List of Figures

Executive Summary

Title & Location of the project

Subject project for which this Environmental Impact Assessment (EIA) Study has been conducted is the proposed Towel manufacturing unit under the name of M/s Roomi Fabrics Limited at Plot no. 1C-6C, Quid-e-Azam Business Park, Sheikhupura.

The proposed project falls under Clue 9 of category B of Schedule II of Review of IEE and EIA Regulations, 2000. TORs of the study under clause 5 (f) of policy and procedure for the filing, review and approval of environmental assessment are annexed as ***Annexure – A.***

Location

Subject proposed project is located at Plot no. 1C-6C, Quid-e-Azam Business Park, Sheikhupura.

Project land coordinates are as follows:

Front: Road

Back: Open Plot

Left: Open Plot

Right: Open Plot

Name of the proponent

Name: Muhammad Akbar Mian S/O Mian Imam Din

Designation: Proponent

CNIC: 35202-2700599-9

Mailing Address: House no.1485/C-1/C Sarwar Road, Near Lahore Cannt Police Station, Lahore Cannt, Lahore

For further details CNIC of the proponent and other relevant documents are attached with this report.


Google Map: "Roomi Fabrics Limited"
Plot no.1C-6C Quid-e-Azam Business Park,Sheikhupura.
Legend
31.7333101,74.0890418
Movie Point & PAF Emergency?
Lahore-Islamabad Motorway
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Movie Point & PAF Emergency...
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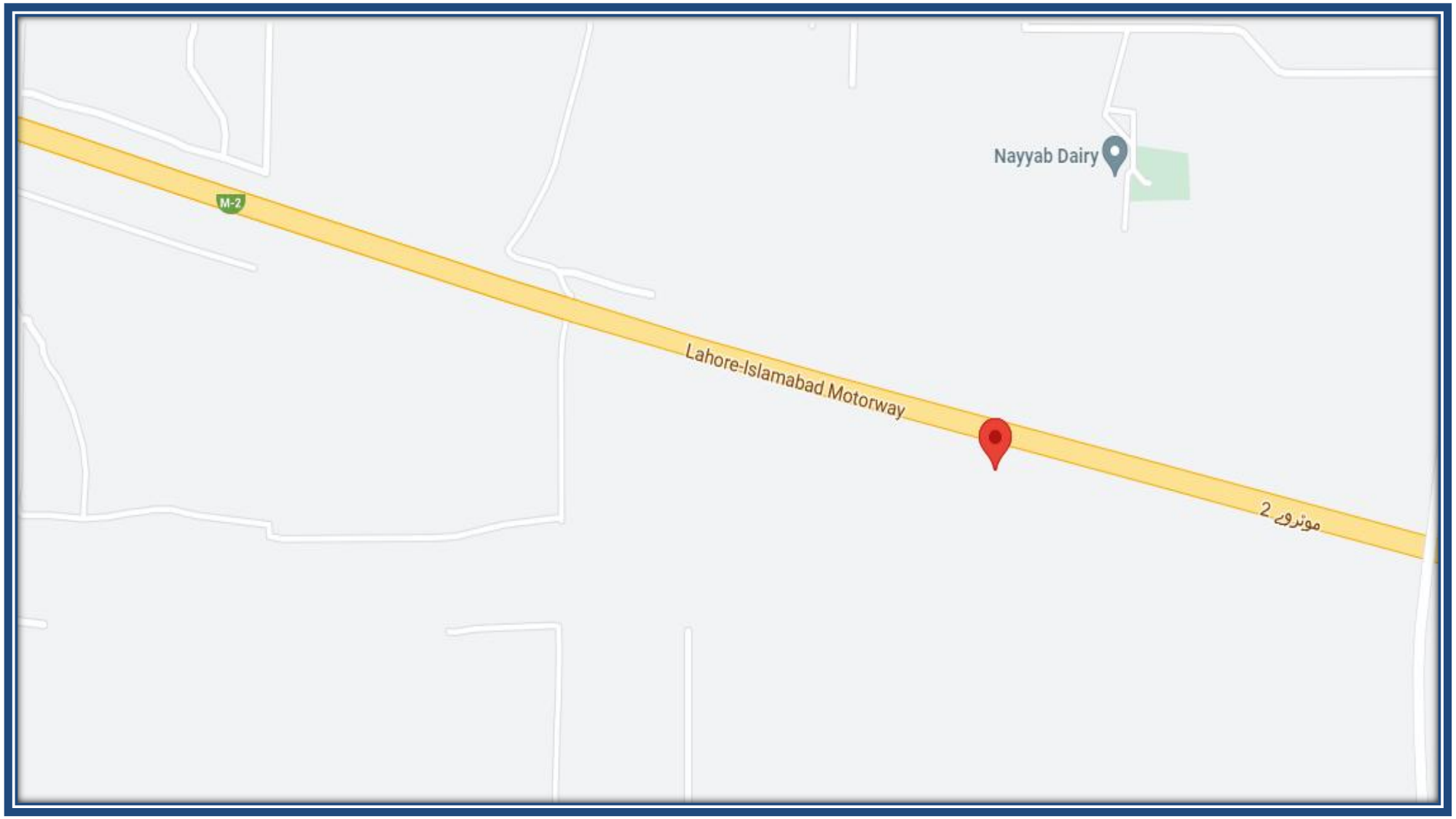


Figure 2: Aerial view of the project site

Name of organization preparing the report:

Safe Enviro-Solutions, as independent consultants, has beenappointed by the proponent to conduct Environmental Impact Assessment Study.

Company office address: *99/Burj-Al-Saeed building Room #102, Main Ferozepur Road, Ichra, Lahore.* .

Phone: *+92 36 8779107*

Email: *safe.envirosolutions@gmail.com*

For detail company profile see the *Chapter # 1 "Introduction"*

A brief outline of the proposal

Name of the project:	**Proposed Towel manufacturing unit under the name of M/s Roomi Fabrics Limited**
Location of the project:	Plot no. 1C-6C, Quid-e-Azam Business Park, Sheikhupura
Proposed Area:	Total covered area for proposed unit is 294,728.79 SFT .
Nature of Project:	Subject project is proposed unit.
Cost of the project:	Total cost of the project will be approx. 6.140 Billion rupees.
Project process:	Project process will include the manufacturing of towels through Weaving, Dyeing, Cutting, Stitching process.
Raw materials	Raw cotton will be the raw material of the project process.
Production capacity	14908 M.Tons/Anum will be the production capacity.
Proposed machines details	Complete details of machinery have been provided in chapter 2.
Power Requirement:	The predicted total electrical load for unit is up to

	2.5MW which is fulfilled by WAPDA & Standby Gas generators of 1.6MW each.
Labor/ Workforce:	During construction: 200 (estimated) During Operation: 1700 (estimated)
Water Requirement:	During the constructional phase of the project approximately 1500 gallon water will be required per day for constructional and domestic uses. During the operational phase of the project approx. 120 m^3/day of water will be required for project process and domestic purposes.
Solid waste:	Approx. 400-500 kg/day constructional and domestic waste will be produced during the constructional phase of the project. During operation: 200-300 kg/day domestic waste

The major impacts

In order to identify all the activities associated with the project during construction and operation phase with potential to cause adverse environmental impacts and harm a thorough review has been conducted. Project will not have any significant adverse impacts on the nearby community and on environment. Overall the project will have positive impacts on the local population and country as a whole. Moreover, area for plantation is also reserved for air purification within the project vicinity.

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

Potential Impact	Criteria for determining Significance	Key Mitigation Measures
Dust Emissions—Particulate matter emitted during construction activities and gaseous emissions from site generators and transportation vehicles can result in deterioration of ambient air quality in the vicinity of the project site, and be a nuisance to the surrounding workers.	PEQS for Ambient Air	Sprinkling of water on dusty tracts and surfaces is recommended; Use of wind shield around stockpiles is recommended; Vehicle speed restrictions should be applied in the project area; Raw materials should be transported in covered trucks; Ensuring that no stockpile is within 250 m of the community.
Construction Noise- Disturbance to surrounding communities due to operation of construction machinery at the project site.	PEQS for Noise OSHA standards	Activities generating high levels of noise should be minimized at the project site. If the noise level will exceed the permissible limits with reference to national and OSHA standards, following recommendations are suggested to take action against the high noise levels: • Proper tuning of construction machinery and vehicles is recommended. • Training of the person and professionals involved in the installation of the plant is recommended. Ear muffs and ear plugs are recommended in case of high noise levels.
Solid waste Management— Improper waste management may generate health and aesthetic issues	Generation of excessive waste; Recyclable waste and reusable waste is discarded; Littering; Improper disposal.	Proper solid waste management plan should be devised and implemented; Constructional waste should be utilized for road filling and maintenance. Domestic waste should be disposed of properly, handed over to contractors, placed in bins.
Vegetation Loss/ Soil erosion— Loss of vegetation as a result of land	Unnecessary or excessive removal of trees and shrubs	Preparation of a Reinstatement Plan; Minimization of the felling of trees and clearing of vegetation; and avoidance of

clearance for the construction purposes		the use of fuel wood
Water Resources— The extraction of water for the project construction activities can affect the groundwater availability for the project area Communities	Water extracted for the project has directly affected the ability of the community to meet their water needs	No impact on the community groundwater needs is envisaged as a result of the project.
Soil Contamination—Oil and chemical spills can contaminate the soil	Presence of visible amount of hydrocarbon in soil	Provision of spill prevention and control kits; Use of impermeable surfaces in workshops, and storage areas; Contaminated soil will be collected and incinerated.
Socioeconomic Issues **Workers Safety—** Safety hazards associated with the construction activity, particularly with the increase in traffic at the project site.	No specific guidelines exist. A significant impact will be interpreted if there are complaints from the community or the occurrence of any injury or loss	Speed limit of 10 km/h will be maintained on the access road; Traffic controller will be stationed on the access road; night driving will be kept to a minimum
Project and Community Interface—Inter-cultural differences between the project staff from other areas and the local community	No community complaints	Training of the non-local project staff on local culture and norms; Avoidance of unnecessary interaction of local population with the non-local project staff

Table: Summary of Environmental impacts of the project during the operation phase and their mitigation measures:

Potential Impact	Criteria for determining Significance	Key Mitigation Measures
Dust Emissions- Particulate matter emissions during project process can deteriorate the air quality in the working area and be a nuisance for the workers' health.	OSHA Standards	PPEs i.e. masks will be provided to workers during the working hours. Proper ventilation should be ensured in the working area. Vehicles to use for thetransportation of materials should be properly tuned.
Gaseous emissions from site generators, boiler and transportation vehicles can	PEQS for Ambient Air	Generators should be tuned regularly and their PEQS

result in deterioration of ambient air quality of the outdoor environment.		compliance should be ensured. Venturi and wet scrubber will be installed at the stack of boiler to control the air emissions from the boiler. Monitoring should be conducted on Monthly basis as per EPA PEQS Rules.
Machinery Noise- Working of machinery can be a nuisance for the workers in the working area.	OSHA Standards	PPEs i.e. ear muffs should be provided to workers in case of high noise.
Health & Safety Issues- Health and Safety issues e.g. Cuts and Injuries may be caused during the machinery handling.	OSHA Standards	Proper training of the staff should be conducted to avoid the accidents. First aid measures should be provided at the workplace.
Discharge of wastewater- The discharge of untreated wastewater can be a negative impact.	PEQS for Municipal and Liquid Industrial Effluents (mg/l, unless otherwise defined)	Compliance of PEQS for Municipal and Liquid Industrial Effluents will be ensured. Monitoring will be conducted as per PEQS and reports will be submitted to EPA.
Solid waste management- Improper solid waste management may cause health problems and aesthetic issues	Exposure to potentially hazardous waste; Generation of excessive waste; Recyclable waste and reusable waste is discarded; Littering; Improper disposal.	Waste bins should be placed at suitable places. Domestic and process related waste should be handed over to contractors.
Groundwater—The increased withdrawal of groundwater for the project will affect the groundwater resources of the project area	Water extracted for the project has directly affected the ability of the community to meet their water needs	No impact on the community groundwater needs is envisaged as a result of the project.

Proposed Environmental Monitoring

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

development and compliances with PEQS and legal obligations. Monitoring for following Environmental Parameters is recommended:

- **Ambient Air**

  Monitoring for ambient air should be conducted on quarterly basis during constructional phase of the project and report should be submitted to EPA Punjab.

- **Noise**

  Regular monitoring for noise level should be maintained periodically during construction and operation phases of the project and report should be submitted to EPA Punjab.

- **Water quality**

  Regular monitoring of water quality should be conducted during construction and operation phases of the project and report should be submitted to EPA Punjab. Record should be maintained regarding the underground water pump and consumption.

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

CHAPTER # 1

INTRODUCTION

This Section of the report provides an overview of the rational of the Project, objective of project, requirement of the project, purpose of the report and approach adopted to conduct the Environmental Impact Assessment Study.

Purpose of the report

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

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

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

Identification of the project and proponent

The proposed project falls under Clause 9 of category B of Schedule II of Review of IEE and EIA Regulations, 2000. TORs of the study under clause 5 (f) of policy and procedure for the filing, review and approval of environmental assessment are annexed as ***Annexure –A.***

Proponent:

Name: Muhammad Akbar Mian S/O Mian Imam Din

Designation: Proponent

CNIC: 35202-2700599-9

Mailing Address: House no.1485/C-1/C Sarwar Road, Near Lahore Cannt Police Station, Lahore Cannt, Lahore

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

Details of Consultant

Safe Enviro-Solutions is an independent company, who conducts IEE, EIA, EMP and other environmental investigations through its panel of environmental consultants, public participation practitioners and experienced environmental managers. The company has its own recommended instruments to check the baseline environmental data/PEQS and lab analysis facility for water, waste water priority parameters.

Company office address:*99/Burj Al-Saeed building Room #110, Main Ferozepur Road, Ichra, Lahore.* .

Phone: *+92 36 8779107*

Email: *safe.envirosolutions@gmail.com*

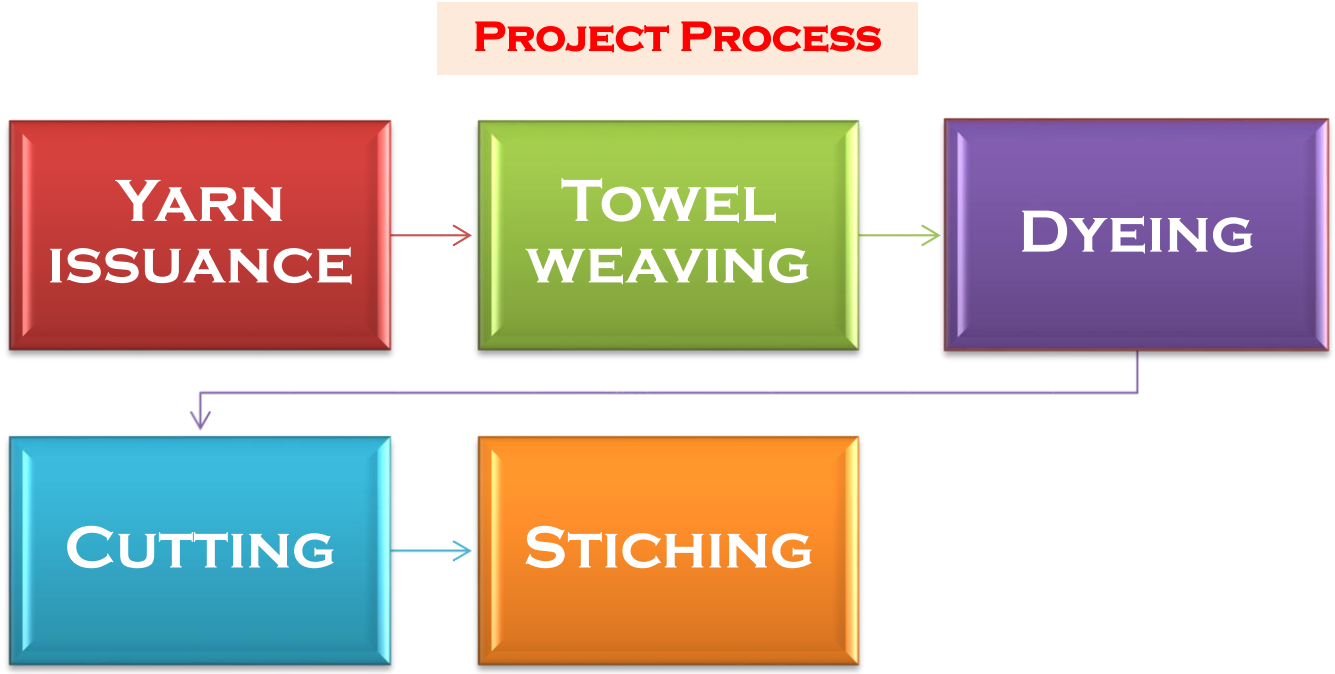
The current study was carried out by the following professionals:

Name	Qualification	Position in the EIA/IEE Team
Muhammad Rehman Majeed	M.Phil (Environmental Science) GCU Lahore	Project Incharge And Supervisor
Muhammad Shahzad	M.Phil Environmental Science GCU Lahore	Team Leader and Coordinator (Author of the Report)
Mohsin Ali	M.Phil Environmental Science GCU Lahore	Senior Environmentalist (Field Analyst)
Abid Rasool	BS (Hons) Environmental Sciences (GCU Lahore)	Environmental Scientist

Ammara Anwar	MS (Environmental Science) (PU Lahore)	Research Associate (Author of the Report)

Brief description of Nature, Size and Location of Project

Subject project is the proposed Towel manufacturing unit under the name of M/s Roomi Fabrics Limited located at Plot no. 1C-6C, Quid-e-Azam Business Park, Sheikhupura. . Total area of proposed unit is 33.45 Acre. Open area of proposed unit is 193088.05 SFT. Ground Floor covered area of proposed unit is 236197.00 SFT. Total covered area for proposed unit is 294,728.79 SFT , Project area is industrial in nature and many other industrial units are already in process of establishment and operation in the surroundings. Raw Cotton will be the raw material of the project process and product will be the Towels. 14908 M.Tons/Anum will be the production capacity of the project Project process will include the manufacturing of towels through Weaving, Dyeing, Cutting, Stitching process.



Location

Subject proposed project is located at Plot no. 1C-6C, Quid-e-Azam Business Park, Sheikhupura.

Project land coordinates are as follows:

Front: Road

Back: Roomi Fabrics Ltd
Left: Roomi Fabrics Ltd
Right : Roomi Fabrics Ltd
For further details, layout map of the project is attached as **Annexure-C** with the report.


