



Executive Summary



EXECUTIVE SUMMARY

INTRODUCTION

This executive summary presents an overview of the main findings of the Environmental Impact Assessment report for the Establishment of M/S Sunshine Health Care Pvt. Ltd located at Hadbast, Mouza Begum Kot, Main Sheikhpura Road Tehsil City District Lahore. The main objective for the Establishment of hospital is to provide high quality care to the sick and injured, on both an inpatient and outpatient basis, without regard to race, creed, national origin, age, gender, disability, or ability to pay. Environmental Impact Assessment of the project has been conducted in accordance with the Punjab Environmental Protection (Amendment) Act 2012 and IEE/EIA Regulations 2000. The process for conducting environmental assessment and the results of EIA are described in this document.

SALIENT FEATURES OF PROJECT:

PROPONENT NAME:	Haroon Rasul
PROJECT TITLE:	Establishment of M/S Sunshine Health Care Pvt. Ltd
PROJECT LOCATION:	Hadbast, Mouza Begum Kot, Main Sheikhpura Road Tehsil City District Lahore
CONSULTANT NAME:	A.S. Enterprises
CAPACITY:	No of Beds are 500
TOTAL AREA OF PLOT:	20445 SFT
NATURE OF AREA:	Commercial
COST OF PROJECT:	PKR 1.5 Billion (Approx)
TREE PLANTATION:	Trees will be planted along the boundary of the Project Area
SOURCE OF WATER:	Ground water
SOURCE OF POWER:	WAPDA and one standby Generator
HOSPITAL TYPE:	Tertiary Care

**PROJECT OBJECTIVES**

It is envisaged that on completion of the -construction, the said hospital will be a one-stop medical centre with adequate medical staffing and treatment facilities of Tertiary Care. This will reduce on the mortality risk that most people currently face whilst being transferred from one medical centre to another in search for services or facilities which are absent from most of the medical centers.

SITE ALTERNATIVES

After the consideration of alternative sites, the site chosen is best suited for the project because there is no protected area or human settlement or important religious, archaeological, historical or recreational site exists within 1 km of the selected site, and since the site is under the ownership of the proponent, there is no need to consider any alternative site for the project. Moreover, the Site has a road access, easy availability of utilities, is at adequate distance from locality and there is no ecologically sensitive or declared protected area such as Territorial Waters, forest, game reserve or biodiversity park within a 10 km radius of the project site, requiring the proponent to look for site alternatives.

SCREENING

As per Review of Initial Environmental Examination and Environmental Impact Assessment (IEE/EIA) Regulations, 2022 the proposed project; i.e. Establishment of M/S Sunshine Health Care Pvt. Ltd fall in H (3) i.e Hospitals more than 50 beds category of projects mentioned in Schedule II.

ENVIRONMENTAL CONSULTANTS:

An Environmental Impact Assessment study report has been prepared to identify and predict the significant environmental impacts likely to arise from the commencement of the Project, along with environmental impact statement followed by delineation of appropriate Environmental Management Plan and Environmental Monitoring Plan to have a control over the adverse environmental impacts and to check the efficiency and effectiveness of the mitigation measures being implemented. For the purpose of this EIA, and to get Environmental



Approval from Environmental Protection Agency (EPA) Punjab, management of M/S M/S Sunshine Health Care Pvt. Ltd has decided to engage the services of Environmental Consultant, M/S **A.S. Enterprises**.

PROJECT OUTLINE

Said project is of construction of building to accommodate a hospital at Hadbast, Mouza Begum Kot, Main Sheikhpura Road Tehsil City District Lahore. The hospital will be composed of theatres for medical surgery, consultation rooms, day care wards, antenatal units, psychiatric ward, laboratories, kitchen, restaurant, waiting rooms and laundry facilities.

It is envisaged that on completion of the construction, the Hospital will be a one-stop medical centre with adequate medical staffing and treatment facilities, offering services to 800 outpatients per day.

SCOPING

‘Scoping’ stage defines key issues that should be included in the Environmental Assessment and determines the scope, depth and Terms of Reference for the EIA study. This is a very important step both in identifying the impacts and identifying scope of the EIA. Effective scoping enables:

- Defining the boundary of the EIA study
- Consulting with relevant stakeholders to identify full range of concerns
- Focusing on key issues that characterize the existing environment in the baseline studies
- Reviewing the types of alternatives to be considered

Several groups, particularly decision makers, the local population and the scientific community, have an interest in helping to deliberate the issues which should be considered, and scoping is designed to canvass their views.

Scoping is important for two reasons; first, that problems can be pinpointed early allowing mitigating design changes to be made before expensive detailed work is carried out, and second, to ensure that detailed prediction work is only carried out for important issues. Scoping is an ongoing exercise throughout the course of project. Methodologies for scoping may range from interviews to use of checklists, matrices and network diagrams for visualization of sources and receptors of impacts and identifying which of these impacts require attention in the study.



These techniques collect and present knowledge and information in a straightforward way so that logical decisions can be made about which impacts are most significant.

MAJOR IMPACTS AND RECOMMENDED MITIGATION MEASURES:

Keeping in view, all the findings of the baseline study, and through general observation and desktop study, and understanding of the activities and processes involved in the project, environmental impacts have been anticipated. Following impact assessment methodology; i.e. defining the criteria for evaluation of the impacts, identification of mitigation measures (all possible options) for impacts identified as significant, evaluation of the residual impacts and identification of the monitoring requirements, adequate and effective mitigation measures have been for all construction and operation related likely environmental impacts of the project. These mitigation measures have been in order of attempts to eliminate or minimize the impact, provide some compensation or rehabilitate the environment by some means.

Whether describes an impact as having both spatial and temporal impacts, which can be described as the change in an environmental parameter over a specified period and within a defined area, resulting from a particular activity compared with the situation which would have occurred had the activity not been initiated.

Key impacts related to the construction phase include:

- Construction Noise
- Solid Waste
- Soil Contamination
- Air Pollution
- Community and Workers' Safety
- Employment Conflicts

Since the project is to be commenced on Proponent owned area and no human settlement exists within safe radius of the selected site, construction related impacts are not expected to extend to the community. Anticipated impacts associated with the construction phase however include noise (machine noise and vehicular noise), air emissions from earthwork and construction machinery and vehicles, and soil contamination due to leakage from or accidents of the



construction or transportation vehicles or during on-site refueling, solid waste from construction, municipal water used and safety of the workers and employment conflicts as the major adverse environmental impacts.

Mitigation measures recommended to be incorporated into the project include running the machines and vehicles on good quality (low-sulfur fuels) in good working order ensuring regular maintenance, tuning and servicing, and providing them with emission control devices, such as mufflers and silencers, etc. Water suppression and covered transportation and storage of the construction materials and slow driving on unpaved roads will control dust emission. Regular testing for leakage detection will also be ensured. Solid waste of construction and demolition activities will be used for flooring, while the remaining solid waste will be managed as per TMA practices in the area. For community safety, irrelevant persons will not be allowed inside and boundary of the site will be fenced. Safety of the workers will be ensured by developing SOPs for all jobs, training the workers to follow SOPs, discouraging any careless attitude of workers and providing the workers with, and encouraging them to use PPEs.

Key impacts related to the operation phase include:

- Noise
- Wastewater
- Solid Waste
- Air Pollution
- Safety, Public Health & Nuisances

However, the magnitude of these impacts shall be very low and insignificant. Municipal wastewater will be handled via Septic Tank whereas process wastewater will be handled. Solid waste will not be allowed to pile up and will be managed. Noise will be mitigated by properly muffling the machines and maintaining them in good working order by enclosing the noisy machines in sound proof halls and planting trees and by providing the workers with PPEs (ear muffs, ear plugs, etc.). Safety issue will be managed by developing and updating from time to time the SOPs for all work activities, training the workers to follow them, not tolerating any careless attitude of the employees during work, regular inspection to ensure no unsafe act or condition prevails at work site and lastly by providing the workers with necessary PPEs (safety



helmets, safety caps, safety shoes, ear plugs, etc.) and encouraging the workers to use them. An emergency Response Plan and a firefighting plan will also be in place and an Evacuation / Emergency Escape Plan will also be developed.

The likely adverse impacts due to this hospital have been evaluated based on the project implementation phases including decommissioning, construction, commissioning, operation and maintenance.

The likely Construction Phase (Civil works) impacts include:

- Occupational Health and Safety of the workers;
- Socio-economic impacts
- Traffic interference and accidents during the construction phase;
- Dust and noise from construction equipment;
- Generation of sanitary and other solid wastes;
- Impacts on area aesthetics, especially from construction wastes

Impacts from the operation and maintenance phase:

- Noise generation from hospital activities;
- Impacts on air quality at the hospital and neighborhood;
- Occupational health and safety impacts;
- Pollution from hospital wastes, especially from clinical waste disposal;
- Pollution from sewerage and waste water generated from the hospital;
- Social disruption due to change in land use

These impacts can be minimized or eliminated with implementation of the proposed mitigation measures and adherence to measures proposed in the environmental management plan

Key mitigation measures include the following:

- A hospital waste management plan for the hospital has been developed and is presented in chapter 6. It emphasizes waste segregation practices, waste collection infrastructure, and timely disposal by a licensed waste collection company;
- Undertaking proper landscaping of the hospital premises to minimize run-off and soil erosion;
- Provide appropriate and adequate sewerage and waste water drainage



- Develop a health and safety policy for the hospital staff, emphasizing hygiene, fire safety, handling of equipment and the use of PPE.

PROPOSED MONITORING:

Environmental impact of a project is worked out using various factors and parameters, so that an Environmental Management Plan can be evolved to take mitigation measures, wherever these might be considered necessary in order of appropriateness of elimination, reduction and compensation as the goals. The development of the EMP is to make some person responsible for implementing the mitigation measures as identified so that smooth implementation of the mitigation measures can be assured. Monitoring plans have also been included to ensure the compliance of the EMP by contractors and other responsible authorities. These plans have been included in Chapter-6 of the report.

During construction, ambient air quality for dust level in particular, vehicle and equipment exhaust, noise level (tests), solid waste management and soil contamination, and community and workers' safety (visual) need to be monitored. Monitoring Plan has been included in Chapter-6. During operation, quality of medicines, solid waste management and workers' safety need to be monitored. Plan has been included in Chapter-6.

CONCLUSION

The Environmental Impact Assessment contains description of the project, description of the environmental baselines, potential environmental impacts and suggested mitigation measures. An implementation mechanism for mitigation measures in the form of an Environmental Management Plan is included in the study. While the objectives of this study have been to describe the project and its environmental impact, it also identifies adverse environmental aspects associated with the project. Appropriate mitigation measures as explained in the environmental study should reduce, if not eliminate, these impacts so that these may remain within acceptable limits.

It is concluded in this study that all potential environmental concerns associated with the project have been adequately addressed, and no further study is required in this context. This report further draws the conclusion that the impacts identified are easily manageable and



reversible, no long-term impact is expected and no deterioration or consequential depletion of local natural resources is expected. It is accordingly recommended that Environmental Approval for the project should be issued by the Punjab Environmental Protection Agency, subject to payment of the requisite scrutiny fee by the proponents of the project.



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Chapter 1: Introduction



CHAPTER 1: INTRODUCTION

1.1 GENERAL

For any development project to be initiated in Punjab, it is mandatory to accord Environmental Approval from EPA Punjab under Section-12 of the Punjab Environmental Protection (Amendment) Act, 2012 by filing an IEE or EIA before EPA Punjab, as may be defined in Review of IEE/EIA Regulations, 2000 or recommended by EPA Punjab. This Report presents the Environmental Impact Assessment for the Establishment of M/S Sunshine Health Care Pvt. Ltd located at Hadbast, Mouza Begum Kot, Main Sheikhpura Road Tehsil City District Lahore. For this purpose the proponent has decided to engage environmental consultants, **A.S. Enterprises** to conduct EIA of said project. The purpose of this study is to identify the environmental baseline i.e. physical, biological and socio-economic/cultural conditions and assess all possible impacts arising during the construction and operation phase of the project and to find out appropriate measures for their mitigation, to either eliminate those impacts or to bring them to acceptable level and formulation of Environmental Management Plan (EMP) for implementation of the project in environment friendly manner.

This report is prepared by critical examine of the environmental factors which might be affected due to construction and operation of the project. The purpose of this report is to analyze impacts of the project. This EIA provides the basis for a determination of the degree of the environmental impacts of the project.

The report provides relevant information, as required under the officially approved format, to help the decision makers i.e. EPA Punjab before issuing for the Environmental Approval.

1.2 THE PROPONENT

Name: Haroon Rasul S/o Ch. Ghulam Rasul

Address: House no. 69/4, Mahallah Abid Majeed Road Lahore Cantt. District Lahore.



1.3 THE PROJECT

The Project under study is titled as Establishment of M/S Sunshine Health Care Pvt. Ltd. Its salient features have been described later in this Chapter, Chapter 3 and briefly in Executive Summary of the EIA.

1.3.1 NATURE OF PROJECT

This project is the Establishment of hospital.

1.3.2 SIZE OF PROJECT

Project will have a capacity of 500 No of beds.

1.3.3 LOCATION OF PROJECT

This project is to be located at Hadbast, Mouza Begum Kot, Main Sheikhpura Road Tehsil City District Lahore

1.3.4 AREA OF PROJECT

20445 SFT will be the total area of project.

1.4 DETAILS OF CONSULTANTS

For the preparation of the EIA Report of this Project, the proponent has hired the services of the environmental consultants; **M/S A.S. Enterprises** Team comprising of environmental engineers, chemical engineers, environmental experts and environmentalists has worked on this report. The following table lists the names of those experts are attached as a annexure with the EIA report.

1.5 PURPOSE OF REPORT

The main objectives of this EIA study were:

- To determine and document the state of the environment of the project area to establish a baseline in order to assess the suitability of the Project in that area.



- To identify pre-construction, construction and operation activities and to assess their impacts on environment.
- Provide assistance to the proponent for planning, designing and implementing the project in a way that would eliminate or minimize the negative impact on the biophysical and socio-economic environment and maximizing the benefits to all parties in cost effective manner.
- To present Mitigation and Monitoring Plan to smoothly implement the suggested mitigation measures and supervise their efficiency and effectiveness.
- To provide opportunity to the public for understanding the project and its impacts on the community and their environment in the context of sustainable development.
- Prepare an EIA Report for submittal to the Environmental Protection Agency, Punjab for according Environmental Approval.

1.6 SCOPE OF STUDY

For the EIA study, the scope of work is as under:

- Description of physical, ecological and socio-economic conditions in and around the facility.
- Project impact identification, prediction and significance at all stages of the project including planning, implementation and operation.
- Identification and assessment of the workability of mitigation measures to offset or minimize negative project impacts on environment.
- Identification of occupational hazards during all stages of the project and laying down suggestions for improvement in the conditions.

