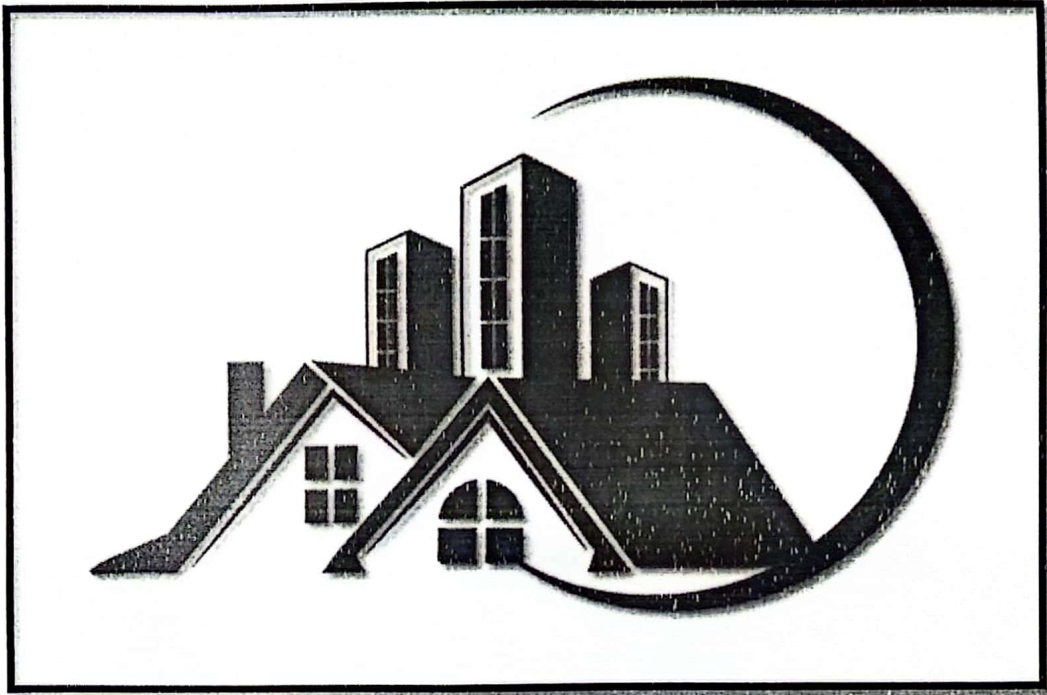


# *EIA/2024*



## **"HOUSING SCHEME"**

**Namely**

**M/S SAIF GARDEN**

*Mouza Mal, Sharif Medical City Road, Tehsil Raiwind, District  
Lahore*

**Proponent:**

**Abid Idress Rana**

*(Proponent)*

**Submitted By:**

**Sumaira Awan Law Associates**

**TABLE OF CONTENTS**

**LIST OF FIGURES VI**

**LIST OF ANNEXURES..... 1**

**LIST OF ABBREVIATIONS ..... 2**

**1 EXECUTIVE SUMMARY..... 3**

**1.1 Title and Location of Project.....3**

**Name of the Proponent.....3**

**1.2 Name of Consultant.....3**

**1.3 A brief outline of the proposal (type, process, technology and land requirement) ..3**

**1.4 Salient Features of Project .....4**

**1.5 Major Impacts and Recommended Mitigation Measures .....4**

**1.6 Proposed Impacts and their Mitigation Measures .....5**

**1.7 Proposed Monitoring .....10**

**2 CHAPTER 1: INTRODUCTION ..... 11**

**2.1 Purpose of Report ..... 11**

**2.2 The Project ..... 12**

**2.3 The Proponent..... 12**

**2.4 Details of Consultant ..... 12**

**2.5 Project Nature, Size & Location ..... 13**

**CHAPTER 2: SCREENING ..... 2**

**3 CHAPTER 3: SCOPING ..... 3**

**3.1. Spatial and Temporal Boundaries of Environmental Assessment.....3**

**3.2. Important issues and concern raised during consultation.....3**

**3.3. Significant Impacts and Factors to be Determined.....3**

**4 CHAPTER 4: CONSIDERATION OF ALTERNATIVES ..... 5**

**4.1 Site Alternatives, their selection and rejection criteria.....5**

# M/S SAIF GARDEN

---

4.1.	Design/technology alternatives, their selection and rejection criteria .....	5
4.2.	Environmental Alternatives, their selection and rejection criteria.....	5
4.3.	Economic Alternatives, their Selection and Rejection Criteria .....	5
5	<b>CHAPTER 5: DESCRIPTION OF PROJECT.....</b>	<b>6</b>
5.1	<b>General.....</b>	<b>6</b>
5.2	<b>Project Objectives.....</b>	<b>6</b>
5.3	<b>Location and Site layout of Project.....</b>	<b>6</b>
5.4	<b>Land Use On-Site .....</b>	<b>6</b>
5.6	<b>Vegetation Features.....</b>	<b>9</b>
5.7	<b>Cost and Magnitude of Operation .....</b>	<b>9</b>
5.8	<b>Schedule of Implementation .....</b>	<b>9</b>
5.9	<b>Description of Project .....</b>	<b>10</b>
5.9.2	Cost of the Project: .....	10
	Project's Construction Activities.....	10
	<b>Site Preparation Works.....</b>	<b>10</b>
	<b>Storage of Materials.....</b>	<b>10</b>
	<b>Masonry, Concrete Work and Related Activities.....</b>	<b>10</b>
	<b>Structural Steel Works .....</b>	<b>10</b>
	<b>Electrical Work .....</b>	<b>10</b>
	<b>Plumbing.....</b>	<b>11</b>
	Construction Materials and other supplies .....	11
5.11	Utilities.....	11
5.11.1	Manpower.....	11
5.11.2	Amenities .....	11
5.11.3	Air Emissions:.....	12
5.11.4	<b>Solid Waste Generation &amp; Management .....</b>	<b>12</b>
5.12	<b>Restoration and Rehabilitation Plan .....</b>	<b>12</b>
6	<b>CHAPTER 6: DESCRIPTION OF ENVIRONMENT .....</b>	<b>13</b>
6.1.	<b>Baseline Physical Environment.....</b>	<b>13</b>
6.1.1.	Topography & Geology.....	13

# M/S SAIF GARDEN

---

6.1.2.	Seismicity.....	13
6.1.3.	Climate .....	14
6.1.4.	Ambient Air Quality.....	15
6.1.5.	Ambient Noise.....	15
6.1.6.	Groundwater Quality.....	16
<b>6.2</b>	<b>Baseline Biological Environment .....</b>	<b>17</b>
6.2.1	Flora.....	17
<b>Table 9:</b>	<b>Vegetation features near project site.....</b>	<b>17</b>
6.2.2	Fauna.....	17
6.2.3	Archaeological Sites or Wetlands.....	17
6.2.4	Endangered Species .....	18
<b>6.3</b>	<b>Baseline Socio-Economic Environment.....</b>	<b>18</b>
6.3.1	Industry .....	18
6.3.2	Health Facilities .....	19
6.3.3	Educational Facilities .....	19
<b>6.4</b>	<b>Lab Reports of Environmental Analysis .....</b>	<b>20</b>
<b>6.5</b>	<b>Suitability of the Site.....</b>	<b>20</b>
<b>7</b>	<b>CHAPTER 7: IMPACT ASSESSMENT &amp; SCREENING PROCESS.....</b>	<b>21</b>
7.1	Methodologies for Impact Identification.....	21
7.2	Characteristics of Impacts .....	23
<b>8</b>	<b>CHAPTER 8: SCREENING POTENTIAL ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES .....</b>	<b>25</b>
<b>8.1</b>	<b>Project Location .....</b>	<b>25</b>
	<b>Nature of Impact.....</b>	<b>25</b>
<b>8.2</b>	<b>Design.....</b>	<b>25</b>
<b>8.3</b>	<b>Impacts and Mitigation Measures during Construction Phase .....</b>	<b>26</b>
8.3.1	Soil Contamination .....	26
8.3.2	Air Emissions .....	27
8.3.3	Impact on Water Environment.....	27
8.3.4	Impact on Flora & Fauna.....	28

# M/S SAIF GARDEN

---

8.3.5	Impact on Noise Environment.....	28
8.3.6	Socio-Economic Impacts .....	29
<b>8.4</b>	<b>Impacts and Mitigation Measures during Operational Phase .....</b>	<b>29</b>
8.4.1	Noise .....	29
8.4.2	Ambient Air Quality.....	30
8.4.3	Water Resource.....	31
8.4.4	Solid Waste Management.....	31
8.4.5	Traffic Congestion & Disturbance to Local People .....	31
	<b>Physical impacts.....</b>	<b>32</b>
	<b>Land.....</b>	<b>32</b>
	<b>Noise Generation .....</b>	<b>32</b>
	<b>Water Consumption .....</b>	<b>32</b>
	<b>Wastewater Generation.....</b>	<b>32</b>
	<b>Solid Waste .....</b>	<b>33</b>
	<b>Health &amp; safety.....</b>	<b>33</b>
	<b>Residential Facilities.....</b>	<b>34</b>
<b>8.5</b>	<b>Potential Environmental Enhancement Measures.....</b>	<b>36</b>
i.	Enhancement in Employment Opportunities.....	36
ii.	Tree Plantation .....	36
<b>9</b>	<b>CHAPTER 9: ENVIRONMENTAL MANAGEMENT AND MONITORING PLAN ....</b>	<b>37</b>
<b>9.1</b>	<b>General.....</b>	<b>37</b>
<b>9.2</b>	<b>Objectives.....</b>	<b>37</b>
<b>9.3</b>	<b>Proposed Mitigation Actions and Monitoring Program.....</b>	<b>38</b>
<b>9.4</b>	<b>Schedule for Implementation and Environmental Budget .....</b>	<b>44</b>
<b>9.5</b>	<b>Environmental Management Team.....</b>	<b>44</b>
<b>9.6</b>	<b>Proposed Monitoring program.....</b>	<b>44</b>
<b>9.7</b>	<b>Proposed EMP reporting and reviewing procedures.....</b>	<b>45</b>
<b>9.8</b>	<b>Environmental Training .....</b>	<b>45</b>
	<b>CHAPTER 10: STAKEHOLDER CONSULTATION.....</b>	<b>47</b>
<b>10.1</b>	<b>General.....</b>	<b>47</b>

# M/S SAIF GARDEN

---

<b>10.3 Proponents Environmental Management Team.....</b>	<b>48</b>
<b>10.3.1 Responsible Authority .....</b>	<b>48</b>
<b>10.3.2 Other departments and agencies.....</b>	<b>48</b>
10.3.3 Consultation with Government Departments .....	49
<b>10.3.4 Environmental Practitioners and experts .....</b>	<b>49</b>
<b>10.4 Affected and Wider Community .....</b>	<b>50</b>

## LIST OF FIGURES

Figure 1: Project Location.....	13
Figure 2: Location of the Project .....	1
Figure 3: Road Access Map.....	8
Figure 5: Seismic Zoning of Pakistan .....	14
Figure 6: Temperature Graph.....	14
Figure 7: Rate of Precipitation .....	15
Figure 8: Industries Located in Project Area Vicinity.....	18
Figure 9: Nearby Health Facilities.....	19
Figure 10: Nearest Educational Facilities .....	19

## LIST OF TABLES

Table 1: Details of the Proponent .....	12
Table 2: Consultant Details .....	12
<b>Table 3: List of Experts</b> .....	13
<b>Table 4: Timeline for Project Development</b> .....	9
Table 6: Air Quality Monitoring Results .....	15
Table 7: Ambient Noise Monitoring Results .....	15
Table 8: Ground water Analysis Results .....	16
Table 9: Vegetation features near project site.....	17
<b>Table 10: Impact Significance Criteria</b> .....	21
<b>Table 11: Impact Matrix Checklist for Establishment Phase</b> .....	22
<b>Table 12: Impact Matrix Checklist for Operational Phase</b> .....	23
Table 13: Impacts Characteristics .....	24
<b>Table 8: Nature and Degree of Positive Socio-economic Impacts</b> .....	34
<b>Table 14: Environmental Management Plan</b> .....	39
Table 15: Proposed Monitoring Program.....	44
Table 16: Consultation with Environmental Practitioners and Experts .....	49
Table 17: Concerns Noted during Community Survey .....	50

## LIST OF ANNEXURES

Following documents are attached as annexure:

<b>Annex-A:</b>	Proponent CNIC
<b>Annex-B:</b>	Land Documents
<b>Annex-C:</b>	WASA Letter
<b>Annex-D:</b>	LESCO Letter
<b>Annex-E:</b>	Site Layout
<b>Annex-F:</b>	Google Map
<b>Annex-G:</b>	Monitoring Reports
<b>Annex-H:</b>	Questionnaire Performa's
<b>Annex-I:</b>	Glossary
<b>Annex-J:</b>	References

# M/S SAIF GARDEN

## LIST OF ABBREVIATIONS

<b>CO<sub>2</sub></b>	<b>Carbon dioxide</b>
<b>dB(A)</b>	A weighted decibel scale
<b>EIA</b>	Environmental Impact Assessment
<b>EMP</b>	Environmental Management Program
<b>Engr.</b>	Engineer
<b>EPA</b>	Environmental Protection Agency
<b>SEAL</b>	Environmental Services Pakistan
<b>ETP</b>	Effluent Treatment Plant
<b>IEE</b>	Initial Environmental Examination
<b>Ltd.</b>	Limited
<b>M/S</b>	Messrs
<b>m<sup>3</sup></b>	Cubic meter
<b>m<sup>3</sup>/h</b>	Cubic meter per hour
<b>No.</b>	Number
<b>NOC</b>	No Objection Certificate
<b>NO<sub>x</sub></b>	Oxides of Nitrogen
<b>PEPA, 2012</b>	Punjab Environmental Protection (Amendment) Act, 2012
<b>PEQS</b>	Punjab Environmental Quality Standards
<b>PKR</b>	Pakistani Rupees
<b>PM</b>	Particulate Matter
<b>PPEs</b>	Personal Protective Equipment
<b>Pvt.</b>	Private
<b>SOPs</b>	Standard Operating Procedures
<b>SO<sub>x</sub></b>	Oxides of Sulfur
<b>WAPDA</b>	Water and Power Development Authority
<b>WWTP</b>	Wastewater Treatment Plant

## EXECUTIVE SUMMARY

### 1.1 Title and Location of Project

This executive summary presents an overview of the main findings of the Environmental Impact Assessment (EIA) Report for establishment of Housing Scheme under the name of M/s Saif Garden at Plot No. Mouza Mal, Sharif Medical City Road, Tehsil Raiwind, District Lahore. The coordinates of the site are: **Latitude 31°184871" North** and **Longitude 74°101232" East**. The main goal of instant project is to fulfil the residential demands of the area by providing all facilities at one place.