Google Map: "Roomi Fabrics Limited"
Plot no.1C-6C Quid-e-Azam Business Park,Sheikhupura.
Legend
31.7333101,74.0890418
Movie Point & PAF Emergency?
Lahore-Islamabad Motorway
31.7333101,74.0890418
Movie Point & PAF Emergency...
موٹروے 2
Google Earth
Image © 2022 Maxar Technologies
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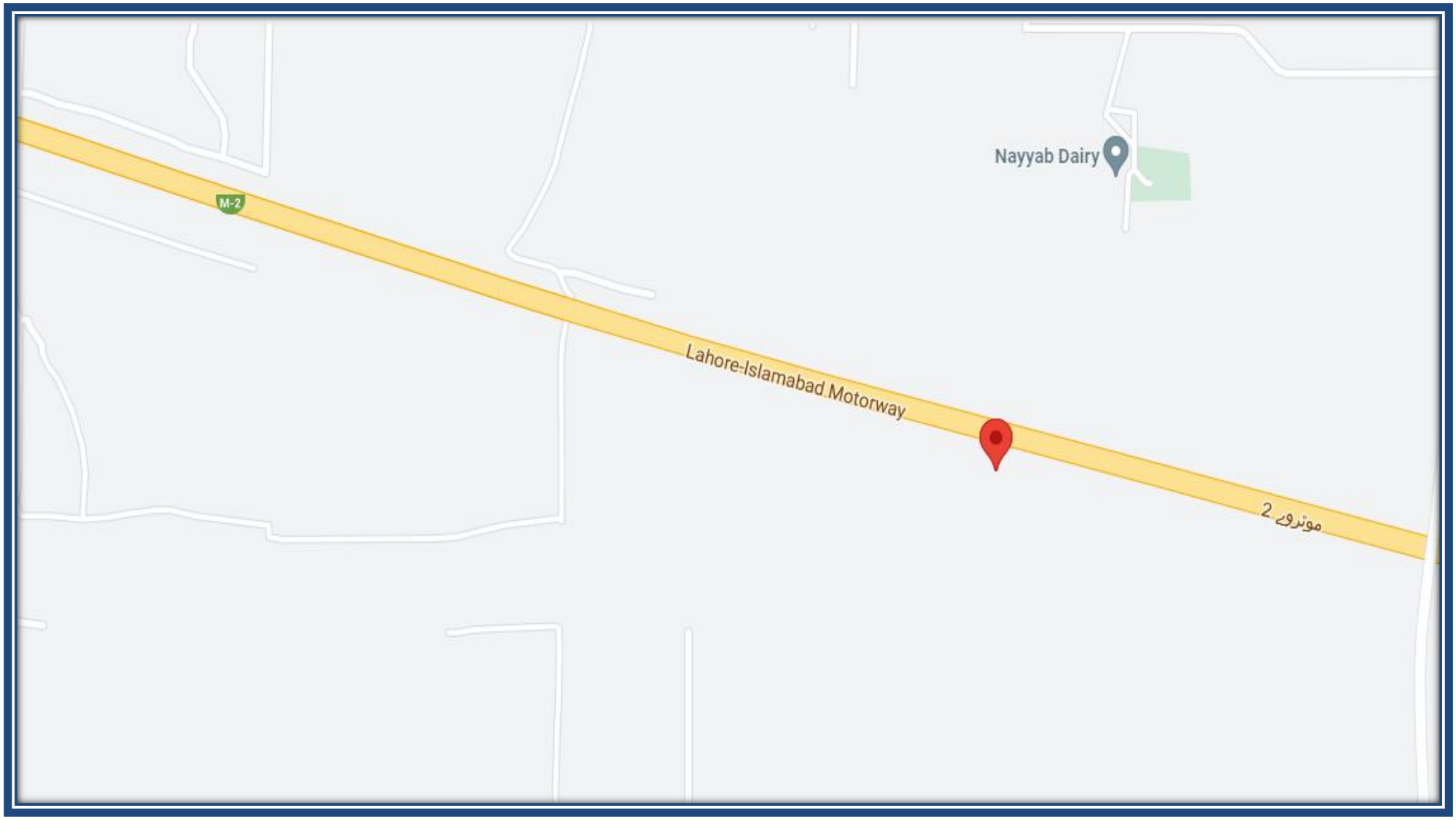
Nayyab Dairy
M-2
Lahore-Islamabad Motorway
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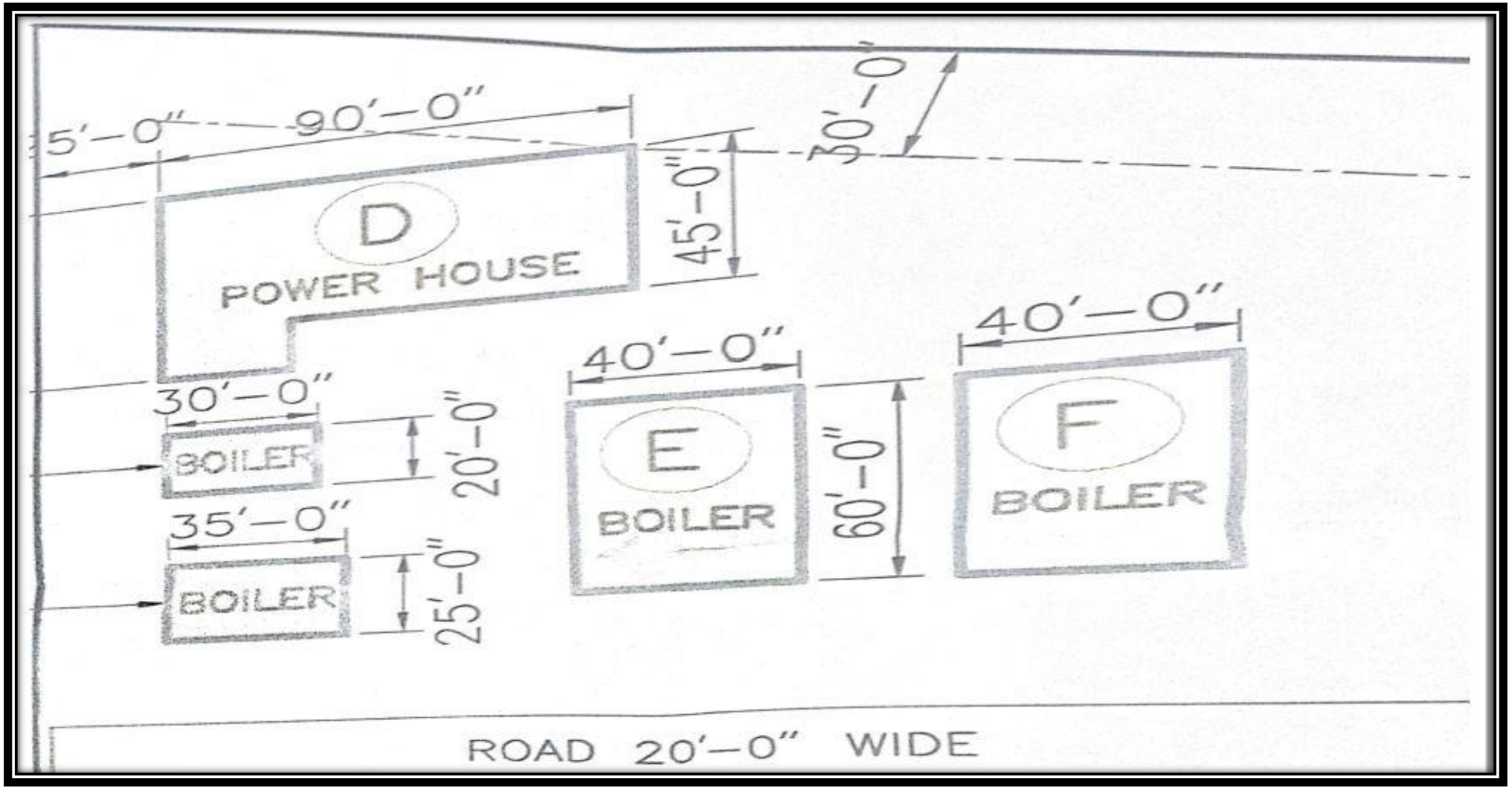
5'-0"
90'-0"
30'-0"
D
POWER HOUSE
45'-0"
40'-0"
40'-0"
30'-0"
BOILER
20'-0"
E
BOILER
60'-0"
F
BOILER
35'-0"
BOILER
25'-0"
ROAD 20'-0" WIDE

Boiler Plan:

CHAPTER # 2

DESCRIPTION OF THE PROJECT

Type and Category of the Project:

Subject project is the proposed Towel manufacturing unit under the name of M/s Roomi Fabrics Limited located at Plot no. 1C-6C, Quid-e-Azam Business Park, Sheikhupura.

Project falls under Clue 9 of category B of Schedule II of Review of IEE and EIA Regulations, 2000. TORs of the study under clause 5 (f) of policy and procedure for the filing, review and approval of environmental assessment are annexed as ***Annexure – A.***

Objectives of the Project

Objectives of the construction of the subject project are:

- To establish and increase the business for the proponent.
- To contribute to the national economy of the country.
- Compensate to help poverty by providing more employment.
- To meet the increasing demand of the textile industry.

Location

Subject proposed project is located at Plot no. 1C-6C, Quid-e-Azam Business Park, Sheikhupura.

Project land coordinates are as follows:

Front: Road

Back: Open Plot

Left: Open Plot

Right: Open Plot

For further details, master plan layout of the project is attached as **Annexure-C** with the report.


Google Map: "Roomi Fabrics Limited"
Plot no.1C-6C Quid-e-Azam Business Park,Sheikhupura.
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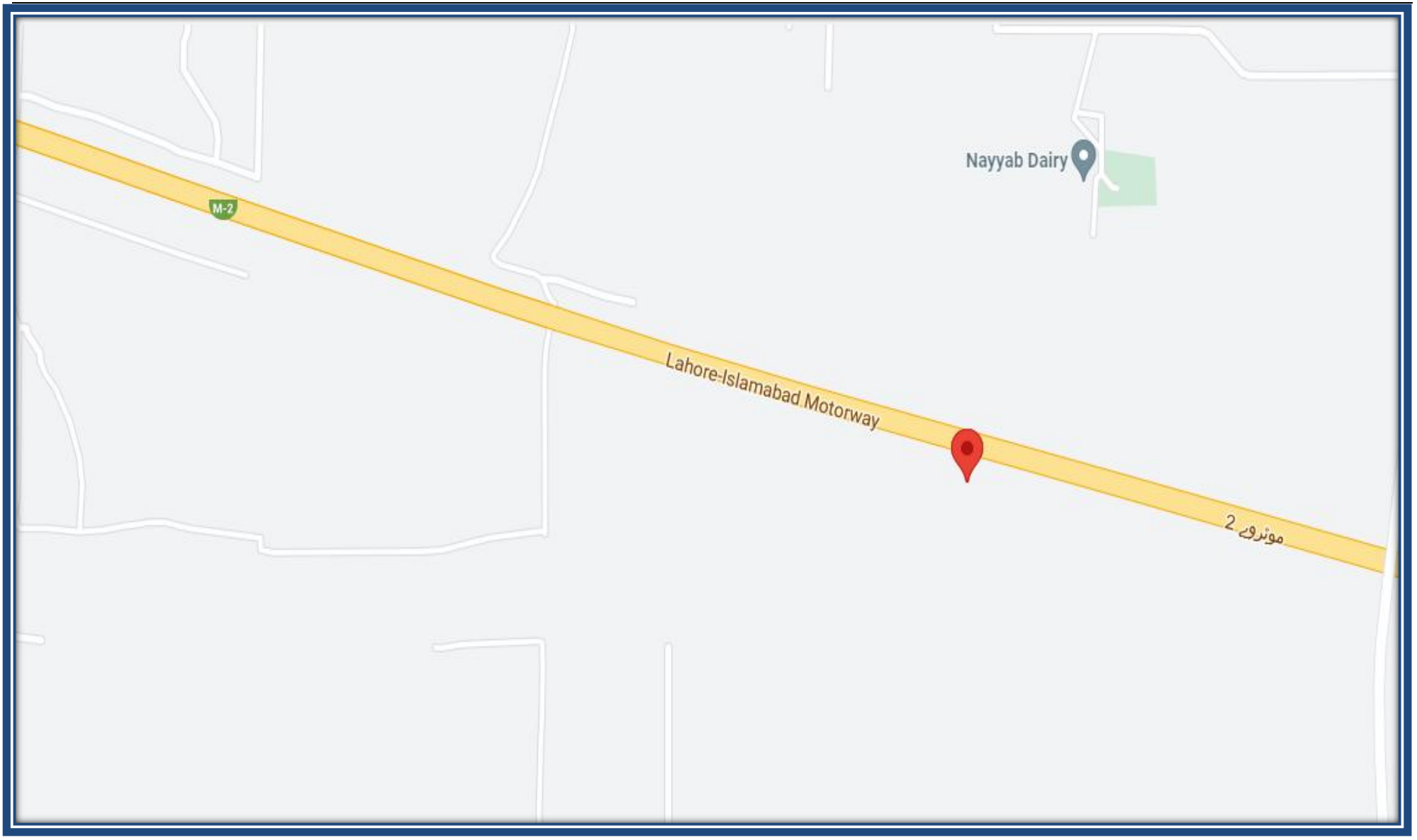
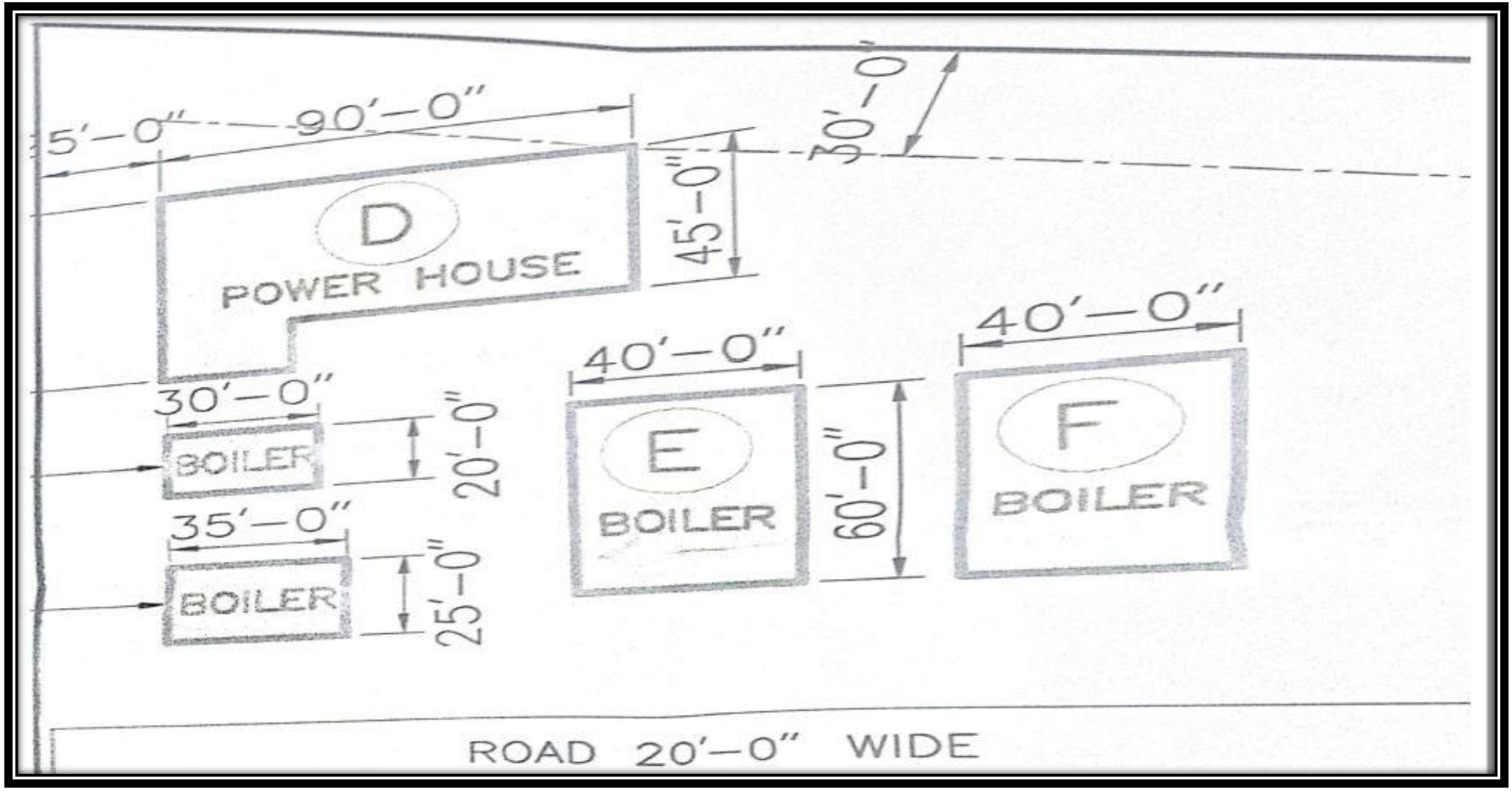


Figure 5: Aerial view of the proposed project site



Project Site Pan:

Land Use on site

Site proposed for the construction of the subject project is an empty plot free of any activity and it is the property of the proponent.

Road Access

Paved road is present at the front side of the project area is present which directly connects to Lahore_Islamabad Motorway.

Vegetation features of the project

There is no dense vegetation or any protected or endangered species present at the project site.

Cost and magnitude of the operation

Project is the yarn manufacturing unit under the name of M/s Roomi Fabrics Limited (Pvt.) Limited. Total covered area for proposed unit is 294,728.79 SFT Inside colony for residence of employees and workers will also be part of the proposed project. There are no other associated activities with regard to the subject project.

Schedule of Implementation

Detailed feasibility studies and designing of the project have been completed. Necessary legal, administrative and financial formalities are being finalized. The project is expected to be completed within 11-12 months from the date of environmental approval. Subsequently the operational and maintenance aspects of the project will be undertaken by the proponent.

Description of the project:

Subject project is the proposed Towel manufacturing Unit under thename of M/s Roomi Fabrics Limited located at Plot no. 1C-6C, Quid-e-Azam Business Park, Sheikhupura. Project area is industrial in nature and many other industrial units are already in process of establishment and operation in the surroundings. Total area of proposed unit is 33.45 Acre. Open area of proposed unit is 193088.05 SFT. Ground Floor covered area of proposed unit is 236197.00 SFT. Total covered area for proposed unit is 294,728.79 SFT. Raw Cotton & stretch filament will be the raw material of the project process and product will be Towels. Project process will include the manufacturing of towels through Weaving, Dyeing, Cutting, Stitching process. Production capacity of the project will be 14908 M.Tons/Anum and total cost of the project will be approx. 6.140 Billion rupees.

Raw material

Cotton & Stretch filament will be used as raw material.

Production Capacity of the Industry

Production of the unit will be 14908 M.Tons/Anum of Towels.

5 YEARS EXPECTED PRODUCTION

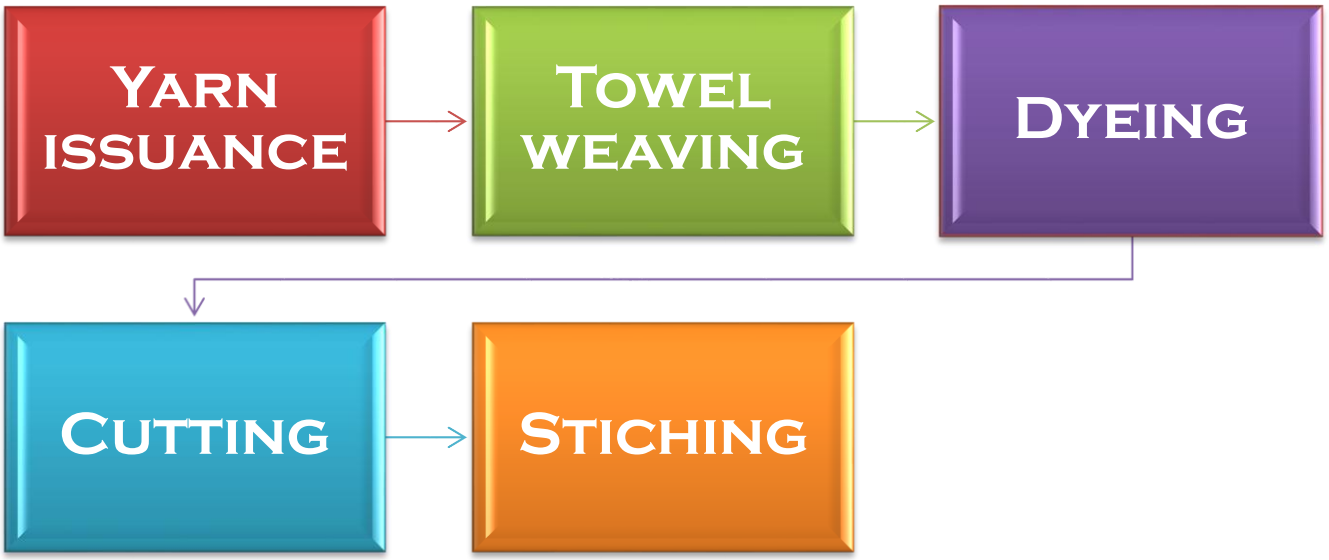
Main products to be produced are Yarn, Grey Towel, Processed Towel, Tub Matts, Bathrobes. Following is expected annual production pattern.