1.7 METHODOLOGY

Methodology of preparing EIA report follows:



1.7.1 SCOPING

The key activities of this phase include:

Project Data Compilation: A generic description of the activities relevant to environmental assessment is compiled with the help of the proponent.

Published Literature Review: Secondary data on weather, water resources and vegetation, and other relevant environmental features of the project area and the similar projects, is reviewed and compiled.

Legislative Review: Information on relevant legislations, regulations, guidelines, and standards is reviewed and compiled.

Identification of Potential Impacts: The information collected is reviewed and potential environmental issues are identified.

Identification of Mitigation Measures: Mitigation measures are identified for all the likely impacts in order of preference for avoiding the impacts altogether, minimizing their frequency or extent and compensating or rectifying the losses; as may be found practicable in the project.

Selection of Alternatives: Based on the potential impacts and the cost required to mitigate them, most crucial project employing the best available technology at the most feasible site is selected.

Scoping Meeting: A scoping meeting is held to share this basic level of project information with all the project stakeholders before the information is incorporated into the report, so that some improvement can be sought out in the data as may be necessary, better or more friendly alternatives can be selected, and better and more practicable mitigation measures can be suggested

1.7.2 BASELINE DATA COLLECTION

A considerable amount of baseline information on the project area was available from the environmental studies previously conducted in the region of other projects. A field visit was conducted to collect primary data on the water quality, ambient air quality,



noise level, and ecological species surviving in the area and the ecosystems prevalent, and the lifestyle, socio-cultural setup, income and sources of income and the facilities available for the residents in the areas around the unit. For ambient air and water quality, tests were conducted by an EPA-certified laboratory, noise level was measured using noise meter, and for socioeconomic profile, people around the site were interviewed.

1.7.3 IMPACT ASSESSMENT

The environmental and socio-economic features and other project information collected, is used to assess the potential impacts of the activities. The issues studied include potential project impacts on:

- Geomorphology
- Meteorology
- Groundwater and surface water quality
- Ambient air quality & noise level
- The ecology of the area, including flora and fauna
- Local communities

Wherever possible and applicable, the discussion covers the following aspects:

- The potential change(s) in environmental parameters likely to be effected by project related activities
- The identification of potential impacts
- The evaluation of the likelihood and significance of potential impacts
- The defining of mitigation measures to reduce impacts to as low as practicable
- The prediction of any residual impacts, including all long-term and short-term, direct and indirect, and beneficial and adverse impacts
- The drafting of monitoring arrangements of residual impacts



1.7.4 DOCUMENTATION

This EIA Report is prepared according to the relevant guidelines prescribed by the Punjab Environmental Protection Agency at the end of assessment. It includes findings of all the phases of the assessment process. Before preparation of the final report for submittal to the EPA Punjab, draft report was presented to the Proponent for review and comments.

1.8 COMPONENTS OF REPORT

This EIA Report has been prepared in the light of Pakistan Environmental Protection Agency (Review of IEE and EIA) Regulations, 2000. The format of this Report consists of the following sections:

Section 1: Introduction; this section represents an introduction of the EIA Report. It contains the objectives & scope of study and overview of the project, project proponent and Consultant.

Section 2: Policy, Legal and Administrative Framework; this section comprises policy, guidelines, statutory obligations and roles of institutions concerning EIA study of the proposed project.

Section 2: Alternatives: This section discusses the possible alternatives of the proposed Project.

Section 4: Description of the Project: Salient features of the project are presented in this section. It provides information about the Project location and its benefits to the public. The focus information is as under:

- a) Overview of the Proposed Project;
- b) Location of the Project;
- c) Project Components including Geometric Design Standards;
- d) Construction Material;
- e) Schedule of Construction;
- f) Construction Camps; and
- g) Workforce and Machinery Requirements.



Section 5: Description of the Environment: It provides an overview of the present environmental baseline of the project area including:

- a) Physical Environment;
- b) Ecological Environment;
- c) Cultural Environment; and
- d) Socio-Economic Environment.

Section 6: Stakeholder Consultation:

This section provides the concerns of the local community and the relevant local government departments.

Section 7: Anticipated Environmental Impacts and Mitigation Measures:

This section provides the information on the anticipated environmental impacts and proposed mitigation measures. It discusses the following:

- a) Pre-Construction Impacts and Mitigation Measures;
- b) Construction Phase Impacts and Mitigation Measures; and
- c) Operation Phase Impacts and Mitigation Measures.

Section 8: Environmental Management Plan:

This section describes the measures suggested for executing the Environmental Management Plan (EMP) at the project site. It elaborates the following in details:

- a) Objectives of EMP;
- c) Role of Functionaries;
- d) Specific Implementation Responsibilities;
- e) Environmental Monitoring Plan;
- f) Environmental Management Plan (In Matrix);
- g) Environmental Mitigation Cost;
- h) Training Plan; and

Section 9: Conclusions

This section presents the outcomes of the whole study. It explains the following in details:



- a) Identification of the Main Issues and Concerns;
- b) Proposed Mitigation Measures; And
- c) Benefits of the Project;



Chapter : Screening & Scoping



SCREENING AND SCOPING

Need of the IEE/EIA study:

According to the section 12 of the Punjab Environmental Protection Act 2012, no proponent of a project shall commence construction or operation unless he has filed an initial environmental examination or where the project is likely to cause an adverse environmental effect, an environmental impact assessment, and has obtained NOC from the EPA Punjab.

Subject to the provision of this Act, Proponent Mr. Haroon Rasool must get a NOC for construction of proposed project under section 12 of PEPA-2012 from Provincial Agency in order to start construction, for which an Environmental Impact Assessment (EIA) Report is mandatory for getting Environmental Approval as this project comes under the Schedule II (list of projects requiring EIA).

The Director General, EPA Punjab is the authority to issue the requisite Environmental Approval after proper review of the project. The EIA report has been prepared under the format of guidelines issued by EPA.

The applicable laws for the environmental study of the project are briefly given below:

- Punjab Environment Protection Act, 2012
- National Environmental Policy, 2005
- Review of EIA and EIA Regulations, 2000
- Guidelines for Preparation and Review of Environmental Reports, 1997.
- Solid Waste Management Rules 2005
- National Environmental Quality Standards 2000
- Punjab Land Use Rules 2009

Scope of the study

Scoping identifies the key issues of concern at an early stage of planning process to assess range of impacts and need for EIA. Scoping is a process of interaction. Scoping identifies boundaries of the EIA study, important issues of concern.

- It identifies concerns, evaluates them, organizes and presents them to assist analysis and



- decision making. For achieving the above objective, the study is mainly divided into the
- following sub tasks.
- Identification of the various legal/statutory requirements as set forth by the Punjab
- Environmental Protection Act, 2012 and the guidelines for preparation of EIA Reports
- and Review of existing regulatory framework in the country with reference to the
- development projects
- Collection of data related to physical, ecological and socio-economic resources of the
- project area
- Review the available data, drawings and report to ascertain their adequacy and need for
- collection of additional data
- Collection of data related to physical, ecological and socio-economic resources of the
- project area
- Review the available data, drawings and report to ascertain their adequacy and need for
- collection of additional data
- Identification and evaluation of salient environmental impacts
- Identification of necessary mitigation measures to minimize the adverse impacts.
- Preparation of Environmental Management Plan (EMP)
- Review of applicable existing environmental Legislation and National Environmental
- Quality Standards (NEQS)

Spatial and temporal boundaries adopted for the various aspects of the study

The natural environmental settings, present land status and its future trends around the project site covering fairly large distances have been taken into consideration while taking stock of the existing and expected conditions. Socio economic conditions, availability of basic of infrastructure, availability of water, labor, raw materials, transport and means of communication, electricity and approach to the project site were the major considerations and spatial and temporal boundaries considered during this study.

Issues discussed during consultation

Following issues were discussed during the stakeholder' s consultation:

- Overall activities of the project and their possible impacts.
- Possible impacts on natural vegetation, flora and fauna



- Possible mitigation measures;
- Beneficial factors and involvement opportunities of the local people in the set of activities of Project.

General

Majority of stakeholders appreciated the project and taken it as a necessary step towards the current situation of basic needs.

Socio Economic

Expectations about employment opportunities and community development were extremely high among all stakeholders.

Significant Impacts and Factors:

Following factors have been taken in the account to assess the Environmental Impacts of the proposed project:

- Environmental impacts due to land use, location, waste generation, utility services
- consumption and emergency spillage etc.
- Environmental impacts on physical resources i.e. soil, topography, geology, climate, air
- quality etc. ecological resources i.e. flora and fauna as well as health and safety of workers



Chapter 2: Alternative



CHAPTER 2: CONSIDERATION OF ALTERNATIVE

2.1 GENERAL

Alternatives are recommended and examined to determine the best method of achieving project objectives, while minimizing environmental impacts (WB December 1996). The discussion and analysis of alternatives in an Environmental Impact Assessment (EIA) study should consider other practicable strategies that will promote the elimination of negative environmental impacts identified.

This section covers the project alternatives which were examined for the proposed project at Hadbast, Mouza Begum Kot, Main Sheikhpura Road Tehsil City District Lahore. An analysis of the available alternatives is necessary to establish that the most suitable management and technology options will be adopted for the project, while minimizing environmental impacts. This evaluation explains the selection of the most feasible alternative in terms of economics, environment and health & safety. In particular it outlines the following options that were considered for this project:

- The “No Development Option”.
- Alternative Site Option.
- Technology Alternatives

2.2 No Development Option

The ‘no-development’ alternative is basically a consideration of the original and undisturbed environment without any development from the proposed project. This option is considered to ensure that all possibilities have been taken into consideration before deciding on a final course of action and also to provide a baseline situation against which the other suggested alternatives can be measured. This project is being undertaken Sunshine Health Care Pvt. Ltd to avoid the strain on its existing health facility and to expand its capacity so it would be beneficial not only to the proponent as it would provide health facilities at affordable cost, but would also generate development and employment opportunities in the area.

2.3 Alternative Project Timelines



Consideration of alternative timings for construction or operation of a project are necessary in cases where there are social, physical or biological receptors that may be sensitive to the project at a particular time and the postponement of the project in these times can avoid any potential significant impacts

No such considerations are necessary for the project as no significant sensitive receptors exist in the area that cannot be mitigated by management or application of physical controls.

2.4 Alternative Site Selection

This option is mostly applicable in situations where the proposed project area is in ecologically sensitive areas. The land in which the proposed project is to be constructed is in a stable environment and therefore will not be affected by this development activity:

Following points should be considered during site selection.

- Sufficient land should be available for development.
- It should be easily accessible, thus avoiding additional transportation costs for the proposed project.
- Proximity of environmentally sensitive receptors should be avoided.

Since adverse impacts on the environment are often associated with construction and development activities, a site selection survey is often carried out to choose the best possible site for the project. After careful consideration, it was decided to construct a building of Sunshine Health Care Pvt. Ltd. This would not only ensure adequate area for construction but would also provide access to the resources required for maintaining the project operations. The proposed project site was selected primarily for the following merits.

- Sufficient area is available for the proposed development
- The proposed project site is located at Hadbast, Mouza Begum Kot, Main Sheikhpura Road Tehsil City District Lahore. The project site lies in developed area of Lahore. For advanced medical treatment, People from different parts of the country moves toward Lahore. It increases burden on existing government and private health infrastructure, therefore management of Sunshine Health Care Pvt.



Ltd decided to enhance its health care capacity keeping in view the existing situation of health unit. Thus, no project option is considered.

- The primary reason for selection of this site was that the proposed site is located in an area that has been allocated entirely to urban and commercial use, hence problems like land use change i.e. conversion of arable land to non-agricultural uses and encroachment of industries over residential areas could be avoided.

2.5 Technology/Process Alternative

With full time consultant cover, state of the art Cardiac Centre, ISO certified Laboratory, Sunshine Health Care Pvt. Ltd is fully confident with its energetic team of Doctors, Nurses and paramedical staff. Cardiologists and Cardiac Surgeons at Sunshine Health Care Pvt. Ltd are serving the people with precision and panache.

Since the aim of this proposed project is an expansion of the health care facility of Sunshine Health Care Pvt. Ltd, the 'Technology/process alternative' option does not directly apply over here and Sunshine Health Care Pvt. Ltd is already using latest, resource conserving technology for its operation.



Chapter 3: Description of the **project**



CHAPTER 3: DESCRIPTION OF PROJECT

3.1 GENERAL

This section of the study concentrates on details of the project and its salient features; such as location, site layout, objectives, selection of alternatives, cost and magnitude of operation and various phases. Inputs and discharges relevant to different phases of the project, such as electricity & materials, etc. have also been examined as a response to possible environmental concerns.

3.2 TYPE AND CATEGORY OF PROJECT

As per Review of Initial Environmental Examination (IEE) and Environmental Impact Assessment (EIA) Regulations, 2022 the proposed project; i.e. Establishment of M/S Sunshine Health Care Pvt. Ltd fall in H (3) category of projects mentioned in Schedule II.

3.3 OBJECTIVES OF PROJECT

The objective of the proposed Project is as following;

- As a community resource, the hospital will have primary commitment to serve the residents of surrounding areas. Anyone who requires will receive the facilities regarding health care regardless of place of residence.
- With regard to cost, the hospital will work to avoid costly duplication of health care services by coordination with other area health care providers to the extent practicable.
- Hospital will seek to provide its own services as cost efficiency as possible.

3.4 ALTERNATIVES

3.4.1 Site Alternatives

A land under undisputed ownership of the proponent is selected for the Establishment of Unit. The site is well located in regard to the following:



- Easy road access to the market
- No settlements in close vicinity
- No watercourse within a safe distance

In view of these facts, it can be concluded that the Selected Site is best suited for the project, and will not pose any adverse impact or threat on any component of the environment.

3.5 LOCATION AND LAYOUT OF PROJECT

3.5.1 Location of the Project

The proposed project of the Establishment of M/S Sunshine Health Care Pvt. Ltd is located at Hadbast, Mouza Begum Kot, Main Sheikhpura Road Tehsil City District Lahore.

3.5.2 Layout of the Project

Layout map of the project site is attached with the report.

3.6 LAND OWNERSHIP

Property ownership documents have been attached with this report clearly showing that the site selected for the Project lies under the name of hospital without any dispute.

3.7 GOVERNMENT APPROVALS

Management has applied for Environmental Approval and after getting Environmental Approval, they will apply for other required approvals. The Other NOC is attached here with.

3.8 LAND USE ON SITE

Land is currently open and will be used for hospital construction purpose in an commercial estate.



3.9 ROAD ACCESS

Main roads and markets are in easy and close access of the project site. Main Shekhupura road is nearby road.

3.10 VEGETATION FEATURES OF SITE

Land is clear and there are no plants or vegetation on site. Various local plants will be grown at the project site in the open areas, and along the boundary.

3.11 DESCRIPTION OF PROJECT

The hospital will be composed of theatres for medical surgery, consultation rooms, day care wards, antenatal units, psychiatric ward, laboratories, kitchen, restaurant, waiting rooms and laundry facilities. A detailed description of the components per floor is attached in the copy of plans attached in Annexure.