### Name of the Proponent

The details of the proponent are as follow:

Proponent Details	
<b>Name</b>	M. Abid Adress Rana
<b>Designation</b>	<i>Proponent</i>
<b>Company</b>	M/s Saif Garden
<b>Address</b>	31-C1, Gulberg III, Lahore

Copy of CNIC of proponent is attached as **Annexure A**

### 1.2 Name of Consultant

M/s Sumaira Awan Law Associates has been engaged for conducting EIA Study of the above stated project. The main objectives of the said project are to establish baseline environmental conditions, identify potential environmental impacts and to suggest suitable mitigation measures accordingly.

### 1.3 A brief outline of the proposal (type, process, technology and land requirement)

As per Punjab Environmental Protection Act 1997 (amended 2012) and Punjab Environmental Protection Review of Initial Environmental Examination and Environmental Impact Assessment 2022 said project falls under **Category H (1): "Housing Schemes more than 300 Kanals"** of the projects mentioned in **Schedule II**.

Establishment of Housing Scheme by M/s Saif Garden is proposed in designated industrial area as large number of industries are present in the surroundings of the project. Management of M/s Saif Garden has own land supporting documents are attached herewith as **Annexure B**. The total project cost is **PKR 7 billion**.

## M/S SAIF GARDEN

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### 1.4 Salient Features of Project

<b>Project Title</b>	Establishment of Housing Scheme under the name of <b>M/s Saif Garden.</b>
<b>Purpose of Project</b>	To fulfil residential demands of the area
<b>Site Coordinates</b>	<b>Latitude 31°184871" North and Longitude 74°101232" East.</b>
<b>Total Area of Project</b>	362 kanals 12 Marla
<b>Cost of the Project</b>	7 billion
<b>Environmental Budget</b>	1 million
<b>Proponent Name</b>	M. Abid Adress Rana
<b>Consultant Name</b>	Sumaira Awan Law Associates
<b>Tree Planation</b>	Trees will be planted in surrounding open spaces, lawns and along the boundary of Project Area.
<b>Water Source</b>	Groundwater,
<b>Water Requirement</b>	Approximately 160 gallons water will be required during establishment of said housing scheme and approximately 560 gallons will be the water requirement after establishment.
<b>Wastewater</b>	Approximately 40% of the water will be generated as wastewater which will be treated in to be installed wastewater treatment facility prior to its disposal. Management has approval from WASA for safe disposal of wastewater same has been attached herewith as <b>Annexure C</b>
<b>Power Requirement</b>	200 KV Transformer will be installed, an approval from LESCO has been obtained, and same has been attached herewith as <b>Annexure D</b>
<b>Manpower/Staff</b>	15-20 Construction/Installation phase, 15-20 approximately Operation Phase

### 1.5 Major Impacts and Recommended Mitigation Measures

In order to identify all the impacts associated with the project with potential to cause adverse environmental impacts, a thorough review has been conducted. Although, there are no chances of any adverse impacts on the surrounding environment if establishment will be done as planned, however, in case of any impacts arises during Establishment possible necessary mitigation measures will be adopted to control the same. Overall, the project has positive social impacts. The project may also have some environmental impacts of minor to moderate magnitude which will be controlled through mitigation measures, proposed in Environmental Management and Monitoring Plan (EMMP). Moreover, no vegetation clearance during construction as housing scheme will be established on proponent's own land.

**1.6 Proposed Impacts and their Mitigation Measures**

Environmental Parameters	Impact Assessment during Different Phases		Mitigation Measures
	Construction	Operational	
<b>Planning and designing</b>			
<b>Location</b>	<b>+1p</b>	<b>+2p</b>	Instant housing scheme will be established on proponent's own land and area has been approved by LDA. <ul style="list-style-type: none"> <li>❖ Generated wastewater will be treated through wastewater treatment plant and will be disposed of into WASA drain in compliance with PEQS.</li> <li>❖ The generated solid waste will be disposed of as per area practice.</li> <li>❖ It is envisaged that no land use change, tree cutting or deterioration of soil and environment will take place and no further mitigation measures will be required.</li> </ul>
<b>Design</b>	<b>+1t</b>	<b>+2p</b>	No mitigation measures will be required as housing scheme will be established as per layout map; <ul style="list-style-type: none"> <li>❖ For construction good quality raw-material will be used.</li> <li>❖ The generated wastewater will be treated in wastewater treatment plant prior to disposal into drain.</li> </ul>
<b>A: Physical</b>			
<b>1. Land Resources</b>			
			Following mitigation measures will be adopted to protect the soil from erosion and contamination: <ul style="list-style-type: none"> <li>❖ During civil work (mainly construction of site clearance (mainly herbs and shrubs) causing soil exposure will be re-vegetated quickly and compensatory</li> </ul>

## M/S SAIF GARDEN

<p><b>Soil Erosion and Contamination</b></p>	<p style="text-align: center;"><b>-1t</b></p>	<p style="text-align: center;"><b>-1p</b></p>	<p>plantation be carried out as soon as possible</p> <ul style="list-style-type: none"> <li>❖ It will be ensured that fast-growing trees will be planted in the designated green areas.</li> <li>❖ Spill prevention and response plan for storage, usage and transfer of fuel should be prepared (if used on site) and implemented.</li> <li>❖ Workers should be trained on spill prevention and response plan (if any)</li> <li>❖ Maintenance and washing of vehicles as well as equipment will be carried out at designated areas within the facility</li> <li>❖ Any hard impermeable covering or tarpaulin should be spread on area to prevent soil contamination.</li> </ul>
<p><b>Solid Waste</b></p>	<p style="text-align: center;"><b>-2t</b></p>	<p style="text-align: center;"><b>-1p</b></p>	<p>General waste management practices will be adopted which will include:</p> <ul style="list-style-type: none"> <li>❖ During construction the recyclable and reusable waste will be sold to the contractor.</li> <li>❖ During operation phase Waste bins will be placed in the facility at the strategic position for the collection of solid waste, from where it will be disposed of as per area practice.</li> <li>❖ Record of all generated waste during the project activity should be maintained on the regular basis.</li> </ul>
<p><b>Land Use</b></p>	<p style="text-align: center;"><b>NA</b></p>	<p style="text-align: center;"><b>+1p</b></p>	<p>Establishment of Housing Scheme will be done on proponent's own land Following mitigations measures will be adopted to reduce the land use impact:</p> <ul style="list-style-type: none"> <li>❖ Unnecessary up-rooting and disturbance to the native vegetation should be avoided up to the extent possible</li> </ul>

## M/S SAIF GARDEN

			<ul style="list-style-type: none"> <li>❖ The designated green area will be vegetated and vegetation present on-site will be preserved as far as practically possible.</li> </ul>
<b>2. Air Resources</b>			
	<b>-1t</b>	<b>-1p</b>	<p>Following measures will be adopted:</p> <ul style="list-style-type: none"> <li>❖ During construction workers will be given PPEs such as ear plugs and muffs.</li> <li>❖ Proper tuning of the machines will be done in order to control the noise.</li> </ul>
<b>Dust and Exhaust Emissions</b>	<b>-2t</b>	<b>-1t</b>	<p>Following mitigation measures will be adopted to mitigate the anticipated impact:</p> <ul style="list-style-type: none"> <li>❖ Ensure that the trucks carrying the raw material should be covered by tarpaulin to reduce fugitive dust emissions</li> <li>❖ Water spraying/sprinkling on tracks should be done on the regular basis.</li> <li>❖ Ensure that all equipment and vehicles, used during the construction phase, are properly tuned and maintained in good working condition, in order to minimize the exhaust emissions and it will be regulated by the concerned authority</li> <li>❖ Ensure that high quality fuel having low sulfur contents will be used in the vehicles engaged in the project activity</li> <li>❖ Ensure that dust emission generated due to vehicular movement is minimized by restricted speed limit and vehicular movement impacts which will be minimized through good traffic management at site</li> <li>❖ Ensure that dust emission during the project activities will be minimized by implementing best management practices.</li> </ul>

## M/S SAIF GARDEN

### 3. Water Resources

<b>Ground Water</b>	<b>-1p</b>	<b>-1p</b>	<p>Following mitigation measures will be adopted:</p> <ul style="list-style-type: none"> <li>❖ Water conservation techniques should be adopted to ensure sustainable consumption.</li> <li>❖ Reuse of treated waste water will be preferred where possible i.e., horticulture purposes.</li> <li>❖ Monitoring of effluents shall be carried out as per provision of (SMART) Rules to ensure compliance with the PEQS</li> <li>❖ It will be ensured that no solid waste will be mixed in the wastewater.</li> </ul> <p>There is no surface water body present in the project proximity that could be impacted.</p> <ul style="list-style-type: none"> <li>❖ Generated wastewater will be treated through to be installed wastewater treatment plant prior to disposal into WASA drain.</li> <li>❖ Proper monitoring of the wastewater will be carried out on regular basis.</li> </ul>
<b>Surface Water</b>	<b>0</b>	<b>NA</b>	<ul style="list-style-type: none"> <li>❖ No mitigation measures are required to be discussed as the project does not extract from any surface water body neither is there any surface water body in close proximity of the project site which is vulnerable to be affected by the establishment of the instant project.</li> </ul>
<b>Wastewater</b>	<b>-1p</b>	<b>-2p</b>	<p>Following mitigation measures will be adopted:</p> <ul style="list-style-type: none"> <li>❖ Water conservation techniques should be adopted to ensure sustainable development.</li> <li>❖ Monitoring of effluents shall be carried out as per requirement of Self-</li> </ul>

## M/S SAIF GARDEN

			<p>Monitoring and Reporting Rules (SMART) to ensure compliance with the PEQS</p> <ul style="list-style-type: none"> <li>❖ It will be ensured that no solid waste will be entered in the wastewater</li> <li>❖ There is no surface water body present in the project proximity that could be impacted</li> <li>❖ The wastewater will be treated through wastewater treatment plant prior to the disposal into WASA drain.</li> </ul>
<b>B : Ecological</b>			
<b>Flora</b>			
<b>Tree Cutting</b>	<b>NA</b>	<b>+1p</b>	<p>Following mitigation measures will be adopted:</p> <ul style="list-style-type: none"> <li>❖ Avoid un-necessary disturbance and removal of the tree at any stage of the project.</li> <li>❖ The designated green area will be vegetated and native vegetation present on-site will be preserved.</li> </ul>
<b>Fauna</b>			
<b>Terrestrial Fauna</b>	<b>NA</b>	<b>NA</b>	<ul style="list-style-type: none"> <li>❖ No mitigation measures will be required as no impact on fauna is being envisaged.</li> </ul>
<b>C: Socio-Economic</b>			
<b>Employment Opportunities</b>	<b>+1t</b>	<b>+2p</b>	<ul style="list-style-type: none"> <li>❖ It will be ensured that preference will be given to the locals during construction and operation (as sanitary workers and others) of the instant project.</li> </ul>
<b>D: Hazards</b>			
	<b>NA</b>	<b>-1p</b>	<p>The following mitigation measures are suggested that could be applied to reduce the risk of health and safety:</p>

## M/S SAIF GARDEN

<b>Physical Hazards</b>			<ul style="list-style-type: none"> <li>❖ Spillage prevention plan should be adopted and it should be implemented effectively</li> <li>❖ The effective use of hearing- protection devices shall be ensured.</li> <li>❖ Protective measures and emergency rescue procedures should be followed strictly.</li> <li>❖ Unloading of the raw-material and flow of the final products should be controlled, supervised, slow and smooth.</li> </ul>
<b>Health and Safety</b>	<b>-1t</b>	<b>-1p</b>	<p>The following mitigation measures are suggested that could be applied to reduce the risk of health and safety:</p> <ul style="list-style-type: none"> <li>❖ Floor surfaces shall be maintained and cleaned on regular basis</li> <li>❖ The effective use of hearing- protection devices shall be ensured. Protective measures and emergency rescue procedures should be followed strictly</li> <li>❖ Adequate PPEs shall be provided to the workers during construction.</li> <li>❖ First Aid boxes shall be placed at different locations.</li> </ul>
<p><b>Legends: 1= Low; 2= Medium; 3= High; 4= Extremely High; NA= Not Applicable; t=Temporary, p= Permanent; A= Applicable; 0= Negligible</b></p>			

### 1.7 Proposed Monitoring

During construction and operation, monitoring will be carried out to check compliance of PEQS. Moreover, periodic monitoring should also be carried out regarding ambient air monitoring, noise pollution, wastewater & worker safety. A detailed site monitoring plan has been developed and given in **Chapter-09** of this EIA Report.

## CHAPTER 1: INTRODUCTION

### 2.1 Purpose of Report

As per Punjab Environmental Protection Act, 1997 (Amended 2012) and the Punjab Environmental Protection Review of Initial Environmental Examination and Environmental Impact Assessment 2022 it is mandatory for the proponent of any development project to obtain Environmental Approval/NOC before commencing construction from EPA Punjab by filing an IEE or EIA as the case may be, before the Agency. This Study presents the Environmental Impact Assessment (EIA) Study for Housing Scheme by M/s Saif Garden present in designated industrial area as many other industries are present near the project. For this purpose, the proponent has engaged environmental consultant: Sumaira Awan Law Associates.

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 of the said project with the aim to find out appropriate measures for their mitigation, to either eliminate those impacts or to bring them to acceptable level and formulate Environmental Management and Monitoring Plan (EMMP) for implementation of the project in environment-friendly manner. This EIA Report provides relevant information, as required under the officially approved format, to facilitate the decision makers i.e. EPA Punjab for the issuance of Environmental Approval/NOC. The main objectives of this EIA Study are:

- To determine and document the state of environment of the project area to establish a baseline environmental condition in order to assess the suitability of said project in respective area.
- To identify the impacts during Establishment & operation activities
- Provide assistance to the proponent for planning, designing and implementing the project in a way that would strengthen environment, improve ecological resilience, eliminate or minimize the negative impact on the bio-physical 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.

## 2.2 The Project

This EIA study represents establishment of Housing Scheme under the name of M/s Saif Garden at Plot No. Mouza Mal, Sharif Medical City Road, Tehsil Raiwind, District Lahore.