Period	Production Capacity Towel (Tons)	Production Capacity Yarn (Tons)	Annual Production Value (PKR)	Annual Production Value ($)
Year 1	11,680	3,228	3,179,800,000	18,704,706
Year 2	15,330	3,228	5,176,200,000	30,448,235
Year 3	20,345	3,228	7,315,200,000	43,030,588
Year 4	20,345	3,228	8,046,720,000	47,333,647
Year 5	20,345	3,228	8,851,392,000	52,067,012

5 YEARS TARGETED EXPORT SALES

Period	Quantity of Exports (Tons)	Value of Exports (PKR)	Value of Exports ($)
Year 1	14,908	3,434,184,000	20,201,082
Year 2	18,558	5,590,296,000	32,884,094
Year 3	23,573	7,900,416,000	46,473,035
Year 4	23,573	8,690,457,600	51,120,339
Year 5	23,573	9,559,503,360	56,232,373

Project process flow chart:



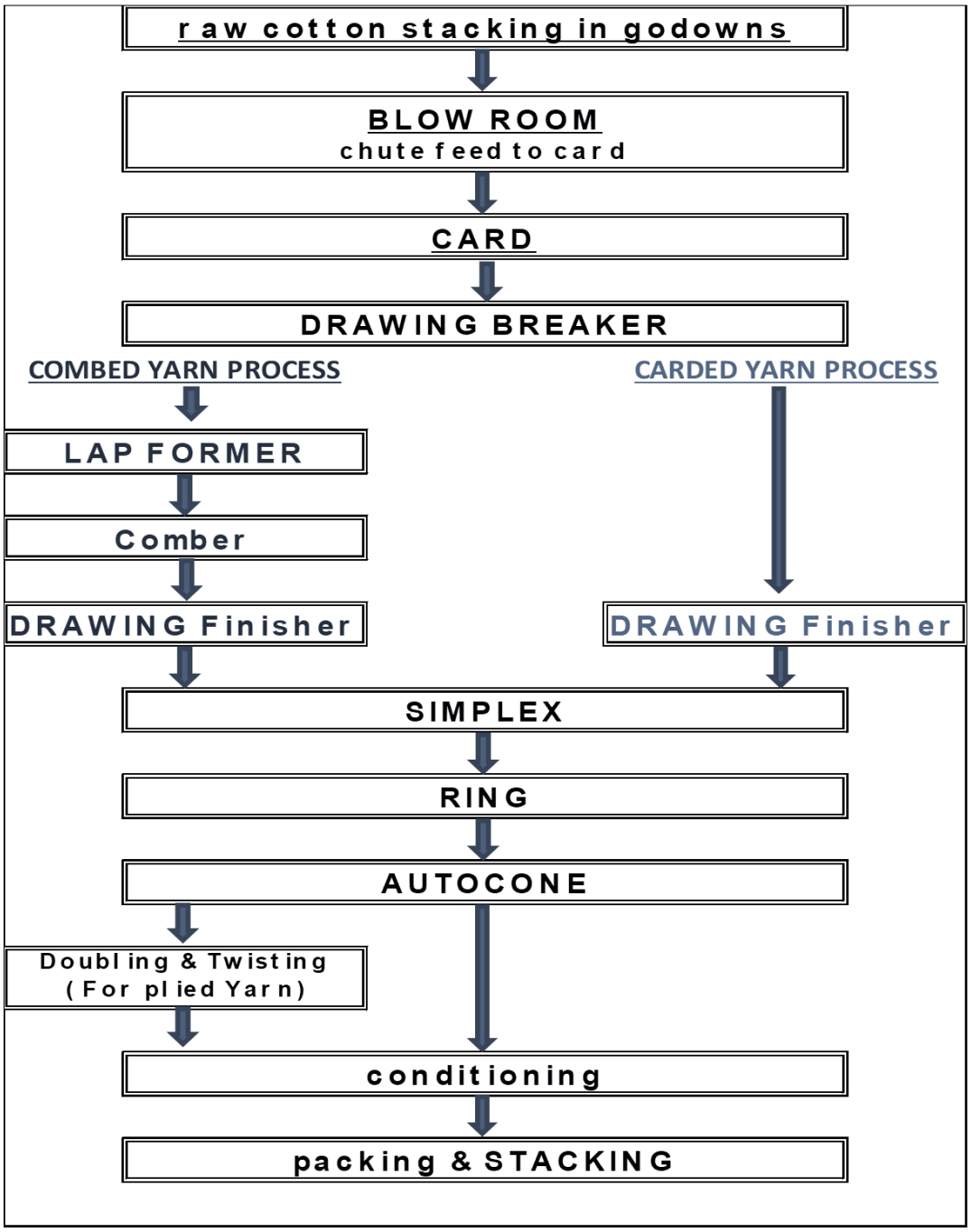
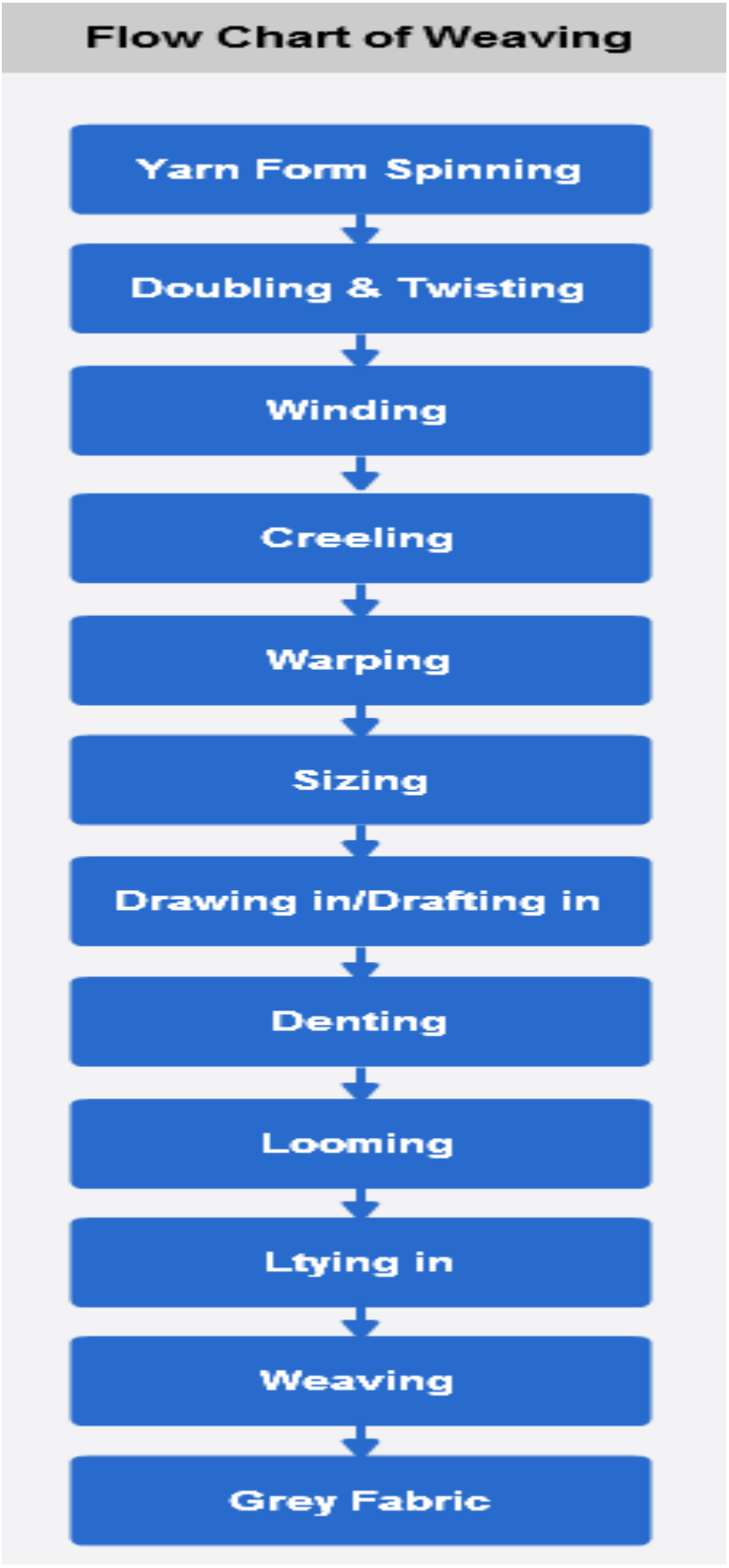


Figure 8: Project process Flow Chart


Flow Chart of Weaving
Yarn Form Spinning
Doubling & Twisting
Winding
Creeling
Warping
Sizing
Drawing in/Drafting in
Denting
Looming
Ltying in
Weaving
Grey Fabric

Blow Room
Opening:

Here, the compressed bales of fibers are opened for making the cotton tuft in a small size (as much as possible).

Cleaning:

This operation is used to remove dust, dirt, broken leafs, broken seeds, stalks and other foreign materials from the fibers.

Mixing or blending:

Mixing or blending process has performed for producing higher quality yarn by reducing production costing which is only possible by mixing different grade of fibers.

Lap forming:

It is done to transfer the opened and cleaned fibers into a sheet form of specific width and uniform unit length which is termed as lap.

- Blow room extract the impurities like broken seeds, husks, leaves
- Blow room open the compressor layer
- After extracting wastes and blending the material it is converted into a uniform thick sheet.

Carding

- Carding is a mechanical process that breaks up locks and unorganized clumps of fiber and then aligns the individual fibers so that they are more or less parallel with each other. Carding can also be used to create blends of different fibers or different color.
- Laps from Blow Room are placed on card creel for rewinding and opening.
- This process helps to opens the cotton fibers even to the separation of one fibers to the other.

Warping

- Cones are placed
- Threads collected on a big sized beam

Sizing

- Yarn arranged on beam by warping is coated with sizing materials for smooth running of yarn on looms.

- During Warping waste of yarn will be due to the breakage of threads by machine vibration running at high speed

Schedule of Area:

1. Proposed Unit Area Distribution:

SCHEDULE OF AREA		
TOTAL AREA OF THE PLOT	=	9.8 ACRE
OR	=	4,29,285.00 SQ.FT
OPEN AREA OF THE PLOT	=	193088.05 SQ.FT.
GROUND FLOOR COV.AREA 55.02%	=	2,36,197.00 SQ.FT
ALL FLOORS COV. AREA	=	2,94,728.79 SQ.FT
DETAILS OF COVERED AREA GROUND FLOOR		
1 = BUILDING-A	=	88684.00 SQ.FT
2 = BUILDING-B	=	1,36,408.67 SQ.FT
3 = BUILDING-C	=	363.28 SQ.FT
4 = BUILDING-D	=	4466.00 SQ.FT
5 = BUILDING-E	=	2400.00 SQ.FT
6 = BUILDING-F	=	2400.00 SQ.FT
7 = BUILDING-G	=	600.00 SQ.FT
8 = BUILDING-H	=	875.00 SQ.FT
TOTAL	=	**2,36,197.00 SQ.FT**
DETAILS OF COVERED AREA ALL FLOOR		
GROUND FLOOR	=	2,36,197.00 SQ.FT
FIRST FLOOR	=	57640.79 SQ.FT
WEIGH BRIDGE	=	891.00 SQ.FT
TOTAL	=	**2,94,728.79 SQ.FT**

Details of machinery

Detailed list of machinery to be installed **is** given below.

Machine Name	No. of Machine	Electric consumption KW/H		Steam	Air Consumption
		per machine	Total	Ton/Per Hour	M3/ Hour
Warping	1	18	18		
Sizing	1	140	140	3.5	
Loom	40	4.5	180		5040
Shed Lighting	N/A	N/A	25		
Compressor 1250+	1	560	560		
Dryer	1	30	30		
Coolin Tower	2	30	60		
Overhead Cleaner	5	5.5	27.5		
AC	1	280	280		
Cargo Lifts	2	30	60		
Beam Stacker	1	18.5	18.5		
Folding Dept.	N/A		100		
TOTAL			1499	3.5	5040

NOTE: Total add on in fabric after above addition will be 39000 Meter per day

Water requirements:

During the constructional phase of the project approximately 1500 gallon water will be required per day for constructional and domestic uses.

During the operational phase of the project approx. 120m^3 /day water will be required for project process and domestic purposes.

Waste water treatment:

60-70% of the used water will be the waste water which will be treated in the septic tanks because no chemicals containing hazardous process wastewater will be discharged. Most of the wastewater from the industry will be from domestic sources.

TANKS DATA			
N°	DESCRIPTION	DIMENSIONS	WATER VOLUME
3	LIFTING TANK	8.00 x 3.50 x 4.00 m	112.00 m^3
4	STORAGE AND HOMOGENIZATION TANK	170.60 m^2 x 7.00 m	1194.20 m^3
5	NEUTRALIZATION	2.00 x 2.00 x 7.00 m	28.00 m^3
6	DISTRIBUTOR	2.00 x 4.00 x 7.50 m	60.00 m^3
7	BIOLOGICAL OXIDATION	53.00 x 8.90 x 7.00 m	3301.90 m^3
8	CLARIFIER FEEDING TANK	2.00 x 2.65 x 7.00 m	37.10 m^3
9	CLARIFIER	4.70 x 4.70 x 7.00 m	154.63 m^3
10	RETURN SLUDGE TANK	2.00 x 1.65 x 7.00 m	23.10 m^3
11	SLUDGE THICKENER	1.50 x 7.10 x 5.00 m	53.25 m^3

Wastewater Drain:

A nearby drain is present at the front side of the project site, in which wastewater will be disposed of after treatment in the septic tanks. Proponent has the approval of Irrigation dept. for discharge of wastewater into drain. Copy of effluent charges bill paid to Irrigation Department of Government is also attached ad **Annexure-E** of this report.

Estimated water Balance for the subject proposed project:

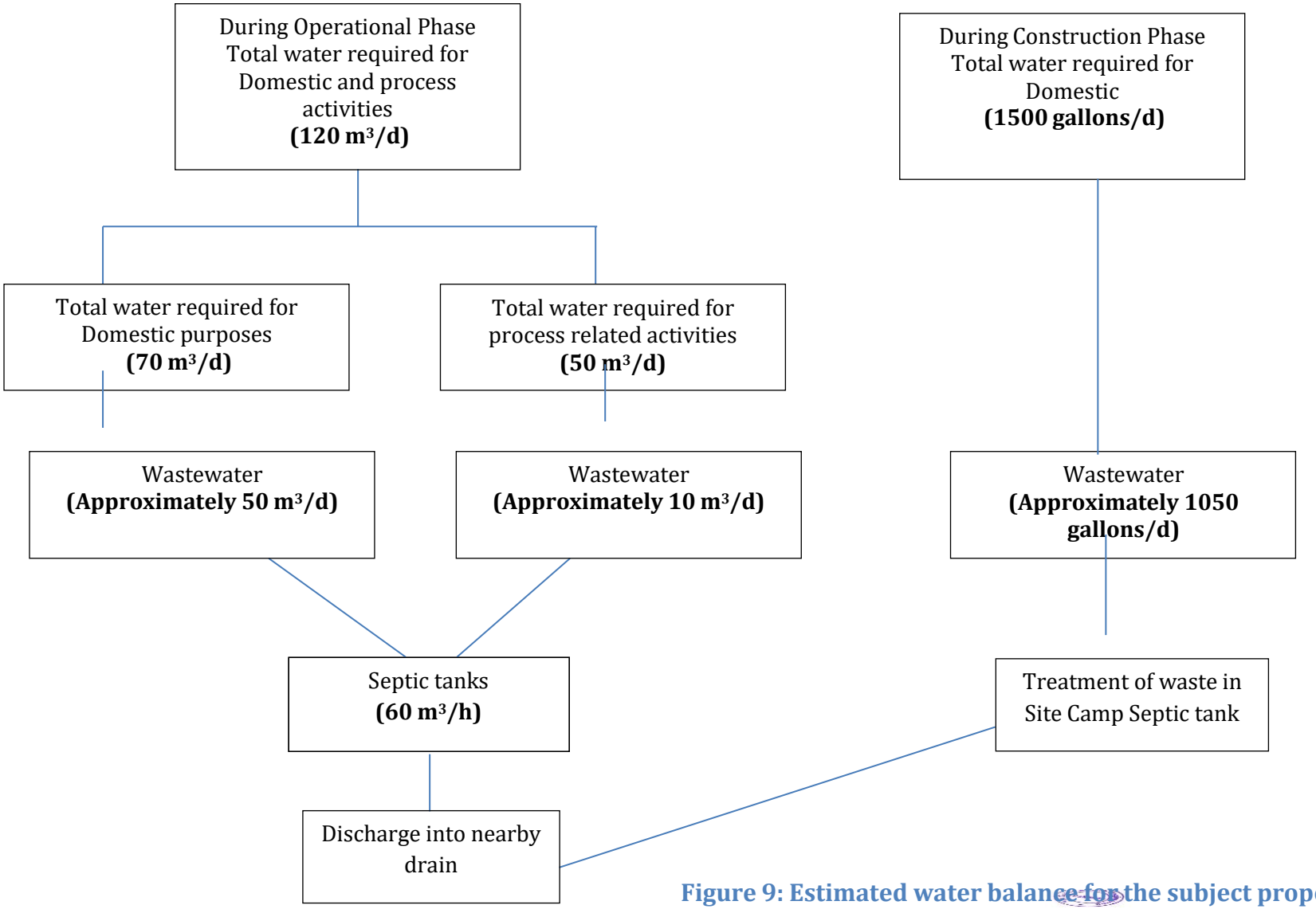


Figure 9: Estimated water balance for the subject proposed project

Solid waste:

Approx. 400-500 kg/day constructional and domestic waste will be produced during the constructional phase of the project. Constructional waste will be reused for road filling and maintenance purposes.

According to an estimate, approx. 200-300 kg/day domestic and project related solid waste will be produced during the operation phase of the project (based on solid waste generation rates of 0.45 kg/capita/day urban waste generation). Project related waste will include yarn, threads etc. and ETP and boiler waste will include ash and sludge etc. which will be handed over to the certified contractors.

Solid waste management system/practices

The Solid waste will be managed in proper way by following operations:

1. Placement of separate waste bins for domestic and project related waste in all working halls and designated points.
2. Collection of waste from all the working halls at one designated point by the sanitary workers on daily basis.
3. Careful collection of ash and sludge on regular basis and temporary storage at designated point.
4. Collection of waste from designated area and handling to the solid waste contractors for its final disposal.

Flow chart of solid waste management plan:

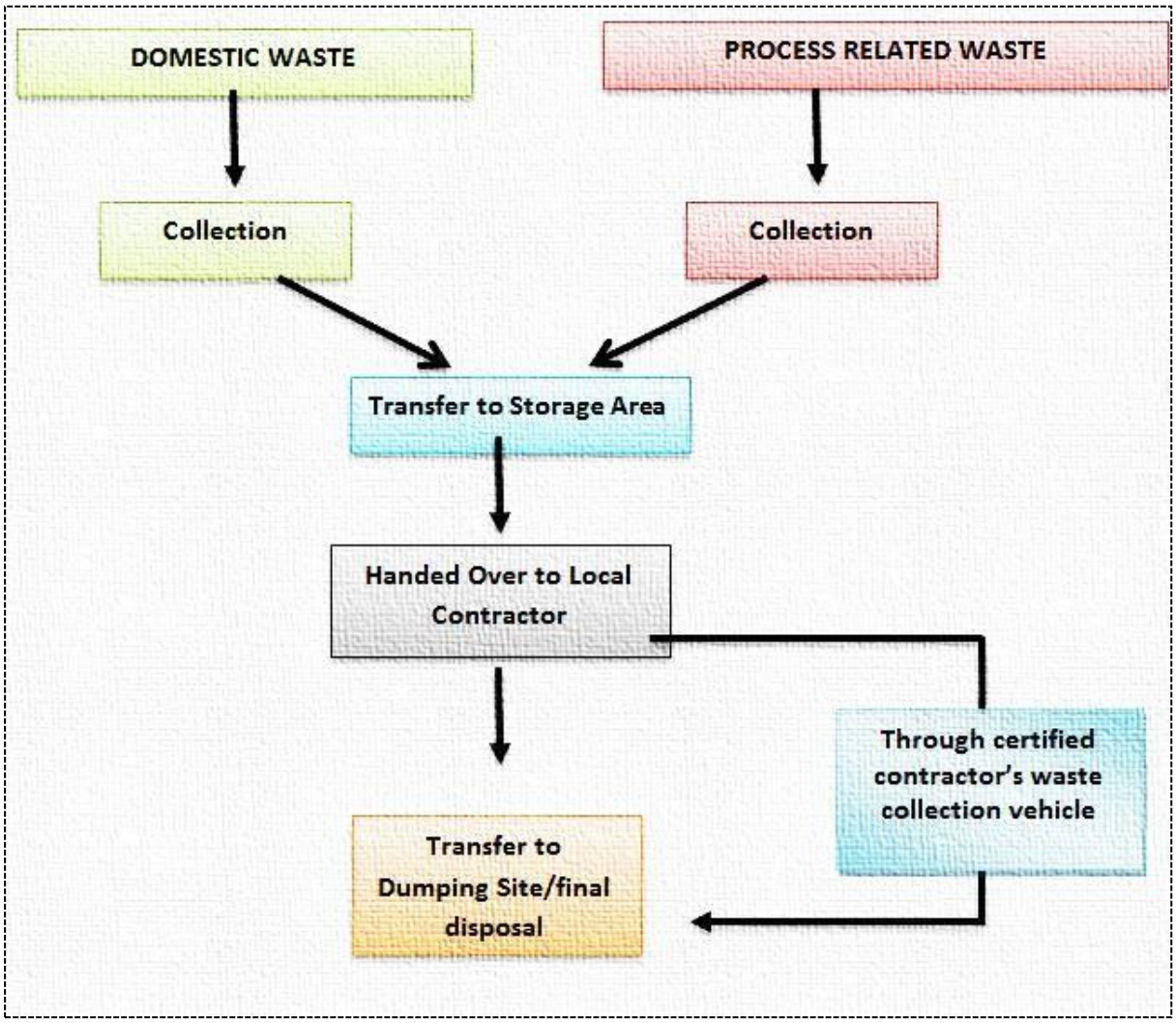


Figure 10: Solid Waste Management Plan

Ventilation system for maintenance of indoor air quality:

Roof overhangs, window size and placement, and overall building shape will be designed in a way to ensure good ventilation. Further the direction of prevailing winds will be considered and maximum solar gain will be ensured. The placement of porches, garages, trees will also be ensured.

Mitigation measures to control the emissions of generators:

i) Firstly, the generator made up of latest and environmental friendly technology will be used.

ii) Standard fuel will be used in the generator.

iii) Proper and regular tuning of the generator will be done.

iv) Double glazed glass and thick walls canopy of the generators will be installed which will limit the emissions of the noise.

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

Plantation

Area for plantation will be reserved within the premises of the project and planation will be done within, outside and at the boundary wall of the unit. Tree plantation plan proposed for the subject project is attached as **Annexure-F** with the report.

Parking Area

Parking area will be made available within the unit for 712 cars, motorcycles, trucks etc.

Occupational Health and Safety:

All the methods and procedures for machinery and chemical handling and storage will be displayed and implemented at the project site. Health and safety rules for chemical handling and storage will be maintained.