3.11.1 Construction phase

In Construction phase a number of activities will be carried out on the site. Major ones will include: Erecting of concrete columns/pillars for the entire buildings. Concrete slabs, beams and columns will be constructed to form firm foundations and frames of the building. Concrete blocks will also be used during wall construction. Most of the building materials for completion including cement, concrete blocks and slabs, sand, iron sheets, iron bars, timber trusses, PVC tiles, and ceiling can be obtained from the local market. Care will be taken to use prescribed tensile strength of iron bars and appropriate ratios of concrete to ensure that load bearing beams and columns will not be subjected to shearing or bending/breaking under pressure. Contractors will be informed to use as much as possible manual labour save for those activities that will require use of machines.

3.11.2 The Operation Phase

Upon completion of two storied block, it will be used as a hospital. Other related services may include kitchen/lunch rooms, refrigeration zone, waiting rooms and wash rooms, mortuary, treatment rooms, preparation rooms, sterilization zones and waste confinement units. Hospitals in general, are likely to have negative effects on the



environment, therefore mitigation measures need to be in place to ensure that the operation of this hospital will not cause harm to the environment. Major activities at this hospital will include patients moving in and out of the hospital to receive treatment, there will be nurses and doctors employed at the hospital and some of these will have sleeping rooms within the hospital complex. There will be a great need for a constant energy supply to run the hospital equipment and lighting. There will also be a lot of organic and inorganic waste generated.

3.11.2.1 Emergency/safety support systems

Hospital management will ensure safety of the building and occupants. This will include having in place fire fighting equipment, ensuring that the escape routes are clearly marked and always free of any obstacles. A fire escape route via stair-cases and one catering for people with disability/ people on wheel chairs has also been provided for in the building designs. The entire building will be fitted with smoke detectors and fire alarms that will be periodically checked to ensure effective performance.

3.11.2.2 Pharmacy logistic in hospitals

Hospital pharmacies will usually be found within the premises of hospital. Hospital pharmacies will be provided stock a larger range of medications, including more specialized. Hospital pharmacies will be typically provided medications for the hospitalized patients only, and are not retail establishments. Hospital pharmacies will provide a huge quantity of medications per day which will be allocated to the wards and to intensive care unit according to medication schedule.

3.7.2. Management of Hospital

Hospital Management System (HMS) will be performed computerizing working in a hospital. The software will take care of all the requirements of an average hospital and will be capable to provide easy and effective storage of information related to patients that come up to the hospital. It will generate test reports; provide prescription details including various tests, diet advice, and medicines prescribed to patient and doctor. It also will provide injection details and billing facility on the basis of patient's status

whether it will be an indoor or outdoor patient. The system will also provide the facility of backup as per the requirement.

3.11.2.3 HOSPITAL WASTE MANAGEMENT

Collection of waste:

Centralized sanitation staff or any other sanitation staffs would collect the waste during morning afternoon or evening under the supervision of nursing staff and sanitation supervisors; documentation will be done in register; garbage bin should be cleaned and disinfected regularly.



Storage of waste:

Waste will not be stored in the generation area for more than a period of 4-6 hours. It will be responsibility of paramedic/sanitation staff to check for segregation. Waste collected in various areas will be transported for disposal/treatment.

Transportation:

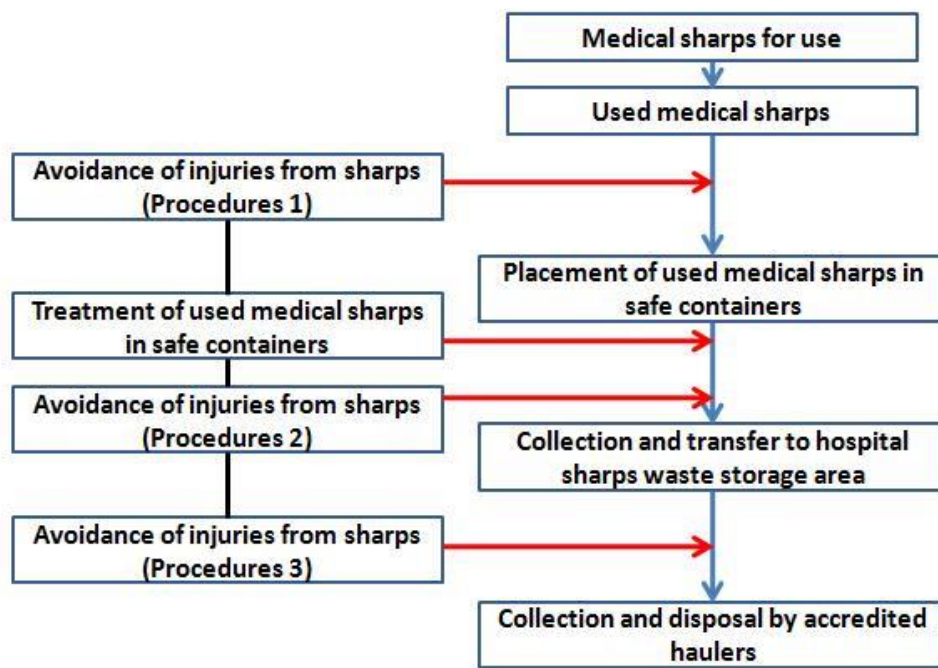
There will be separate corridors to transport the waste. Transportation will be done in sealed container/ sanitation supervisor will ensure for leakage.

Treatment and disposal

General waste will be dumped at municipal dumping site. Sanitation officer will be responsible for proper coordination between municipal and hospital. Use of label/symbol is useful in identifying waste for treatment. e.g: risk of corrosion, danger of infection, toxic hazards, glass hazards etc.

YELLOW BAGS	RED BAGS	BLUE BAGS	BLACK CARBOY
Infectious waste, bandages, gauze, cotton or any other objects in contact with body fluids, human body parts, placenta etc.	Plastic waste such as catheters, injection syringes, tubings, iv bottles	All types of glass bottles and broken glass articles, outdated & discarded medicines	Needles without syringes, blades, sharps and all metal articles.

Flow Chart From Generation of Medical Sharps Waste to Disposal Outside the Hospital and Intra-hospital Safety Procedures



3.11.3 SUPPLIES

Water supply

Ground water (100ft) will be used to fulfill this demand. Water to be used in hospital works will be used after passing through RO Plant.

- **Layout, location and specification of RO Plant**

The RO System works on the principle of Reverse osmosis, also known as hyper-filtration. One of the finest techniques for treating water, reverse osmosis eliminates contaminants from water thus making it fit for drinking. The RO system is provided with sediment pre-filter and an activated carbon filter as the membranes are degraded by chlorine, bacterial attack, manganese, hydrogen sulfide and iron. Advanced models of RO Systems are also attached with water softeners.

- **Working**



Stage 1: Removes dirt, sediment, sand and other physical particles

Stage 2: Granular Carbon Filter, which reduces chlorine, organics, odor, smell and turbidity from water

Stage 3: Block Carbon Filter that further reduces chlorine, odors and other chemicals

Stage 4: Reverse Osmosis Membrane in which bacteria, heavy metals, salt, bad mineral substances and other dissolved matter and chemical drugs are removed from water

Stage 5: Rear anti-bacteria activated carbon filter that improve the taste of water

- **Technical specifications**

Allowed pressure for source water: 0.1-0.3Mpa
Work temperature: 5-40 Celsius Max of original water
TDS: 1000ppm
Output: 100-400G/Day
Flush Type: Auto flush
Fitting: Common fitting or quick connect fitting
Volume of pressure storage tank: 11G Rated voltage
Frequency: AC220V/50Hz
Rated power: 50W
Precision of purification: 0.0001um
Transformer: 24V (220V)



(Figure : Sunshine Health Care Hospital)

3.11.3.1 Electricity

WAPDA will be the main source of electricity for this pharmaceutical unit. Stand-by gasoline operated generator will provide electricity for this Unit in load-shedding conditions.

3.11.3.2 AIR VENTILATOR

The air ventilator HVAC (heating, ventilation, and air conditioning) is operated for filter the air and control the temperature 20 to 25 °C.

3.11.3.3 Manpower

There will be approximately 20 workers on the unit during the construction and 10-15 workers will be hired for operation of said unit. The profile of the personnel is as follow.

- Operating staff with medical background



- Maintenance staff, including craftsmen, with skills in one or more area (e.g. electrical, mechanical and instrumentation)
- Clerical and administrative staff.
- Locally based staff as guard and for catering and cleaning.

3.11.3.4 Firefighting

The firefighting system will include water and gas devices / extinguishers. Hospital will establish a proper fire fighting system. Indoor and outdoor fire hydrants will be installed according to the codes and standards. Fire Extinguishers will be installed and will always remain in ready state. Map showing fire fighting equipments is annexed.

3.11.4 WASTEWATER

Municipal wastewater coming from various municipal works, such as cleaning will be generated, which will be treated via Fenton's Reaction. The wastewater generated from construction process is no longer need to be treated. However, the Hospital wastewater will be treated via Fenton's Reaction and will be discharged into sewerage line, when hospital will be operational.

• Why Fenton's Reaction method for wastewater treatment in Hospital

The contact of hospital pollutants with aquatic ecosystems leads to a risk directly related to the existence of hazardous substances, which could have potential negative effects on the biological balance of natural environments. There is a need for efficient pre-treatment options, which can effectively reduce/alter/modify the recalcitrance/toxicity profile of the wastewater. Advanced oxidation processes (AOPs) such as Fenton, Photo-Fenton and Photo Oxidation like processes constitute a promising technology for the treatment of wastewaters containing non-biodegradable organic compound. However, the development of oxidation processes is showing higher removal rates, oxidation reactions have primarily been used to supplement rather than replace conventional systems and to enhance the treatment of refractory organic pollutant.



Fenton's Reaction method for wastewater treatment in Hospital

This process would be use to Hospital wastewater, contaminated soils and sludge's with the following actions:

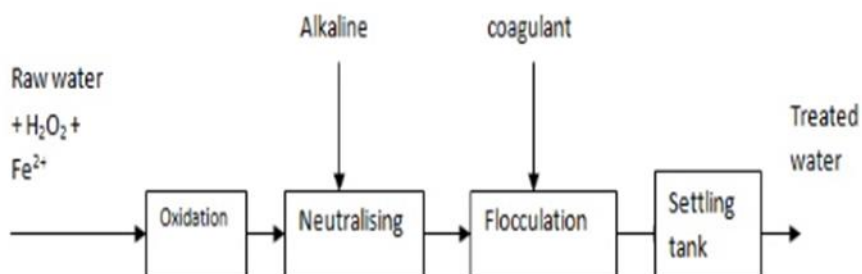
- Organic pollutant destruction
- Toxicity reduction
- Biodegradability improvement
- BOD/COD removal
- Odor and color removal

➤ **Procedure**

Fenton treatment of wastewater would be carried out at ambient temperature in the following sequential steps: (1) wastewater sample would be put in a beaker and stirred by mixing machine. Its pH would be adjusted to fixed values by H₂SO₄ 98% (w/w). (2) The scheduled Fe²⁺ dosage would be achieved by adding the necessary amount of solid FeSO₄·7H₂O. (3) A known volume of 35% (w/w) H₂O₂ solution would be added in a single step. (4) After fixed reaction time, before carrying out COD tests, pH value should be adjusted into 8.0 to remove residual Fe²⁺ (Fe³⁺). (5) Settlement would be achieved for 30 minutes, and then examination of COD should be done.



Fenton Processes



(Figure : Fenton's Process Chart)

3.11.5 AIR EMISSIONS

No air emission is likely to be released during operation of the project; except the dust or PM to be produced during floor cleaning and other such operations, which also will not be posing any environmental threat (will not breach the safe standards). Wet suppression will be done to control dust emissions. Generator emissions will be controlled by providing proper enclosure and tuning and maintenance.

3.11.6 NOISE

All the machinery will be installed and operated in a closed hall and from operation of machinery noise will not be a problem for the residents in the area nearby. Further Administration of the unit will take the precautionary measures to avoid the noise emissions. There is no possibility of Noise pollution. Construction activities will however add great to the noise, but that noise will be temporary, and will be mitigated by measures as stated in Chapter-5.



Further trees to be planted in the unit which will act as noise absorbers and workers will use PPEs whenever and wherever might be necessary.

3.11.7 SOLID WASTE

Waste generated during construction would include mostly construction material (mainly steel and wood), empty cement bags, excavated earth and general packaging waste. Reusable construction material will be recovered from the waste as much as possible. Most of process waste will be recyclable while domestic waste will be handled by solid waste management contractor. For collection of solid waste dust bins will be kept in the unit premises to manage the waste. Effective collection, storage and disposal of all wastes and good in-house keeping will be given priority and periodically undertaken. Coded waste bins will be required for storage and disposal of the different types of wastes to be generated. These will be put in place and at several points for example at least each office/consultancy room will need a bin for biodegradable waste and a bin for non-recyclable waste and there will be at least 4 large bins in the common area of each floor, and several toilet bins corresponding with the number of toilets. Audit for the solid waste generation will be conducted from time to time in order to figure out the main source of waste stream and to see how to manage it in future.

3.11.8 COST OF PROJECT

Cost of project is 1.5 Billion approx.

3.11.9 EVACUATION PLAN

The layout is designed in view of security and it would be maintained according to policy of the company executing the project. Emergency exit passages will be established and maintained. A proper evacuation plan will be formulated to cope with any emergency situation. Assembly points will be set and proper training will be provided to the workers and staff. Proper emergency plan and ventilation plans are annexed.

**3.11.10 COST AND MAGNITUDE OF OPERATION**

Raw Material, Operation and maintenance of the machinery are the costly activities involved in the operation phase of the project. Equipment safety will be assured if these operations are carefully managed. No separate fund allocation is required. However, budget will be allocated for purchase and maintenance of standardized PPEs for workers and for waste management and environmental enhancement. Despite these costs, this project was found to be financially feasible in the feasibility report.



Chapter 4: Description of the **Environment**



CHAPTER 4: DESCRIPTION OF THE ENVIRONMENT

4.1 GENERAL

This section covenants with the prevailing environmental conditions of the project area. Information that has been collected from different sources, including public literature, reports of other studies conducted in this area, knowledge with the proponent and the concerned government departments and the first-hand surveys and field measurements has been presented in this section. This chapter of Environmental Impact Assessment (EIA) encompasses all the important aspects of local environment; such as biological resources, socioeconomic development and quality of living values.

A Social survey in the Project Area was also carried out through consultation with the various communities. Local residents living in the Project Area were interviewed to obtain their feedback regarding the construction of the Project and its impacts on their daily life/future in the short and long term.

4.2 PHYSICAL ENVIRONMENT

This part examines the physical resources such as topography, soil, climate, surface and ground water resources and quality, ambient air quality and geology of not only the Project site but also the city as a whole to assess whether the project under assessment can or does have any impacts on any of these parameters. The description of physical environment of Lahore and the project site is presented in the following sub sections.