## 2.3 The Proponent

The details of the proponent of said project are given below:

**Table 1: Details of the Proponent**

Proponent Details	
<b>Name</b>	Muhammad Abid Adress
<b>Designation</b>	Proponent
<b>Company</b>	M/s Saif Garden
<b>Address</b>	31-C1, Gullberg III, Lahore, Pakisatan

## 2.4 Details of Consultant

The proponent of said project engaged M/s Sumaira Awan Law Associates to carry out the environmental impact assessment study of aforesaid project in accordance with EPA, Punjab guidelines. For this purpose, the company nominated the team of professionals which comprises of Environmental Scientists and Environmental Engineers. The details of the consultant are given below:

**Table 2: Consultant Details**

Consultant Details	
<b>Consultant</b>	<b>M/s Sumaira Awan Law Associates</b>
<b>Address</b>	Rewaz Garden Lahore
<b>Contact No.</b>	042-35294297

To prepare an EIA Report of the respective project the company engaged the following experts. The details of the experts are given below;

# M/S SAIF GARDEN

Table 3: List of Experts

Sr. #	Name	Qualification
<b>Team Leader</b>		
i.	Miss. Hira	M.Phil. Environmental Sciences
<b>Environmental Scientist</b>		
ii.	Mahreen Ch.	M.Phil. Environmental Sciences
<b>Environmental Engineer</b>		
iv.	Engr. Anzala	B.S. Environmental Engineering
v	Engr. Maida	B.S. Environmental Engineering
vi	Engr. Tahreem Akhtar	B.S. Environmental Engineering
vii	Engr. Salman Ahmed	B.S. Environmental Engineering

## 2.5 Project Nature, Size & Location

The instant project is establishment of Housing Scheme under the name of **M/s Saif Garden**". The estimated cost of project is **PKR 7b**. The geographical location of the project is **Latitude 31°18'47.1" North** and **Longitude 74°10'12.32" East**.

The location of the project is shown in **Figure 1**:



Figure 1: Project Location

# M/S SAIF GARDEN

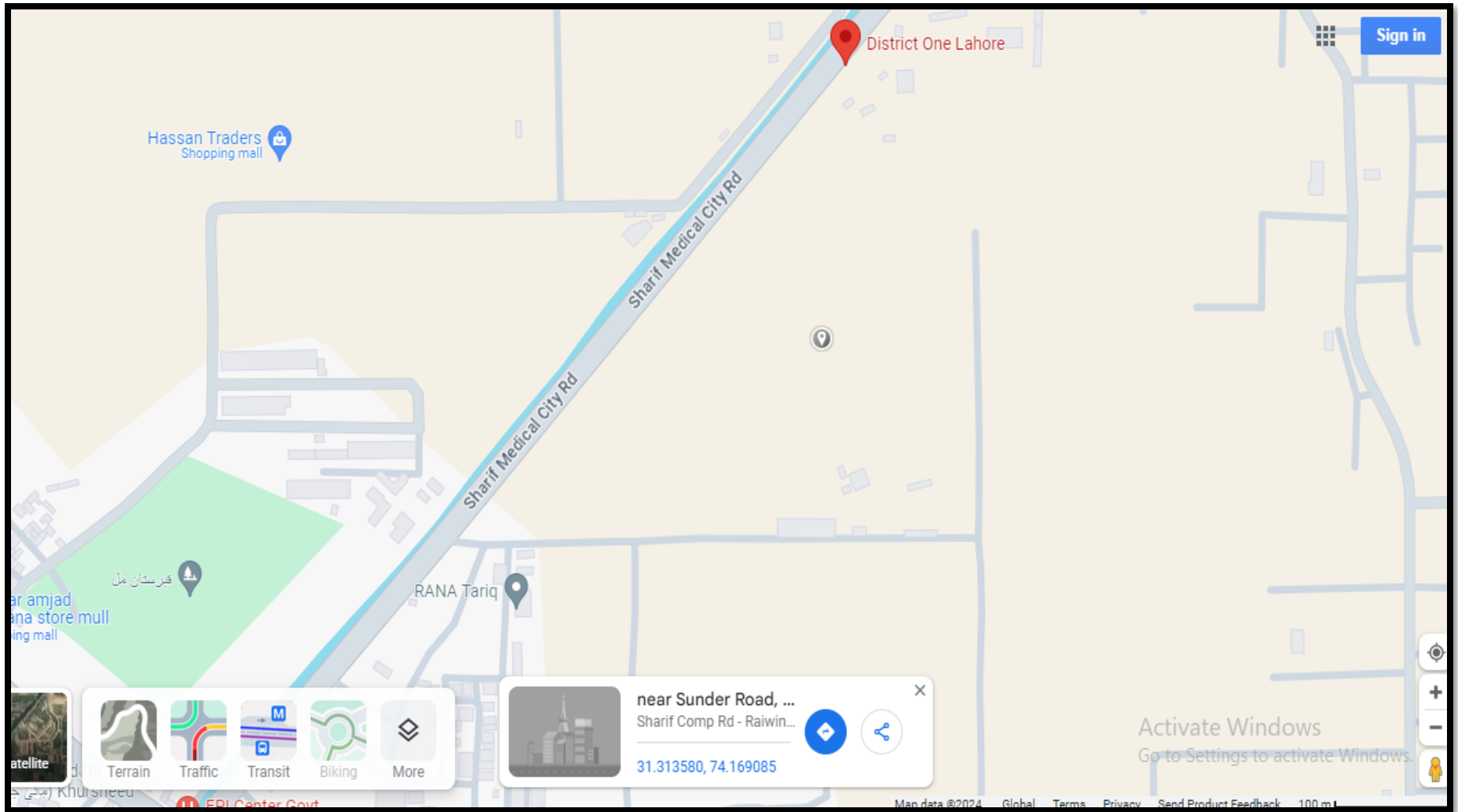


Figure 2: Location of the Project

**CHAPTER 2: SCREENING**

Section 12 of Punjab Environmental Protection Act (PEPA), 1997 (Amended 2012) states:

*“No proponent of a project shall commence construction or operation unless he has filed with the Government Agency designated by Federal Environmental Protection Agency or Provincial Environmental Protection Agencies, as the case may be, or, where the project is likely to cause an adverse environmental effect an Environmental Impact Assessment (EIA), and has obtained from the Government Agency approval in respect thereof.”*

As per Punjab Environmental Protection Review of Initial Environmental Examination (IEE) and Environmental Impact Assessment (EIA) Regulations, 2022 under Section 12 of Punjab Environmental Protection Act, 1997 (Amended 2012), instant project i.e., Housing Scheme which falls under Schedule II **Category H(1)**: Housing Schemes more than 300 Kanals

### CHAPTER 3: SCOPING

#### 3.1. Spatial and Temporal Boundaries of Environmental Assessment

Instant project is establishment of Housing Scheme and management has selected the site because it's his own land. By the implementation of said project, residential demands of the area will be fulfilled. During the construction/establishment of housing scheme the raw materials can be easily transported to the site as it is accessible through metaled road network. Moreover, following facilities are available on-site: electricity supply, water supply, sewer collection & disposal system.

The simple and efficient establishment of said housing scheme will make sure to not disturb the ecosystem at any level and if there are any impacts, the proper remedial measures will be taken. The operation of said project employment opportunities for the locals after establishment. The Google Earth Map (**Figure 2**) attached below shows the various residential areas are present within 01-02km aerial distance of project site. Overall, no significant impacts can be seen over the longer run as proper management plan has been devised and will be implemented to cope up with any adverse effect.

#### 3.2. Important issues and concern raised during consultation

During consultation it was observed that majority of the respondents were in favor of said establishment. The other related issues and concerns raised by general public are discussed in detail in **Chapter 10** (Stakeholder Consultation). However, during the social survey following concerns of the local community were noted:

- Nuisance must be controlled at source.
- Locals should be preferred for the job opportunities.
- Environmental monitoring should be done on regular basis as per SMART Rules.
- Solid waste should be managed effectively by adopting the standard practices of the area.
- Cleanliness of the area should be maintained.
- An effective EMMP should be designed and enforced with true spirit.
- Health and safety of the workers should be ensured.
- Proper disposal of sewage should be ensured.

#### 3.3. Significant Impacts and Factors to be Determined

Main impacts and factors to be determined are;

- Occupational Health and safety
- Site Security
- Traffic Management

## **M/S SAIF GARDEN**

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- Job opportunities for locals
- Energy efficient techniques must be adopted
- Proper site restoration after Establishment
- Tree plantation at designated green areas
- Emergency preparedness

### CHAPTER 4: CONSIDERATION OF ALTERNATIVES

#### 4.1 Site Alternatives, their selection and rejection criteria

Management of M/s Saif Garden has selected the site to establish housing scheme on his own land. Due to implementation of said project no land use change is being foreseen as the Saif Garden is located in LDA approved area. The site is suitable for establishment of said housing scheme;

- Selected site is proponent's own land.
- The site is accessible through metaled road network
- The site is located at the safe distance from sensitive receptors (residential area & protected area).
- No land use change is being foreseen due to implementation of said project.

#### 4.1. Design/technology alternatives, their selection and rejection criteria

Instant project is establishment of housing scheme, there is no involvement of any technology or any design, so this not applicable for said project.

#### 4.2. Environmental Alternatives, their selection and rejection criteria

Not Applicable as instant project is establishment of housing scheme, and LDA has approved the land for establishment.

#### 4.3. Economic Alternatives, their Selection and Rejection Criteria

Not Applicable, said project is establishment of housing Scheme.

### CHAPTER 5: DESCRIPTION OF PROJECT

#### 5.1 General

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

#### 5.2 Project Objectives

The overall aim of instant project:

- To fulfill the residential demands of the area by providing all facilities at one place.
- To provide a range of affordable, accessible and decent rental housing options to residents.
- To be fully integrated with and supplement the existing infrastructure in the city.
- To become fully self-sufficient and to meet the need of increasing population

#### 5.3 Location and Site layout of Project

The selected site is located at Plot No. Mouza Mal, Sharif Medical City Road, Tehsil Raiwind, District Lahore. The coordinates of the site are; **Latitude 31°184871" North** and **Longitude 74°101232" East**. The site layout is attached herewith as **Annex-E**. However, the Google Earth Map showing the project location and its distance from nearby sensitive receptors is shown in previous chapter, and attached herewith as **Annexure F**.

#### 5.4 Land Use On-Site

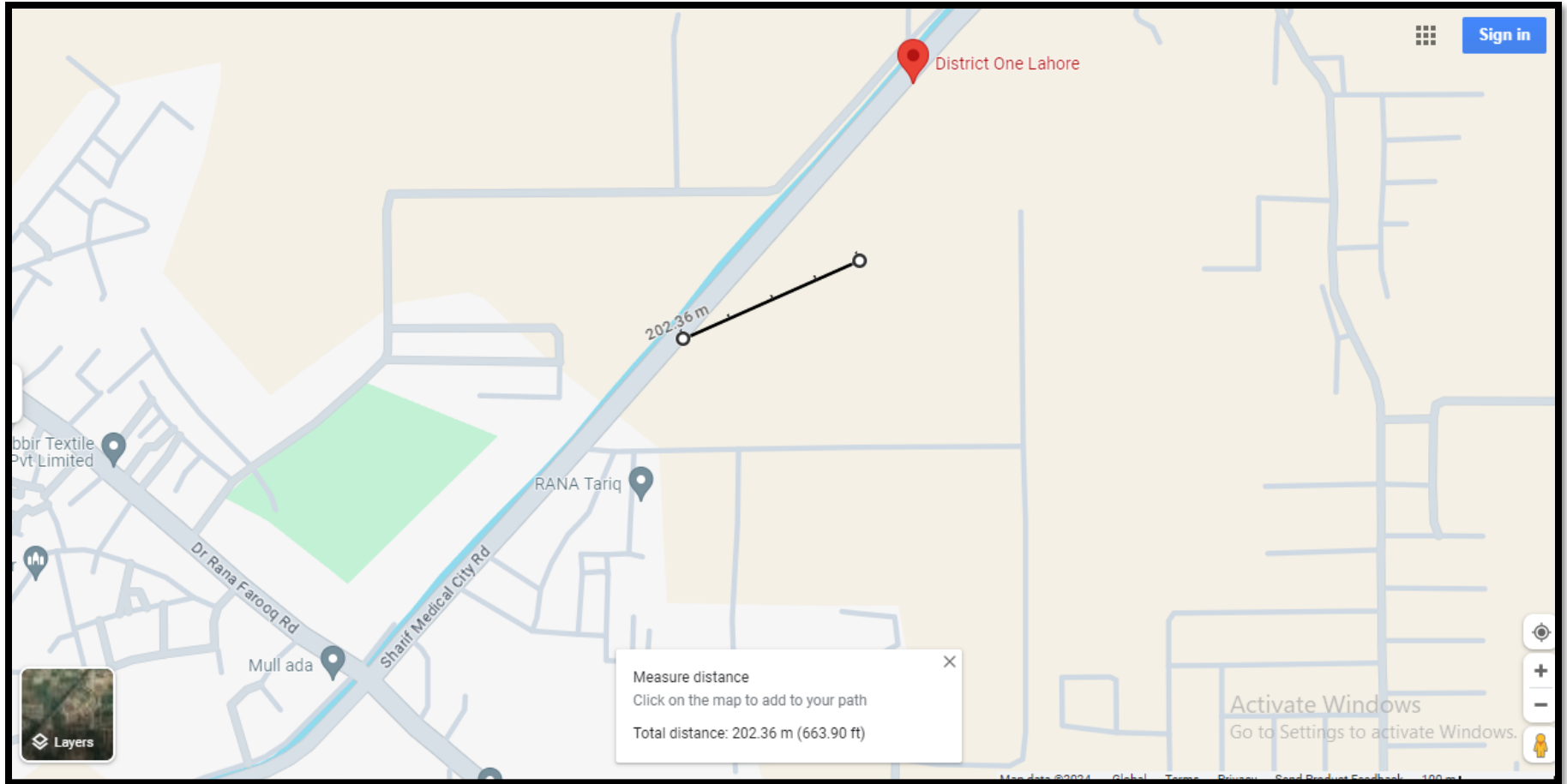
The selected site is present at sharif Medical City Road as shown in Google Earth map attached below;

# M/S SAIF GARDEN



## 5.5 Road Access

The site is approachable through Sharif Medical City Road as mentioned in map below:



**Figure 3: Road Access Map**

**5.6 Vegetation Features**

The topography of the project area is flat and it is open land with herbs & shrubs species. Instant project does not involve any herbs, shrubs or tree cutting as site has been selected on proponent’s own land. Moreover, tree plantation will be done along boundary & in all open spaces after completion of installation.