Personal Protective Equipment:

Following PPEs will be available for the workers in the proposed unit:

- Dust Mask
- Ear Plugs
- Ear muffs
- Safety Boots
- Safety Gloves
- Safety Belt
- Helmet
- Goggles

Types of PPEs used during construction and Operational activities

Protection	Occupational Hazards	PPEs
Head Protection	Falling objects, inadequate height clearance, and overhead power cords	Helmets with or without electrical protection
Hand protection	Hazardous material, cuts or lacerations, vibrations, extreme temperatures	Synthetic or Rubber gloves, leather, insulating material etc
Eye and face protection	Flying particles, molten metal, liquid chemicals, gases or vapors, light radiation	Glasses, shield protective, etc
Hearing protection	Noise, ultra sound	Hearing protectors like ear plugs, ear muffs
Respiratory protection	Dust, fogs, fumes, gases, smokes, vapors, oxygen deficiency	Facemasks or air supply

Body protection	Extreme temperatures, hazardous materials, biological agents, cutting and laceration	Aprons, insulating clothing etc of appropriate materials

Fire Protection System

An addressable argus type fire protection system with detection and alarm annunciation and other installations etc. would be provided to protect against any fire hazards. Fire buckets and fire extinguishers will be installed at all sensitive places within the unit. Details and numbers of fire extinguishers to be installed is attached as **Annexure-G.**


FIRE PRECAUTION MEASURES
(1) AUTOMATIC FIRE DETECTION & ALARM SYSTEM PROVIDED IN SENSITIVE AREA.
(2) FIXED FIRE SUPPRESSION SYSTEM PROVIDED IN SENSITIVE AREA
(3) THE BUILDING HAS MULTIPURPOSE DRY CHEMICAL POWDER 6KG FIRE EXTINGUISHERS FOR EACH 2000 SQ.FT OF FLOOR AREA.
(4) INDEPENDENT DIESEL GENERATOR IS PROVIDED FOR MAINTAINING WATER SUPPLY
(5) THE MAXIMUM TRAVEL DISTANCE TO A FIRE EXTINGUISHER IS KEPT AT 75 FT.
(6) FIRST AID BOX IS PROVIDED AT EACH FLOOR.
(7) FOLDING STRETCHERS (02 Nos.)PROVIDED AT EACH FLOOR.
(8) HOSE 100 FIT LONG , 2.5" DIAMETER (NYLON TOP,RUBBER LINED) WITH BRASS COUPLINGS ONE LENGTH.
(9) BRANCH PIPE WITH NOZZLE OF 3 / 4".
(10) LIGHTNING ARRESTOR INSTALLED ON TOP OF THE BUILDING.

FIRE CONTROL ROOM
FIRE CONTROL ROOM EQUIPED WITH THE FOLLOWING EQUIPMENTS.
(1) TWO COMPRESSED AIR BREATHING APPARATUS ALONG WITH TWO EXTRA CYLINDERS FOR FIGHTING FIRE IN SMOKE LOGGED AREAS.
(2) FOUR FULL FACE MASKS.
(3) FOUR FIREMAN SUITS.
(4) FOUR FIRE BLANKET.
(5) FOUR SAFETY HELMETS.
(6) EMERGENCY LIGHTS.
(7) TWO MEGAPHONE.
(8) SAFETY GOGGLES.
(9) FOUR PAIRS OF SAFETY SHOES.
(10) FIRST AID BOX WITH NECESSARY MEDICINES.

SECURITY / SAFETY ARRANGEMENTS
PROVISION OF METAL DETECTORS, PORTABLE EMERGENCY LIGHTS,EXTENSION LADDER (FIDER).
TWO MEGAPHONE, FOUR SMOKE MASKS, FOUR SAFETY HELMETS AND PROVISION OF TRAINED SECURITY GUARDS.

Emergency Exits:

Emergency exit points will be made available for easy evacuation in case of any

emergency.

Security:

The present site will be secured by means of boundary walls along with the presence of security guards round the clock which will improve the security of the project site and also in its vicinity.

Personal protective equipment:

Workers will be provided with dust mask, ear plug, ear muffs, safety boots, safety gloves, safety belt, helmet and goggles etc. during the working hours to ensure personnel health & safety. Implementation of PPEs will be ensured by the proponent for the proposed project also.

Industries:

Project is located in the industrial area of district and many industries are present around the project site. Various other industries like Roomi Fabrics Limited , Asian Food Industries, Suraj Cotton Mills, Koh e Noor Power Plant etc. are present in the surroundings of the project site.

Power sources and transmission:

Estimated power requirements of the unit will be 2.5 MW which will be fulfilled by WAPDA and Standyby Gas generators 1.6MW each.

Available Facilities

Available facilities at the proposed project site include:

- Electric supply from WAPDA
- Solid Management (SWM)
- Line and cellular telephone facilities
- Water supply, sewerage disposal and drainage systems

Restoration / Rehabilitation Plan

All possible precautions will be taken to prevent an untoward incident in terms of life and property losses. The demolition materials will possibly be reused and recycled. All excavated surfaces will be termite proofed.

On completion of the project, the debris will be removed from the site in order to maintain aesthetics of the project. All measures will be undertaken for ensuring occupational safety, security and clean environment in the project area. Ornamental trees and flower plants will be planted on inside peripheral of the unit premises to restore the land.

Government approvals required by the project:

Necessary approvals from other Government Departments are under process and will be obtained by the project proponent and will be submitted to EPA at the time of operation.

CHAPTER # 3

ANALYSIS OF ALTERNATIVES

This Chapter deals with the analytical overview of different alternatives that have been considered. The analysis has been carried out critically so as to justify the need of the Project and to select the most feasible alternative. Besides the economic viability; environmental sustainability and social soundness of the proposed Project has also been considered while analyzing different alternatives.

The No Project Alternative

A zero-alternative entail maintaining existing use to which the proposed project site has previously been put to. This alternative would eventually evade any short-term potential negative impacts from project execution. To this end, any potential positive impacts envisaged during midterm and long-term project implementation will be missed.

Adopting zero alternative would mean abandoning all the potential that the site offers to investor(s), contribution to government revenue and even local community livelihoods improvement.

Alternative Considerations and Reasons for their Rejection:

Location/Site alternatives:

To fulfill the commercial aspects of the project under reference of this EIA Report, it is to be sited at a place where commercial processing activity is either already going on or there are bright prospects of the same. Concurrently, it must also meet the legal requirements of the Punjab Environmental Protection Act, 1997 (Amended 2012). Availability of land at the best convenient place is equally important among other considerations for the site selection. Availability of access roads, communication facilities, electricity, basic infrastructure, sewerage etc. is yet the other necessary requirements.

Obviously, environmentally sound, neat and clean environment are the other considerations for site selection. The project will also facilitate the people of the area with increasing the opportunity of employment, and other related facilities.

Keeping these requirements and their feasibility and other basic infrastructural requirements, the selected site is ideally suited for Construction of the subject proposed project. No alternative site/location for the proposed project was considered because the subject project is proposed Towel manufacturing unit under the name of M/s Roomi Fabrics Limited and the site of the project is property of Roomi Fabrics Limited Also the land is already located at designated Industrial Areaas per Master Plan

Process/Technology Alternatives:

The best available yarn manufacturing technology will be used in the project manufacturing process which possesses less environmental impacts. Internationally manufactured machinery will be used list of the machinery has been provided in the chapter above.

Modified Construction Technology Alternatives

The proposed development will be constructed using modern, locally and internationally accepted technology and materials to achieve public health, safety, security and environmental aesthetic requirements. Equipment that saves energy and water will be given first priority without compromising on cost or availability factors. The concrete pillars and walls will be made using locally sourced stones, cement, sand (washed and clean), metal bars and fittings that meet the quality standards requirements

CHAPTER # 4

DESCRIPTION OF ENVIRONMENT

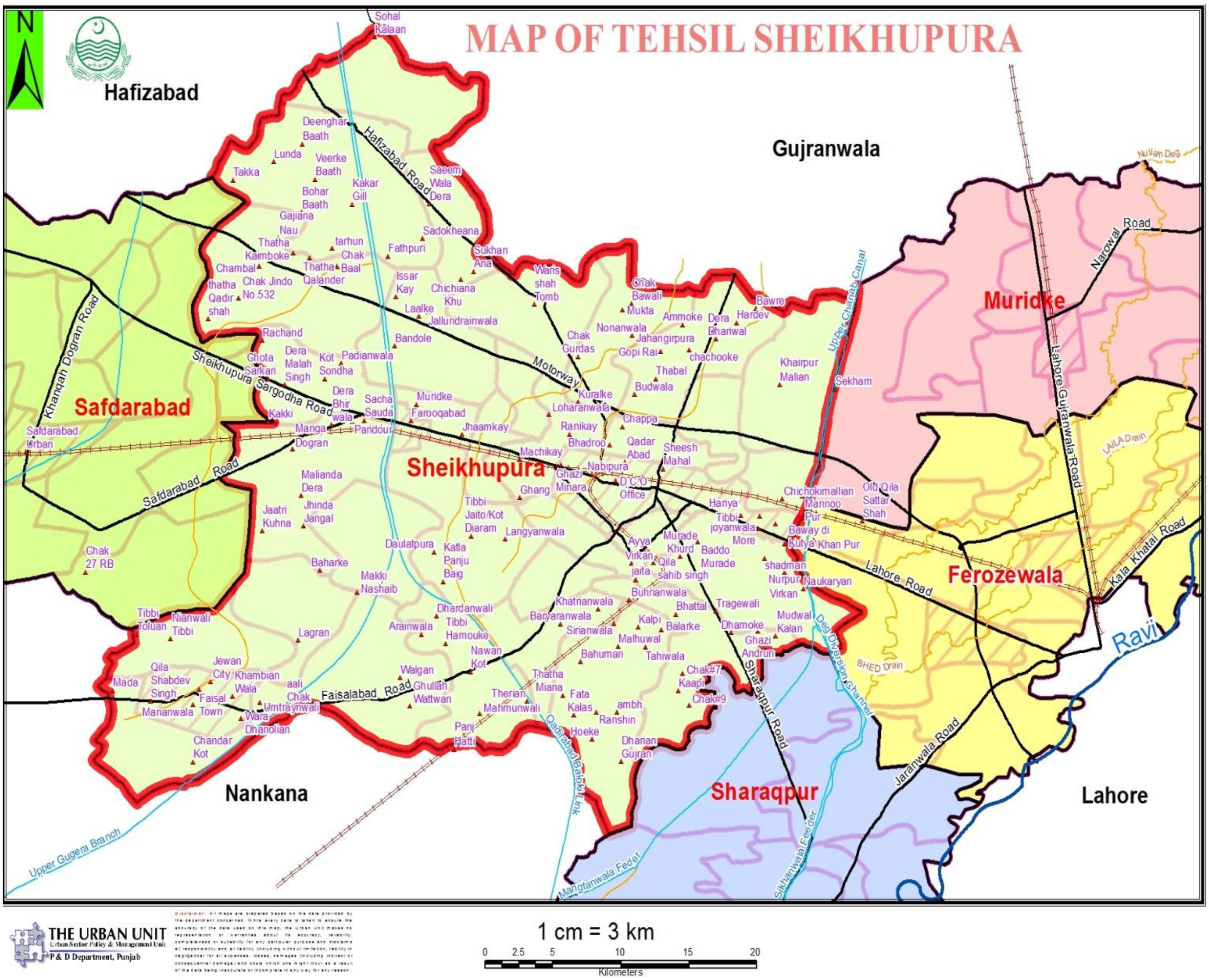
This section describes the baseline conditions, which cover the existing Physical, ecological and socio-economic environment of the project as well as study area. Data was collected by reviewing secondary data and field survey.

Physical Environment

Topography & Geography

- **Physical resources topography, soils, climate, surface water, ground water, geology;**

This chapter contains a brief description of the prevailing environmental state of the area. The main components of the environment include physical resources, ecological resources, cultural resources and socio-economic conditions of the area.



A comprehensive detail of each is given below:

1. Physical Environment

An account of different components of the physical environment of the area is given hereunder:

Topography

Topography of Sheikhupura city is plain. The area is a part of Rechna Doab and consists of Sub-recent sediments brought by spill channel from the Chanab River. There are some old channel levees remnants and old basins filled up with clay materials. The material is probably of Late Pleistocene age derived from mixed calcareous sedimentary and metamorphic rocks of Lower Himalayas. Sheikhupura is bounded by 6 other districts of Pakistani Punjab namely: Sheikhupura, Nankana Sahib, Narowal, Hafizabad, and Gujranwala. Seepage from the canals in the Area has considerably raised the water table resulting in water logging and salinity.

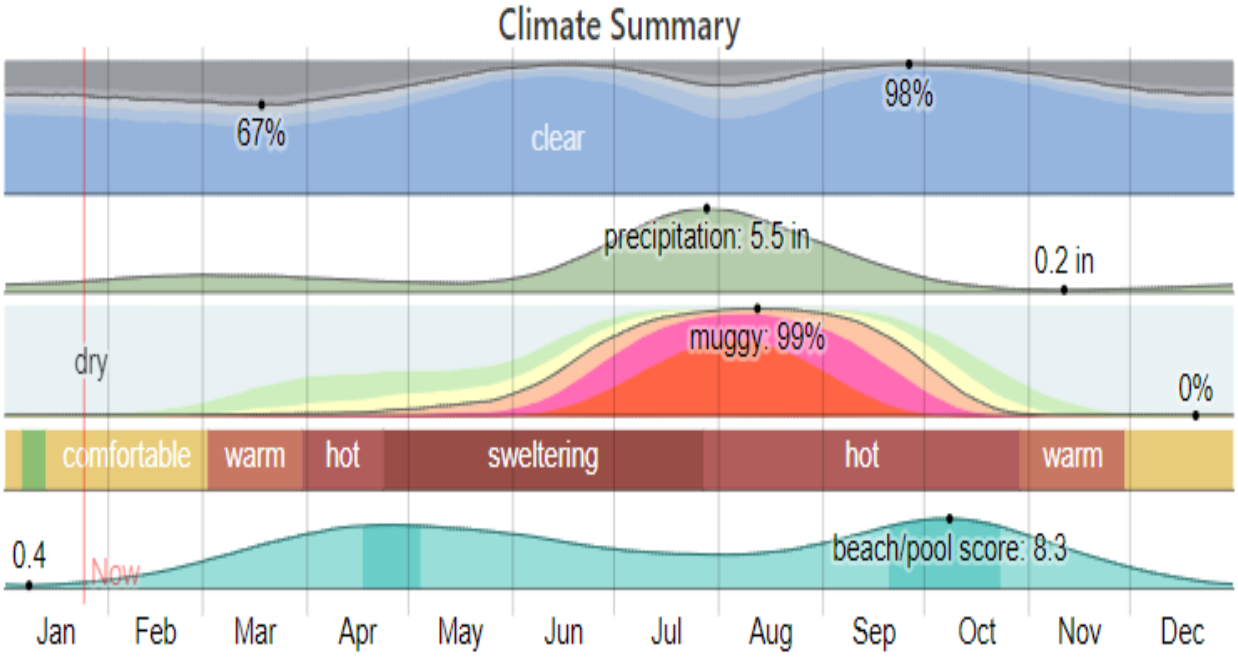
Soils

At all sites of district Sheikhupura the soil is clay loam in texture having pH 8, ECe around 3.5 d Sm-1 and field capacity range from 45-71%. It possesses sufficient organic matter from 8.3 to 9.5 mg/g dry soil. The upland or the Bar in the North West, in the natural condition, is a level prairie thickly dotted over with a stunted under-growth of bush jungle. The Bar Soil is popularly known as Missie. The low land along the river Ravi has light loam. The central portion which is the Deg Valley has stiff soil. Stiff soil is either Rohi or Kallarathi depending on the salt (kallar) contents.

Climate

The District has extreme climate; the summer season starts from April and continues till October. During the summer season, temperature ranges from 30 to 45 degrees the winter season starts from November and continues till March. December and January are the coldest months with a mean minimum temperature of 5 degrees. The dust storms occur occasionally during the hot season, during June, July and August. Rainy weather alternates with oppressive weather. The rainfall is

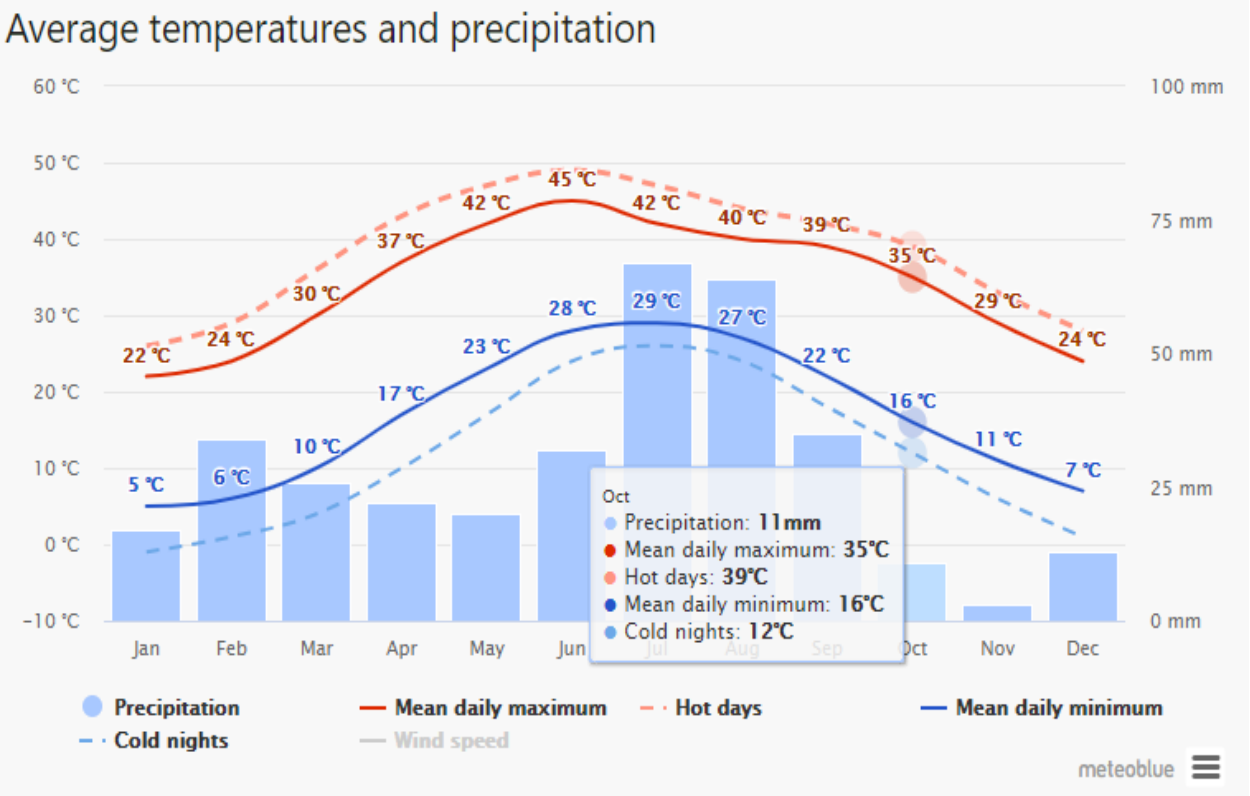
500mm per year. The mean minimum and maximum humidity during winter is 37% and 84%.



A short description is given hereunder to present the climatic conditions of the area:

Temperature

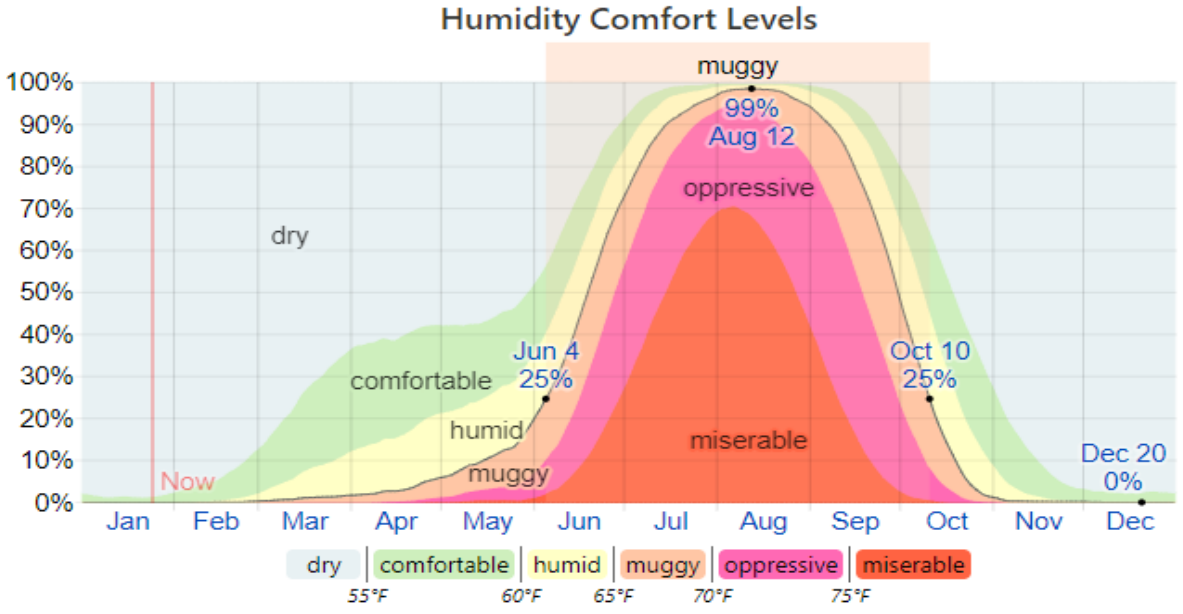
The climate of the district is hot in summer and cold in winter. May and June are the hottest months with maximum temperature ranges from 30 to 45 degrees. December and January are the coldest months with a mean minimum temperature of 5 degrees. The summer season starts towards the end of April and continues till September. The winter begins in November and lasts till February. The spring season exists during March and April and is pleasant.