4.3 LAND ENVIRONMENT

4.3.1 TOPOGRAPHY

Lahore is situated on a slightly rising ground along the left bank of the River Ravi in 31° 35' 0" north latitude (31.583333) and 74° 21' 0" east longitude (74.35). Topography of the city as a whole is uniform and generally common to most of the central Punjab floodplains. Coordinates for the project site are 31° 28'06.82" north 74° 14'06.64" east. The project site is almost flat. The terrain of the city and the surrounding suburbs is also

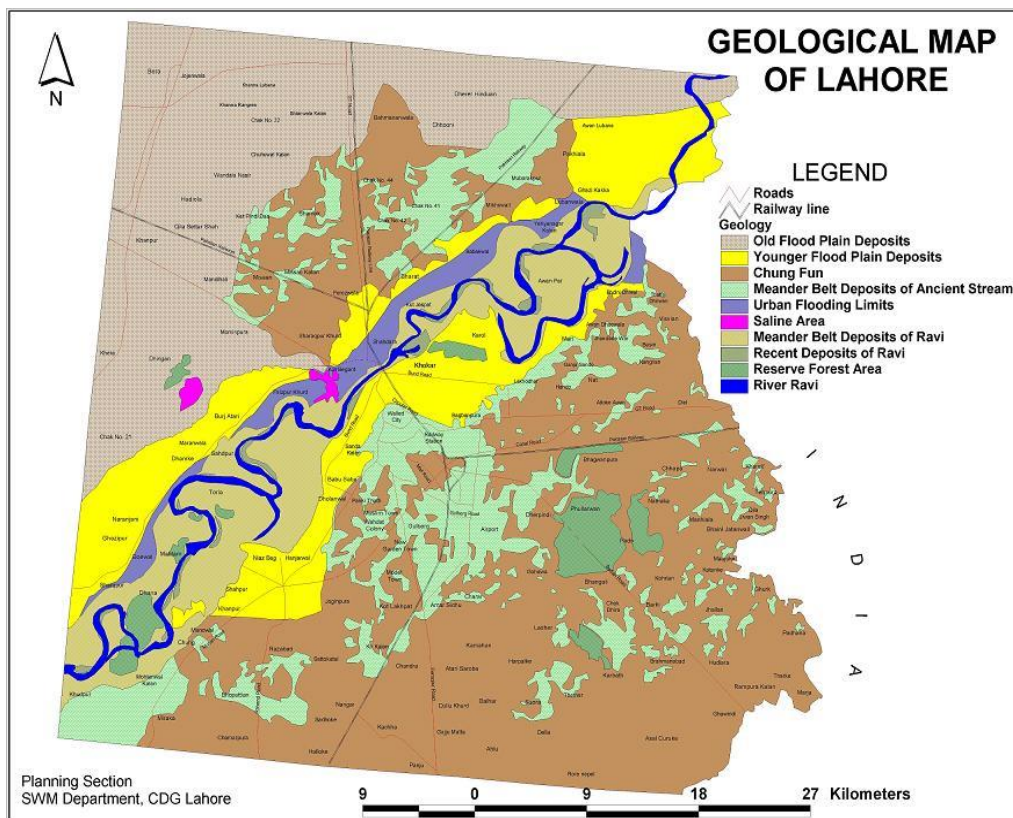
flat. The average for the city is about seven hundred feet above sea level. The project has not altered the topography of the project area in any manner whatsoever.

4.3.2 SEISMICITY

The area is not located in active seismic zone so no recent tectonic activity has been observed in the area and no fractures and faults are present in the project area but the project area lies in minor earthquake risk region.

4.2.3 GEOLOGY AND SOIL

As the soil of Lahore is mostly alluvial, however, it is normally very fertile and rich in potential plant nutrients but the soil of the Project Site is loamy with a moderate texture. No slides and slumps are present in the area but the project area is stable. Geological map of the Lahore is given in Map 4.1.



Map 4.1: Geological Map of Lahore



4.2.4 AIR ENVIRONMENT

4.2.4.1 CLIMATE

The area lies in tropical climate region with considerable range of temperature between winter and summer. Summers are quite hot with moderate humidity and mean summer temperature remains around 37°C with frequent spells crossing 44°C, whilst winters are of extreme cold and mean winter temperature (December/January) ranges between 6.5°C and 10.5°C. The mean of the maximum temperature ranges between 29-30°C and mean of the minimum ranges from 19 to 20°C. Long-term climate trend data was obtained from the MET office, located at the Jail road, in Lahore.

Table 4.1: Long-Term Climate Trend of Area

Weather	Months
Autumn	1 Oct – 15 Nov
Winter	15 Nov – 15 Feb
Spring	15 Feb – 1 Apr
Summer	1 Apr – 30 Sep
Monsoon	July – September

Difference in temperature in day is usually within 20°F limits. Generally the month from May to September are considered hard and disagreeable. However, water months are quite pleasant for most of the parts except in December and January, which give a feeling of severe cold.

4.2.4.2 TEMPERATURE

The area experiences an extreme climate during the months of May, June and July, when the city witnesses summer season. The temperature ranges between 40°C to 45°C, during the summer months. The temperature during winters (months of December, January and February) varies between 5°C to 8°C.

Table 4.2: Monthly Mean Maximum Temperature (C)



Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2017	20	23.3	28.3	33.8	39.3	40.2	36	35.6	35.0	32.9	26.1	22.2
2018	17	22.8	30.9	38.0	39.8	39.2	39.8	33.8				

(Source: Meteorological Department)

Table 4.3: Monthly Mean Minimum Temperature (C)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2017	10.0	12.5	16.8	21.8	26.5	28.5	27.1	27.7	25.9	20.1	13.6	9.1
2018	7.8	11.9	19.2	24.3	26.8	27.9	26.8	26.9				

(Source: Meteorological Department)

4.2.4.3 RAINFALL

The area has a distinct rainy season, during which the weather is very humid. The rainiest months of the year are July and August, with June and September also gets some rain. During the rest of the year, barely any rain falls in the area.

Table 4.4: Monthly Total Rain (mm) [-1=Trace]

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2017	19.8	26.9	52.3	19.9	6.1	20.2	110.9	92.0	20.4	2.6	1.1	-1.0
2018	0.3	9.4	5.4	2.6	7.6	4.8	287.7	119.4				

(Source: Meteorological Department)

4.2.4.4 WIND DIRECTION

The area experiences westerly and north westerly winds during the winter and spring seasons, known usually as the dry stable times of year and southerly and south easterly



winds during summer and monsoons. Wind speeds are low during winter picking up during spring season and peaking during the summer months.

Table 4.5: Wind Direction at 08:00 am

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2018	N45 W	N35 W	N36 W	N39 W	N66 E	N64 W	N70 E	S10 W	S35 W	S45 E	S45 W	N45W

(Source: Meteorological Department)

Table 4.6: Wind Direction at 05:00 pm

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2018	N45 W	N50 W	N43 W	N51 W	N57 E	N81 W	N04 E	S36 W	S17 W	S56 E	S52 W	N60 W

(Source: Meteorological Department)

4.2.4.5 WIND SPEED

As can be seen in table 4.7 and table 4.8 the wind speed is generally light during the post monsoon and winter months but during the summer and monsoon months the wind speed increases. Except the monsoon months (July, August, and September), the predominant wind is from the West and North West directions. During the monsoon months the wind blows from the East and South East. Calms are reported at an annual average of 9%.

Table 4.7: Wind Speed at 08:00 am (Knots)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
------	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----



2017	0.4	0.9	1.1	2.5	2.6	2.4	2.0	1.5	1.2	0.5	0.1	0.1
2018	0.5	1.1	0.7	2.0	3.0	2.5	1.3	1.9				

(Source: Meteorological Department)

Table 4.8: Wind Speed at 05:00 Pm (Knots)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2017	2.3	3.9	3.8	4.1	3.5	3.7	2.7	2.5	2.5	1.9	0.5	0.9
2018	1.2	2.8	3.6	3.6	3.9	2.6	3.1	1.5				

(Source: Meteorological Department)

4.2.4.6 HUMIDITY

The Relative humidity in project area varies from 17 to 70%. From July to September humidity in the area increases and goes to its highest in the range of 60 - 70 %, while in the rest of year it is in range of 30 - 40 % as given as follow;

Table 4.9: Humidity at 08:00 Am (%)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2017	85	73	65	46	38	40	70	74	71	66	78	79
2018	92	75	69	40	39	46	76	83				

(Source: Meteorological Department)

Table 4.10: Humidity at 05:00 pm (%)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2009	58	44	40	26	22	23	52	59	49	36	48	48
2010	68	48	40	20	23	31	60	67				

(Source: Meteorological Department)



4.2.4.7 AIR QUALITY

The overall air quality in the study area is of moderate nature. Dust particles along with oxides of nitrogen, sulphur and carbon are the major causes of air pollution in the ambient air quality. It was observed during the visit that Petrol and Diesel operated vehicles are emitting smoke and exhaust gasses in excessive quantity which is source of environmental pollution and responsible for the air quality deterioration. These vehicles are not maintained properly and they emit harmful particles in the air due to incomplete combustion.

4.2.3 NOISE ENVIRONMENT

4.2.3.1 NOISE QUALITY

Lahore is industrial area of the Pakistan having population around seven an. There are many a large, medium and small industries which are still working within city premises. Industrial activity and vehicular emissions are causing excessive noise in the city.

The affluent areas of Lahore are quieter than rest of the city the noise level in these areas is still far higher than the standards set by the World Health Organization and the EPA. Noise pollution in the city is on the rise with most residents complaining that the noise is becoming a public nuisance.

4.2.4 WATER ENVIRONMENT

There are no surface water resources like canal or ponds, near the project area. The city of Lahore is underlain by the deep permeable aquifer formed within the alluvial plane of the Ravi River and Chenab, which is the part of Greater Indus Plain.

Ground water is the principal source of municipal water supply in Faisalabad. This is also the case in the immediate vicinity of the site. The City's drinking water is obtained from groundwater aquifer by means of tube wells located throughout the area. Groundwater is pumped from 400-800 feet and is generally good for direct consumption. About 83% of the city's population is consuming groundwater for drinking purposes.



4.3 BIOLOGICAL AND ECOLOGICAL ENVIRONMENT

It include all the information about the life i.e. plants and animals etc.

4.3.1 FLORA

As the project site is in commercial zone, so no particular flora is present. Only some bushes are present at the project site.

4.3.2 FAUNA

Most of the domestic fauna are in the vicinity of the Project Site.

4.3.3 WILDLIFE

There is no wildlife in the Project area at present and likely to exist in future.

4.3.4 RARE AND ENDANGERED SPECIES

There is no rare and endangered species at the moment in the Project area.

4.3.5 PARKS, RESERVES AND ARCHEOLOGICAL SITES

The project site does not have any natural parks, wildlife reserves and archaeological sites near the project area.

4.4 SOCIO-ECONOMIC AND CULTURAL ENVIRONMENT

Any development intervention would have better chance to measure its outcome, if it first conducts a small socio-economic survey among those people expected to effect from its program and activities. In light of this the socio-economic survey was conducted among selected stakeholders so as to have adequate baseline information about various features characterizing its beneficiaries.

4.4.1 METHODOLOGY

In order to assess the present socio-economic and socio-cultural conditions of local population of the project site, a social survey was conducted from the people, which may get direct positive or negative impacts due to the project. The methodology of the survey was based on filling specially designed questionnaires (**See Annexure II**) and general observations to assess and set criteria for baseline study related to socio economic conditions.



4.4.2 SURVEY FINDINGS

4.4.2.1 GENDER RATIO

Female population of the City of Lahore was 240,200 with an annual growth rate of 3.46% (1998 census). The literacy rate among females is 60%. It is found that most of the females are housewives and only 2% of total female population belongs to working class, although it is a small number but still it is comparatively higher than other areas of the country.

4.4.2.2 LIVELIHOOD

Here the people are hard working and their source of income is through industrial activities business.

4.4.2.3 RELIGION RATIO IN PROJECT AREA

In project area majority of the population is Muslim. Main religious minorities in Lahore include Christians and Ahmadis. The major casts of the City residents include Sayyed, Rajpoot, Moghuls, Kashmiris, Kakkay Zai, Arain, Jatt, Gujjar, and Sheikh. (Sources: City District Government Lahore website & District Census Report, Lahore).

4.4.2.4 CULTURAL VALUES

The local residents generally belong to the upper, middle and lower middle classes and follow a blend of old and modern cultural values.

4.4.2.5 TRANSPORTATION & COMMUNICATION

Many private transporters have launched bus services for these areas.

4.4.2.6 EDUCATION

Lahore is famous for its reputable educational institutions both in the government and private sectors. The literacy level of the project area is low. Educational institutes are integrated at a distance from this area.

4.4.2.7 HEALTH

In the project area private clinics, dispensaries and health workers are present.

**4.4.2.8 SETTLEMENT AND RESETTLEMENT ISSUE**

There is no resettlement issue as the land belongs to the owners. No previously existing settlements are present at the project site. Also there is no need of relocation of any human or non human entity from the project area.

4.4.2.9 ARCHAEOLOGICAL AND HISTORICAL SITES

No archaeological or historical site has been identified within the project area.

4.4.2.10 PROTECTED AREAS

No protected areas are present in or near the project area.

4.4.2.11 HUNTING/PICNICING

No hunting and picnic activities take place in the project area.

4.4.2.12 SCENIC VIEWS

No scenic views are present in the project area.

4.4.2.13 STRUCTURES

The land is predominantly commercial. Many structures are present in the vicinity of project area.

4.4.2.14 ELECTRICITY

The area will receive electric supply from LESCO.

4.4.3 CONCLUSION

Form the survey conducted it is concluded that the project will not have major adverse impacts on the existing environment and community. As mentioned earlier the project land is in commercial area and owned by the proponent so there will be no issues arising like relocation or resettlement of people or other infrastructure. Moreover, the project will have positive impacts in terms of employment opportunities in case of future extension of the project.



4.5 LAB REPORTS OF ENVIRONMENTAL ANALYSIS

Testing of different parameters was done from a certified laboratory to check the quality of different environmental parameters. The copy of the lab reports of these parameters (ambient air analysis, water quality analysis) is given in annexure.



Chapter 5: Potential Environment Impacts and Mitigation Measures



CHAPTER5: POTENTIAL ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

5.1 GENERAL

This section discusses the project's potential environmental impact on the area's geomorphology, soil, water resources, air, biological resources and socioeconomic condition and, where applicable, identifies mitigation measures that will reduce, if not eliminate, its adverse impact. The assessment carried out in this section is based on potential impacts on overall environmental receptors within the project area.