**5.7 Cost and Magnitude of Operation**

The cost of the said project is **PKR 7 billion** it includes; civil work, wastewater treatment plant installation, The magnitude of operation includes:

- Civil work
- Installation of wastewater treatment Plant
- Import of machinery & equipment
- Testing and commissioning of operation
- Plantation of various ecologically important species on the designated green space.

**5.8 Schedule of Implementation**

The tentative schedule for said project implementation is approximately **06 months** and the detail timeline of the construction period is given in **Table 04**:

**Table 4: Timeline for Project Development**

Sr#	Activities	3 Month			3 Month		
		2W	3W	7W	4W	5W	3W
1	Detailed Designing						
2	Mobilization of Contractors						
3	Building Renovation						
4	Site Restoration & Rehabilitation						
5	Plantation at Site						
6	Commissioning						
<i>W= Weeks</i>							

## 5.9 Description of Project

The proposed project is the Establishment of housing scheme namely “M/s Saif Garden” at **Mouza Mal, Sharif Medical City Road, Tehsil Raiwind, District Lahore** Proposed project involves the development of housing scheme over an area of **362 Kanal 12 Marla**. Approximate cost of the aforesaid project is approx. **PKR 7 billion**.

### 5.9.2 Cost of the Project:

Approximate cost of the aforesaid project is approx. **PKR 7 billion**.

### Magnitude of operation includes:

- Detailed designing, planning and execution of project.
- Construction of public and social amenities such as; road construction, infra-structure development/public areas, installation of street-lights, demarcation of parks and graveyard.
- Plantation of various plant species on the designated green spaces as per drawings.

### Project’s Construction Activities

#### Site Preparation Works

The proposed project site will be prepared for development of housing scheme. Due to the nature of project, it will involve the use of heavy machinery. The engineers will also utilize human labor where necessary so as to create employment to the locals especially the youth.

#### Storage of Materials

Construction materials will be stored for timely construction. Bulky materials such as stones, sand and steel will be carefully piled at designated areas on site. To avoid piling large quantities of materials on site, the proponent will order bulky materials such as sand, gravel and stones in quotas.

#### Masonry, Concrete Work and Related Activities

The construction of the project involves a lot of masonry work, laying of plumbing and related activities. General masonry and related activities include, concrete mixing, plastering and erection of building walls and curing of fresh concrete surfaces. These activities are known to be labor intensive and will be supplemented by machinery.

#### Structural Steel Works

The roads & public amenities will be reinforced with structural steel for stability. Structural steel works involve steel cutting, welding and erection.

#### Electrical Work

Electrical work during construction of the premises will include installation of electrical gadgets and appliances including electrical cables, lighting apparatus etc. In addition, there will be other activities involving the use of electricity such as welding.

## Plumbing

Installation of pipe-work will be done to connect sewage from the houses to sewer system. Plumbing activities will include metal and plastic pipe cuttings, laying of pipeline, use of adhesives, metal grinding and drilling etc.

## Construction Materials and other supplies

Main construction material to be used during the construction activities will include paving stones, cement, crush, gravel, steel and sand. The materials will be transported by trucks to the project site, where they will be stored until moved to different locations as and when required. During the construction phase main public amenities will be constructed as well as the plots and other social amenities area such as parks, community centers and mosques will be demarcated.

## 5.11 Utilities

### Water Supply:

During construction works, water will be used for concrete preparation, watering the construction sites, as well for domestic purposes. Water used for concrete preparation and watering the construction site is considered as non-return water. The per capita consumption of water is considered to be *45 liters/day* for construction phase and *65 liters/day* for operational phase. During construction phase, total water requirement for 15 workers will be ***0.675 m<sup>3</sup>/day***. During operational phase, the anticipated water demand will be fulfilled by underground. According to the number of houses and the average member of persons in single house is 6, total water requirement for domestic purposes will be ***8.97m<sup>3</sup>/day***.

### 5.11.1 Manpower

During construction phase 15-20 workers will be involved. During the operation phase of the project, the total manpower requirement is estimated to be 10-15 approximately will be hired.

### 5.11.2 Amenities

Following amenities will be used during operation of said project

#### i. Electricity/ Power Supply

Power requirement for instant project 200Kv will be fulfilled by WAPDA.

#### ii. Wastewater Management

Wastewater Treatment plant will be installed to treat generated wastewater. Management of **M/s Saif Garden** has planned to install Treatment Plant. No wastewater will be discharge into drain without treatment. Management has approval from WASA for safe disposal of wastewater.

### iii. Noise

Noise may be generated from operation of machinery to during constructional phase of the project. During Operation of the project there will be no such issues.

#### **5.11.3 Air Emissions:**

During Construction phase, the major sources of air pollution are the construction activities and the emissions from the vehicles and heavy machinery. To control this pollution, proper tuning of vehicles and using good quality fuel are the major mitigations. While during operational phase, no significant air emissions will be generated. However, adequate greenbelt will be developed and maintained to get better quality of air.

#### **5.11.4 Solid Waste Generation & Management**

During the construction phase, the solid waste will mainly consist of the construction material such as; steel, wood, sand, debris and packaging material. During operational phase, proponent will provide facilities for handling solid waste generated within the facility. The solid waste collection system will be designed by the Proponent & specific area has been allocated for this purpose. Solid waste will be disposed off properly in designated area. The solid waste generation rate of a person is approximately 0.65kg/day. The average number of persons in single house is 6. So, the estimated amount of solid waste generated will be **205.3 kg/day**.

#### **5.12 Restoration and Rehabilitation Plan**

The proposed project is establishment of housing scheme on proponent's own land. So, replacement, relocation and rehabilitation would not be required. However, the proponent intends to do proper landscaping and plantation at designated areas.

## CHAPTER 6: DESCRIPTION OF ENVIRONMENT

This section describes the baseline conditions, which shows the clear-cut picture of existing environmental resources; physical, ecological and socio-economic environment of the Project Area. Information on these aspects has been derived from field visits to the project area as well as information obtained through visits to the Government departments and other relevant agencies. The primary data was collected by surveying the project area and its nearby vicinity. The secondary data regarding physical parameters (topography, geology, seismology, hydrology and climatology) was obtained by visiting relevant departments and their official websites. The biological parameters (flora and fauna) were also studied in the project area. The vegetation of project area was studied by preparing a floristic list based on visual observation. The species were recorded with reference to their historical existence in the project area.

Information on wildlife fauna species (mammals, amphibians, reptiles, birds, etc.) in the assessment area was compiled based on opportunistic observation, gathering the existing information and consultation with local experts, community members and government departments. The socio-economic aspects were studied and analyzed by conducting detailed socio-economic surveys.

### 6.1. Baseline Physical Environment

In this section, physical resources such as; topography, soil, climate, surface as well as ground water resources and its 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 the project site is present in the following sub sections

#### 6.1.1. Topography & Geology

Lahore is the capital and largest city of the Pakistani province of Punjab. It is the second largest city in Pakistan, after Karachi, and 26th largest in the world, with a population of over 13 million. Located in north-eastern Punjab along the River Ravi, it is the largest Punjabi-speaking city in the world. Lahore is one of Pakistan's major industrial and economic hubs. It has been the historic capital and cultural centre of the wider Punjab region and is one of Pakistan's most socially liberal progressive and cosmopolitan cities. Lahore's origin dates back to antiquity. The city has been inhabited for around two millennia, although it rose to prominence in the late 10th century. The coordinates of the site are; **Latitude 31°18'48.71" North** and **Longitude 74°10'12.32" East**.

#### 6.1.2. Seismicity

According to Seismic Zoning of Pakistan, the project area lies in Zone 1 of Modified Mercalli (M.M.) scale and represents minor damage in the past due to the Earthquake. Distant earthquakes may cause damage to structures with fundamental period greater than 1.0 second, corresponds to intensity V and VI of the M.M scale (National Disaster Management Authority). The seismic zoning of Pakistan is given below in Figure:

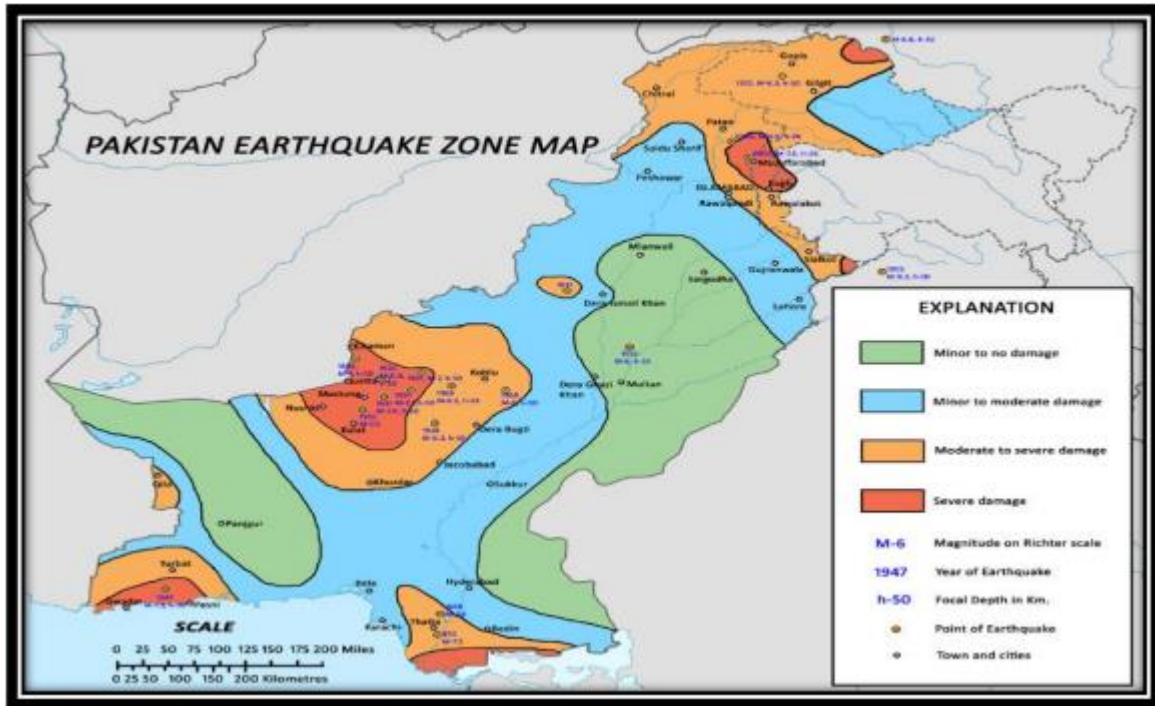


Figure 4: Seismic Zoning of Pakistan

6.1.3. Climate

The climate of the project area is moderate. During site visit 17oC was measured during day time and 10oC during night. Project site was visited in Dec, 2020. The bulk of monsoon precipitation occurs in July and August, with monthly averages of 115.0 mm and 89.8 mm respectively. Minimum rainfall occurs in the month of November which is 3.0 mm (PMD).

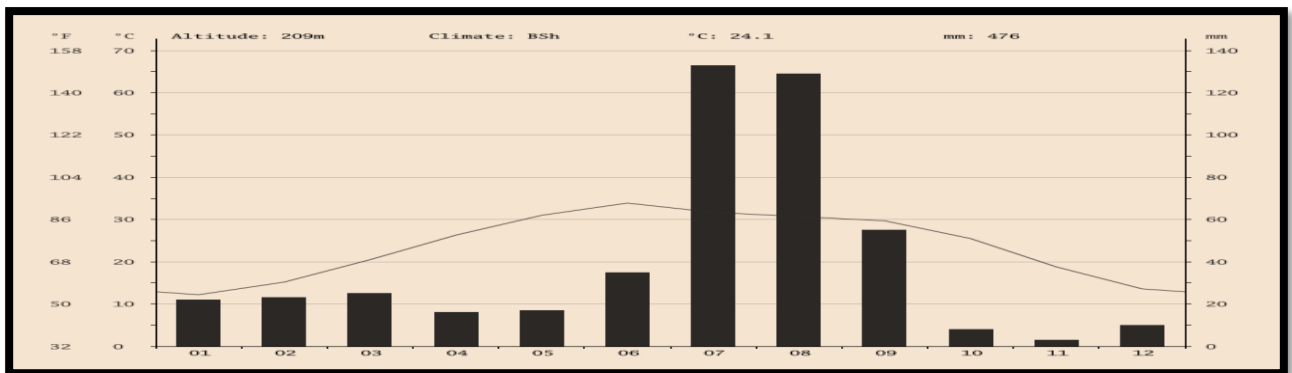


Figure 5: Temperature Graph



**Figure 6: Rate of Precipitation**

**6.1.4. Ambient Air Quality**

The primary air pollutants are; carbon monoxide (CO), oxides of nitrogen (NO<sub>x</sub>), sulfur dioxide (SO<sub>2</sub>), and particulate matter (PM). In order to determine the air quality of the area, environmental monitoring was carried out by SEAL being EPA certified Laboratory and having the requisite sampling device and expertise for collection of samples. To determine the air quality of the area ambient air monitoring was carried out and following results were obtained:

**Table 5: Air Quality Monitoring Results**

S#	Monitoring Source	CO	NO	NO <sub>2</sub>	SO <sub>2</sub>	PM <sub>2.5</sub>	PM <sub>10</sub>
PEQs		mg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>
		10	40	80	120	35	150
1	Midpoint	3.6	41.0	41.0	42.9	31.9	140.0

**6.1.5. Ambient Noise**

Noise level measurements had been carried out within the selected site. This analysis showed that values are much below the limit prescribed under the Punjab Environmental Quality Standards (PEQS). Monitoring reports are attached as **Annex G**.

