.

Recommendations

- In view of the comprehensive screening process and findings of the present study there is no need of conducting further investigations.
- Tree plantation in the building premises is recommended.
- A good firefighting system should be installed.
- Proper solid waste management system should be followed according to direction of the Local Government.
- High standards of bio-security and safety should be enforced during operation stage. Safety of the workers should be top priority for the management.



- Management of M/s Ibadat Educational Trust should continue to assist the local communities as a corporate social responsibility.

The present EIA report is enough to meet the administrative and legal framework. Therefore, the environmental approval may be accorded for the present project.