5.2 OBJECTIVES

Objectives of screening out all possible impacts and then providing their mitigation measures are:

- To find different alternatives and ways of carrying out the project activities.
- To enhance the Environmental and Social benefits of proposal.
- To avoid, minimize and remediate adverse impacts.
- To ensure that residual adverse impacts are kept in acceptable limits

5.3 IMPACT ASSESSMENT METHODOLOGY

- **Screening of Potential Impacts**

Based on site visit, observation, brain storming, provided information and social interviews, significant impacts are anticipated and evaluated. Then qualitative and quantitative (where possible) assessment of these anticipated impacts is carried out.

- **Identification of Mitigation Measures**

After anticipation and screening of significant impacts, certain mitigation measures are provided in order to enhance benefits of project and reducing impacts. These measures can be classified as:

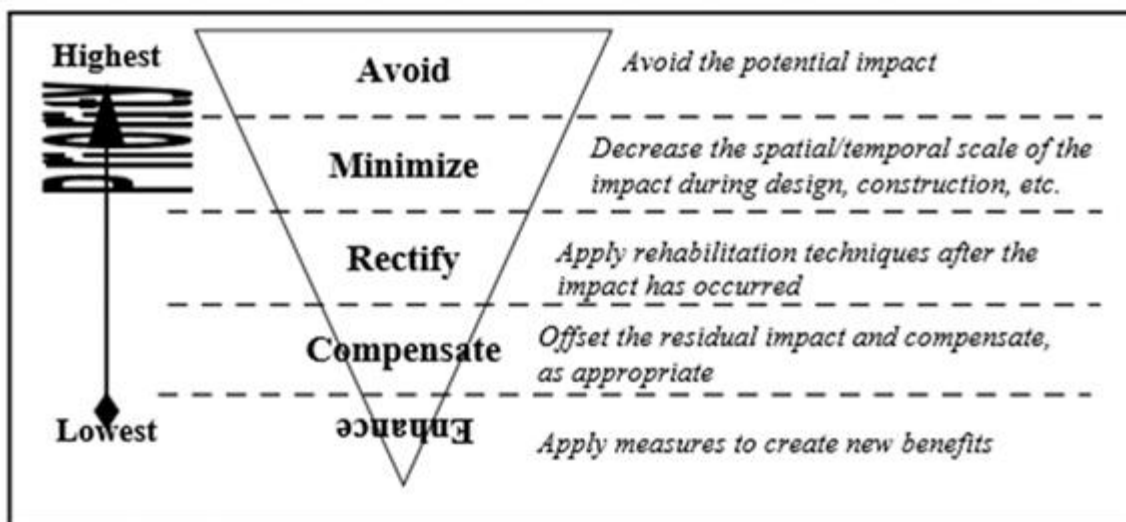


Figure 1: Hierarchy of Mitigations

- **Evaluation of the Residual Impacts**

Incorporation of suggested mitigation measures may reduce the magnitude of the environmental impacts of the project but sometimes, it may fail in bringing them within the acceptable limits. This step refers to the identification of the anticipated remaining impacts after mitigation measures have been applied.

- **Identification of Monitoring Requirements**

The last step in the assessment process is the identification of minimum monitoring requirements. The scope and frequency of monitoring depends on the residual impacts. The purpose of the monitoring is to confirm whether the impacts are within the prescribed limits and to provide timely information if acceptable limits are being breached.

In the sections below the impact assessment methodology for the construction of a hospital has been defined in detail. It includes the magnitude, the extent of the impact and the nature of the anticipated impact being foreseen due the installation and operation of the proposed project.

5.3.1 Methodology:



The methodology adopted to carry out the EIA study of the proposed project was as follow:

- Orientation
- Planning of Data Collection
- Data Collection
- Site Reconnaissance
- Analysis of Maps
- Literature Review
- Desk Top Research
- Public Consultations
- Field Studies
- Laboratory Analysis
- Checklist for the evaluation of impacts and their analysis
- Categorization of impacts based on their potential environmental significance and
- prescription of preventive / mitigation measure.

In addition to the evaluation and review of the available records, data and the facts for the previous project, detailed discussion were held with the concerned members of the project management as well as other project stakeholders. Notes and proposals for measures to be taken to mitigate and compensate for any determined / detrimental environmental impacts are contained in the Environmental Management Plan (EMP) as well as monitoring plan, including all parameters that need to be measured, and the frequency of monitoring actions. A comprehensive qualitative and quantitative methodology was adopted to conduct this study.

inter-alia in due compliance with EIA requirements. The study included collection of both primary and secondary data regarding environmental status and other relevant factors. This EIA report has been accomplished after carrying out thorough visit to the proposed site and detailed investigation to identify the following environmental areas of concern:

- To achieve the desired environmental compliance standards; as per the Pakistan
- environmental regulatory requirements; as applicable to the project.
- Plans and activities to prevent/mitigate any potential impacts and the gaps that could
- probably remain after implementation.
- Any other points/steps to be taken which could be beneficial to mitigate environmental



- adverse impacts that may accrue both during construction and regular operation of the
- project. A view methodology for environmental assessment is given in following table 5.1:

Table 5.1: Environmental and Social Assessment Process

Phase	Activities	Status	Responsibility
Screening and scoping	Reconnaissance and initial site visit and consultation, identification of environmental and social issues & applicable safeguard environment policy, categorization and working out an action plan.	Carried out during the present EIA	Project Manager (PM) Consultants
Impact Assessment	Identification of potential environmental and social impacts through site visits, stakeholders consultations, review of drawings alternatives etc.		
Impact categorization	The significant potential impacts were tabulated and mitigation measures were prescribed.	During the present EIA.	PM Consultants

Project constraints:

Overall collation of information and impact assessment has been undertaken to a high standard, the project has been subject to a number of constraints. Of these the two most important are as follows:



- **Baseline studies:** baseline studies have been carried out to characterize the natural and socio-economic environment in the areas affected by the various project elements. Although every effort has been made to research seasonal variations the studies are based on less than 12 month's data and therefore assumptions have had to be made regarding seasonal factors.
- **Cumulative Impacts:** Cumulative impacts occur when two or more projects are found in the same location at the same time. Impacts can be particularly severing during the construction phase, and careful scheduling may be required

Inception procedures:

In order to complete the study within the time span desired by the proponents, a team was assembled to carry out the study and specific assignments were entrusted to each member of the team, each of whom were armed with the resources, tasks, instructions and checklists to carry out nominated tasks.

5.1.2 Document resources

The purpose of discussions with the proponents was to collect documentation and background information on the project. The reliability of a study depends on authenticity and depth of baseline information to assess possible impacts on existing environment.

Public consultation:

The object of identification of stakeholders and affected persons was basically to pave the ground for public consultation in order to enlist the views of all concerned with, or about the project.

Characteristics of Impacts**Magnitude**

The magnitude of the impact includes the type of impact project will cause such as; direct, indirect and cumulative. Direct impact means the impact being caused in the immediate environment within the same time frame. Indirect impact is the impact being caused as a result of the other impact or may result as the reaction of the other parameters. Cumulative includes both.



Immediacy

Immediacy focus on the following parameters:

- Temporal Extent (during construction and after construction)
- Spatial Extent (local or may be widespread)

Sustainability and Reversibility

It focused on the following parameters:

- Mitigability (Fully/Partially)
- Monitoring (Fully/Partially)

Objectives

Following are the objectives of screening out all significant environmental and social impacts as well as mitigation measures need to reduce the severity of the impact up to the extent possible:

- To find different alternatives and ways of carrying out the project activities causing
- adverse impacts
- To enhance the Environmental and Social benefits of proposed project.
- To avoid, minimize and remediate adverse impacts.
- To ensure that residual adverse impacts are kept in acceptable limits.

Impact Identification with Checklist

The method of checklist has the advantage of being simple to understand and use good for site selection and priority setting but has the disadvantage of not to distinguish between direct and indirect impacts and they do not link actions and impacts.

A Checklist of environmental parameters has been developed on experience basis to evaluate the impacts of various actions affecting the Environmental Resources and values with the recommended feasible protection measures.



Environmental Components	Impacts		Nature of Impact		Duration			Location			Likelihood			Reversibility		Significance				Consequences
	Positive	Negative	Direct	Indirect	Short term	Intermediate	Long term	Local	National	Global	Low	Moderate	High	Reversible	Irreversible	Major	Minor	Moderate	Beneficial	
Morphology & Soil		•	•		•			•				•		•				•		M
Water Resources		•	•			•		•			•			•			•			L
Ambient Air		•	•		•			•				•		•				•		L
Noise Pollution		•	•			•		•			•			•			•			L
Waste Discharges		•	•			•		•				•		•				•		M



Traffic		•	•		•			•			•		•				•			L
Wildlife Habitat		•		•	•			•			•		•				•			L
Social Impacts		•		•	•			•			•		•				•			L
Local Economy and Employment	•		•			•			•				N A					•		Positive

Levels of Negative Consequences:		Positive Consequences:	
High	H	Positive	
Moderate	M		NA= Not Applicable
Low	L		• = Characterizes the Impact



5.4 Impacts Associated with Project Location

The proponent has selected the site owing to the following reasons:

- The site is undisputed and under the ownership of the proponent
- There is no fauna flora (particularly belonging to an endangered species) within a 2 km radius of the site
- Main road network runs in front of site
- There is no ecologically sensitive or declared protected area (PA) like forest, fish hatcheries, Territorial Waters, wildlife or game reserves, any structure of socio-cultural significance (historical or archaeological site or religious structures; Masjid, temples, etc.) within 10 km of the selected site

It can be concluded in view of these reasons that the selected site is best suited for the project, and will not pose any adverse impact or threat on any component of the environment.

5.5 Impacts Associated with Design Phase

At the design phase, no considerable impact will occur on land, soil, topography, ground water, and on people of the area. However in pre-construction phase a management system should be provided at design level so impacts can be reduced. Design of the building will adhere to all standard technical requirements in order to avoid adverse impacts on environment and human health.

Mitigation Measures at Design Phase

At design phase special attention should be given to the design of the project in the sense that it has been designed in such a way as to cause minimum disruption and deterioration of environment and surroundings.

5.6 Impacts Associated with Construction Phase

The Environmental and Socio-Economic Impacts associated with the construction activities of the plant are the following:



- Construction Noise
- Dust Emission During Construction
- Change of Land Use
- Water Sourcing
- Vehicle and Equipment Exhaust
- Soil Contamination
- Socioeconomic Impacts
- Community and worker's Safety
- Traffic Disturbance
- Employment Conflicts
- Archeological Resources
- Project and Community Interface

5.6.1 IMPACTS ON PHYSICAL ENVIRONMENT

5.6.1.1 Effect on Geomorphology and soil

Potential Impacts:

Spills of fuel and lubricants during handling, transportation and storage may result in contamination of soil at the construction site. Significance of this impact will depend on the nature of spilled material, location of spill and quantity of spill.

The likely impacts of these activities may include:

- Physical scarring of the landscape
- Increased risk of land slippage
- Soil contamination

Impact Assessment

Soil contamination may occur due to spillage and leakage of fuels. This possibility of impact is higher at fuel storage areas at campsites, vehicles and machinery used in the field and areas of vehicle fueling and maintenance.



There are no visible signs of any adverse impacts on the soils and to avoid any such condition to arise, following mitigation measures are provided and will be followed

Mitigation Measures

- Spill Prevention and Response Plan for storage, use and transfer of fuel should be prepared.
- Workers should be trained on spill prevention and response plan.
- Thick Plantation is recommended after completion of construction
- Maintenance and washing of vehicles and equipment should be carried out at designated areas
- Any hard surface or tarpaulin should be spread on area to prevent soil contamination.
- Regular inspections should be carried out to detect leakages in construction vehicles and equipment
- Spill prevention trays should be provided and used at refueling stations
- Drivers of construction vehicles should drive slow following traffic rules to avoid accidents

Residual impacts

No residual impact to soil will be caused provided the above-mentioned measures are implemented properly.

Monitoring requirement

Document all related accidents of spillage with the corrective actions taken in order to avoid reoccurrence.

5.6.1.2 Water Quality

Potential impacts

The quality of surface and groundwater supplies may deteriorate if pollutants get mixed with surface runoff during rain and carried to water reservoirs in the vicinity, or if pollutants leach into the ground.



The storage and handling of fuels and lubricants may also contaminate surface and groundwater resources, if there are spillages that wash into surrounding areas or seep into the ground.

Improper disposal of domestic effluent from the camp may result in contamination of soil and water and become a health hazard. A significant impact on the environment will be interpreted if the wastewater discharged is not in compliance with the National Environmental Quality Standards for municipal effluent

Impact Assessment

A significant amount of sediment may get washed into fields and watercourses if it rains during the construction period; however the impact is not expected to be significant. Potential sources of pollution in such cases may include:

- Domestic wastewater (sanitary and kitchen discharge)
- Oil and grease from vehicles
- Sediments from exposed land surfaces

Mitigation Measures

- Septic tanks will be provided

Residual Impacts

Implementation of the mitigation measures is not likely to leave any significant impact on the ground or surface water quality.

5.6.1.3 Water use

The water during the construction activity will be required for the domestic water consumption at the construction camp and for the construction activities including sprinkling of water for dust suppression.

Potential impacts

In the case of the said Project, water requirement is too small to disturb groundwater yield and water availability. Moreover, the soil of the area is rich in groundwater reserve.

**Mitigation measures**

Careful earthwork, frugal water use employing reuse and treatment of the wastewater via a Septic Tank will mitigate the issue.

5.6.2 Dust Emissions

Dust generated during construction activities can be substantial. Dust emission from construction sites is a concern particularly if the site is near residential areas. Dust or the equivalent technical term ‘particulate matter,’ is generally defined as any airborne finely divided solid or liquid material up to the size of about 100 microns (micrometers or one millionth of a meter).

Potential Impacts

Particulate matter emitted during construction activities can result in deterioration of ambient air quality in the vicinity of the source, and be a nuisance to the communities and plant workers. The main health hazards are the particles smaller than 10 microns (designated as ‘PM₁₀’) as they are Respirable. Larger particles also tend to settle rapidly and often do not reach receptors. In cases where they reach the receptors, the dust is considered a nuisance as it may spoil property and affect visibility.

A significant effect on the environment will be interpreted if there is an increase in visible dust beyond the boundaries of the Project due to activities undertaken at the site, or the dust affects local property or results in complaints from the community.

Impact Assessment

Potential sources of particulate matter emission during construction activities include exposed surfaces, exposed storage piles, truck dumping, hauling, vehicle movement on unpaved roads, and concrete mixing and batching. The quantity of dust that will be generated on a particular day will depend on the magnitude and nature of activity and the atmospheric conditions prevailing on the day.

Mitigation measures



- The most effective means of reducing the dust emission is wet suppression. Watering exposed surfaces and soil with adequate frequency to keep soil moist at all times can reduce the total dust emission from the project by as much as 75%
- Dust emission from soil piles will be reduced by covering the piles, for example with tarpaulin or thick plastic sheet.
- Good quality (low-sulfur) fuel will be used for vehicle and machinery
- Construction materials that are susceptible to dust formation will be transported only in securely covered trucks to prevent dust emission during transportation.
- Provision of dust respirators to equipment operators who are exposed to dust while operating their equipment.
- Tree planting on open and areas which will not be used by the operations.