**Table 6: Ambient Noise Monitoring Results**

S. No.	Monitoring source	Unit	PEQs	Conc.	M. Point
1	Midpoint	dB (A) Leq	75	55	65

**6.1.6. Groundwater Quality**

Groundwater quality results of project area are given below:

**Table 7: Ground water Analysis Results**

Sr. No	Parameter	Method	Unit	Result	PEQS
1	pH	APHA 4500-H <sup>+</sup> B	--	7.48	6.5-8.5
2	Total Dissolved Solids (TDS)	APHA 2540 C	mg/l	238	1000
3	Chloride	4500- APHA Cl <sup>-</sup> B	mg/l	26.36	250
4	Fluoride	APHA 4500-F <sup>-</sup> D	mg/l	0.09	1.5
5	Taste	APHA 2120 B	Object. /unobj.	Unobject.	Unobject.
6	Odour	APHA 2120 B	Object. /unobj.	Unobject.	Unobject.
7	Colour	APHA 2120 B	TCU	0.04	15
8	Nitrate (as NO <sub>3</sub> <sup>-</sup> )	APHA 4500-NO <sub>3</sub> <sup>-</sup> E	mg/l	0.3	50
9	Nitrite (as NO <sub>2</sub> <sup>-</sup> )	APHA 4500-NO <sub>2</sub> <sup>-</sup> B	mg/l	BDL	3
10	Lead	APHA-Pb B	mg/l	0.01	0.05
11	Total Hardness as CaCO <sub>3</sub>	APHA 2340 C	mg/l	154.56	500
12	Turbidity	APHA 2130 B	NTU	0.03	5
13	Zinc	APHA 3500-Zn B	mg/l	0.0	5
14	Aluminum	APHA 3111 D	mg/l	0.12	0.2
15	Chromium	APHA 3500-Cr B	mg/l	0.0	0.050
16	Cadmium	APHA 3500-Cd D	mg/l	0.0	0.01
17	Copper	APHA 3500-Cu C	mg/l	0.036	2
18	Boron	APHA 4500-B C	mg/l	0.021	0.300
19	Barium	APHA 3111 B	mg/l	0.021	0.700
20	Antimony	APHA 3114 C	mg/l	0.004	0.020
21	Arsenic	APHA 3114 C	mg/l	0.010	0.050
22	Cyanide	APHA 4500-CN <sup>-</sup> D	mg/l	0.01	0.05
23	Mercury	APHA 3112	mg/l	BDL	0.001
24	Nickel	APHA 3111 B	mg/l	0.012	0.020
25	Residual Chlorine	APHA 4500-Cl <sub>2</sub>	mg/l	0.23	0.2 - 0.5

26	Total Coliform	APHA 9222 B	Number/100ml	0	0/100 ml
27	Thermo Coliform	APHA 9222 B	Number/100ml	0	0/100 ml
28	E. coli	APHA 9222 C	Number/100ml	0	0/100 ml

## 6.2 Baseline Biological Environment

The biological environment consists of the flora and fauna present at the study as well as project area. The detail of each parameter is given below; In sub-sections below, biological features are discussed below:

### 6.2.1 Flora

No tree cutting will be involved for installation of current project in fact after construction tree plantation will be done at designated green areas. The detail of the tree species present near study area is given in: Table-09. <sup>1</sup>

**Table 8: Vegetation features near project site**

S#	Common Name	Scientific Name
1	Gold Mehoar	<i>Deloxin Regia</i>
2	Sukh Chain	<i>Pongamia globra</i>
3	Neem	<i>Azadiruhta Indica</i>
4	Sheesham	<i>Dalbergia sissoo</i>
5	Beri	<i>Ziziphus mauritiana</i>

### 6.2.2 Fauna

The fauna consists of mammals, birds, reptiles and amphibians. Currently, the study area is having few species of the fauna such as; Jungle Cat (*Felis chaus*), Field Mouse (*Mus musculus*), and Soft Furred Rat (*Millardia mettada*). These species are considered as the pests present in the area due to the agricultural activities in the project area proximity. Reptiles mainly includes; snake and Tree Lizard (*Calotes versicolor*). Only amphibian reported in the City is Bullfrog (*Hoplobatrachus*). The Birds species includes; Common Crow (*Corvus splendens*), House Sparrow (*Passer domesticus*) and King Crow (*Passer domesticus*). Due to the installation of aforementioned unit at proposed location no adverse impact is envisaged on fauna. During site visit near site no such fauna was noticed that could be impacted due to construction of aforementioned project as the selected site is location in industrial area. However, within 05 km from project site dogs, cats, cows, sparrows and crows were seen.

### 6.2.3 Archaeological Sites or Wetlands

It is envisaged that no building of archaeological, cultural and historical importance was damaged at the time of selection of site. Moreover, there is no wetland or surface water body reported to be affected due to the construction of the aforesaid project.

<sup>1</sup><https://www.cabdirect.org/cabdirect/abstract/19952313443>

## 6.2.4 Endangered Species

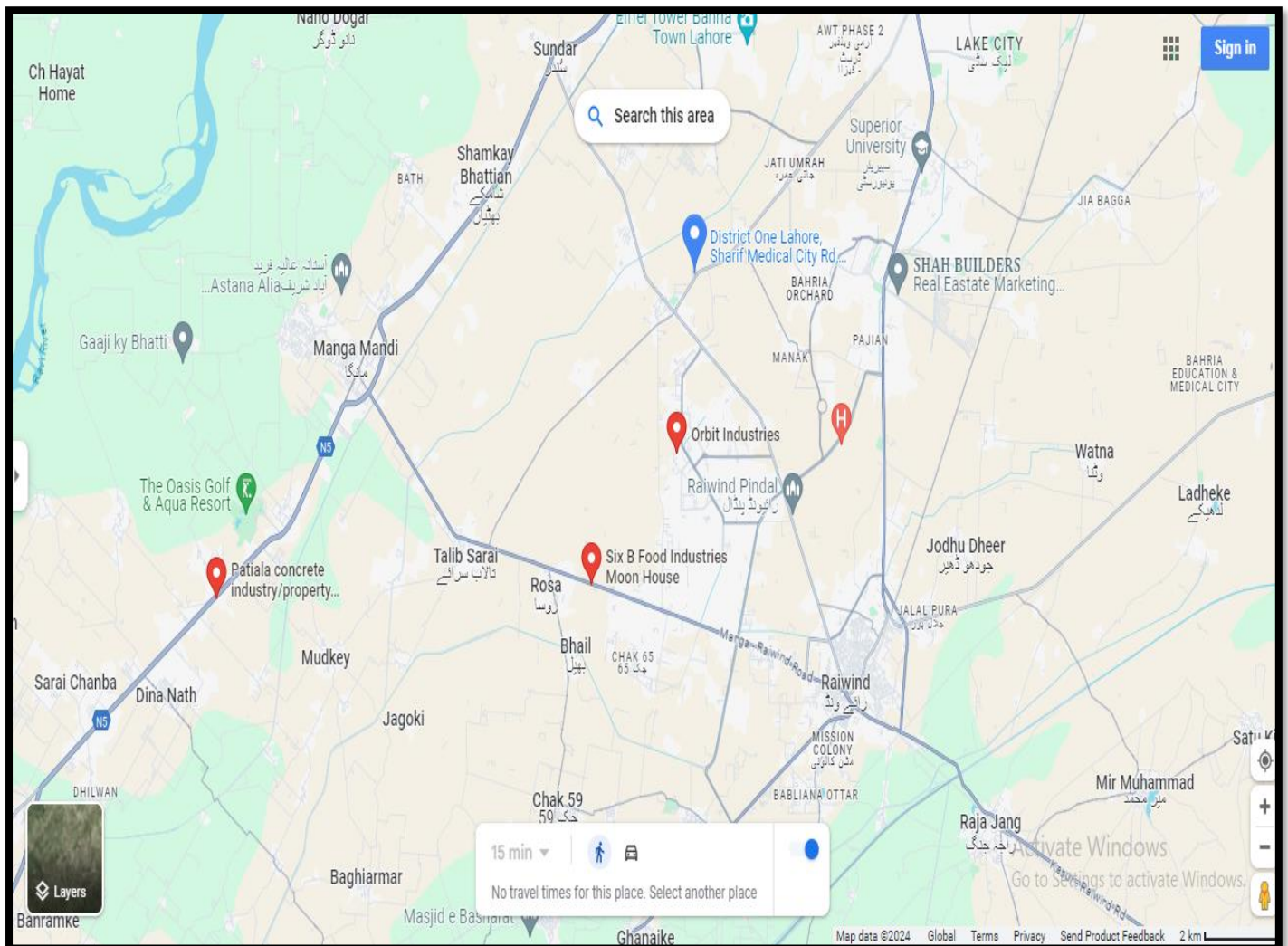
There is no floral or faunal species inhabiting the project area that are included in the Red Data Book of IUCN. The populations of birds are reported to be reduced over time due to excessive pesticide sprays in agricultural crops and loss of habitat.

## 6.3 Baseline Socio-Economic Environment

Socio economic environment is represented by the human and economic development and quality of life values. For the study of socio-economic environment of the project area, field surveys were conducted and interviews were held with the various stakeholders. The socioeconomic conditions of the project area are as follow:

### 6.3.1 Industry

Above said Housing Scheme will be established at Mouza Mal, Sharif Medical City Road, Tehsil Raiwind, District Lahore. The project site is also surrounded by various other industrial activities nearby industries are mentioned in below map:



**Figure 7: Industries Located in Project Area Vicinity**

## 6.3.2 Health Facilities

Healthcare services are provided to the citizens by both public and private sector hospitals. The nearest hospital is; Cancer care Hospital. Moreover, there are a number of private hospitals, clinics and laboratories in the city.

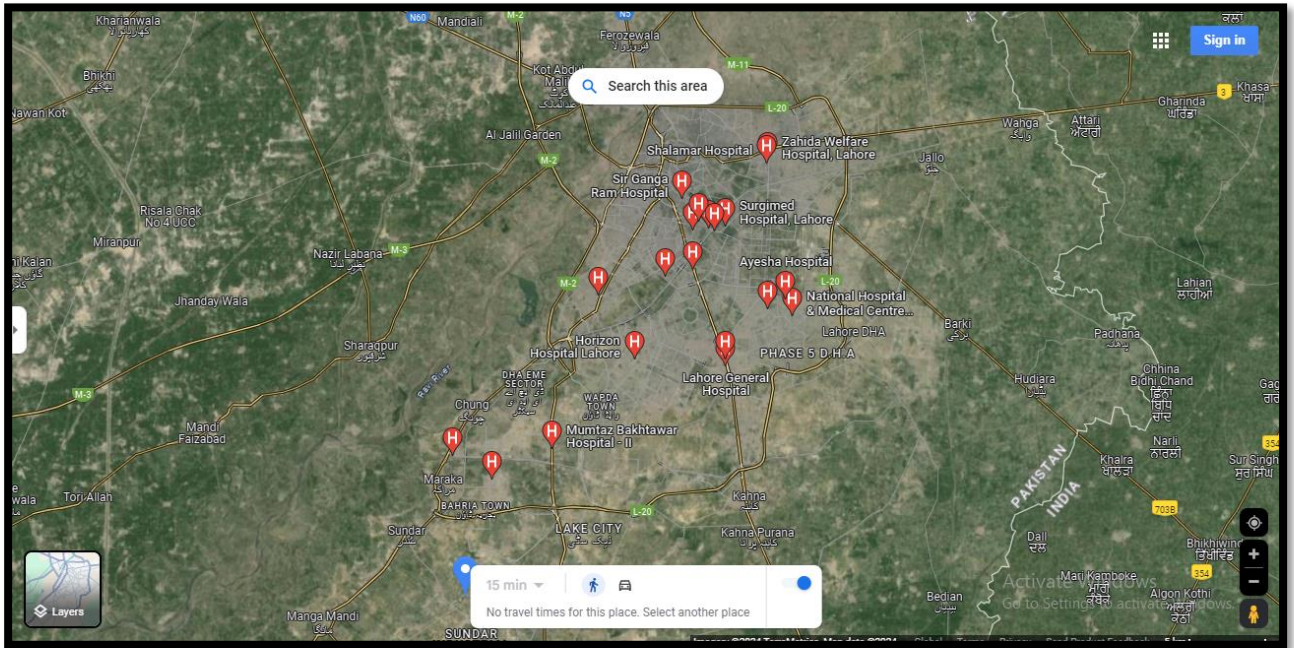


Figure 8: Nearby Health Facilities

## 6.3.3 Educational Facilities

Education up to higher secondary is present in project area.

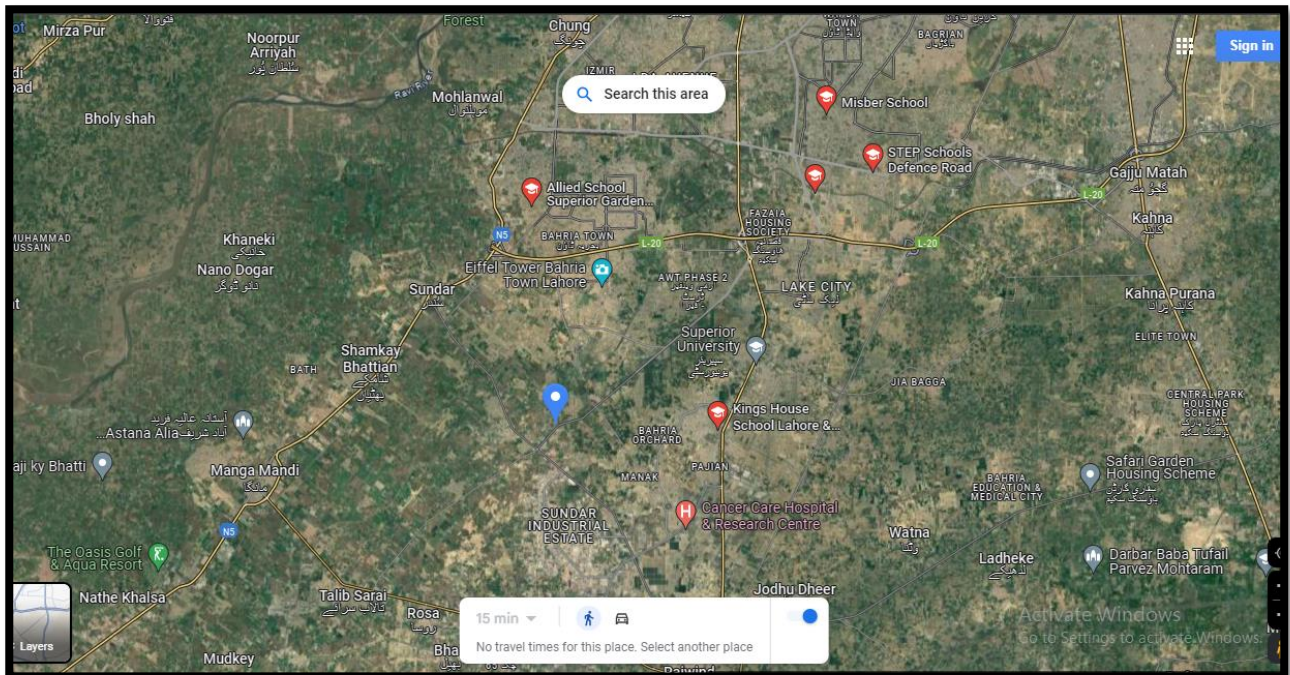


Figure 9: Nearest Educational Facilities

### **6.4 Lab Reports of Environmental Analysis**

Testing of different parameters was carried out from EPA certified laboratory i.e. SEAL to check the quality of different environmental parameters. The copy of the lab reports of these parameters (ambient air analysis, ground water quality analysis and noise) are attached herewith as **Annex-E**

### **6.5 Suitability of the Site**

As the project site is located in residential area. The site does not fall in environmental sensitive area and all commodities are at a suitable distance from project site as they will not be impacted by the construction and operational activities even locals will get more benefits and job opportunities. No replacement, relocation and rehabilitation are required for the development of proposed project.