Temperature Graph of district:

Humidity

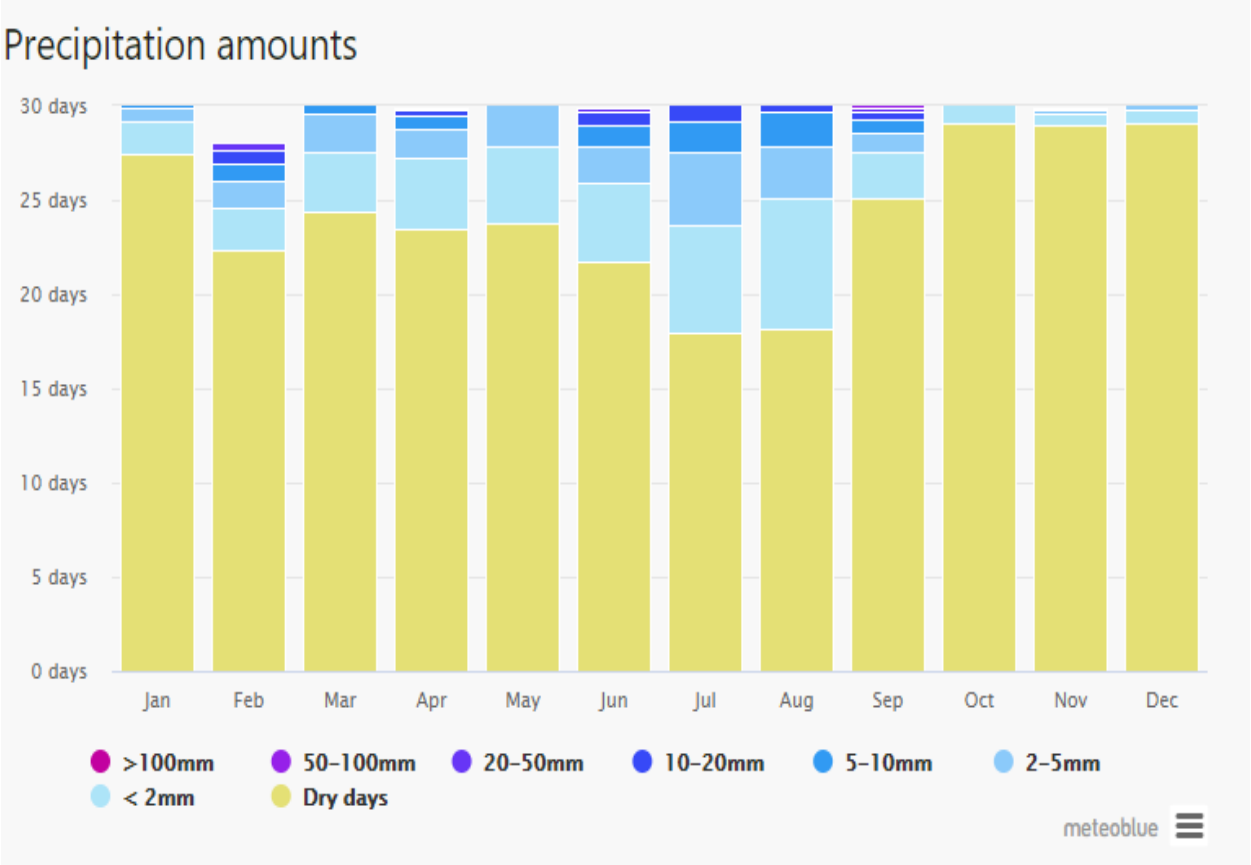
Monthly relative humidity for this area has been worked out as 55.0%. The maximum recorded humidity for the district is 91.0% while the minimum humidity is 35.0%.



The percentage of time spent at various humidity comfort levels, categorized by dew point.

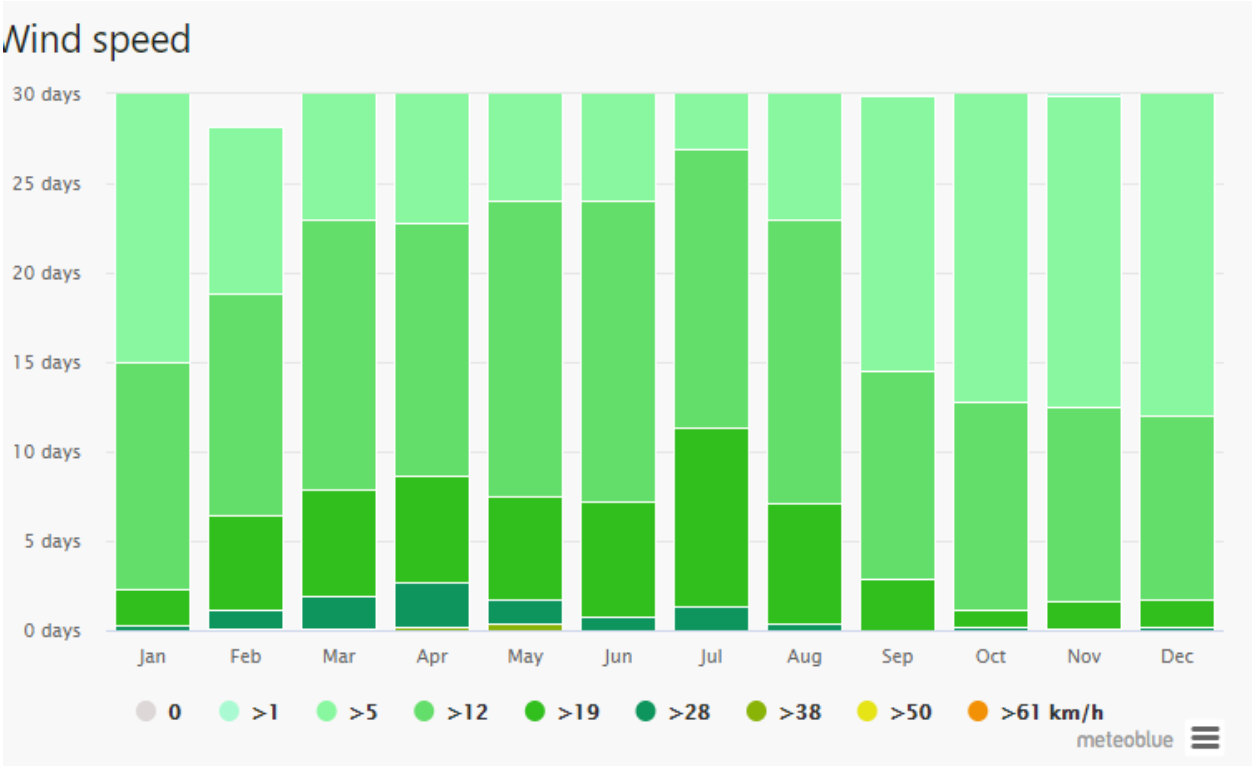
Precipitation

The average annual rainfall is 500 mm/Year. Most of the rain occurs during monsoon in summer which often results in flooding of the nearby water drain and canal.



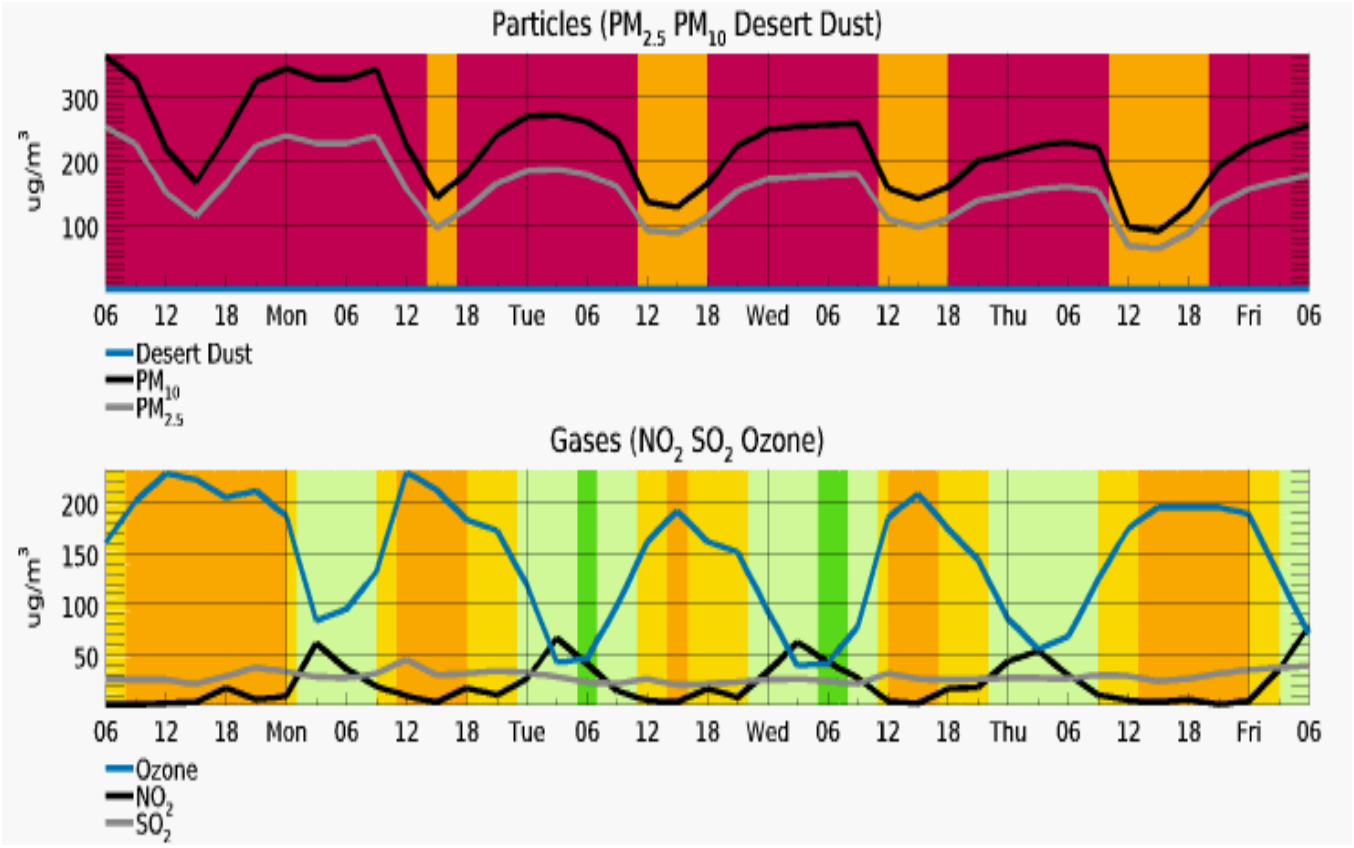
Ambient Air Quality

In the project area, Particulate Matter (SPM & PM10) and Oxides of Nitrogen (NOx), Sulphur Dioxide (SO2) and Carbon Monoxide (CO) are the major air pollutants. Traffic on road is the main source of air pollutants including NOx, SO2, CO, PM, HCs, smoke, etc.



Ambient Air Gases

As already explained, there are very few industrial units in the Study Area which are far away from this project site. However, traffic activities are continuous source of contamination of ambient air within the project influence zone.



Ambient Noise

Smoke and noise pollution by vehicles is the other main issue, emission of smoke from the foundries is degrading the environment level of the Sheikhupura city.

Water Resources

The water supply in Sheikhupura is collected from ground water through a network of 41 tube wells, which covers 33% of the town and 40% of the population. The distribution system consists of 4 overhead reservoirs with a combined capacity of 290000. No plans are currently being developed to improve public water supply mechanisms.

Ground Water

Sewerage and Drainage:

The sewerage system covers 20% of the city and serves 30% of the population. Waste water is generally disposed of through open drains to the nearby sewer system, which is noticed to cause environmental contamination and water borne diseases. The residential area is expanding continuously on all sides of the town without any proper planning, which has reduced the coverage of facility. No plans are being developed to address these issues.

Geographic Features:

Sheikhupura is situated at a distance of about 36 Km from Sheikhupura, the provincial headquarters. Sheikhupura lies 31°42'51.16"N latitude and 73°59'3.49"E longitude. The city is well connected with its surrounding big urban centres like Faisalabad 94 Km, Sargodha 143 Km and Gujranwala 54 Km. Sheikhupura is also a railway junction. Trains coming from Sheikhupura take these routes for Faisalabad and ShorKot. Sheikhupura city is connected with Faisalabad through newly constructed road Sheikhupura Faisalabad road project and also connected Faisalabad by M2 and M3 Motorway Hiran Minar, a place of archaeological and historical growth, is situated about 5 kilometres from city

Land Use:

Sheikhupura district borders six other districts in Punjab, including Sheikhupura, Nankana Sahib, Narowal, Hafizabad, and Gujranwala. As such it is very well connected with the urban centres of Sheikhupura (36km), Faisalabad (94 km), Sargodha 143Kmand Gujranwala 54Km. The City also serves as a railway junction, with trains from Sheikhupura passing through Sheikhupura on the way to Faisalabad and Shorkot. Sheikhupura was originally a planned town. Grain and vegetable markets and retail shops were established in the centre, and the „Civil Line" of public and administrative buildings was placed to the West in the form of a rectangular grid. After 1947, development in the Southern and Eastern parts of the city was haphazard and lacked proper planning. Uncoordinated growth continues to the present day

Ecological Environment

A detail of ecological account of the Project and Study Area is given below:

The principle trees of the District are the Jand (Prosopis spicigera), Karril (Capparis aphylla), Farash (Taxarix articulata), kikar (Acacia arbica), Shisham (Dalbergia sissoo), Beri (Zizyphus jujaba), Malberrry or toot (Morus maraceae), Bohar (Fucus indica), Sirin (Albizzia lebbek), Amb (Mangifera indica), Nim (Melia indica), Piple (Ficus religiosa).

Trees

A field study related to the identification of tree species in the study area was also conducted. A vast majority of trees were observed in the localities visited as well as open fields. These are Tali/Sheeshum (Dalbergia sissoo), Kikar (Acacia nilotica), Safeda (Eucalyptus cinerea), Neem (Azadirachta indica), Beri (Zizyphus jujaba), Malberrry or toot (Morus maraceae), Bohar (Fucus indica), Sirin (Albizzia lebbek).

A tabular comparison is given hereunder to explicit frequency of each species in three zones of study area:

List of Trees Identified in the Project Area

Serial Number	Common Name	Scientific Name
1	Tali/Sheshum	Dalbergia sissoo
2	Kikar	Acacia nilotica
3	Safeda	Eucalyptus cinerea
4	Neem	Azadirachta indica
5	Beri	Zizyphus jujaba
6	Malberrry or toot	Morus maraceae
7	Bohar	Fucus indica
8	Sirin	Albizzia lebbek

Vegetables

Vegetables in around and Project Site

The main vegetables grown in the district Sheikhupura is

- Onion
- Potatoes

Vegetables in Study Area

Some important of these Phool Gobhi/cauliflower (Brassica oleracea Ver. botrytis), Band Gobhi (Brassica oleracea Ver. capitate), Onion (Allium Cepa), Potato (Solanum Tuberosum) and Turnip (Brassica rapa subsp. Rapa).

List of vegetables Identified Around the Project Area

Sr #	Study Area	
	Common Name	**Scientific Names**
1	Onion	Allium Cepa
2	Potato	Solanum Tuberosum
3	Phool Gobhi	Brassica oleracea Ver. Botrytis
4	Band Gobhi	Brassica oleracea Ver. Capitate
5	Turnip	Brassica rapa subsp. Rapa

Fruits

Oranges, Lemon, Guava, Grape fruit and Mangoes, Mulberry and Jamun orchids are famous.

Sr #	Study Area	
	Common Name	**Scientific Name**
1	Orange	Citrus Sinensis
2	Lemon	Citrus Lemon
3	Guava	Psidium Guajava
4	Grape Fruit	Citrus * paradise
5	Mangoes	Mangifera Indica
6	Mulberry	Morus alba
7	Jamun	Syzygium cumini

The soil of the area is not suitable for all kinds of vegetation including fodder, orchards, vegetables and other seasonal crops. The main crops in the area is

- Sugarcane
- Wheat
- Cotton
- Gram
- Guar Seed

Farm Traction Power

Tractor is the sole source of farm traction power. No farmer was found using animal traction power. There was significant variation in tractor ownership across farm size groups. However,

more than half of the farmers owned tractor while rest were hiring the services for land preparation.

Irrigation

The tube-wells and canal water are the main source of irrigation water for wheat, rice and other crops and fodder. Also, many farmers irrigate their fields with contaminated water of drain and also many studies have been conducted to assess the level of toxic heavy metals in the soil and vegetables irrigated by drain water and their ultimate impacts on human health. It has been highly recommended during these studies not to use the contaminated water of drains for agricultural practices. On the other hand plenty of ground water is easily accessible for agriculture use.

Crops and Fodder

Crops usually seeded in the area include Wheat, (Trticum indicum), Rice, Gram Guar Seed.

Cropping Pattern

Wheat & Rice are the major kharif (summer) and rabi (winter) crops, respectively covering more than 65 percent of the cropped area in both seasons. Two third of the cropped area is under paddy, a cash crop of the area. Also, the rice-wheat is the dominant sequential cropping system, yet fodders and sugarcane are the other important crops of the area in Kharif and Rabi seasons.

Forests

No natural or artificial forest exists in the project influenced area.

Fauna

The area provides healthy environment for the growth and reproduction of a diverse nature of fauna. A short description is given in the following paragraphs.

Mammals

Mammals within project site

Common mammals reported from the project area wild-bore, hyaena (Hyaena striata), red Indian foxes (Vulpes bengalensis), porcupines and jackals (Canis aureus). Until a few years ago the wolf (Canis palfies) was also found in riverain forests, but the species has almost become extinct due to loss of forests.

List of Mammals Present in and Around the Project Area

Project Site		**Study Area**	
Common Name	**Scientific**	**Common Name**	**Scientific Name**

Cat	Felis catus	Cats	Felis catus
Rat	Rattus rattus	Dogs	Canis familiaris
Squirrel	Sciurus carolinensis	Cows	Heracleum lanatum
Hog Deer	Axis porcinus	Goats	Copra hircus
Boar	Sus scrofa	Horses	Equus caballos
Chinkara	Gazella bennettii	Donkeys	Equus africanus asinus
		Sheep	

Reptiles

Reptiles within Project Site

No reptiles were identified within the project site

Reptiles in Study Area

Above reptiles were also seen in study area in localities and field. The most common reptiles include Snakes, Pakistani Cobra (Naja naja karachiensis), Lizards, Varanis (Goh/large lizard), Spiders and Scorpions, etc.

List of Reptiles Present in and Around the Project Area

Common Name	**Scientific Name**
Lizards	Lacertilia
Spiders	Araneae
Scorpions	Scorpionoidea
Pakistani cobra	Naja naja karachiensis
Goh/large lizard	Varanis

Amphibians

A number of Amphibians found in the tract include Common Frog (Rana tigrina), Common Toad (Bufo bufo) and Tortoise (Chitra indica).

List of Amphibians Present in and Around the Project Area

Project Site		**Study Area**	
Common Name	**Scientific Name**	**Common Name**	**Scientific Name**
Common Frog	Rana tigrina	Common Frog	Rana tigrina
Common Toad	Bufo bufo	Common Toad	Bufo bufo
		Tortoise	Chitra indica

Birds

Different types of birds' species were identified within the project site. The bird's species identified in these areas include House Sparrow (Passer domesticus), House Crow (Corvus splendens), Cheel, Bagle, Bulbul (Pycnon tus cafer), Parrots (Psittacula krameri), Hawk (Buteo Jamaicensis), Kite (Milvus), Pigeons (Columbia livia), Ullu, etc. are also seen in the area. A large variety of waterfowls and migratory birds also visit the region because of the barrages and wetlands in the area.

List of Birds Present in and Around the Project Area

Sr #	**Project Site**		**Study Area**	
	Common Name	**Scientific Name**	**Common Name**	**Scientific Name**
1	House Sparrow	Passer domesticus	Parrots	Psittacula krameri
2	House Crow	Corvus splendens	House Sparrow	Passer domesticus
3	Hawk	Buteo Jamaicensis	House Crow	Corvus splendens
4	Kite	Milvus	Pigeons	Columbia livia
5	Pigeons	Columbia livia		

Wildlife Sanctuaries and Game Reservoirs

No wild life sanctuary or game reservoir is located in the vicinity of the project area or in the project influenced area.

Rare or Endangered Species

There are no rare or endangered species in the study area.

Social Environment

Human settlements are symbol of typical haphazard rural growth based on ill planned developmental procedures showing common indicators of all the unorganized procedure of rural settlement of the province. These localities were developed on need oriented basis. No bye-laws, rules and obligations necessary for human settlement, construction or expansion and infrastructure development were considered. These localities are also the picture of stereotype rural residential areas which lack basic amenities, improper roads, and poor drainage system, deteriorating hygienic and sanitary conditions causing bad effects on human health.