Residual Impacts

The effects of the dust nuisance are temporary with no long lasting impact expected after the completion of the construction.

Monitoring requirements

- Dust emission will be visually monitored
- Ambient air quality will be checked near or at project site.

5.6.2.1 Noise

Potential issues

Depending on the Construction Equipment used and its distance from the receptors, the community and workers may typically be exposed to intermittent and variable noise levels. During the day such noise results in general annoyance and can interfere with sleep during the night.

Impact Assessment

The potential sources of significant noise during the construction period include the construction machinery and construction related traffic. The noise will be the maximum during the day time when construction activities are ongoing.

**Mitigation Measures**

- Reduce equipment noise at source by proper design, maintenance and repair of construction machinery and equipment
- Minimize noise from vehicles by use of proper silencers and mufflers
- Use noise-abating devices wherever needed and practicable.
- The movement of vehicle should be restricted during night time.
- Providing workers with noise related PPEs
- Planting of trees that could serve as sound buffers.
- Noise barriers must be put in on and around the project boundary
- Hauling trucks shall be operated at low speed to minimize vibration.

Monitoring requirement

Monitoring will be done on regular basis to avoid increase in noise beyond NEQS

5.6.3 IMPACTS ON BIOLOGICAL ENVIRONMENT**5.6.3.1 Vegetation loss**

Vegetable loss can only be an issue during construction phase of any project if land clearance is required for the project to be commenced in an area rich with natural vegetation. The project area experiences a rich flora but since the land selected is open so, no cutting of trees or land clearance is to be commenced.

5.6.4 SOCIO-CULTURAL IMPACTS**5.6.4.1 Possible Displacement**

As the site is owned by proponent and resettlements and community are at a safe distance from site, so no displacement or rehabilitation of people is expected.

5.6.4.2 Induction of Labor**Potential Issues**

Potential employment related issues include dissatisfaction among the locals over the number of jobs offered to them.



Impact Analysis

Persons required at the unit during the construction phase will be locally hired and hence, this issue will be eliminated.

Residual Impacts

As workers will be locally hired, employment conflict is not expected to be created.

Monitoring Requirements

The following data should be recorded and maintained on the employment:

- Total number of jobs offered during construction.
- Name and place of residence of the employed staff.

5.6.4.3 Community Health

Workers will undergo medical examinations before being hired, and will be screened for communicable diseases. In addition, there will be very little contact between workers and local people. The project is therefore very unlikely to lead to an epidemic of any sort among local communities.

Mitigation Measures

The crew will undergo medical examinations before being hired, and will be screened for communicable diseases. The project is therefore very unlikely to lead to an epidemic of any sort among local communities.

- All employees shall undergo regular check up with physician to ensure that they have good health.
- The proponent will provide regular medical practitioner for the regular checkup of the employees' health.
- Conduct free clinic and medical mission to regularly check the health condition of the residents of the community



5.6.4.4 Safety

Potential Issues

Safety always remains an area of utmost concern in any occupational activity; construction being one. Not only workers but the people from surrounding communities on the roads adjacent to the site are at stake of safety risks as well.

The safety issue is that of traffic entering and leaving project site for transport of goods and materials. Workers' safety is also an issue because of machinery if they show carelessness.

Mitigation measures

To reduce the hazard, the following mitigation measures will be implemented:

- Standard Operation Procedures (SOPs) shall be developed for all construction works and workers will be advised to strictly observe them
- Workers will be provided with the adequate PPEs and told and encouraged to use them
- No careless attitude shall be bothered and born at the site
- A stop sign will be put up on the access road
- A speed breaker will be constructed on the access road
- The speed limit for the access road will be kept low
- A public safety plan should be developed and displayed
- Community complaint register and other mean should be adopted for the community to complain.
- No machinery should be left unattended, particularly in the running condition.
- Nighttime driving of project vehicles should be limited.
- Drivers will be trained to drive slowly following traffic rules.

Residual Impacts

Long-term safety issues in terms of permanent damages to health and bodily injuries can prevail only if the above-mentioned mitigation measures are not observed.

Monitoring Requirements



Visual monitoring will be required for the likelihood (and causes if they happen) of near-miss, incidents and accidents, so that preventive approach can be adopted towards safety. And in case any such event breaks out, first aid facility provided is required to be monitored.

5.7 Impacts during Operational Phase

The Environmental and Socio-Economic impacts associated with the operation phase are the following:

- Air Emissions
- Noise
- Wastewater
- Waste Management
- Occupational Health and Safety

5.7.1 IMPACT ON PHYSICAL ENVIRONMENT

5.7.1.1 Noise

There will be no noise in the hospital as no equipments will run so negative impact of noise on environment.

5.7.1.2 WASTEWATER

Potential Issues

There would be wastewater regarding domestic use only.

Impact Analysis

There is negligible impact of this wastewater on the environment.

Mitigation

There will be no wastewater generated from process as there is no involvement of water at any stage. The domestic wastewater will be treated via RO Plant and will be discharged into sewerage line.

**5.7.1.3 AIR POLLUTION**

During operational stage of the Hospital', the continuous operation of air conditioners HAVAC will be operated to filter the air and for maintain the temperature of the hospital.

Mitigation

In order to minimize air pollution, following mitigation measures are recommended:

- Plantation will be provided on the main entrance of hospital which will generate fresh oxygen;
- An air quality monitoring and improvement plan will be developed to keep the air pollution levels from air conditioners etc. within the limits of Punjab Environmental Quality Standards (PEQS);
- Level of air pollution will be monitored on regular basis and appropriate mitigation measures will be implemented;
- Vehicles with excessive smoke emissions will not be allowed to enter the proposed Hospital.

5.7.1.4 SOLID WASTE MANAGEMENT

Solid waste generated from 'Hospital' will be Environment Medical Waste and domestic waste like paper, plastics, polythene shopping bags and food waste.

Mitigation

Small waste storage bins will be installed inside the whole hospital. The waste from these bins will be collected by the sanitary workers and will shift it to a big container / skip and will be sent for Lahore group of Companies.

The housekeeping waste will be disposed off in accordance with the procedures of Tehsil Municipal Administration (TMA).



5.7.2 SOCIO-ECONOMIC IMPACTS

5.7.2.1 EMPLOYMENT CONFLICTS

The project is creating skilled and unskilled labor opportunities during operational stage. 70% unskilled labor is to be employed from the local communities, which will reduce unemployment in the area and improve living conditions of the local population. This is a moderate positive impact.

5.7.2.2 Vehicles Management

After construction of this hospital, the number of vehicles entering/ exiting the project area will increase. This will be a moderate negative impact.

Mitigation

The parking area is designed away from the hospital which may reduce the noise of vehicles.

5.7.2.3 Safety Hazards

Potential Impacts

Safety hazards in the healthcare facilities are generally associated with handling of sharps (needles, cutters), gases, autoclaves, and other similar equipment. These hazards include risk of cuts, pricks, gas poisoning, burning, and other bodily injuries. The healthcare facility staff as well as the patients may be susceptible to these safety hazards.

The construction activities for facility renovation/rehabilitation will also pose safety risks for the construction workers, facility staff, as well as patients.

Mitigation Measures

Strictly following standard operating procedures to use sharps and proper use of personal protective equipment (PPE) particularly prick-proof gloves and masks is of foremost importance to avoid safety hazards associated with sharps, gases, and others. In addition, thick/puncture resistant plastic bags to collect rigid/puncture proof boxes to dispose needles/other sharps will be used.



For the facility renovation/rehabilitation/expansion activities, a site-specific Environmental Management Plan (EMP) will be prepared for each facility or a cluster of facilities. This EMP will include the site-specific mitigation measures to address safety hazards associated with the renovation/rehabilitation activities.

5.7.2.4 EMERGENCY RESPONSE

Incidents and accidents may take place unexpectedly during project operations. These may include;

- Fire hazard

5.7.2.5 FIRE HAZARD

Working operation of unit will be manageable but negligence in operations may cause risk of safety and health problems. Mishandling or mismanagement may lead to fire hazard, which poses a serious threat. Short circuiting in electrical switches and frayed electrical wires can cause fire.

Mitigation

- The fire fighting system will include water and gas devices / extinguishers.
- Indoor and outdoor fire hydrants will be installed according to the codes and standards.
- Fire extinguishers should be properly maintained and checked periodically.
- Flammable materials in the premises should be prohibited.
- Fire alarm systems should be maintained for detection and warning of fire.
- Adequate training of workers on use of fire fighting system to deal with emergency situation.
- Administration of the unit will develop the proper evacuation plans from all halls.



5.8 Potential Environmental Enhancement Measures

5.8.1 Tree Plantation

Tree plantation and cropping within the premises have been planned by the proponent for environmental enhancement. Green area is marked on map. A large area will be reserved for the plantation and among plants native flora like Peepal and Amaltas will be involved which have maximum capacity to reduce noise pollution and tolerance index of these species are more than 10. Some floral species like rose will also be introduced in the lawn for aesthetic beauty and trees like sufaida will be planted as boundary wall inside the lawn which will look like green wall. The Proponent will also make arrangements for protection and maintenance of trees.



Chapter 6: Environmental Management and Training Plan



CHAPTER 6: ENVIRONMENTAL MANGEMENT AND MONITORING PLANS

6.1 GENERAL

This EIA provides the Environmental Management Plan (EMP) of the project for its construction and operation phases to keep it environment benign as well as the monitoring plan to ensure the compliance of the established EMP.

As per the environmental legislation in Pakistan, the EMP for the operations phase, along with other documents, is to be submitted to the Environmental Protection Agency to obtain confirmation for compliance and Environmental Approval for project operation.

Even after implementation of the suggested mitigation measures, the impact may remain significant, and require monitoring. This section also underlines the monitoring framework for both construction and operation phases to check compliance of the EMP and to take timely actions for correction in case any accident of significant criteria, requirements or goals are found.

6.2 OBJECTIVES OF ENVIRONMENTAL MANAGEMENT PLAN

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 and contractor and provide a means of effective communication of environmental issues between them.
- Identify monitoring parameters in order to ensure the effectiveness of the mitigation measures
- Provide a mechanism for taking timely action in the face of unanticipated environmental situations.
- Identify training requirements at various levels.



6.3 MANAGEMENT APPROACH

The organizational roles and responsibilities of the key players are summarized below:

Proponent: The project proponent will undertake overall responsibility for compliance with the EMP. Proponent will carry out verification checks to ensure that the contractors are effectively implementing their environmental and social requirements.

Contractors: The contractors will implement the majority of environmental and social mitigation measures. The contractors will carry out field activities as part of the project. The contractors are subject to certain liabilities under the environmental laws of the country, and under its contract with proponent.

6.4 COMPONENTS OF THE EMP

The EMP consists of the following:

- Management plan
- Monitoring Plan
- Communication and documentation
- Institutional capacity
- Environmental training

6.5 ENVIRONMENT MANAGEMENT PLAN

It lists all the mitigation measures identified in the EIA and the associated environmental or social aspect, during construction and operation phase with the administrative framework involving all the responsible implementing authorities required to take the planned actions/measures. It enhances project benefits by reducing its impacts and making it environment-friendly.



Aspects	Potential Impacts/ Risks	Proposed Mitigation Measures	Responsibility
Changes in land value	Economic losses/gains	Minor positive	-
Seismic Hazard	Damage due to earthquake	Selection of a design for structure that must be safe against earthquakes	Administration
Change of Land use	Hospital will be developed in open land	Plantation will be done in the specified areas of this hospital	Administration
Traffic Movement	Movement of vehicles may result in traffic disruption if proper parking facilities are not provided.	Adequate parking facilities will be provided for the construction machinery and tractor-trolleys bringing the material into the Project Area	Administration
Additional load on Existing Utilities	Additional load on water supply, sewerage system, electricity, telephone, gas and solid waste system	All the effects and mitigations of these utilities have already been covered in previous sections and no any problem will create due to load on existing facilities	Administration
Disposal of Construction Waste/Excavated Material	Dumping of construction wastes / excavated material in the surrounding area may limit use of land	Management of Construction activities in a way to ensure minimum degradation to the soil around the Project area and dumping of excavated waste will	Administration



		be done at a designated site approved by TMA,	
Air Quality	Dust produced due to construction activity can affect the health of employees and residents in the surrounding areas	Use of dust suppression techniques like water sprinkling etc. will be made to minimize the effect of dust. Construction workers will be provided with masks for protection against the inhalation of dust. Regular monitoring of all vehicles, equipment, and machinery used for construction. All vehicles, machinery, equipment and generators used during construction activities will be kept in good working condition and properly tuned and maintained in order to minimize the exhaust emissions.	Administration
Noise and Vibration	Noise pollution due to increased construction machinery operation	Selection of up-to-date equipment and machinery with reduced noise levels ensured by suitable in-built damping techniques; Regular checkups and maintenance of the construction equipment; and use of appropriate muffling devices,	Administration
Flora	Construction will not involve cutting of	Plantation of different trees will make project area environment	



	bushes	friendly	
Fauna	There is no wildlife present in the Project area. Also, the local animals and bird species of the area are very much domesticated	No Impact	Administration
Relocation of Utilities	No relocation of any public utilities is involved	No Impact	
Traffic Management	Disturbance to routine traffic moving on the Road.	Observation of timing by the vehicles carrying construction material to cause minimum disturbance to traffic on Road. Construction equipment and machinery will be stationed in the boundary premises to avoid the traffic congestion on the approach road	Administration
Poverty Alleviation	Construction of this hospital will generate the employment opportunities to the population living in the surrounding areas.	Minor positive	-
Sanitation and Waste	Health risks to	All the solid waste will be disposed off in accordance with	TMA



disposal facilities at Project site	construction workers	the regulations of TMA	
Workers' Safety and Hygienic conditions	Health risks in case of unsafe and/or unfavorable work conditions	Enforcement of work safety measures such as wearing safety goggles, protective masks and boots and fixing of cautionary signs at designated sites,	Administration
C- Operational Phase			
Air Quality	Air quality may deteriorate due to the continuous operation of air conditioners etc.	Plantation will be provided which will generate fresh oxygen; An air quality monitoring and improvement plan will be developed to reduce air pollution and for this sake HAVAC will also be operated to filter the air. within the limits of Punjab Environmental Quality Standards (PEQS); Level of air pollution will be monitored on regular basis; and vehicles with excessive smoke emissions will not be allowed to enter.	Administration
Noise	Noise level may increase due to increased movement of vehicles	Plantation around the gate and entrance and at the specified areas in this hospital will reduce	Administration



	outside of this hospital	the noise level at much extent.	
Groundwater	Prolonged water consumption may in the long run lower/deplete the underground water table.	Labor of this hospital will be trained in water conservation measures such as use of water efficient/ economy appurtenances and reuse of wastewater for gardening.	Administration
Waste water Generation	There is only domestic wastewater will be generated while during operation.	To get rid from domestic wastewater septic tank will be present and which will draw off to the main drain already present in this domain	
Solid Waste	There will be mostly EMW and domestic waste like paper, plastics, polythene shopping bags and food waste.	Small waste storage bins will be installed inside the hospital. From there the waste will be collected through the sanitary workers, who will shift it to a big container from where it will be disposed off in accordance with the procedures of TMA	Administrations
Emergency Response	There are always chances of earthquakes and manmade disasters, fire, road accidents etc.	An Emergency Response Plan for earthquakes and manmade disasters will be developed by the Management. Emergency Response Plan will be implemented in close consultation with the Fire Fighting Department, Bomb	Administration



		Disposal Squad and Paramedics.	
Vehicle Management	After construction of Hospital , there will be few numbers of vehicles entering/ exiting in the project area.	Vehicle parking area will be away from the hospital and there will be specific time table for the vehicles in the hospital so that there will be minimum problem regarding vehicle management	Administration
Socio-economic Impact	Emergence of new employment opportunities for the local people	Major positive	-

6.6 ENVIRONMENTAL MONITORING PLAN

Environmental monitoring is a vital component of the Environmental Management Plan. It is the mechanism through which the effectiveness of the Environmental Management Plan in protecting the environment is measured. The feedback provided by the environmental monitoring is instrumental in identifying any problem or lapse in the system under implementation and planning corrective actions. The main objectives of the environmental monitoring are:

- To provide a mechanism to determine whether the project construction contractors are carrying out the project in conformity with the EMP.
- To identify areas where the impacts of the project are exceeding the criteria of significance and, therefore, require corrective actions.
- To document the actual project impacts on physical, biological, and socio-economic receptors, quantitatively where possible, in order to design better and more effective mitigation measures.