**CHAPTER 7: IMPACT ASSESSMENT & SCREENING PROCESS**

This section discusses the potential environmental impact of instant project, methodologies for impact identifications and characteristics of impacts including nature, magnitude, extent, location, timing, duration, reversibility and risk. The assessment carried out in this Section is based on potential impacts on overall environmental receptors within the project area.

**7.1 Methodologies for Impact Identification**

During construction phase, adverse environmental & social impacts were depending on the resources and receptors involved along with other parameters such as; geographical scope (magnitude and extent), temporal scope (duration) and reversibility. It has been anticipated that this project will have beneficial social impacts, it will bridge the gap between supply & demand, employment opportunity will be increases for which locals will be preferred and socio-economic uplift of the proponent. Having identified and characterized the potential significant impacts during design, Establishment and operation phase of project an Environmental Impact Severity Matrix & checklist to summarize all the identified impacts as mentioned below in tables.

**Table 9: Impact Significance Criteria**

<b>Impact</b>	<b>Criteria</b>
<b>No Impact</b>	When the said activity will have no impact
<b>Long Term</b>	When the impact is of high intensity with high spread and high duration or of high intensity with medium spread and medium duration
<b>Moderate Term</b>	When the impact is of moderate intensity with high spread and high duration or of high intensity with low/ moderate spread and low duration
<b>Short Term</b>	When the impact is of low intensity but with moderate spread and moderate duration or of moderate intensity
<b>Insignificant</b>	When the impact is of low intensity, low spread and low duration
<b>Adverse</b>	When the impact is of large intensity, spread easily and long-term
<b>Beneficial</b>	When the impacts are positive and improve the environmental conditions

Table 10: Impact Matrix Checklist for Establishment Phase

Environmental Sensitivities	Intensity of Impact						Impact Nature		Impact Significance				
	Low Intensity	Moderate Intensity	High Intensity	Local	Moderate	Regional	Beneficial	Adverse	Insignificant	No Impact	Short Term	Moderate	Long Term
<b>Physical Parameters</b>													
Air Quality	✓											✓	
Noise		✓										✓	
Water Quality		✓										✓	
<b>Biological Parameters</b>													
Land Environment													
Flora													
Fauna													
<b>Physical Parameters</b>													
Local Economy	✓												
Social Impacts	✓												
Health & Safety	✓												

Table 11: Impact Matrix Checklist for Operational Phase

Environmental Sensitivities	Intensity of Impact						Impact Nature		Impact Significance				
	Low Intensity	Moderate Intensity	High Intensity	Local	Moderate	Regional	Beneficial	Adverse	Insignificant	No Impact	Short Term	Moderate	Long Term
<b>Physical Parameters</b>													
Noise		✓											
Water Quality		✓											
Air Emissions	✓												
<b>Biological Parameters</b>													
Land Environment													
Flora													
Fauna													
<b>Physical Parameters</b>													
Local Economy													
Social Impacts													
Health & Safety													

**7.2 Characteristics of Impacts**

The impact characteristics are identified to screen out potentially insignificant environmental and social impacts from potentially significant adverse environmental and social impacts during planning & designing, Establishment and operational phases of the project. The objective of impact screening process is to assess the significance of issues related to the air, water, noise, soil, transportation, civil work, communication, the hazards and external constraints. The beneficial and adverse impacts of project during

## M/S SAIF GARDEN

planning & designing, Establishment and operational phases are identified based on their duration, location, frequency, extent, significance and reversibility. The impact of each activity on various environmental parameters is given below:

**Table 12: Impacts Characteristics**

Sr#	Environmental Component	Impact Characteristics												
		Duration		Location		Frequency		Extent		Significance			Reversibility	
		Long	Short	Direct	Indirect	Cont.	Intermittent	Wide	Local	Large	Moderate	Minor	Rev.	Irrev.
<b>Beneficial Impacts</b>														
1	Employment Opportunity	☑		☑		☑			☑		☑		☑	
2	Solid Waste Management	☑		☑		☑			☑		☑		☑	
3	Land Value	☑			☑	☑			☑			☑		☑
4	Tree Plantation	☑		☑		☑			☑		☑			☑
<b>Adverse Impacts</b>														
1	Solid Waste	•		•		•			•			•	•	
2	Health and Safety		•		•		•		•			•		•
3	Physical Hazards		•	•			•		•			•		•
4	Security Risks		•	•			•		•			•	•	
5	Wastewater		•	•		•			•			•	•	
6	Air Emissions	•		•		•			•		•			•

## CHAPTER 8: SCREENING POTENTIAL ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

This Chapter identifies the potential impacts (positive and adverse) on the physical, biological and socio-economic environment of project area due to instant project. It also identifies measures that will help to mitigate the adverse environmental and social impacts (if any) and it will enhance positive impacts of the project. Impacts are assessed by analyzing their magnitude and sensitivity, which is a legal requirement.

### 8.1 Project Location

The proposed project is the Establishment of housing scheme namely “**M/s Saif Garden**” located at **Mouza Mal, Sharif Medical City Road, Tehsil Raiwind, District Lahore** Coordinates of the project site are **Latitude 31°184871” North** and **Longitude 74°101232” East** The proponent has selected the proposed site owing to the following reasons:

- Current project site also surrounded by various housing schemes.
- The site is easily accessible through Sharif Medical City Road
- The site has availability of infrastructure facilities such as water supply, power, roads, social infrastructure and man power.
- No endangered fauna/flora has been observed near the project site.
- The proposed site does not fall in any category of protected or environmentally sensitive area.

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.

### Nature of Impact

The nature of the impact will be direct, low, short-term and hence in-significant.

### Mitigation Measures

Following mitigation measures has been adopted to reduce the impact of said project location on sensitive receptors:

- The selected site located at adequate distance from the various sensitive receptors.
- The site is accessible through metaled road network i.e., as selected site is present on proponent’s own land.
- The site is owned by the proponent and no dispute is associated.
- The wastewater will be treated prior to its disposal in WASA drain.
- The generated solid waste will be collected by Contractor and it will be disposed off through the standard practices of area.

### 8.2 Design

At the design phase, no considerable impact would occur on land, soil, topography, ground water, and on people of the area. However, in the pre-construction phase, a management system should be provided at design level so that impacts can be reduced.

Design of the proposed project would adhere to all standard technical requirements in order to avoid adverse impacts on the environment and human health

### **Nature of Impact**

The nature of impact will be direct, low, short-term and hence in-significant.

### **Mitigation Measures**

The Proponent intends to construct the facility on modern and sustainable lines. The design, if maintained and operated in an environment-friendly manner, is expected to cast positive impact on the Environment and will not pose any adverse impact or threat on any component of the Environment.

- The project is design to minimize the air & water pollution in-check.
- On-site training safety training will be given to the workers.
- Fire-fighting equipment will be installed on-site.

### **8.3 Impacts and Mitigation Measures during Construction Phase**

Project construction phase will be 6 months whose activities will affect on land environment, water, air, noise level, soil quality, socio-economic trend of area, etc. These impacts had been controlled effectively by adopting best management practices. By the implementation of said project, a positive impact on the socio-economic culture for the people has been observed. The chance for local employment, fabrication, brick masonry, painting and machinery erection works will be increased. The construction phase of aforesaid project will include activities associated with the site leveling, construction of civil structures, architectural works and building services. The construction phase would bring in immediate but short-term changes on various components of environment near the project site. This section explains how aforesaid project will affect different environmental aspects and its mitigation measures to manage the impact. The impacts during construction phase will be temporary and localized. Even though, the measures proposed to minimize such impact

#### **8.3.1 Soil Contamination**

During constructional activities the chances of soil erosion and contamination may be increased. Soil erosion from construction activities will deteriorate the soil quality. There are low chances of land contamination due to release/spill of lubricants, oil and other materials during the construction period. Erosion may also result from movement of heavy vehicle such as; bulldozers, excavators, trucks and pick-ups. The impact will be short term, localized and can be controlled through immediate appropriate management and mitigation measures. This impact is considered negative of minor magnitude. Hence, the impact is in-significant.

### **Nature of Impact**

The nature of said impact will be direct, low, short-term and hence in-significant.

### **Mitigations**

Following mitigation measures will be adopted to protect the soil from erosion and contamination:

- Spill prevention and response plan for storage, usage and transfer of fuel should be prepared (if used on site) and implemented.
- Workers should be trained on spill prevention and response plan (if needed).
- Maintenance of vehicles as well as equipment will be carried out at designated areas within the facility.
- 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.
- Machinery involved should be maintained properly to avoid leakages.
- The proponent will be required to instruct and train their workforce in storage and handling of materials that can potentially cause soil contamination.
- Solid waste generated during construction will be properly and safely disposed of as per practices of area.

### **8.3.2 Air Emissions**

The main source of air emission during said phase is dust. It will be generated due to movement of equipment at the site other constructional activities. Dust emissions are expected to result in increased particulate matter thus affecting baseline air quality, primarily in working area for a short duration.

#### **Nature of Impact**

The nature of proposed impact will be direct, low, short-term and hence in-significant.

#### **Mitigations**

Following mitigation measures will be adopted:

- In order to reduce concentration of suspended dust particles & transport roads will be sprinkled with water on the regular basis.
- Construction activities causing dust should not be carried out on excessively windy days.
- Workers will be provided with masks for protection against the inhalation of dust and they should be trained for its use.
- Strict speed limit for the vehicle carrying the raw-material should be imposed.
- Emission of exhaust gases from vehicles used for construction should be controlled.

### **8.3.3 Impact on Water Environment**

The constructional activities will be associated with mechanical fabrication, assembly and erection civil work. The overall impact on water environment due to aforesaid project activities are considered short-term and in-significant.

#### **Nature of Impact**

The nature of said impact will be direct, low, short-term and hence in-significant.

#### **Mitigations**

Following mitigation measures will be adopted:

- Water conservation techniques should be adopted to conserve water.
- Labor should be trained to conserve the water.

### **8.3.4 Impact on Flora & Fauna**

No impact on the flora and fauna is being envisaged as said project will be established on proponent's own land by M/s Saif Garden. No additional disturbance is being envisaged for implementation of said project.

#### **Nature of Impact**

The nature of said impact will be direct, low, short-term and hence in-significant.

#### **Mitigations**

Following mitigation measures will be adopted:

- After the completion of construction phase trees will be planted in the designated green areas.
- For the management of landscape, local and native trees will be planted.
- Trees will be planted along the project area boundary.
- Unnecessary up-rooting of the trees and plants must be avoided.

### **8.3.5 Impact on Noise Environment**

The noise produced during construction phase may not have significant impact on the existing ambient noise levels as all sensitive receptors are located at adequate distance. The activities like; foundation, infrastructure and plant are considered as the main source of noise generation. The major constructional work will be carried out during the day hours only. The construction equipment may generate high noise which can affect the personnel operating the machines. Use of proper personnel protective equipment will mitigate any adverse impact of noise on the working population.

#### **Nature of Impact**

The nature of proposed impact will be direct, low, short-term and hence in-significant.

#### **Mitigations**

Following mitigation measures will be adopted:

- Selection of up to date and well-maintained equipment with reduced noise levels ensured by suitable in-built damping techniques or with appropriate muffling devices.
- Limiting noisy activities to the day hours, wherever possible.
- Providing the construction workers with suitable hearing protection like; ear cap, or earmuffs and training them how to use effectively.
- Use of low noise machinery, or machinery with noise shielding and absorption are the mitigation measures suggested for said project.

### 8.3.6 Socio-Economic Impacts

In project area, no significant changes are envisaged in traditional life style and occupation of local people residing in the nearby communities as it is being established at adequate distance from various sensitive receptors. The local people are rather benefited due to the provision of job opportunities. No impact is envisaged due to influx of workers as local will be preferred and hired for working. Social issues may arise which will cause minor negative impact on the social life style of people. Moreover, health and safety related issues may arise during the construction activities. These impacts are insignificant can be further reduced significantly by adopting best management practices.

#### Nature of Impact

The nature of said impact will be direct, low, short-term and hence in-significant.

#### Mitigation Measures

Following mitigation measures will be adopted to reduce the socio-economic impact on the community:

- Good relations with local communities will be promoted by encouraging Contractor to provide opportunities for skilled and un-skilled employment to the locals as well as on-job training.
- The contractor should prefer hiring local labor from adjacent community;
- The contractor will keep the copy of National Identity Card (CNIC) of his employees and will warn the workers not to involve in any anti-social activities otherwise they may face dire consequences.
- At the time of hiring the Contractor has to ensure that workers should be of good repute.
- First aid kits having all the necessary first aid stuff will be available at site.
- Routine medical check-ups of all the field staff including unskilled labor needs to be conducted by qualified physician and surgeon.
- Training of workers should be carried out for operating various constructional machinery, safety procedures should be adopted, environmental awareness should be carried out, equip all workers with safety boots, helmets, gloves, protective masks and monitoring of their proper and sustained usage will be carried out. In case of accidents, contractor will provide free medical treatment to the community.
- The Contractor will be responsible for sensitivity towards the local customs and traditions.

### 8.4 Impacts and Mitigation Measures during Operational Phase

The following section describes the potential impacts which are associated with the operation of above stated project.

#### 8.4.1 Noise

Noise pollution is not expected to occur beyond PEQS during the operational phase. The mechanical and electrical components of the proposed technology work within the permissible noise limit levels. Moreover, even if the noise level exceeds the allowable

levels during unexpected conditions, this will have no significant impact since the nearby residential areas are found at the safe distance as shown in the Google Earth Maps attached in **Section 3.1** and **Section 5.3**.

### **Nature of impact**

The nature of said impact will be direct, low, short-term and hence in-significant.