Objectives of the Study

The main objectives of socio- economic study of the project area were:

- To furnish appropriate information about the baseline socio-economic conditions
- To identify and assess significant social impacts of the Project activities on the surrounding area
- To propose suitable means for probable mitigation of the significant adverse social impacts.

An Overview of Socio-economic Conditions

This section describes the status of overall socio-economic baseline conditions prevailing in the study area. Field visits to Sheikhupura suggest that proper HRM practices are not being followed. Most of the finance managers are not technical or trained for managing the financial matters of their respective organizations. Weak link between capacity development and professional growth, poor salary structure and lack of performance management and insufficient human resources are other issues which are affecting the efficiency of the finance and other service delivery departments. It was also identified that the implementation of planning criteria set by the government is weak and the concept of integrated planning approach does not exist. The Finance department the Sheikhupura TMA is of the view that factors such as political priorities and distribution of financial resources are some of the core issues in TMA planning process. The downside of this management is that utilization fluctuates: it was poor in 2006-2007 but improved in 2007-2008 and again decreased in 2008-2009. The utilization in the non-development (Revenue) expenditure has been reasonable except 2007-2008. However on the development side in year 2008-2009 the utilization rate has been extremely slow and the reason may the change of political government in February 2008 where TMA were advised to stop

incurring expenditure on the development projects. It currently remains at zero for all public utilities, and has been so since 2008.

Analysis of Socio-economic Conditions

This section presents a locality-wise analysis of existing status of various socioeconomic parameters such as income, employment, basic facilities, education, health, recreation, migration, conflicts, ethnic status, role of women, professions, residential conditions, etc.

A) Sources of Income

Sheikhupura has developed a good industrial base. According to the Census of Manufacturing Industries of 1987-1988, the value-added generated in large-scale industries was higher in Sheikhupura than in Sheikhupura. The GRP of the City in 1993 was estimated to be Rs. 6,260 million, which constitutes roughly 32% of the district‟s GRP. The industrial sector contributes 68% of the GRP and 43.15% of total employment.

B) Basic Facilities

Basic facilities like electricity, roads, transport, gas, water etc. are not available in the area.

C) Educational Facilities

The stats for schools operating in the district of Sheikhupura are as below:

Gender	**H.Sec**	**Secondary**	**Elementary**	**Primary**
Male	7	78	84	443
Female	11	71	133	325
Total	**18**	**149**	**217**	**768**

D) Medical Facilities

Like the education sector, the health sector in Sheikhupura also suffers from a number of issues especially affecting the lives and health of children and women. The public health facilities have quite a less coverage in terms of providing the health services to the district's population.

E) Recreational Facilities

Sheikhupura has a number of historical places in the city which attracts visitors to the city:

- Sheikhupura Fort Hiran Minar
- Sheikhupura Fort (Qila Sheikhupura)
- Company Bagh
- Shrine of Shah Jamal

- Muqadssa-e-Mariam
- Sacha Sodha
- Tomb of Mian Sher Muhammad Sharaqpuri

G) Types of Community

It was observed that being the members of a typical/traditional blend of rural and urban community, almost all the old people are very conservative in their life style. People practice their traditional, social and cultural values strictly in all walks of life.

H) Types of Family

The joint/extended family system is generally prevailing among people of the whole area; however, nuclear family system is also observable in the area.

I) Ethnic Status

An overwhelming majority of the people belongs to Jutt, Mughal, Hans, Arain, Sial, Gujjar, Kamyana etc. tribes living together with peace and harmony. This shows social cohesiveness, solidarity and harmony among them.

J) Status of Women Literacy

A vast majority of the females of the Study Area are literate which shows very good educational trend among females; however, young females have high literacy rate showing positive trend in female education.

K) Decision Making Authority

Majority of the females have no authority in decision-making process regarding their life. This shows non-participation of the females in decision-making process regarding the females and other issues.

L) Role of Women

Role of female is conventional and traditional. Most of the females are engaged in housekeeping. However, females also perform outdoor activities and duties. Females are supposed to be responsible to perform all the family activities and are involved in all types of family functions.

2- Quality of Life Values

If we specifically about the project area then majority of the people has to adopt seasonal occupation to supplement their income due to low-income level and inconsistent income opportunities. Majority of the people were working as labors, farmers and many do their own common business (shopkeepers). A fair number of people work as laborers in the city industries. The locals of this are provided with basic facilities like electricity, roads, transport etc. but are disorganized and mismanaged. If we talk about educational facilities then education up to primary level are available in almost all the localities and are easily approachable. The proper health care facilities are not present in the area for both male and female population. Open and level fields of the localities are used as playgrounds by the youth. Urs and Melas are playing a vital role to provide some recreational opportunities to the locals.

It was observed that being the members of a typical/traditional blend of rural and urban community, almost all the old people are very conservative in their life style. People practice their traditional, social and cultural values strictly in all walks of life. The joint/extended family system is generally prevailing among people of the whole area; however, nuclear family system is also observable in the area.

Lab Reports of Environmental Analysis

Testing of different parameters has been done by proponents. The copies of lab reports of different environmental parameters are given in annexure.

CHAPTER # 5

SCREENING OF POTENTIAL ENVIRONMENTAL IMPACTS & THEIR MITIGATION MEASURES

The following chapter describes the overall possible impacts of project on the physical, biological and socioeconomic environment because of construction and operation phases and mitigation measures to minimize the significance of the possible impacts up to an acceptable level. The anticipated impacts related to project location, design, constructional and operational phases have been assessed and mitigation measures are provided accordingly.

Environmental Impacts due to project location

Project is present in the industrial area of the District. No nearby human settlement exists within the radius of 500 meter. Unit is proposed weaving unit; site does not fall in the category of sensitive area and no environmentally sensitive localities exist within radius of study area. The only issue which can arise due to the location of the subject project could be the issue of traffic congestion due to transportation of the construction material at the project site. If the project proponent maintain HSE conditions and comply with the PEQS limits than, there will not be any significantimpacts of the project on the environment.

If the mitigation measures are effectively implemented, the residual impact of the Subject project activities on the area's geophysical environment is expected to be insignificant.

Impact significance: Low or may be positive

Nature of impact: Direct

Duration: Long-term

Timing: Operation phase

Reversibility: NA

Likelihood: Low (unlikely),

Consequences: Mild or may be positive

Mitigation Measures for location phase impacts

- Project site should have good road infrastructure and efficient road infrastructure already exists there that is used currently to access the site and there is no issue of the road congestion due to the wide, good and paved road.

- Location can be considered as the positive impact due to utilization of the product in the same District.
- The project will provide the jobs to the local residents as well as to those from the suburban areas.

Environmental Impacts due to the project design

Subject project is the proposed Roomi Fabrics Limited Area for parking, solid waste management and waste water treatment facility will be made availalbe within the subject project.

Firefighting plan, health & safety plan, tree plantation plan, emergency response plan will be incorporated during the designing phase of the project. The subject project will consist of;

- Cotton Godowns
- Cotton Yards
- Blow room
- Production floors
- Finishing hall
- Storage area
- Boiler
- Underground tank
- Store
- Residential colony for workers and employees
- Cafeteria etc.

Following are the major Environmental impacts due to the development related to the design:

- Structural stability of the proposed project.
- Soil structure and soil bearing capacity
- Road infrastructure design
- Emergency exit in the proposed project
- Firefighting system
- Wastewater disposal system design
- Rain water harvesting capacity of the drainage system
- Electricity hazards

Impact significance: moderate to high or may be negative

Nature of impact: direct

Duration: Long-term

Timing: Constructional phase & Operation phase

Reversibility: NA

Likelihood: moderate to high

Consequences: moderate to high or may be negative

Mitigation measures and recommendations

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

- Emergency exist points should be marked within the project building.
- Firefighting system should be designed for the emergency situations.
- Geo-technical investigation of the project site should be conducted.
- Electricity system should be designed safe and sound.
- Electricity wires should be covered by thick plastic/electricity resistant covers.

Environmental Impacts during the construction phase

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

Impacts on the Physical Environment

Soil Erosion and Pollution

There is a possibility of soil erosion and pollution to occur during construction phase of the project. The clearing of vegetation could lead into soil erosion when the cleared land is exposed to natural agents such as wind and surface run-off. Removal of top soil after site clearance by agents such as wind, rain water, and surface run off is a likely action to occur. Similarly, accidental oil spills from construction equipment and discharge of wastewater from equipment washing to the environment might accelerate soil pollution to some extent. Oil spills may infiltrate into soil causing soil pollution and later water pollution during rainy season.

However, this impact is localized around machinery, maintenance areas or garage and areas of concentrated activities. Severity of impact is localized with low intensity due to the nature of project, which shall require minimum number of people during construction and shall not require heavy construction equipment. It is expected that the impacts will be low, local, and they will occur mostly during the construction stage (short term).

Air Pollution

Air pollution is quite likely to occur during construction phase. This is due traffic and other equipment using fossil fuels that release hydrocarbons and other gases including carbon dioxide, nitrous oxides, sulphur oxides, and particulate matters which may pollute the air. Likewise, activities like land clearing, vehicle movement, excavations for buildings foundations, construction drive ways and landscaping may generate dust especially during the dry season.

Other sources of air pollution will occur due to decomposition and/or burning of the cleared vegetation and dust from gravel drive ways. The level of air pollution originating from the above mentioned sources are expected to be low, localized and short term. No serious impacts are expected on people and the environment as whole.

Surface Water Pollution

No surface water entity i.e. stream, canal, river is present in the vicinity of the subject project so there no impact of subject project on the surface water.

Impacts on Biological Environment

Impacts on Flora

The clearance of most vegetation during construction to leave space for construction of proposed unit and other building facilities and access roads will bring negative impacts to flora population. Moreover, direct exposure to nitrous oxides (NOx) may cause growth inhibitions in plants to some extent. No special plant species of international conservation importance was recorded at proposed site. The impacts are therefore considered of low significance.

Impacts on Fauna

The nature of the site has not attracted several organisms to find refuge in the area although some including different types of birds, reptiles, amphibians and invertebrates are found. The clearance of vegetation and presence of noisy machinery, trucks and workforce will create unfavorable environment for most of these organisms while crawling organisms will eventually vanish following construction of paved surface.

However, the temporary nature of the construction activities will result in impacts of short-term duration and therefore the impact is considered of low significance.

Impacts on Socioeconomic Environment

Workers Accidents and Hazards during Construction

Construction workers are prone to accidents resulting from construction activities. These accidents may have acute or chronic impacts depending on nature, severity and intensity. In this regard, construction and mobilization activities of the proposed unit

could result into accidental injuries and hazards, etc. which could negatively impact the workforce.

Because of the intensive engineering and construction activities including erection and fastening of roofing materials, metal grinding and cutting, concrete work, steel erection and welding among others, construction workers will be exposed to risks of accidents and injuries. At times, such injuries may be from accidental falls from high elevations, injuries from hand tools and construction equipment cuts from sharp edges of metal sheets and collapse of building sections among others.

Vibration and Noise

The level of noise and vibration are likely to increase during the construction phase. The noise will be mainly come from vehicles and equipment operation during construction activities as well as people working on the project construction. This is a short-term impact and it will be felt mostly around construction sites and its peripherals.

There will be no drilling activities or involvement of heavy or high noise machinery. For residential areas located within 20km from the Project site boundary, it is predicted that the construction phase and operation of the proposed project will not pose any significant and the annoyance level is within the "no to little" impact category.

Considering technological advancement in construction industry, it is anticipated that machinery and equipment to be used during construction will be modern, versatile, and quieter than the old ones. It is also likely that they will require fewer numbers of operators reducing noise from workers. Therefore, the levels of noise and vibrations are anticipated to be within the tolerable limits, short term and localized. In view of the above and the fact that construction will concentrate on non-residential area, no significant impact is anticipated and the impact can be highly mitigated.

Employment Opportunities

On the other hand, the proposed project will have, during construction phase, potential positive impact to the local community through provision of employment. It is expected that maximum people will be employed during construction phase. Employment will be in form of managers, skilled labors as well as unskilled laborers. Therefore, apart from employment benefits accruing to local people other national and international experts are likely to be employed by the project especially at senior positions.

Income Generation among Suppliers

During construction phase, the proposed project plan to source most construction materials from local and/or national sources including cement, iron sheets, steel bars,

pipes, etc, from local shops. This demand therefore, will create market for local people and/or elsewhere in the country engaged in supplying construction materials leading to significant positive economic benefits to suppliers on short term basis.

Impacts on Security

The presence of laborers and expensive construction equipment, machinery and materials in the sites could potentially pose a security risk at the project site. Furthermore, offenders may capitalize on increased movement during construction and anonymity created by the construction activities to carry out criminal activities in the site and surrounding areas. This impact is likely probable due to low security measures from the fact the site is slightly far from police station(s) that could otherwise prevent criminal activities around the project site.

Accordingly, the impacts on the area's security are considered to be of medium significance. Therefore, appropriate security measures should be provided at the site through fencing, security checks/screening of workers and their guests and 24 hours security watch by expert security men (normally privately contracted) to prevent such criminal activities from happening at the site.

Mitigation Measures

Protection of Flora

In order to protect plant species from potential negative impacts, the proponent shall ensure that:

- The contractor is responsible for informing all employees about the need to prevent any harmful effects on natural vegetation on or around the construction site as a result of their activities;
- Clearing of natural vegetation is kept to a minimum;
- Unnecessary removal, damage and disturbance of natural vegetation are prohibited;
- Re-vegetation of the proposed project site is undertaken;
- Indigenous trees are planted around project area to enhance natural habitat

Land Degradation and Soil Erosion Control

Potential negative impacts on land and soils shall be mitigated by ensuring that:

- The contractor implements erosion control measures as an on-going exercise;
- During construction, the contractor protects all areas susceptible to erosion by installing necessary temporary and permanent drainage works as soon as possible and by taking any other measures necessary to prevent storm water from concentrating in streams and scouring slopes, banks, etc.;

- Any tunnels or erosion channels developed during the construction or maintenance period shall is backfilled and compacted and the areas restored to a proper condition;
- Areas where construction activities have been completed and where no further disturbance would take place are rehabilitated through re-vegetation;
- Ground clearance is minimized and if possible concentrated only to the specific building foundation areas, and only when it is necessary;
- Prompt reclamation of exposed soils is done;
- Construction during long rains period should be done with caution to avoid soil from being washed away;
- Topsoil excavated from buildings foundations is stored for re use on other areas like rehabilitations of quarries

Soil and Water Pollution Measures

Measures to mitigate soil and water pollution impacts during construction phase shall ensure that:

- Concrete mixing directly on the ground is prohibited and only be undertaken on impermeable surfaces;
- Concrete batching activities are located in an area of low environmental sensitivity;
- All runoff from batching areas is strictly controlled, cement-contaminated water is collected, stored and disposed of at an approved site;
- Contaminated water storage facilities are not left to overflow and appropriate protection from rain and flooding are implemented;
- Unused cement bags are stored out of the rain where runoff won't affect it;
- Used (empty) cement bags are; collected, stored in weatherproof containers to prevent windblown cement dust and water contamination, not to be used for any other purpose and shall be disposed of on a regular basis via the solid waste management system;
- All excess concrete is removed from site upon completion of concrete works and disposed of whilst preventing washing of the excess concrete into the ground;
- Entrance or accidental spillage, of solid matters, contaminants, debris and other pollutants and wastes into surface and ground water is prevented;
- Awareness of employees to prevent unnecessary oil spills and protection of environment in their daily duties is promoted; and

- All excess aggregate is removed from site and properly disposed.

Waste Management

To ensure that solid waste is properly managed and potential negative impacts are mitigated, the contractor shall ensure that:

- All facilities are maintained in a neat and tidy condition. Measures to reduce the negligent behavior with regard to the disposal of all refuse are taken, bins, containers and refuse collection facilities for later disposal are provided at all places of work;
- Solid waste may be temporarily stored on site in a designated area prior to collection and disposal;
- Waste storage containers are covered, tip-proof, weatherproof and scavenger proof;
- No burning, on-site burying or dumping of waste shall occur;
- Inert construction rubble and waste materials are disposed of by burying in the borrow pits or a designated site;
- All excavated materials, debris from construction works are not to be stockpiled or deposited near or on stream banks or other watercourse perimeter where they can be washed away by high water or storm runoff or can any way enters to water sources itself;
- Metal refuse bins or equivalent plastic refuse bins, all with lids, are provided to all buildings;
- Domestic refuse is collected and removed from all facilities at least twice per week and transported to the approved refuse disposal site in covered containers or trucks;
- Used oil, lubricants, cleaning materials, etc. from the maintenance of vehicles and machinery are collected in holding tanks and sent back to the supplier;
- Runoff from fuel depots / workshops / machinery washing areas and concrete batching areas is collected into a conservancy tank and disposed of designated site

Air Quality Control

The contractor shall ensure air quality by undertaking the following measures:

- Ensure that the generation of dust is minimized and implement a dust control programme to maintain a safe working environment, minimize nuisance for

surrounding residential areas/dwellings and protect damage to natural vegetation, crops, etc.;

- Exposed soil and material stockpiles shall be protected against wind erosion and the location of stockpiles shall take into consideration the prevailing wind directions and locations of sensitive receptors;
- To minimize the pollution caused by dust generation during the construction stage, water will be sprinkled on the construction site and on drive ways as frequently as possible;
- To minimize exhaust fumes, machinery and equipment shall not be running when not in use while ensuring that they regularly serviced; and
- Construction vehicles and machinery shall be equipped with pollution-control devices to minimize emissions

Vibration and Noise Control

Vibration and noise produced by construction work will be manages as follows:

- The contractor shall strive to keep noise generating activities to a minimum;
- The contractor shall restrict all operations that result in undue noise disturbance to local communities and/or dwellings (e.g. drilling etc.) to daylight hours on weekdays;
- The contractor shall inform in advance any local communities and/or residents that could be disturbed by noise generating activities such as drilling or compacting and shall try to keep such activities to a minimum;
- The contractor shall be responsible for compliance with the relevant legislation with respect to noise;
- Provision of earplugs and earmuffs to the workers working in high peak noises during the construction stage;
- Use of modern low noise machinery and vehicles is recommended;
- Activities that may involve noises and vibration should be withheld at night especially close to human dwellings.

Landscape and Topography

As construction activities are very likely to lead to negative impact on landscape and topography at project site, such impacts will be brought to a minimum by executing the following measures:

- Planting of appropriate indigenous trees, grass cover and other vegetation types on project area should be encouraged so as to enhance scenic beauty of the area; and
- Removal and proper disposal of construction debris need to be effected after completion of construction works and shall not be stockpiled or deposited near or on water sources or other watercourse perimeter where they can be easily be washed away by high water or storm runoff or can any way enter these sources.

Occupation Health and Safety Measures

The following safety measure should be observed during the construction stage:

- Provision of health and safety induction course to all workers;
- Instilling proper code of conduct and work ethics among construction workers and ensure that they are observed;
- Provision of Personal Protective Equipment (PPE) to all workers and enforce their use;
- Installing first aid kit and hire trained personnel to provide first aid;
- Reporting to OSHA within 24 hours of occurrence of any accident or near miss which can cause fatal or permanent disability; and
- Workers should be educated on their own safety and safety of others;
- For covid-19 prevention it is recommended:
- Workers are well-trained to practice and implement social distancing.
- No one is allowed to enter the premises of the project site without wearing proper mask.
- Personal hygiene practices are ensured and labor is trained for it by the contractor and the management of the unit.
- The proponent/contract provides masks to all the construction workers on daily basis and sanitizers are available at specific points of the project site

Environmental Impacts during Operation Stage

Main environmental issues associated with Project operation are as follows.

- Health and safety issues for workers may arise during the project process e.g. Particulate matter may be generated during the project process, which may cause the health issues for the workers and noise of machinery can also be a negative impact on the health of workers.
- Waste water due to domestic and process activities.

- Fire due to short circuits and other activities.
- Solid waste generation due to domestic and project related activities.
- Noise pollution from generator and other machinery.
- Health hazards including the electricity hazards.
- Emissions will be generated from working of boiler.
- Ash from the boiler.
- Sludge from wastewater treatment facility will be generated.
- Vehicle access is required especially for transportation. The site is well served with the road network. Heavy traffic will be allowed only during tight time during operational phase. The traffic issues at any stage of project life cycle will not arise.

Impact significance: moderate to high or may be negative

Nature of impact: direct

Duration: Long-term

Timing: operational phase

Reversibility: NA

Likelihood: moderate to high

Consequences: moderate to high or may be negative

Recommendations

- Safety of workers should be ensured through proper training and PPEs must be ensured during the working hours.
- Wastewater treatment facility should be constructed within the premises of the unit.
- A well design firefighting system will be constructed to cope with fire situations in the subject project.
- Solid waste bins should be installed at designated processes and Installed Solid waste bins should be regularly cleaned and solid waste must be handed over to the EPA Approved contractor.
- Cyclones will be installed at the stack of boiler.
- Ash will be handled carefully.
- Sludge from the wastewater treatment facility will be handed over to the certified contractors.
- Electricity monitoring/Thermography should be conducted by the proponent quarterly for the safe supply.