Following environmental record should be maintained:

- Periodic inspection reports of the site



- Audit reports
- Incident record of all moderate and major spills and other incidents and accidents.
The record will include:
 - ✓ Location of spill or battery limit of the accident
 - ✓ Estimated quantity or the amount of injury (as may be reported in LTI or LWI)
 - ✓ Spilled material or nature of injury or loss (temporary or permanent)
 - ✓ Restoration measures
 - ✓ Photographs
- Description of any damage to vegetation, water resource, or community asset.
- Corrective measures taken, if any
- Waste Tracking Register that will hold records of waste generated during the construction period. This will include quantities of waste disposed, recycled, or reused.
- Records of water consumption with use wise breakdown
- Survey reports, in particular, the following:
 - ✓ Vehicle and equipment noise.
 - ✓ Ambient noise survey reports.
 - ✓ Ambient level of PM
 - ✓ Vendor data—all vendors disturbed by the project and compensation paid
 - Public infrastructure: Record of all damages and repair work undertaken.
 - ✓ Employment
 - ✓ Total number of unskilled, semi-skilled, and skilled jobs offered during Construction.
 - ✓ Name and domicile of the employed staff.
 - ✓ Project and Community Interface



- ✓ Record of community complains and the measures taken to address them.
- ✓ Number of meetings held in various communities and data of persons who attended
- ✓ Environmental and social training records

**Table 1: Environmental Monitoring Plan for Construction Phase**

Components	Objective of Monitoring	Parameter to be Monitored	Measurement	Frequency	Location	Responsibility
Noise Levels	To determine the effectiveness of the noise abatement measures on the sound level	Noise level on the site and adjacent area on dB(A) scale	Noise level reading will be taken	at least 3 working days and on weekend	At least three locations on the unit boundary and three locations at the receptor end	Environment Officer /manager
Waste Collection, Storage and Disposal	To check the availability of Waste Management System and Implementation	Inspection of Waste Generation, collection, Storage and Disposal at site	Visual inspection	Once daily	Construction site	Environmental officer/manager



Soil contamination	To determine the effectiveness of the control measures taken to minimize the spillage of oil and chemicals	Inspection of equipment and vehicles	Visual inspection and availability checks	monthly inspection	all vehicles and equipments in use at construction site	Contractor/Environmental officer
Workers safety	To check and evaluate the effectiveness of the workers' safety plan	Injuries and accidents	Recording injuries	daily	Onsite	HSE/contractor
Water conservation	To determine the effectiveness of the Water Conservation Techniques in Practice	leakages, spills and wastages	Visual inspection and record tracking	On monthly basis	at all points of use	Environmental officer/manager



Vehicle and equipment exhaust	To confirm the availability of exhaust control devices with the construction vehicles and equipment and their maintenance levels	Air quality at different points around the vehicles and equipment	Readings will be taken	on three typical working days	At least three points around the vehicles and equipment and three points at some distance downwind	Administration
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The monitoring of the EMP and the communication and documentation mechanism that will be employed during the operational phase will be based on the Environmental Management System (EMS) of the project proponents and the certification and legal bindings. The management system of the project proponents will be the same as the certified EMS in place at the company. Approximately PKR 30,000 per month budget will be reserved for the Environmental Monitoring and measures.

Table 2: Environmental Monitoring Plan for Operation Phase

Potential activity and potential impact	Objective of monitoring	Parameter to be monitored	Measurement	Location	Frequency	Responsibility
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Waste disposal, procedure for waste collection, storage, and disposal	To check the availability of waste management system and implementation	Inspection of waste generation, collection, storage, and disposal will be undertaken at each site of the project activity	Visual inspection	Entire unit	Once daily	Administration Officer
Safety	To check and evaluate the effectiveness of the workers' safety plan and availability and access of first aid facilities	Injuries	Injuries will be recorded	Entire unit	Daily	HSE officer



6.7 INSTITUTIONAL CAPACITY OF THE UNIT

The organizational structure for the Environment Management Plan is outlined below:

6.7.1 PRIMARY RESPONSIBILITIES

The primary responsibility for implementing EMP within the company lies with the owner of M/S Sunshine Health Care Pvt. Ltd.

6.7.2 OPERATION MANAGEMENT & CONTROL

Conducting the operational activities in environmentally sound manner will be the responsibility of the concerned Manager; for which he will be trained.

6.7.3 SUPERVISION & MONITORING

Senior Supervisor will be responsible for all environmental issues and for the implementation of EMP.

6.7.4 COMMUNICATIONS AND DOCUMENTATION

An effective mechanism to store and communicate environmental information during the project is an essential requirement of an EMP.

6.7.4.1 MEETINGS

Two kinds of environmental meetings will take place during the project:

- Kick-off meetings
- Weekly meetings

The purpose of the kick-off meeting will be to present the EMP to project staff and discuss its implementation and to discuss any event of environmental significance that has happened in the under-discussion industry or a similar industrial unit to investigate its root causes and develop its solutions.



The purpose of the weekly meetings will be to discuss the conduct of the operation and environmental issues and their management. The proceedings of the meeting will be recorded in the form of a weekly environmental report.

6.7.4.2 CHANGES-RECORD REGISTER

A change-record register will be maintained at the site, in order to document any changes in project design. These changes will be handled through the change management mechanism.

6.8 ENVIRONMENTAL TRAINING

Environmental training will help to ensure that the requirements of the EIA and EMP are clearly understood and followed by all project personnel in the course of the project.

Table 3: Training Program

Target audience	Trainers	Contents	Schedule
Selected management staff	Contractors	Key finding of mitigation measure	After every five months
All personnel	HSE Officer	Mitigation measures	Monthly
Technical Staff	HSE Officer	Waste disposal or sale out status, vehicle movement restriction and other mitigation measures	After every three month
Other staff	HSE Officer	Waste disposal, resource conservation and other mitigation workers	Monthly

6.9 EQUIPMENT MAINTENANCE DETAILS

PPEs and other required machinery of latest technology with high efficiency will be purchased by the Proponent. Maintenance of Equipment will be done twice year for the smooth operation of hospital.

**6.10 ENVIRONMENTAL BUDGET**

Approximately PKR 30,000 per month budget will be reserved for the Environmental Monitoring and measures.

Table 6-4: Environmental Budget Breakdown

Sr. No.	Item/Activity		Quantity (No. s)	Budget (PKR)	Description
1	Plantation Campaign		1000	0.6 Million	Cost includes plantation and maintenance up to 5 years
2	Total Cost of EMMP/Fire Fighting		-	0.5 Million	For Construction and Operational Phases
3	Environmental Monitoring	Air Quality Monitoring	02	20,000/-	2 samples @ 10,000/- per sample
		Noise Level Monitoring	02	15,000/-	2 samples @ 7,500/- per sample
		Drinking Water Analysis	02	20,000/-	2 samples @ 10,000/- per sample
4	Miscellaneous		-	50,000/-	Lump sum
5	Health & Safety		-	1 Million	Lump sum
6	Workers Training			50,000	Lump sum
7	Solid waste Management		-	0.5 Million	Lump sum
5	Total Environmental and Social Management Cost			2.75 Million	



Chapter 7: Stakeholders **Consultation**



CHAPTER VII:

STAKEHOLDERS CONSULTATION

7.1 General

Consultation with the stakeholders is a tool for managing two-way communication between the project sponsor and the affected public. Its goal is to improve decision-making and build understanding by actively involving individuals, groups and organizations, which have a stake in the project. This involvement increases project's long-term viability and enhances its benefits to locally affected people and other stakeholders.

In order to evaluate the socioeconomic and environmental impacts, field surveys are extremely essential. In addition to the surveys at the preliminary stage, consultation with the community and their active participation plays a vital role in successful implementation of the project. To identify the different types of stakeholders and ascertain their perceptions about the project were measured. A social impact assessment survey was conducted. Informal group discussions were also held as an additional tool for obtaining feedback from the stakeholders that are being discussed in the following pages.

7.2 Objectives of Consultation

Public consultation plays a vital role in studying the effects of the project on the stakeholders and in the successful implementation and execution of the project. Public involvement is a compulsory feature of environmental assessment, which leads to better and more acceptable decision-making. The objective of the consultation with stakeholders is to help verify the environmental and social issues that have been presumed to arise and to identify those which are not known or are unique to the operation of the project.

The important general objectives of the consultation process are:

- Information dissemination, education, and liaison



- Identification of problems and needs
- Collaborative problem solving
- Reaction, comment and feedback on the Project;
- Documenting mitigation measures proposed by the stakeholders

7.3 Proponent

The project is **Sunshine Health Care Pvt. Ltd** located at Hadbast, Mouza Begum Kot, Main Sheikhpura Road Tehsil City District Lahore and the proponent is Haroon Rasul.

7.4 The Responsible Authority

The management of **Sunshine Health Care Pvt. Ltd** located at Hadbast, Mouza Begum Kot, Main Sheikhpura Road Tehsil City District Lahore is the responsible for the impacts of their projects

Table 5.1: Responsibility of “Sunshine Health Care Pvt. Ltd

Sr. #	Positions	Stage	Environmental Responsibilities
1	Proponent / Owner	Operations	• Oversee Environmental Policy • Serve as primary contact to the regulatory authorities
2	All Employees	Operation	• Attend training and understand their roles Understand the Environmental Policy / Objectives and act accordingly • Coordinate with the responsible authorities within the project to report any noncompliance to their Environmental Policy
3	Operational Supervisor	Operational	• Understand the environmental policy of the project • Operate in accordance with the environmental policy



			• Ensure reducing solid waste generation • Reduce water and energy wastage • Ensure all machineries /equipment are in good conditions • Ensure health and safety of the workers during construction phase
4	Maintenance Manager	Operation	• Understand the environmental policy of the project • Operate in accordance with the environmental policy • Ensure reducing the chances of increased solid waste • Reduce water and energy wastage • Ensure all machineries /equipment are in good conditions • Ensure health and safety of the workers during operational phase • Provides health, safety and environmental awareness trainings to the staff
5	Administrative Person Deal with Environment Issues	Operational	• Understand the environmental policy of the project • Operate in accordance with the environmental policy • Reduce water and energy wastage • Ensure all machineries /equipment are in good conditions • Ensure health and safety of workers during operational phase • Receive health, safety and environmental awareness trainings • Timely coordination with the responsible authority

7.5 Methodology for consultation

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

- Selection of the stakeholders for consultation, reconnaissance of the project site and initial discussions with the neighboring villagers, drivers etc.



- Appraising the targeted stakeholders initially for the purpose of consultation and working out a schedule for holding regular consultation meetings
- Distribution of questionnaires to obtain opinions and concerns
- Meetings with the stakeholders through the participation of environmental consultants and social specialists and documenting the opinions of the stakeholders expressed during the meetings etc.

7.6 Affected and wider community

The stakeholders contacted during the survey belonged to different categories of people as shown in the Table 7.1.

Table 7.1: Categories of Stakeholders Interviewed in the Project Area

Sr. No.	Stakeholder Category
1	Neighbor workers
2	Project workers
3	Potential Distributors

7.7 Issues Discussed

Following issues were discussed during the stakeholder consultation:

- Overall activities of the project operational phase
- Possible mitigation measures
- Benefits or implications of the project specifically for the local people

7.8 Findings of the Overall Discussion

- After making complete feasibility the site is being used for construction activities.
- Project increases revenue generation for the Government
- It create employment opportunities
- Local people should be given preference for employment in the project



7.9 Socioeconomic Trends around the Sunshine Health Care Pvt. Ltd

Socioeconomic status (SES) is an economic and sociological combined total measure of a person's work and of an individual's or family's economic and social position in relation to others, based on income, education, and occupation.

This chapter includes the information that how the present study has been conducted and what are the results of this socioeconomic survey in the surrounding areas of **Sunshine Health Care Pvt. Ltd**.

7.9.1 Study Population

The target population was comprised of nearby lease area's workers around the project site of **Sunshine Health Care Pvt. Ltd** located at Hadbast, Mouza Begum Kot, Main Sheikhpura Road Tehsil City District Lahore.

7.9.2 Study Size

Therefore, approximately a total of 20 households of different socio-economic conditions were surveyed and their heads of households were our main respondents.

7.9.3 Study Instrument

Data collection tool was questionnaire; it was a 19- items based semi structured questionnaire.

7.10 Sampling Procedure for Questionnaire

7.10.1 Procedure

Before filling the questionnaire respondents were fully assured that their data will not be disclosed. They were told about the purpose of study. They were also told if they have any problem to understand the questions in questionnaire can ask.

7.10.2 Statistics Measures

After preparing the questionnaire, field surveys were conducted. The data selected from questionnaire was analyzed by using SPSS version 16. The data collected with the help of questionnaire was analyzed in SPSS to get the descriptions of current study. A part of questionnaire has been adopted from SF-36, a standard question to evaluate physic-social-health status.