### **Mitigations**

In general, the following methods will be adopted to control the noise pollution from the proposed unit:

- Personal protective equipment like; ear plugs and ear muffs should be provided to employees working in the noise prone areas.
- Time to time tuning and maintenance of machineries should be done.
- Ambient noise levels as mentioned in PEQS will be complied.
- Monitoring of the ambient noise level will be carried out on regular basis.
- A greenbelt will be developed all around the plant which will be act as noise barrier.
- Residential area is at safe distance from selected site.
- Proper encasement of noise generating sources will be done to control the noise levels within limits.
- The use of complete or partial enclosures as and if required.
- Attenuation by use of sound absorbents on walls and fixed or suspended ceilings
- All the workers will be provided with ear plugs. All the transporters will be vised to carry out regular maintenance of their vehicles

### **8.4.2 Ambient Air Quality**

During operational phase of instant project there will be no source of air pollution during process activities. Only the dust can be generated from unloading or loading of raw material (if any)

### **Mitigations**

Following mitigation measure will be adopted to keep the ambient air quality of the area intact.

- PPEs along with the face mask will be provided to the workers and their regular usage will be ensured by the In-charge.
- Proper air circulation will be carried out to keep the indoor environment healthy.
- Company owned vehicles will be maintained on regular basis in order to avoid air emissions.
- Monitoring of the ambient air quality will be carried out on regular basis.
- Generators will be provided with proper enclosure, tuning and maintenance to control emissions (if any).

### 8.4.3 Water Resource

It is estimated that 560 gallons of water will be used during project operational phase. Wastewater will be generated which will be treated in to be installed wastewater treatment plant prior to the disposal into WASA drain.

#### **Nature of Impact**

The nature of the impact will be direct, low, short-term and insignificant.

#### **Mitigation**

Following mitigation measures will be adopted to reduce the impacts on water resource

- The generated wastewater will be treated through wastewater treatment plant.
- For recharging of the groundwater open green spaces will be left within the premises.
- Close the water tap when not in use to conserve the water resource.
- Provision of safe drinking water to the workers will be ensured.

### 8.4.4 Solid Waste Management

The construction phase of the project is expected to generate waste that would include; packing waste; scrap, excess construction materials and debris, domestic waste, empty containers and drums etc. The waste can pose a health hazard; pollute soil, surface and ground water if disposed off improperly.

#### **Nature of Impact**

The nature of impact will be direct, medium, long-term and significant.

#### **Mitigation**

Following mitigations should be adopted to reduce the issues related to the solid waste:

- The reusable waste will be sold to the in the open market whereas the rest will be managed as per the municipal work practices being observed in the area.
- Recyclable material should be separated at source and will be sold in the open market or to vendor (if any).
- Domestic solid waste should be stored in the covered bins in order to avoid the growth of vectors and rodents as well as to control the odor and to reduce public nuisance. It should be collected and disposed of as per area practice.
- Appropriate in-housekeeping, sanitary and solid waste management practices should be adopted.
- Regular visual monitoring will be carried out to ensure good house-keeping practices.

### 8.4.5 Traffic Congestion & Disturbance to Local People

Operational difficulties may be experienced at start-up or during periods when equipment malfunctions. For this purpose, vendor will train the team and that team will give trainings to the other team members.

#### **Nature of impact**

Due to the construction activities, the traffic in the project area will increase and may result in traffic disruption if proper parking facilities are not provided in the proposed project site.

### **Mitigations**

The following mitigation measures will be followed:

- Observation of timing by the vehicles carrying material of infrastructure to cause minimum disturbance to traffic on the existing road.
- The equipment and machinery must be stationed within the premises boundary to avoid the traffic congestion on the main Road.
- Transportation of raw material and heavy machinery will be done early in the morning;
- Adequate parking facilities will be provided within the boundary of the project area for construction machinery and vehicles bringing the construction material into the project area.

### **Physical impacts**

#### **Land**

After completion of construction, different native and ornamental plants will be planted in designated areas. This will improve the overall ecology, aesthetic and landscape of the area. This will have positive and significant impact on the land and soil condition of the area.

- **Nature of Impact**

The nature of impact is considered to be positive, long-term and significant.

#### **Noise Generation**

During operational phase, no significant source of noise is envisaged as it is a housing scheme.

- **Nature of Impact**

The nature of impact is considered to be negative, short-term and insignificant.

#### **Water Consumption**

In operational phase, Water Consumption for the proposed project will be domestic and would not have any adverse impact on water resources. The anticipated water demand will be fulfilled by ground water.

- **Nature of Impact**

Nature of impact would be direct, low, short-term and insignificant. The impacts can be minimized by following the mitigation measures.

- **Mitigation Measure**

- Water conservation program will be initiated to prevent wastage of water.
- All hose and tap connections are to be fitted with correct and appropriate plumbing fittings.
- Regular maintenance and monitoring of water supply system will be carried out.

#### **Wastewater Generation**

In operational phase, wastewater generated will be domestic. It will be treated through the septic tank prior to final disposal.

### ➤ **Nature of Impact**

Nature of impact will be direct, low, short-term and insignificant.

Implementation of the proposed mitigation measures and regular monitoring will not likely to leave any significant impact from the proposed project.

### ➤ **Mitigation Measures**

- Wastewater will be generated from municipal activities. Municipal wastewater will be treated through to be installed wastewater treatment plant before Disposal into WASA drain
- Domestic wastewater will not be allowed to pollute any surface or groundwater body.
- Water conservation strategies will be employed to avoid wastage of water.

### **Solid Waste**

It is expected that certain Amount of domestic solid waste will be generated during the operation stage. The solid waste generated will include kitchen waste, plastic waste, paper waste etc. The solid waste collection system will be designed by the Proponent & specific area has been allocated for this purpose. After collection, solid waste will be disposed of properly.

### ➤ **Nature of Impact**

The nature of impact will be direct, medium, long-term and significant which can be reduced following the mitigation measures.

### ➤ **Mitigation measures**

- A door-to-door solid waste collection system will be formulated to avoid public nuisance and to provide hygienic conditions.
- Solid waste will be stored in covered bins in order to avoid the growth of vectors and rodents as well as to control the odor and to reduce public nuisance
- Waste from containers shall be collected separately on a daily basis.
- All the collection bins will be labeled & properly maintained on regular basis.

### **Health & safety**

Health & safety risks are likely to occur during operational phase.

### • **Nature of Impact**

Nature of impact will be moderate, short term and direct.

### ➤ **Mitigation Measures**

- To avoid any chance of fire, a comprehensive firefighting plan will be developed that will include all types of fire extinguishers, fire hydrants, sand buckets, etc.
- Personal Protection Equipment (PPEs) such as ear plugs, gloves, goggles and masks will be provided to the people wherever necessary.
- First Aid Box will be kept in easy approach of all residents in case of any injury or mishap.

**Residential Facilities**

There will be more residential facilities in the project area due to establishment of said project. A range of affordable, accessible and decent housing options will be provided to residents with all facilities at one place.

In totality, the overall economic conditions of the area will be improved.

**Table 13: Nature and Degree of Positive Socio-economic Impacts**

<b>Nature Of Positive Impact</b>	<b>Degree Of Impact</b>	<b>Description</b>
<b>I. Construction Phase</b>		
Job Opportunity	Positive Impact	Generate unskilled, semi-skilled and skilled jobs as construction labors, and other service providers.
Economic Growth	Positive Impact	Economic impact in terms of generating opportunities for other business-like sourcing of man and material supplies for specialized jobs.
<b>II. Operation Phase</b>		
Residential Facilities	Major Positive Impact	To provide a range of affordable, accessible and decent housing options to residents.
Tree Planation	Major Positive Impact	The plantation will be carried out at designated green area which will improve the overall ecological conditions. It will help to increase the aesthetic beauty of area.

➤ **Impact Screening Checklists:**

The impact screening checklist is developed to screen out the potentially insignificant environmental and social impacts from the potentially significant adverse environmental and social impacts during construction and operational phases of the said project. The objective of the impact screening process is to assess the significance of the issues related to the air resource, water resource, noise, the hazards and external constraints. Each activity impact on various environmental parameters is given below:

## M/s SAIF GARDEN

### Impact Screening Checklist of Construction Phase

Environmental Sensitivities	Nature of Likely Impacts						Impact Significance				
	Low Intensity	Moderate Intensity	High Intensity	Local	Moderate Spread	Regional	Beneficial	insignificant	Short Term	Moderate	Long Term
Air Quality		✓		✓							
Noise		✓		✓							
Water Quality	✓				✓						
Land Use	✓										
Flora		✓									
Fauna		✓									
Local Economy				✓	✓						
Social Impacts				✓	✓						
Health & Safety			✓		✓						

### Impact Screening Checklist of Operational Phase

Environmental Sensitivities	Nature of Likely Impacts						Impact Significance				
	Low Intensity	Moderate Intensity	High Intensity	Local	Moderate Spread	Regional	Beneficial	insignificant	Short Term	Moderate	Long Term
Air Quality	✓			✓							
Noise		✓		✓							
Water Quality	✓			✓							
Land use	✓										
Flora		✓		✓							
Fauna	✓			✓							
Local Economy		✓			✓						
Social Impacts		✓		✓		✓					
Health & Safety		✓		✓							

### **8.5 Potential Environmental Enhancement Measures**

Following potential environmental enhancement measures will be adopted:

#### **i. Enhancement in Employment Opportunities**

During Establishment the employment opportunity will be enhanced. Workers will be hired from local community, include; skilled and un-skilled workers. During construction/Installation phase 15-20 workers will be hired and in operational phase approximately 15-20 workers will be employed. It will include technical and non-technical staff. Locals will also have the opportunity to diversify their income by being employed during various project phases. Hence, there will be an increased employment opportunity for the local people which will have a positive impact on the socio-economic status of the area.

#### **ii. Tree Plantation**

At the end of the construction landscape of the area will be enhanced by planting native and ornamental plants at the designated green areas. This will enhance the aesthetic beauty of the area.

## **CHAPTER 9: ENVIRONMENTAL MANAGEMENT AND MONITORING PLAN**

### **9.1 General**

This chapter summarizes the various mitigation measures as outlined previously in this EIA Report that will be implemented during the designing, Establishment operational and decommissioning stages of project. It does not discuss further the mitigation measures which have been adopted within the design and planning of the project, as these are comprehensively covered in previous section of this EIA Report. Outline and key features of the EMMP for operations phase of the aforesaid project is presented in the sub-sections below. As per the environmental legislation in Pakistan, the compliance status of the conditions mentioned in the construction/Installation should be submitted along with other documents 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 requires regular environmental monitoring.

### **9.2 Objectives.**

An Environmental Monitoring Plan (EMP) was outlined alongside Environmental Management Plan to ensure all the corrective actions to counter adverse impacts which gives a detailed EMMP. The EMMP will serve as a principal execution module of the project that would not only mitigate adverse environmental impacts during the construction/installation and the operational phase of the project but also ensures that environmental standards and good in-housekeeping are being practiced. Continuous environmental monitoring is exercised to ensure that preventive measures are in place and effective to sustain environmental integrity. The key objectives of EMMP are:

- To outline functions and responsibilities of persons associated with the commencement of the instant project.
- To state and implement standards and guidelines which are required under environmental legislations particular in context to the proposed project commencement.
- To facilitate the implementation of the mitigation measures by providing the technical details of each Project's impact and proposing implementation schedule of the proposed mitigation measures.
- Define a monitoring mechanism and identify monitoring parameters to ensure that all proposed mitigation measures are completely and effectively implemented.
- Identify the resources required to implement the EMMP and outline corresponding financing arrangements.

**9.3 Proposed Mitigation Actions and Monitoring Program**

It lists all the mitigation measures identified in the EIA and the associated environmental or social aspect in line during construction/Installation phase and operational phase with the administrative framework involving all the responsible implementing authorities who are required to take the planned actions/measures and monitor it accordingly. It enhances project benefits by reducing its impacts and making it environmentally friendly. The environmental management and monitoring plan is given below in Table 14.

## M/s SAIF GARDEN

**Table 14: Environmental Management Plan**

SR.#	TYPE OF IMPACT	TARGETS TO BE ACHIEVED	MITIGATION MEASURES	RESPONSIBILITY	
				IMPLEMENTATION	MONITORING
<b>CONSTRUCTION/DEVELOPMENT PHASE</b>					
<b>1.</b>	<b>Air Quality</b>				
<b>a.</b>	Dust Emission	Compliance with prescribed PEQs	<ul style="list-style-type: none"> <li>➤ Monitoring of air quality should be conducted by 3<sup>rd</sup> party EPA certified Laboratory</li> <li>➤ Well maintained machinery should be used at site and its regular monitoring should be ensured.</li> <li>➤ Restrict movement of vehicles during construction hours.</li> <li>➤ Regulate speed of vehicles to reduce fugitive dust.</li> <li>➤ To cover sand piles with tarpaulin sheet to suppress dust emission.</li> <li>➤ Workers will be provided with Personal Protective Equipment (PPEs) such as face masks and goggles.</li> </ul>	Contractor/ Proponent	Proponent
<b>2.</b>	<b>Noise</b>				
<b>a.</b>	Noise pollution	Compliance with prescribed PEQs	<ul style="list-style-type: none"> <li>➤ All machinery should be fitted with acoustic insulation.</li> <li>➤ Providing the construction workers with suitable hearing protection like earmuffs and training them in their use.</li> </ul>	Contractor/ Proponent	Proponent

## M/s SAIF GARDEN

			<ul style="list-style-type: none"> <li>➤ Use noise-abating methods/devices wherever needed and practicable.</li> </ul>		
<b>3.</b>	<b>Water Sourcing</b>				
<b>a.</b>	Water Source	Water Conservation	<ul style="list-style-type: none"> <li>➤ Availability of water should be assessed to evaluate the impact on community resources.</li> <li>➤ Water should be used in such way that would not deplete water sources.</li> <li>➤ Protection of groundwater reserves from any source of contamination such as the construction and oily waste that will degrade its potable quality.</li> </ul>	Contractor/ Proponent	Proponent
<b>4.</b>	<b>Traffic</b>				
	Traffic Congestion	Smooth way for vehicles	<ul style="list-style-type: none"> <li>➤ Heavy traffic during construction phase should come to the project site during early morning or late-night hours.</li> <li>➤ During construction phase, regulate speed of vehicles.</li> <li>➤ Designated parking areas will be provided for different type of project vehicles within the project site.</li> </ul>	Contractor/ Proponent	Proponent
<b>5.</b>	<b>Wastewater Generation</b>				
<b>a.</b>	Wastewater	Groundwater protection	<ul style="list-style-type: none"> <li>➤ Wastewater generated will be municipal and treated through wastewater treatment facility prior to final disposal into disposal mains.</li> </ul>	Contractor/ Proponent	Proponent
<b>6.</b>	<b>Solid Waste Management</b>				