- Noise levels should not exceed the PEQS.
- Project proponent should submit all the monitoring reports in the EPA Punjab for the compliance of the PEQS.

Potential Environmental Enhancement Measures

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

- Sprinkling of water will be done on dusty roads and tracks.
- PPEs will be provided during construction activity.
- Constructional waste and domestic solid waste will be disposed-off or utilized properly.
- Local people will be informed in advance when work is about to start in an area.
- Machinery will never be left unattended.
- Efforts should also be made to discuss traffic conditions so that regular traffic is not disturbed. Transporters engaged for the project would be forced to adhere to the load specifications of the access road. No overloading would be allowed in any case.
- Safety signs and boards will be placed during construction.
- Air pollution controlling devices will be installed within the project during operation.
- Scrubbing system will be installed at stack of generators.
- Machinery will be kept maintained.
- Waste water will be treated through waste treatment system that will be installed within the premises of the subject project.
- Proper SOPs will be followed with proper schedule along with the HSE conditions.
- Area will be restored with native plants. A proper tree plantation plan will be formulated to save the environment.
- Solid waste will be handed over to contractors and agreement will be made.
- Noise will be controlled by adopting proper measures.
- PPEs will be provided to workers during working.
- Firefighting equipment's and system will be installed.
- Safety signs will be placed at all locations where required.

- Hygienic conditions will be ensured and proper quality will be maintained by quality control testing.
- First aid facilities will be made available.

Covid-19 measures:

- SOP regarding covid-19 prevention and sanitization of all the buildings/facilities will be made.
- Staff will be trained to practice and implement social distancing.
- No one would be allowed to enter the premises of the subject project without wearing proper mask.
- Proper sanitization of all the facilities will be done.
- Guards will check the temperature of everyone walking/coming at the entrance gate.
- Standardized and DRAP approved sanitizers should be made available.
- Awareness campaigns regarding spread of Corona virus and personal hygiene must be carried out by the management of M/s Roomi Fabrics Limited
- Soaps/Hand-wash must be made available in all restrooms/toilets/washrooms and kitchen.
- The proponent and management must strictly follow and adopt all the Covid-19 laws, policies and guidelines provided by Federal/Provincial government and International bodies

CHAPTER # 5

ENVIRONMENTAL MANAGEMENT AND MONITORING PROGRAM

Purpose and Objectives of the EMP:

The primary objectives of the EMP are to:

- Facilitate the implementation of the mitigation measures identified in the EIA.
- Define the responsibilities of the project proponent.
- Define a monitoring mechanism and identify monitoring parameters in order to:

1. Ensure the complete implementation of all mitigation measures.
2. Ensure the effectiveness of the mitigation measures.
3. Provide a mechanism for taking timely action in the face of unanticipated environmental situations.
4. Identify training requirements at various levels.

Management Approach:

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

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

Institutional Capacity

Following functionaries will be involved in the implementation of EMP:

- Project Proponent
- HSE/Project Manager
- In-Charge Administration
- Supervisor of project
- Environmental Engineer

Training Schedules

Training for the management/contractors/engineers and workers on environmental aspects of the project will be arranged on biannually basis during the constructional phase of the project and on quarterly basis during the operational phase of the project. It will be imparted by a team of experienced trainers.

Training of building contractor

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

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

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

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

Responsibility of EMP

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

Summary of impacts and their mitigation measures

Serial	Environmental Issues/ Impacts	Mitigation Measures
PLANNING, SITE SELECTION AND DESIGN STAGE		
1	Observance of administrative and legal formalities	It is recommended for obtaining of approval from other relevant departments.
2	Acquisition of land	The proposed land is the property of the project proponent.
3	Loss of environmentally sensitive areas	There is not any sensitive area near the project site however the project proponent will achieve the PEQS at the boundary wall of the subject project to avoid the environmental impacts on the nearby industrial unit.
4	Changes in traffic pattern	There is no need to change the traffic pattern due the development of the subject project because no. of industries have been developed at the same link road only few vehicles will visit the project on daily basis.
5	Potential conflicts with stakeholders	There is not any conflict at the current stage of the project. Neighboring industries were visited regarding their concerns. They have no objection regarding development of the subject project as per proposed design. It is recommended to Settle the issues through scoping and specific group discussions.

6	Resettlement issues	No resettlement issues
7	Project Design	Provision of Emergency Exits, Assembly Points, firefighting arrangements, water storage for firefighting should be incorporated in the design. Installation of Dust/flue gases/odor controlling devices should be incorporated in the design. Project proponent is committed to provide all these provision in the design of the project.
SITE DEVELOPMENT STAGE		
1	Erosion due to stripping and site clearance	Sprinkling of water on road sides or dusty tracks
2	Generation of dust	Careful loading and unloading of construction materials is recommended. Sprinkling of water on construction site and surrounding areas is recommended.
3	Generation of noise	• Avoid suing forbidden horns at the site. • Do not throw heavy equipment and construction materials in haphazard manner.
4	Local flooding/ponding	Immediate repair and maintenance of water supply pipes and sewers in case of any defect will be undertaken.
5	Outbreak of fire	Firefighting equipment must be maintained at the site in good working condition.
6	Safety	Safety of the workers and others must be

		ensured. Privacy of the neighbors must not be disturbed.
7	Labor issues	Employ the local labor as far as possible Wages of the labor should be as per Government policy
CONSTRUCTION STAGE		
1	Minor erosion of land	There are two types of erosions: 1. Wind Erosion 2. Water erosion • It is recommended to construct the boundary wall first that will reduce the soil erosion due to wind and chances of water erosion due to water flow from the adjacent will be reduced also. • Clearing of land should be step wise; vegetation should be removed only from the area where main building will be developed. • Add more vegetation, restore the land by more plantation • Sprinkle water on dusty tracks is recommended
2	Contamination of land and water	Hazardous substances like oil, fuel, etc. should be kept on concreted surface. Essential services like water supply, sewerage disposal and solid waste management must be in working condition.

3	Impacts of dust, noise and flue gases on neighbors	Sprinkling of water on dusty tracks is recommended. Avoid suing forbidden horns at the site. Do not throw heavy equipment and construction materials in haphazard manner. Proper tunings of vehicles and machinery must be ensured. Schedule construction timings should be implemented for minimum disturbance to neighbors. Continuous Environmental monitoring must be ensured as per proposed monitoring plan.
OPERATION STAGE		
1	Contamination of land and water sources	Continuous vigilance on maintenance of services. Tarpaulin sheets must be placed to avoid leaching of oil into ground.
2	Fire breakouts	Training of workers regarding flammable substances will be ensured. SOPs of fire prevention will be adopted like forbidden of smoking, regular testing of electricity infrastructures and regular testing of gas supply system to the industry. Firefighting equipment must be kept in working condition at site.
3	Safety/security concerns	Safety of the workers and others will be ensured. Privacy of the neighbors will not be

		disturbed.
4	Malfunction of utilities	It is proposed to appoint maintenance engineer with technicians like plumber and electrician for smooth operation of utility services.
5	Occupational Health, Safety and Environment	• Regular medical check-ups must be ensured to improve the working condition and efficiency of workers. • Safety of management, workers and visitors must be ensured. • Observance construction and safety codes must be ensured. • Provision of emergency exits must be ensured.
6	Production of Solid Waste	Area for solid waste must be reserved within the subject project. The solid waste must be managed on regular basis. The domestic waste will be disposed-off in environment friendly way.

Equipment Maintenance Detail

The subject project is proposed Towel manufacturing unit under the name of M/s Roomi Fabrics Limited The company will maintain the records for Health Safety & Environment and will hire HSE manager to check and deal with the HSE issues. The company shall maintain PPEs, medical facilities, firefighting Equipment's as fire buckets, fire hydrants and fire extinguishers and records for their periodic fillings or replacement.

Environmental Budget

The cost which is required to effectively implement the mitigation measures is important for the sustainability of the Project in operation stage of the Project.

Company will allocate the Environmental Budget of 8,000,000/- annually for the Training, maintenance and management of Environment that will include filling and maintenance of equipment's, restoration, plantation, and availability of PPEs, strategic planning to cope with any emergency situation and formulate the disaster management plan to cope with natural disaster. Any equipment or devices failure or replacement will not be included in this budget.

CHAPTER # 6

STAKEHOLDERS PARTICIPATION

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

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

Objectives of Consultation

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

The important general objectives of the consultation process are:

- Information dissemination, education and liaison;
- Identification of problems and needs;
- Collaborative problem solving;
- Reaction, comment and feedback on proposed project;
- Documenting mitigation measures proposed by the stakeholders;

Methodology of consultation:

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

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

- Environmental consultants and social specialists and documenting the opinions of the stakeholders expressed during the meetings etc.

Proponent

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

Responsible Authority

Management of M/s Roomi Fabrics Limited is the responsible authority to take all measures prior to start the activity.

Environmental Practitioners and experts

Team of M/s Safe Enviro-Solutions visited the project site, had discussions with stakeholders and consulted with the local people of nearby and other villages to evaluate the project socio-economic impacts. People provide the massive information about the project and have positive remarks regarding the project development.

Other departments and agencies

For the impact analysis detailed meetings were held with the management of M/s Roomi Fabrics Limited (Pvt.) Ltd, local community, education institutes, health institutes, hospital and NGOs. Issues were discussed that may affect the environment and also the implementation of proposed project. All possible mitigation measures were considered and incorporated in the Environmental Management Plan.

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

Affected & Wider Community

There is no affected community present in the radius of our study area. PGEE team has consulted with the inhabitants of the different villages. They provided positive remarks regarding the subject project and in the favor of the subject activity for the proposed plant. Stakeholders participation Performa's and socioeconomic questionnaire were get filled by the inhabitants to evaluate the project socio-economic impacts. List of respondents and socioeconomic questionnaires are attached as **Annexure-I** with the report.

Categories of stakeholders interviewed in the project area:

Sr. No.	Stakeholder Category
1.	Neighboring factory workers.
2.	Nearby residents
3.	Shopkeepers.
4.	Drivers.

Consultation Areas:

1. Qiam Pur
2. Bamban Kalan
3. Khokhariki Mallian

Consultation Pictures:

In addition to the above categories, authorities of administrative and educational institutions, commerce and Investment Department (C&I), Environmental Protection Department (EPD) etc. were also consulted for more effective participation and appraisal of the proposed project.

Issues Discussed:

Following issues were discussed during the stakeholder consultation:

- Overall activities of the project;

- Possible impacts on natural vegetation, air, land and properties;
- Possible mitigation measures;
- Benefits of the project specifically for the local people.

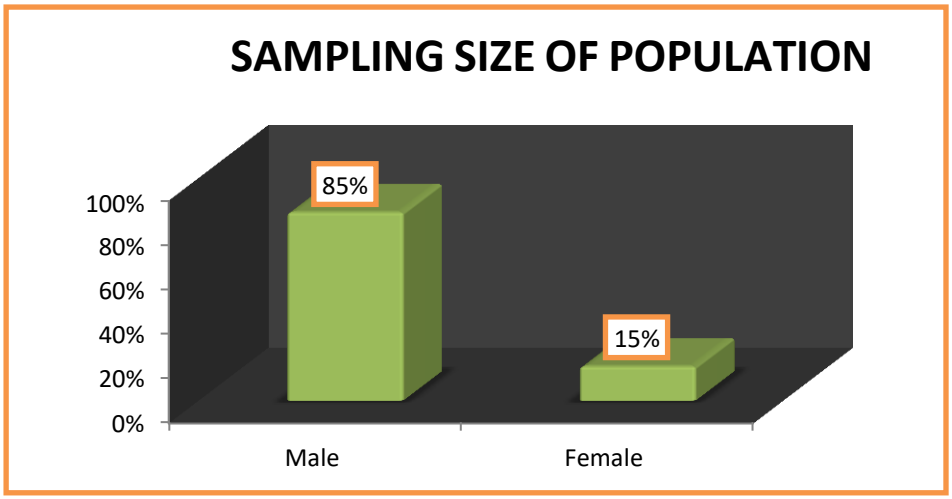
Sample size

Sample size of 30 respondents was selected by the Team of consultants for conducting the socioeconomic survey. Women were also consulted for the said survey; some of their names are mentioned in the above list of respondents while most of them were not willing to give personal information. List of respondents is attached at the end of this chapter.

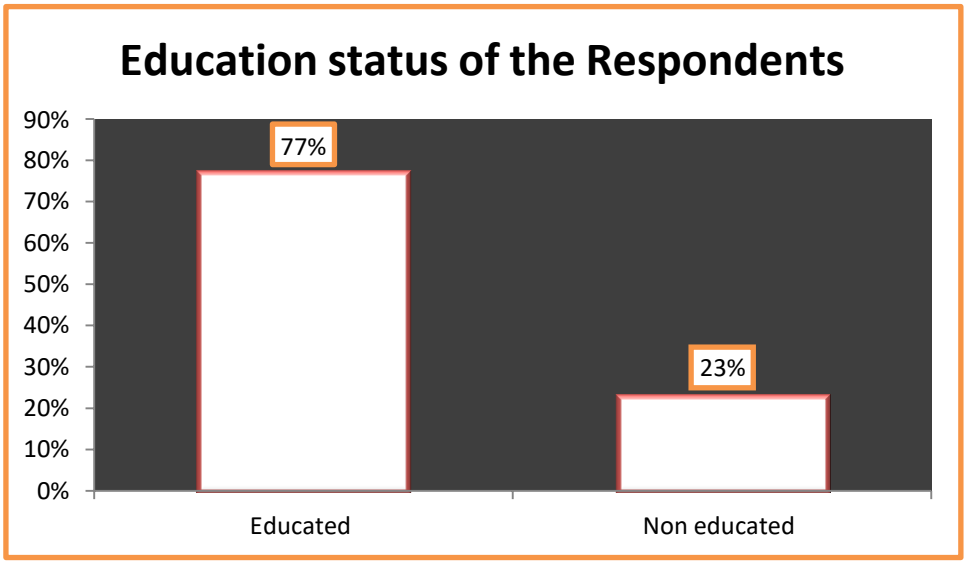
Statistical Analysis

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

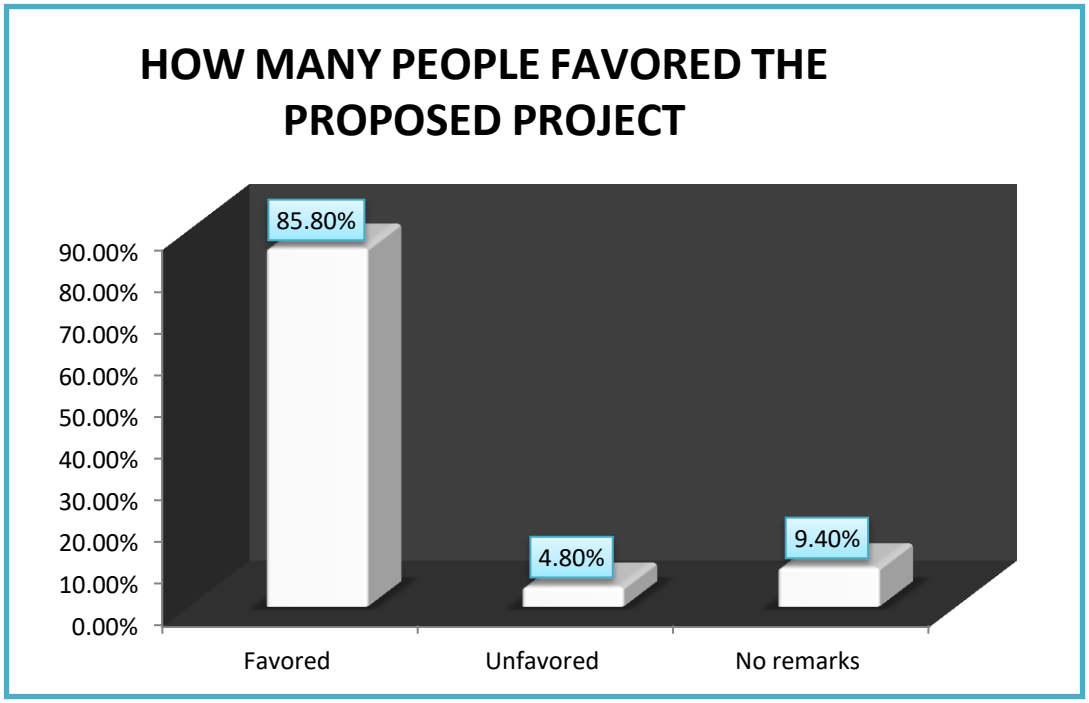
Graphical representation of analysis is given below:



In the sampled population, 85% respondents were male while 15% respondents were female. The number of female respondents is less as compared to male respondents because according to the social binding female hesitates to respond or communicate comfortably.

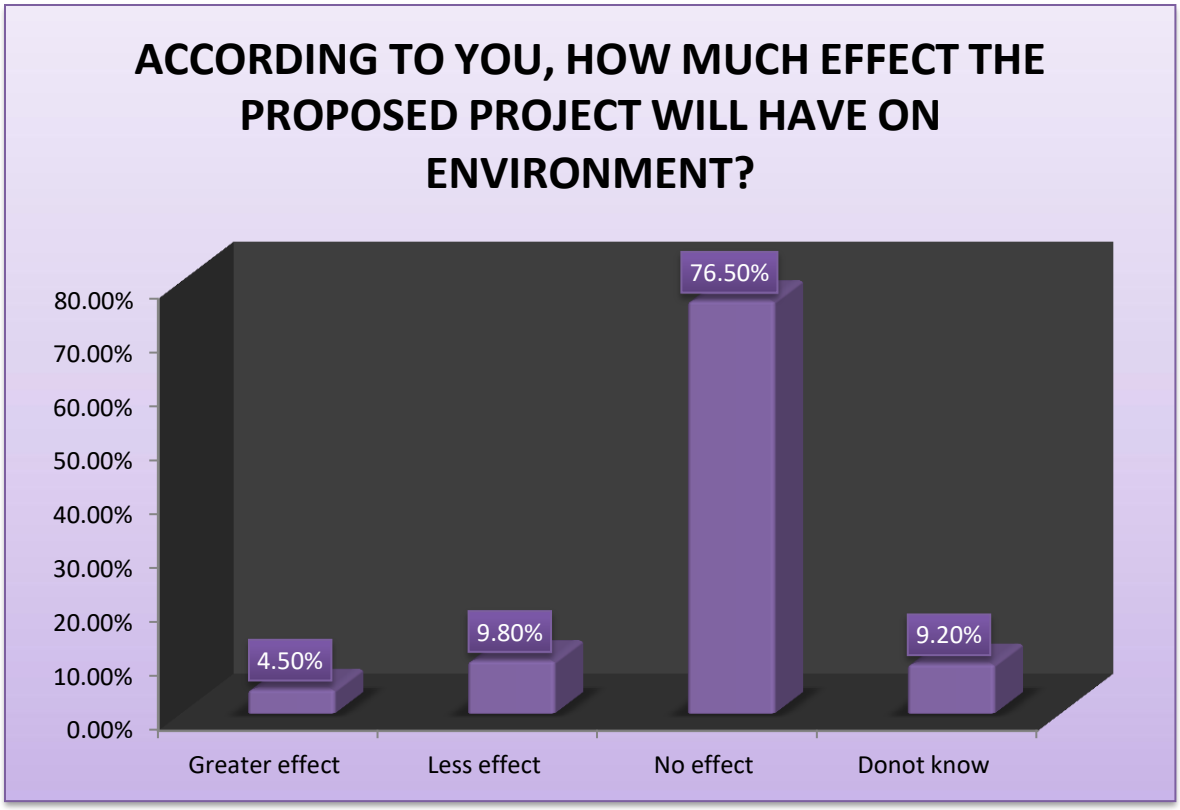


In the sampled population, 77% respondents were educated while 23% were uneducated. Overall education status of the area is good.

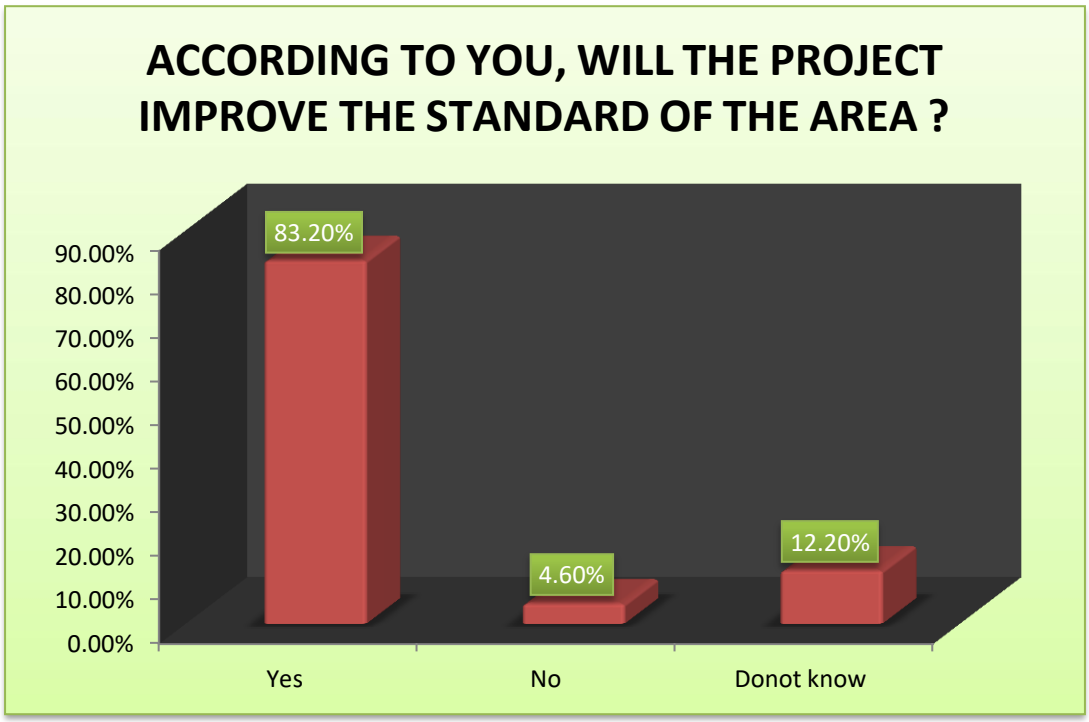


As per survey, 85.80 % people favored the proposed project and they gave positive remarks regarding the subject project. While 9.40% respondents had no opinion regarding

the project and 4.80% respondents were not satisfied with the proposed project because they think that development will affect the natural aesthetics of the area.