7.10.3 Study Areas

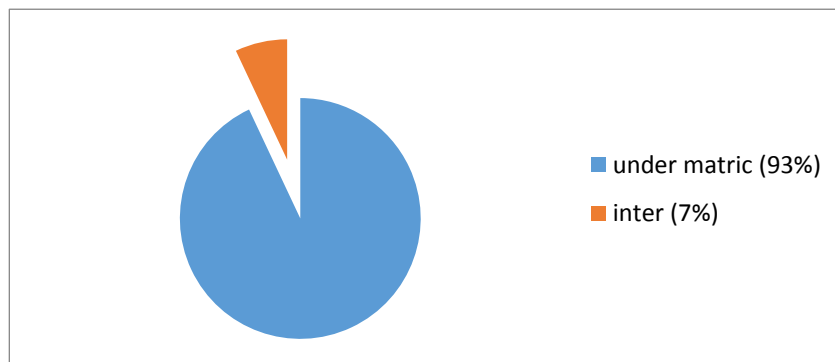
Somehow at surrounding and nearer lease area was visited for socio-economic aspects. Details of these sites are discussed below. These areas were surveyed by team of A.S. Enterprises as per requirement of socioeconomic survey for Environmental Impact Assessment Report of Sunshine Health Care Pvt. Ltd located at Hadbast, Mouza Begum Kot, Main Sheikhpura Road Tehsil City District Lahore.

7.10.4 Description of Tables:

In the following table, only frequency and percentage has been measured (by SPSS) of those parameters which are probably present in maximum quantity.

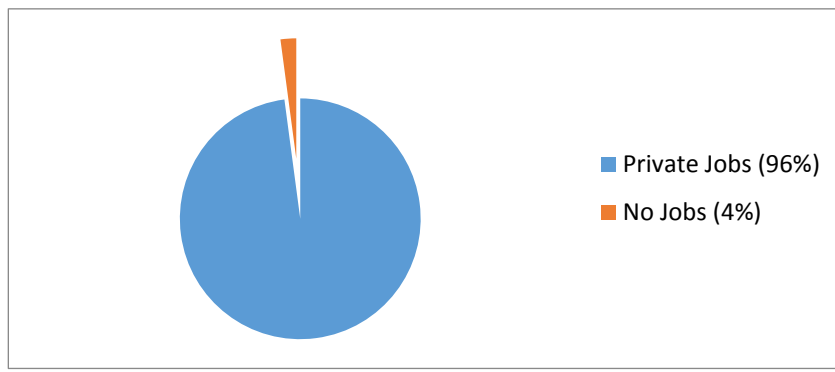
7.10.5 Site: Sunshine Health Care Pvt. Ltd located at Hadbast, Mouza Begum Kot, Main Sheikhpura Road Tehsil City District Lahore

Table 7.2 Socioeconomic Questionnaire

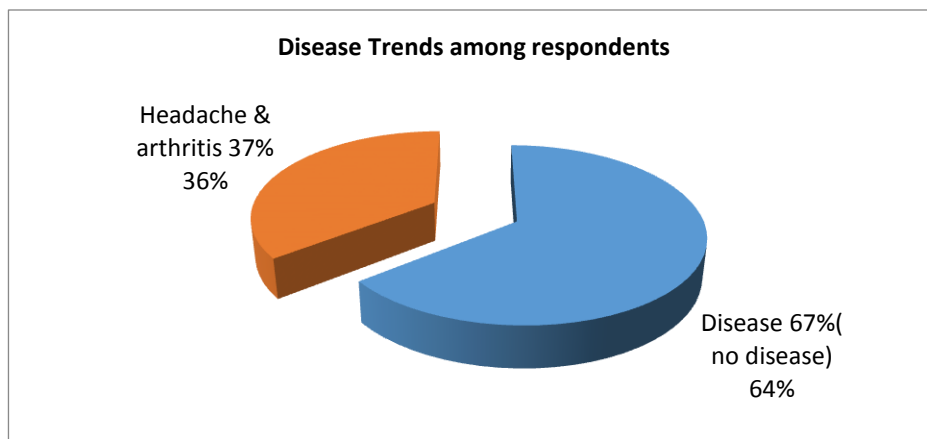




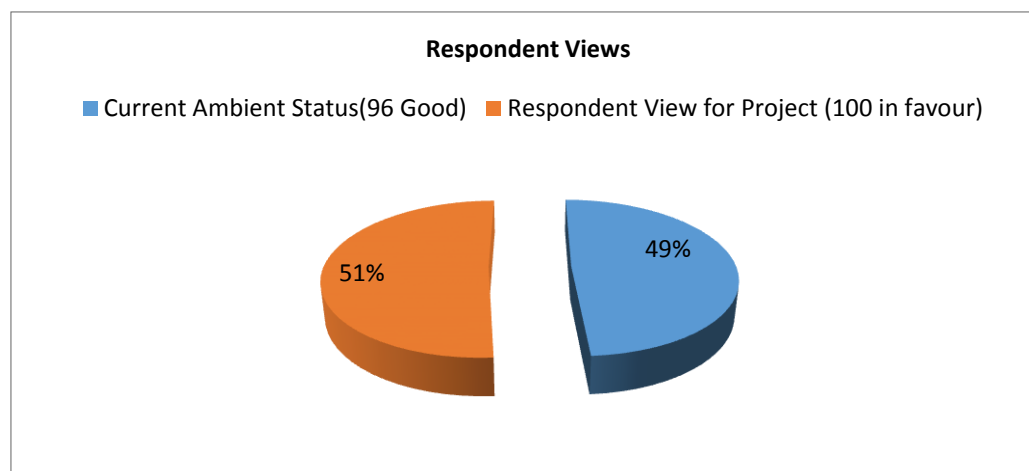
7.3 Graphical Presentation of Education around the Project Site



7.4 Trends of jobs around the project site



7.5 Health Status of Respondents



7.6 Respondent View about Project

7.11 Stakeholder Concerns and Recommendations

The finding of the community consultation has been addressed in various sections of EIA. Mitigation plan has been incorporated into EMP. The summary of consultation with various stakeholders is given below:

7.11.1 Project Approval

The community consultations demonstrated that goodwill towards the project proponent indeed exists. Approval for project activities by communities was evident. The consultations were considered a good gesture and were appreciated; especially by men and women. The poverty level is such that communities are looking forward to any project proponent to improve their financial well-being to a great extent. Benefit from the project should be distributed judiciously and equitably among the primary stakeholders in the project area, and the proponent will continue to ensure that this principle is followed in this project and community development program.



7.11.2 Local Employment

Communities in the project area emphasized that local inhabitants should be given priority when employing people for related works and activities according to their skills.

7.12 Other departments and agencies

Other departments and agencies such nearby schools and other educational institutes were also surveyed during whole consultation process. The suggestions and mitigation measures has been incorporated in the Environmental Management Plan.



Chapter 8: Conclusion and **Recommendation**



CHAPTER 8: CONCLUSION AND RECOMMENDATIONS

8.1 CONCLUSION

The report presents Environmental Impact Assessment (EIA) of the Establishment of M/S Sunshine Health Care Pvt. Ltd.

EIA of Project is performed according to guidelines of EPA. It includes description of the project, description of the environmental baselines, potential environmental impacts and suggested mitigation measures. An implementation mechanism for mitigation measures in the form of an Environmental Management Plan is included in the study.

The performed EIA showed all anticipated impacts (both positive and negative), associated with the project. Appropriate mitigation measures as explained in the environmental study shall reduce, if not eliminate, these impacts so that these are within acceptable limits. Moreover, no deterioration, depletion or exploitation of local natural resources is expected to be caused by this project.

Based on overall assessment of the environmental impact of the project, it is concluded that the project is not likely to cause any significant adverse impact on the social, physical and biological environment of the area, provided that suitable mitigation measures as identified in this study are implemented.

It is accordingly recommended that Environmental Approval for the project may be issued by the Punjab Environmental Protection Agency, subject to payment of the requisite scrutiny fee by the proponent of the project.

8.2 RECOMMENDATIONS

The Environmental Impact Assessment study and survey results are finally evaluated to recommend the following:

- No activity should be undertaken at the site which could pose any sort of a threat to public health.
- Worker should be provided with ear plugs or ear muffs (PPEs) like mufflers, goggles, gloves and shoes etc.



- Separate parking spaces should be demarcated at the site for parking of vehicles.
- Establishments shall be regularly advised to keep noise levels within acceptable limits.
- Waste minimization practices should be employed and workers should be encouraged to adopt such methods.
- Wages should be distributed on time.
- Wages should not be below minimum wages as prescribed.
- Workers should be told and encouraged to use PPE's.
- Proper ventilation can limit the amount of indoor air pollutants.
- Proper tree plantation plan should also be developed in order to make the unit environment friendly.
- Small waste storage bins should be installed at different corner for proper waste collection and discharge.
- Obligatory insurance should be provided to work laborers against accidents.
- Basic medical training should be provided to the specified work staff and basic medical service and supplies to workers.
- Prohibiting flammable materials in the warehouse premises.
- Stop the source of the spill immediately.
- The Security Guards shall also be trained to act in case of all possible emergency situations. The fire alarms can be activated to signal evacuation. At the same time, communication shall be made with hospitals, emergency services and police for urgent support.
- The Environmental Management & Monitoring Plan should be implemented.



Annexure II: Property Documents



Annexure III: Proponent **CNIC (Copy)**



Annexure IV: Terms of Reference



TERMS OF REFERENCE

Scope of Work for Consultant

Activities of the consultant will strictly follow the Guidelines given in PEPA Act 2000. An extract is narrated below:

- Complete baseline information about the environmental, social, and ecological characteristics of the project area will be collected via field surveys by keeping in view the following but not limited to location; water bodies, villages/towns/sensitive areas; accessibility, security, vegetation, flora, fauna, physical structures, livelihood, social amenities and Physical Cultural Resources (PCR's).
- Relevant information will also be collected on potential impacts of the project and the characteristics of temporary and permanent impacts.
- Various stakeholder consultations will be conducted as part of EIA study. The details of consultations including venue, date, participants, feedback, their concerns/views, etc. will be recorded and reported.
- The specific and effective mitigation measures will be suggested to minimize the adverse socio-environmental impacts and related mitigation costs.
- An Environmental Management and Monitoring Plan (EMMP) will also be developed to be implemented by the relevant authorities during the pre-construction, construction and operational phases.
- Environmental Testing / Sampling by EPA Approved Laboratory.
- Timely preparation and submission of all deliverables.
- After the completion of a comprehensive EIA report, the Proponent will also be assisted by the Consultants to receive Environmental Approval from Environmental Protection Authority (EPA), subject to the agreement of the Proponent.



Key Deliverables

- Submission of 05 hard copies and 02 soft copies of EIA Report to EPA Punjab, Lahore. EIA Report will be accompanied by:
- An Application Form set out in Schedule IV of Review of EIA/ IEE Regulations, 2000
- An Undertaking as per Schedule VII of Review of EIA/ IEE Regulations, 2000
- Review Fee in form of bank draft
- Replies of Queries raised by EPA if they require some additional information

Responsibilities of Client

- Responsible to pay all the dues of the consultant as per the agreed terms and conditions
- According to regulation 7 of the Review of EIA/ IEE2002, proponent will pay, at the time of submission of EIA, a non-refundable fee of PKR 30,000/- in form of bank draft to EPA
- A.S would facilitate client regarding coordination with relevant EPA during processing of Environmental approval/NOC and will answer to all technical queries/ presentations related to EIA report.
- Technical Data regarding project description will be provided by client.
- You are requested to confirm all the necessary arrangements to facilitate our intervention.
- All material developed for the clients including the relevant systematic and methodology have been developed by the Company and are copyrighted by it. Clients shall not copy reproduce or disclose to third parties the data as provided by the Company without its prior written consent.



Annexure V: Glossary



GLOSSARY

EIA (Environmental Impact Assessment): It is the process of identifying, predicting, evaluating and mitigating of effects of biophysical, social and other relevant proposed projects and physical activities prior to major decisions and commitments being made.

EMP (Environmental Management Plan): An EMP is a site-specific plan developed to ensure that all necessary measures are identified and implemented in order to protect the environment and comply with environmental legislation.

ESIA (Environmental Social Impact Assessment): It is to identify the impacts of the project on social and environmental conditions.

FAUNA: Word used for combination of all the species of animals.

FLORA: Word used for combination of all the species of plants.

IEE (Initial Environment Examination): Initial examination of projects for identification of hazards of project.

NCS (National Conservation Strategy): Three objectives of the National Conservation Strategy (NCS) are: (i) conservation of natural resources; (ii) sustainable development; and (iii) improved efficiency in the use and management of resources.

NOC (No Objection Certificate): It is a kind of clearance issued by EPA necessary for any project to be constructed.

PEPA (Pakistan Environmental Protection Act 1997): An act to provide the protection, conservation, rehabilitation and improvement of environment, for the prevention and control of pollution and promotion of sustainable development.

Topography: Physical features of any area including soil, water and air are called topography.



Annexure VI: List of **Abbreviations**



List of Abbreviation

°C	Degree Celsius
dB(A)	A weighted decibel scale
EIA	Environmental Impact Assessment
EMMP	Environmental Management and Monitoring Plan
EMP	Environmental Management Plan
Engr.	Engineer
EPA	Environmental Protection Agency
EPD	Environmental Protection Department
EPO	Environmental Protection Ordinance
GEL	Global Environmental Lab
IEE	Initial Environmental Examination
km	Kilometer
Ltd.	Limited
LTI	Loss Time Injury
LWI	Loss Work Injury
m ³ /h	Cubic meter per hour
M/S	Masses
NEQS	National Environmental Quality Standards
No.	Number
NOC	No Objection Certificate
PEPC	Pakistan Environmental Protection Council
PEPA, 1997	Pakistan Environmental Protection Act, 1997
PEPA, 2012	Punjab Environmental Protection (Amendment) Act, 2012
PEPO	Pakistan Environmental Protection Ordinance
PKR	Pakistani Rupees
PM	Particulate Matter



PPEs	Personal Protective Equipments
Pvt.	Private
SMART	Self Monitoring and Reporting
SOPs	Standard Operation Procedures
TMA	Town Municipal Authority
WAPDA	Water and Power Development Authority



Annexure VII: Sources of Data



SOURCES OF DATA

- Punjab Environmental Protection (Amendment) Act 2012 (PEPA)
- Guidelines for the preparation and review of Environmental Reports, October 1997
- Review of IEE/ EIA Regulation, 2000
- The 2004 Baseline Survey on Millennium Development Goals in AACs, Pakistan
- World Weather Online.com
- Water and Sanitation Agency (WASA)
- Lyallpur Museum
- RED Data Book of IUCN



Annexure VIII: Project Team



PROJECT TEAM

PERSON NAME	DESIGNATION
Mr. M Sami Ullah	Director
Mr. Awais Saleem	Environment Officer
Ms. Aroz Ejaz	Environment Consultant
Mr. Bilal Ahmad	Environmentalism
Mr. Nadeem Akhtar	Environmentalism
Mr. Touqeer	Field Officer



Annexure IX: Other NOC