## M/s SAIF GARDEN

a.	Solid Waste	Proper & safe handling and disposal of construction related waste	<ul style="list-style-type: none"> <li>➤ Confirm amounts of surplus rock-based materials can be reused in the project or by other interested parties for other projects.</li> <li>➤ Records of all waste generated during the construction period will be maintained.</li> </ul>	Contractor/ Proponent	Proponent
<b>7.</b>	<b>Health and Safety</b>				
a.	Workers Health & Safety	Prevention of any possibility of work site accident/ impact on worker's health	<ul style="list-style-type: none"> <li>➤ Better safety conditions during construction phase should be ensured.</li> <li>➤ Providing every worker with skull guard or hard hat and safety shoes.</li> <li>➤ Conduct proper worker health and safety training and orientation prior to initiation of tasks.</li> </ul>	Contractor/ Proponent	Proponent
<b>8.</b>	<b>Socio-Economic Impacts</b>				
a.	Socio-Economic Impacts	Better lifestyle	<ul style="list-style-type: none"> <li>➤ Local contractors will be given preference for hiring equipment and machinery during operation.</li> <li>➤ A complaint register will be maintained on site during construction to record complaints of the nearby residents.</li> <li>➤ The site must be kept clean to minimize the visual impact of the site.</li> </ul>		

## M/s SAIF GARDEN

<b>OPERATIONAL PHASE</b>					
<b>1.</b>	<b>Solid Waste Management</b>				
<b>a.</b>	Solid Waste Generation	Handling and proper disposal of solid waste	<ul style="list-style-type: none"> <li>➤ A door-to-door solid waste collection system will be formulated to avoid public nuisance and to provide hygienic conditions.</li> <li>➤ Solid waste will be stored in covered bins in order to avoid the growth of vectors and rodents as well as to control the odor and to reduce public nuisance.</li> <li>➤ All the collection bins shall be properly labeled &amp; maintained on regular bases.</li> </ul>	Environment Officer	Proponent
<b>2.</b>	<b>Air Quality</b>				
<b>a.</b>	Air Emissions	Better Air Quality	<ul style="list-style-type: none"> <li>➤ Adequate greenbelt will be developed and maintained to get better quality of air.</li> </ul>	Environment Officer	Proponent
<b>3.</b>	<b>Water Sourcing</b>				
<b>a.</b>	Water Sourcing	Water conservation	<ul style="list-style-type: none"> <li>➤ Water conservation program will be initiated to prevent wastage of water.</li> <li>➤ All hose and tap connections will be fitted with correct and appropriate plumbing fittings.</li> </ul>	Environment Officer	Proponent
<b>4.</b>	<b>Wastewater Generation</b>				
<b>a.</b>	Wastewater	Handling and proper disposal of wastewater	<ul style="list-style-type: none"> <li>➤ Wastewater will be generated from municipal activities. It will be treated through wastewater treatment facility before disposal into WASA sewerage lines.</li> </ul>	Environment Officer	Proponent

## M/s SAIF GARDEN

			<ul style="list-style-type: none"> <li>➤ Water conservation strategies will be employed to avoid wastage of water.</li> </ul>		
5.	<b>Health and Safety</b>				
a.	Worker's Health and Safety	Prevention measures against labor health problems	<ul style="list-style-type: none"> <li>➤ To avoid any chance of fire, a comprehensive firefighting plan will be developed that will include all types of fire extinguishers, fire hydrants, sand buckets, etc.</li> <li>➤ Personal Protection Equipment (PPEs) such as ear plugs, gloves, goggles and masks will be provided to people wherever necessary.</li> <li>➤ First Aid Box will be kept in easy approach of all residents in case of any injury or mishap.</li> </ul>	EHS Officer	Proponent
6.	<b>Noise Emissions</b>				
	Noise Emissions	Prevention measures for noise-free Environment	<ul style="list-style-type: none"> <li>➤ Adequate greenbelt will be developed and maintained to get noise-free Environment.</li> </ul>	EHS Officer	Proponent

**9.4 Schedule for Implementation and Environmental Budget**

The Establishment will be completed within 6 months after getting Environmental Approval/NOC. The total cost of the project is **PKR 7 billion approx.** which includes; the cost of civil work, implementation of mitigation measures as suggested in EIA Report, site restoration, etc. Environmental budget of **PKR 1 million** will be allocated to protect the environment which will include; tree plantation, environmental monitoring as per SMART Rules, etc.

**9.5 Environmental Management Team**

The primary responsibility for implementing different aspects of the EMP within the company lies with the concerned departments of **M/s Saif Garden.**

**9.6 Proposed Monitoring program**

Environmental monitoring is a vital component of the Environmental Management Plan. It is the mechanism through which the effectiveness of the EMP 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. For domestic activities already constructed facilities will be used. Solid waste disposal will be according to standard practices of area. It should be noted that it is difficult to outline a formal monitoring protocol for specific environmental parameters and key impacts until detailed project design has been completed. A formal monitoring protocol will be included within the revised EMP once the detailed project design has been completed.

**Table 15: Proposed Monitoring Program**

<b>Components</b>	<b>Parameter to be Monitored</b>	<b>Measurement</b>	<b>Frequency</b>	<b>Location</b>	<b>Responsibility</b>
Land Resource	Soil quality	Regular visual monitoring and soil analysis	Daily	On-site	Project Manager
Noise Levels	Noise level on the site and adjacent area on dB(A) scale	Noise level reading will be measure on regular basis	Regularly	At all noisy locations within the facility	HSE Officer
Workers safety	Injuries and accidents	Recording injuries	Daily	On-site	HSE Officer
Wastewater	As per SMART Rules	Testing by EPA Certified Lab	Quarterly	On-site	Environmental Manager, HSE Officer

Air Emissions	As per SMART Rules	Testing by EPA Certified Lab	Quarterly	On-site	Environmental Manager, HSE Officer
Ecological Resource	Flora & Fauna of the area	Observation by conducting surveys	During Baseline Survey, once in a year and after the completion of the Project	Around project site	Project Manager/Environmental manager

**9.7 Proposed EMP reporting and reviewing procedures**

Following protocols will be adopted for reporting & reviewing EMP:

- During Establishment EMP reporting and reviewing will be done by the contractor/HSE department. Regular monitoring will be done and reports will be submitted in EPA, Punjab as per condition of Environmental Approval of construction/Installation phase.
- Monitoring reports will be reviewed by Environmental Management Team and HSE Department of M/s Saif Garden and then will be shared with EPA, Punjab.
- Photographic records will also be maintained on regular basis.
- Recorded data will be reviewed by supervisory contractor/proponent so that it can be further improved if required.

**9.8 Environmental Training**

M/s Saif Garden will ensure in-house training for the project staff, labor and the supervisory staff through the provision of one day basic training and one day advanced training, covering environmental and social aspects of the projects in general and implementation requirements will emphasis on the development project in general, on the roles & responsibilities of the staff and the labor while executing the environmental monitoring plan in particular. The training protocols will include the following aspects:

- Procedures for monitoring the air quality parameters and measures to be adopted for avoiding/minimizing air pollution, particularly from the transportation of raw material and final goods will be given to the Environmental Management Team.
- Safety measures against hazards for workforce and the local communities arising from the construction and installation activities.
- Emergency response trainings.
- Fire-fighting trainings and drills.
- Use of safety gadgets by the workforce.

## **CHAPTER 10: STAKEHOLDER CONSULTATION**

### **10.1 General**

Public consultation refers to the process by which the concerns of local affected persons and others who have plausible stake in impacts assessment of the project or activity are ascertained with a view to taking into account all the material concerns in the project or activity design as appropriate. According to the IEE and EIA Review Regulations, 2022 public consultation is mandatory for any socio-environmental study. For this purpose, assessment survey and public consultation sessions held with different stakeholder groups that may be impacted. The consultation process was carried out in accordance with the guidelines laid by EPA, Punjab. The objectives of this process were to:

- Share information with stakeholders on project construction/installation and operation.
- To assess the impacts on the physical, biological, and socio-economic environment.
- Understand stakeholder concerns regarding various aspects of the project.
- Understand the perceptions, assessment of social impacts and concerns of the communities of the project area.
- Find out the awareness level and situation of acceptability to identify any issues for the implementation of said project.
- To invite people to express their views about the positive/negative impacts on their life styles and environment.

This report includes all the comments, which were taken into account in preparing the definitive development concept for the installation of the purposed plant. Public consultation performas are attached herewith as **Annex-H**.

### **10.2 Consultation Mechanism**

Primary stakeholders were consulted during informal and formal meetings. The consultation process was carried out in the Urdu language. During these meetings a simple, non-technical, description of the project was given, with an overview of the project's likely human and environmental impact. This was followed by an open discussion allowing participants to voice their concerns and opinions. In addition to providing communities with information on the proposed project, their feedback was documented during the primary stakeholder consultation. The issues and suggestions raised were recorded in field notes for analysis and interpretation.

By reaching out to a wider segment of the population and using various communication tools such as participatory needs assessment, community consultation meetings, focus

group discussions, in-depth interviews, and participatory rural appraisal EIA involved the community in active decision-making. This process will continue even after this EIA has been submitted, as well as during future EIA in which similar tools will be used to create consensus among stakeholders on specific environmental and social issues.

Secondary stakeholder consultations were more formal as they involved government representatives and local organizations, consulted during face-to-face meetings. They were briefed on the EIA process, the project design, and the potential negative and positive impact of the project on the area's environment and communities. It was important not to raise community expectations unnecessarily or unrealistically during the stakeholder consultation meetings in order to avoid undue conflict with community's leaders or local administrators. The issues recorded in the consultation process were examined, validated, and addressed in the EIA Report.

This section involves communication of possible impacts and concerns with

- ✓ Proponents Environmental Management Team
- ✓ The responsible authority
- ✓ Other departments and agencies
- ✓ Environmental Practitioners and experts
- ✓ Affected and wider community

### **10.3 Proponents Environmental Management Team**

Consultation regarding M/s Saif Garden was done with Proponent's Environmental Management Team and anticipated impacts were discussed. Concerns of locals, Environmental Practitioners & experts were discussed and asked to consider them while construction of above-said project. Locals will be preferred for employment after providing proper training. Mitigation measures mentioned in EMP will be truly implemented.

#### **10.3.1 Responsible Authority**

Overall responsibility for implementation of EMP will be that of project proponent. An HSE Manager/Asst. Manager of relevant qualification will be appointed. HSE Manager/Asst. Manager will act as Environmental Manager and will manage the all-safety related hazards, environmental issues and ensure the compliance of PEQS.

#### **10.3.2 Other departments and agencies**

Different departments were consulted regarding said project within study area of project area.

**10.3.3 Consultation with Government Departments**

Various departments were consulted by the socio-environmental team of the consultants and concerned details about the project were noted down through personal interviews, group meetings, etc., in their offices.

**10.3.4 Environmental Practitioners and experts**

Consultation with environmental practitioners and experts was noted and their comments and suggestions were observed and mentioned below.

**Table 16: Consultation with Environmental Practitioners and Experts**

Sr. No	Name	Qualification	Comments/Suggestions
1.	<b>Miss Mahreen</b>	B.S Environmental Engineer	She said that: <ul style="list-style-type: none"> <li>• Environmentally friendly operation of said facility should be ensured. Moreover, it will help to comply with PEQS.</li> <li>• Wastewater should be disposed of properly.</li> </ul>
2.	<b>Mr. Salman</b>	BS Environmental Sciences	Following comments/suggests were noted: <ul style="list-style-type: none"> <li>• He said that locals should be preferred for employment opportunity.</li> <li>• In case of outsider’s residence must be provided within the facility or in its nearby vicinity.</li> <li>• Proper mitigation measures must be adopted during construction and operation of said project.</li> </ul>
3.	<b>Miss. Anzala</b>	B.S Environmental Engineer	<ul style="list-style-type: none"> <li>• She said that in case of removal of vegetation trees must be planted after construction at designated green areas.</li> <li>• More water conservation strategies must be adopted.</li> <li>• Solid waste must be collected and dispose off properly by using standard practices of the area.</li> </ul>

4.	<b>Miss Tehreem</b>	B.S Environmental Engineer	<ul style="list-style-type: none"> <li>• Proper leveling and commissioning must be done at the end of civil work.</li> <li>• Environmental manager must be hired to ensure the compliance of PEQS.</li> <li>• With establishment of said project the impact due to the disposal of wastewater should be adopted as per standard practices of the area</li> </ul>
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#### 10.4 Affected and Wider Community

Social survey was conducted to consult with local community. Their concerns were noticed and discussed with proponent and their team. Majority was in favor of project their details are given below in table

**Table 17: Concerns Noted during Community Survey**

Sr.#	Respondents	CNIC/Contact No.	Concerns
i.	<b>Talha Khan</b>	0315-7619321	During the survey in the study area following concerns of the local community were noted: <ul style="list-style-type: none"> <li>➤ During construction and operation locals should be preferred for the job opportunities.</li> <li>➤ Solid waste should not be collected at site, it should be disposed of properly.</li> <li>➤ Health and safety of the workers should be ensured.</li> <li>➤ Workers should be hired from local community.</li> <li>➤ Indigenous trees around the project area should be planted to control air pollution.</li> <li>➤ During construction phase dust emission should be controlled.</li> <li>➤ An effective EMMP should be designed and enforced with true spirit.</li> </ul>
ii.	<b>Sulman Ahmad</b>	0311-6719687	
iii.	<b>Adil Mehmood</b>	0335-6473921	
iv.	<b>Mazhar Fareed</b>	0302-0853768	
v.	<b>Arsalan Muneer</b>	0306-3590816	
vi.	<b>Ismail Usman</b>	0345-4946755	
vii.	<b>Muddasar Hussain</b>	0301-8679214	
viii.	<b>Muhammad Arslan</b>	0309-4631563	
ix.	<b>Adnan Sabir</b>	0305-8212677	
x.	<b>Umar Farooq</b>	0341-7922769	
xi.	<b>Tahir Maqsood</b>	35301-5814610-9	
xii.	<b>Rao Abdul Rasheed</b>	35102-0597328-7	
xiii.	<b>Asif Mashi</b>	35102-3522898-9	
Xiv	<b>Vishal Manzoor</b>	35102-9004606-7	