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



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

Findings of the Overall Discussion:

- After the completion of the proposed project the site will be used for industrial activities.
- It will enhance the socio-economic conditions/values of the area.
- Project will increase revenue generation for the Government.
- It will create employment opportunities.

- Local people will be given preference for employment in the proposed project.
- Construction of the proposed project will be completed in the designated timeframe to limit adverse impacts of construction.
- There will be no significant additional load on the existing infrastructure i.e. utilities of water, telephone, electricity etc. due to the development of the proposed project.

Majority of people favored the proposed project in a sense that the construction of the said project will generate employment opportunities for local people and revenue for the government, will enhance the socioeconomic conditions of the area and automatically will contribute to the national economy of the country.

List of Respondents

Sr. No.	Name of Respondent	Education Status	Age	Occupation
1	Farhan	Middle	33	Worker
2	Kamran Nazir	Matric	29	Guard
3	Fahad Ali	Primary	42	Driver
4	Iqrar	Intermediate	38	Shopkeeper
5	Zahoor	Graduation	26	Employee
6	Mohsin	Nil	21	Labour
7	Subhan Ali	Nil	18	Labour
8	Muhammad Tayyab	Graduation	22	Student
9	Fariha Altaf	Undergraduate	20	Intern
10	Ghulam Ishaq	B.sc	40	Employee
11	Irfanullah	Primary	38	Driver
12	Saeed Rasool	Nil	35	Labor
13	Iqra Batool	Intermediate	28	Employee
14	Syed Nasir Khan	B.A	30	Employee
15	Waqif Shah	Middle	32	Shopkeeper
16	Hikmat Shah	Matric	37	Guard

17	Rohina Aziz	Matric	34	Worker
18	Gul Sher	Intermediate	28	Shopkeeper
19	Astam Khan	Intermediate	26	Salesman
20	Muhammad Umer	Graduation	25	Medical Wrap
21	Salma Bashir	Nil	40	Nil
22	Zainab Bashir	Intermediate	18	Student
23	Jahanzeb	Matric	24	Guard
24	Rasheed Khan	Middle	40	Driver
25	Shaheen Idrees	Matric	27	Worker
26	Sabir Khan	Nil	33	Labour
27	Alam Noor	B.Com	24	Employee
28	Rashid	Intermediate	21	Salesman
29	Zaman	Masters	30	Self Employed
30	Farhat Ali	Nil	36	Labour

Chapter # 07

Impact Assessment

Identification of all impacts:

All the impacts related to the subject project due to the project location, design, during the construction phase and operational phase have been identified and their mitigation measures have been suggested in *Chapter # 4, Screening of potential environmental impacts and mitigation measures.*

Methodologies for impact identification:

The methodology adopted for impact evaluation includes the Project Impact Evaluation Matrix.

Project Impact Evaluation Matrix

The impact Evaluation matrix was developed by placing project activities on x-axis and different environmental parameters likely to be affected by the proposed project actions grouped into categories i.e. Physical, Biological and Socio Economic Environment. For the impact assessment, project impact assessment matrix is used by dividing the project action into different phases (Construction phase and operation phase). A project impact evaluation matrix is attached in next section of this chapter.

The evaluation of impacts has been carried out on the basis of developing matrix, in which impacts have been rated on the basis of their significance. For rating impacts significance following criterion has been developed;

NA – Not Available
O – Insignificant (No or minimal impact)
LA – Low Adverse (Short term, reversible or less damage to environment)
MA- Medium Adverse (Long term reversible damage to environment)
HA – High Adverse (severe irreversible adverse damage to the environment)
LB – Low Beneficial (Short term benefits or less beneficial to the environment)
MB – Medium Beneficial (Long term benefits to environment)
HB – High Beneficial (Continuous benefits to environment)

CONSTRUCTION PHASE																
	Physical Environment							Biological Environment		Socio-Economic Environment						
Environmental Component / Project Activities	Topography & Drainage	Soil Quality	Landscape	Surface water Quality	Ground water quality	Air quality	Noise	Flora	Fauna	Agricultural Land	Health & Safety	Disruption of Public Utilities	Employment	Population Disturbance	Social Disorder	Cultural Values	Traffic Management
Placement of construction machinery on site	LA	LA	MA	LA	O	O	O	MA	LA	MA	LA	O	O	MA	LA	LA	HA
Parking of heavy vehicles	LA	O	LA	O	LA	O	O	LA	O	LA	LA	O	O	MA	MA	MA	HA
Transportation of raw construction material	LA	MA	MA	LA	O	HA	HA	MA	HA	LA	HA	O	MB	HA	HA	LA	HA
Temporary storage of raw material	LA	LA	LA	MA	LA	MA	O	LA	O	LA	LA	O	LB	LA	O	O	HA
Loading and unloading of raw material	LA	LA	MA	MA	O	HA	MA	LA	LA	LA	MA	LA	MB	HA	LA	O	MA
Labour camping on site	O	O	LA	LA	O	O	LA	LA	O	LA	LA	HA	O	HA	MA	MA	O
Storage of oil and fuel	LA	MA	LA	LA	O	LA	O	LA	LA	LA	MA	O	LB	O	O	O	O
Extraction of ground	O	O	O	O	MA	O	O	MA	O	MA	LA	HA	O	O	LA	O	O

water																
Construction material mixing/ preparation	LA	MA	LA	LA	LA	LA	HA	O	O	O	HA	HA	HB	MA	LA	MA	O
Welding/ cutting and steel fix ring process	O	O	O	O	O	MA	HA	O	O	O	HA	O	HB	MA	LA	LA	O
Shuttering/ beams	O	O	O	O	O	MA	HA	O	O	O	HA	LA	HB	MA	MA	MA	O
Building roofing	O	O	O	O	LA	MA	MA	O	O	O	HA	LA	HB	MA	LA	LA	O
Operation of generators	O	O	O	O	O	HA	HA	O	O	O	HA	LA	HB	LA	LA	O	O
Excavation	HA	MA	MA	LA	LA	HA	HA	MA	LA	O	HA	O	HB	LA	O	O	O
Water tank/ pond on site for temporary storage	O	O	O	LA	LA	O	O	O	B	O	LA	LA	B	LA	O	O	O

Legend:

O=Negligible/No impacts B=Beneficial LA=Low Adverse MA=Medium Adverse HA=High Adverse

OPERATIONAL PHASE																
	Physical Environment							Biological Environment		Socio-Economic Environment						
Environmental Component / Project Activities	Topography & Drainage	Soil Quality	Landscape	Surface water quality	Ground water quality	Air quality	Noise	Flora	Fauna	Agricultural Land	Health & Safety	Disruption of Public Utilities	Employment	Population Disturbance	Social Disorder	Cultural Values	Traffic Management
Transportation of raw material/ products	MA	MA	MA	MA	O	MA	HA	LA	MA	O	HA	LA	B	MA	LA	O	HA
Production process	O	O	O	HA	MA	MA	MA	O	O	O	HA	HA	HB	O	O	LA	O
Washing process	O	O	O	LA	HA	O	O	LA	LA	LA	LA	HA	B	O	O	O	O
Operation of boilers	O	O	O	LA	HA	MA	MA	O	O	O	HA	HA	HB	O	O	O	O
Operation of generators	O	O	O	O	LA	HA	MA	O	O	O	HA	LA	HB	O	O	O	O
Water consumption	LA	O	LA	HA	HA	O	O	LA	LA	LA	LA	HA	B	LA	O	O	O
Wastewater generation	HA	MA	MA	MA	MA	LA	O	MA	MA	MA	HA	LA	B	LA	LA	O	O
Storage of raw materials/ dyes	O	O	O	O	O	O	O	O	O	O	LA	O	B	O	O	O	O

Social activities	O	O	LB	B	B	B	B	B	B	HB	HB	B	HB	HB	HB	O
Public welfare	O	O	B	B	B	B	B	B	B	HB	HB	HB	HB	HB	HB	LB
Economic activities	LB	O	B	B	B	B	B	B	B	B	HB	B	B	B	B	LB
Employment	O	O	O	O	O	O	O	O	O	O	B	B	B	B	B	LB
Infrastructure improvement	LB	MB	HB	B	B	B	B	HB	LB	HB	HB	B	HB	B	B	B

Legend:

O=Negligible/No impacts B=Beneficial LA=Low Adverse MA=Medium Adverse HA=High Adverse

Impact analysis and prediction:

In order to evaluate the socioeconomic and environmental impacts, filed surveys are extremely essential. In addition to the surveys at the preliminary stage, consultation with the community and their active participation plays a vital role in successful implementation of the project. For the impact analysis and predictions following methods were adopted:

Consultations/ case studies:

To study the impacts of the project on physical and biological environment, site visits were conducted by the environmental practitioners and experts and possible physical and biological impacts which may arise due to the subject project were identified through consultations and case studies and their mitigation measures were suggested accordingly.

Meetings:

For the identification of the social impacts of the project, meetings and group discussions were held with the local people, stakeholders, nearby residents and passerby because social acceptability of the project and the area is a key to success. Consultation with the stakeholders is a tool for managing two-way communication between the project proponent and the affected public. Its goal is to improve decision making and built understanding by actively involving individuals, groups and organizations, which have stake in the project. This involvement increases project's long term viability and enhances its benefits to locally affected people and other stakeholders.

To identity the different types of stakeholders and ascertain their perceptions about the project, an initial environmental examination was conducted. Informal group discussions were also held as an additional tool for obtaining feedback from the stakeholders that are being discussed in the following.

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

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

- Environmental consultants and social specialists and documenting the opinions of the stakeholders expressed during the meetings etc.

Characteristics of impacts:

Impact assessment criteria:

The impacts were assessed in the light of criteria given as under:-

- Magnitude or degree of impact
- Time and duration of impact
- Likelihood of impact occurrence
- Sensitivity of impact
- Risk related to impact

Potential Positive Impacts:

The project is envisaged to have following major positive impacts;

Employment opportunities:

M/s Roomi Fabrics Limitedwill help in generating new jobs for the local population. The requirement of Managers, Engineers, Workers, technicians, skilled and unskilled labor etc. will generate employment opportunities. It is estimated about 500 persons will be employed during operational phase and about 18-20 persons will work during construction phase. Hence, there is large number of employment opportunities especially for the locals of the district.

Increase in Business:

With the influx of laborers for the proposed project, there will be more opportunities for small scale business such as small food cafes etc.

Improved Infrastructure:

Construction of M/s Roomi Fabrics Limitedwill improve the infrastructure of the area as proponent has incorporated aesthetic values and regeneration of site in its planning stage.

Economic benefits:

Construction of M/s Roomi Fabrics Limitedis a majors Unit in the country; it is a great investment for the economy of our country. In the long run it will positively impact not only the local population but also the economy of Pakistan.

Potential Negative Impacts:

Types of Negative Impacts

Minor Impacts

These are of minor intensity. For mitigation of the minor impacts routine and limited actions are required.

Moderate Impacts

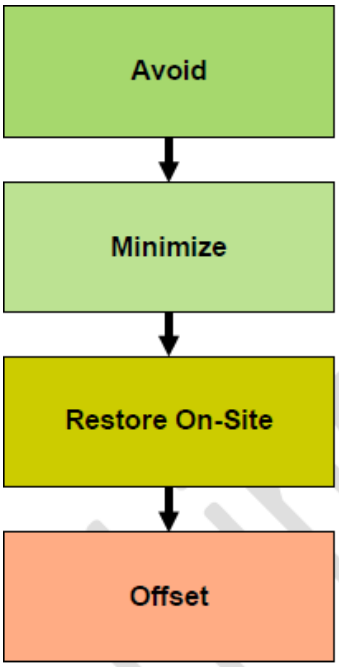
These impacts need specific and additional mitigation measures.

Major Impacts

These impacts have severe adverse impact. These are intolerable. All possible preventive and multiple control measures are adopted to minimize their intensity and duration.

Mitigation assessment criteria:

The Mitigation Hierarchy establishes a structure to guide development and application of measures to mitigate impacts on environmental values and associated components. The term “mitigation” applies to four steps, or levels, in the mitigation hierarchy:



General principles

1. Maintaining the integrity and natural functions and processes of ecosystems, and the resilience of ecosystems, is prerequisite to sustainable use of natural resources, and essential to maintaining ecosystem goods and services over time.
2. The mitigation hierarchy is applied in order of priority as follows:
    a. Avoid
    b. Minimize
    c. Restore On-Site
    d. Offset (Off-Site or On-Site)
3. Generally, the "higher" the priority of the environmental value and associated component, the more protective the mitigation measures.
4. For an action or measure to be considered "mitigation", a party must accept responsibility for implementation of appropriate mitigation measures, and there must be certainty that the mitigation measures will be carried out.
5. Implementing mitigation measures can help resolve issues that may delay or prevent a proposed project or activity.

General considerations

1. Which environmental values and associated components will be impacted by the proposed project or activity? (This will be determined from the output of the

environmental impact assessment, i.e., the Environmental Impact Assessment and Mitigation Plan)

2. Have the criteria being used to determine relative priorities among environmental values and associated components?
3. Have mitigation measures for impacts on environmental values and associated components, at all scales, been considered?
4. What is the current condition of each environmental value and associated component actually present within the footprint and area of influence of the proposed project or activity?
5. Can impacts on one or more environmental values or associated components be more fully mitigated than impacts on other environmental values and associated components?
6. Are there multiple environmental values and associated components with conflicting management needs and potential conflicts that need to be considered?
7. Is sound guidance available and being used, e.g., are best management practices (BMPs) and guidelines available for affected environmental values and associated components?
8. Is there opportunity to collaborate with other proponents that may have interest in overlapping mitigation measures?

Impact significance of:

- ***Ecological importance***

Natural Vegetation

Project activities do not impose any potential impact on the area's natural vegetation and plantation.

Assessment of Impact:

A significant impact will be interpreted if unnecessary or excessive removal and burning of plants for fuel wood is observed. In case of subject project no tree cutting will be required for the construction of the subject project.

Nature of impact: Direct

Duration: long term

Timing: construction phase

Reversibility: irreversible

Likelihood: moderate

Consequences: Mild, as no rare plant species are not present in the project area.

Impact significance: significant

Mitigation Measures:

The following mitigation measures will reduce any impact on vegetation:

- Do not park vehicles on green belts/ grass
- Unnecessary damage to vegetation will strictly be avoided.
- Proponent will plant trees and other species after construction phase

Residual Impact:

Given the current state of the vegetation, and proper implementation of the proposed mitigation measures, slightly significant residual impact on the natural vegetation of the area is anticipated.

Fauna

The fauna including wildlife species do not exist at the project site**.**

Nature of impact: Direct

Duration: short term

Timing: construction phase

Reversibility: not applicable

Likelihood: low

Consequences: Nil, as no rare plant species are not present in the areas.

Impact significance: not significant

Residual Impact:

Given the current state of the fauna there is no significant residual impact on the wild life of the area.

- ***Social importance***

Following parameters were adapted for the assessment of the well-being of the poor people near the project site that are used to assess the social, economic, and cultural impacts of the project.

Inconvenience due to construction Vehicles:

During the construction period a minor impact may be the movement of vehicles from the main road to the proposed plant boundary; it may affect the traffic on other roads and may cause minor annoyances to the residents and other industrialists of the area. The transportation of heavy materials and equipment is likely to damage the existing roads if they were used for the transportation of heavy machinery.

Mitigation measures: Efforts should also be made to discuss traffic conditions so that regular traffic is not disturbed. Transporters engaged for the project would be forced to adhere to the load specifications of the access road. No overloading would be allowed in any case.

Nature of impact: Direct

Duration: Short term

Timing: construction phase

Reversibility: reversible

Likelihood: low

Consequences: low, as it links the main Multan road and vehicles will rarely use the sub roads

Impact significance: slightly significant

Cultural Issues:

Induction of outside workers in the Contractor's labor may cause cultural issues with the local community as the local community is very sensitive about their cultural values. Also theft problems to the local community may arise by the labor force and vice versa.

Mitigation Measures: Good relations with the local communities will be promoted by encouraging contractor to provide opportunities for skilled and unskilled employment to the locals, as well as on-the-job training in construction for young people. Project manager will restrict his staff to mix with the locals to avoid any social problem.

Contractor will keep the copies of Computerized National Identity Cards (CNIC) of his workers and will warn them not to involve in any theft activities. And if anyone would involve, he will have to pay heavy penalty. Similarly, at the time of employment contractor has to take care that the workers should be of good repute. The contractor

camp will be properly fenced and main gate will be locked at night with a security guard to check the theft issues.

Contractor will also be the responsible for the sensitivity towards the local customs and traditions.

Nature of impact: Direct

Duration: Short term

Timing: construction phase

Reversibility: reversible

Likelihood: low

Consequences: low, if project proponent implements mitigation measure, its impact will be low

Impact significance: slightly significant

Accident risks:

Unmonitored construction activities may create an accident risk for the local residents particularly children and labor force.

Mitigation measures: Contractor must have first aid kits along with the medical officer in the field if a minor injury takes place, but for an unfortunate accident services of nearby hospitals will be availed. Routine medical check-ups of all the field staff including unskilled labor need to be conducted by a qualified doctor.

Training of the workers should be arranged regarding safety procedures, environmental awareness, equipping all construction workers with PPEs, safety boots, safety helmets, ear plugs, gloves and protective masks. Monitoring must be carried out to check for the sustainable use of PPEs.

Nature of impact: Direct

Duration: Short term

Timing: construction phase

Reversibility: not applicable

Likelihood: moderate

Consequences: moderate, as complete trainings and mitigation measure have been planned.

Impact significance: significant

Privacy Issues:

Disturbance may happen to the privacy of women residing in the work area when workers will work at height.

Mitigation Measures: Contractor must take care for the privacy of residents, especially women near the working area.

Nature of impact: Direct

Duration: Short term

Timing: construction phase

Reversibility: reversible

Likelihood: low

Consequences: low, as contractor will take care of the matter

Impact significance: slightly significant

Sharing of resources:

During the construction and operational phase of the project, workers will share the common resources like potable water, fuel, wood. It may create conflicts between work force and local population.

Mitigation measures: The contractor will be required to maintain a close friendly relationship with the local communities to ensure that there may not be any conflict related to common resources utilization. He must get permission of the local population before using their common sources of water and other resources.

Nature of impact: Direct

Duration: Short term

Timing: construction phase

Reversibility: reversible

Likelihood: low

Consequences: low, it the terms & conditions will be followed and mitigation measures have been employed

Impact significance: significant

Noise Problems:

Residents of the area and neighbors may face the problems of noise during the construction and operations phase.

Mitigation measures: Large noise generating activities should be carried out in fixed hours. The timing will be known to all the people in 500 m radius of the site.

Nature of impact: Direct

Duration: Short term

Timing: construction phase

Reversibility: reversible

Likelihood: Moderate

Consequences: Moderate, project contractor will follow the safety guidelines & NEQS

Impact significance: significant

Mobilization issues:

During the construction phase, the general mobility of the local residents and their livestock in and around the study area is likely to be hindered.

Mitigation measures: It will be the responsibility of project contractor and drivers to follow the speed limits in the area.

Nature of impact: Direct

Duration: Short term

Timing: construction phase

Reversibility: reversible

Likelihood: low

Consequences: low, as it links the main Multan road and vehicles will rarely use the sub roads

Impact significance: slightly significant

Health:

People from the project area regularly travel to other cities, and thus cannot be considered isolated from the rest of the country. They are regularly exposed to illnesses common to urban populations, and have similar levels of immunity. The project is therefore very unlikely to lead to an epidemic of any sort among local communities.

Mitigation measures: Regular medical check-ups of all the workers need to be conducted to ensure the health of workers and local population.

Nature of impact: Indirect

Duration: Long term

Timing: construction / operation phase

Reversibility: reversible

Likelihood: moderate

Consequences: low to moderate, it may cause disturbance or spread of disease in the area if mitigation measure will not followed

Impact significance: significant

Safety:

Project activities could become a hazard as it is located in populated area local people, especially children, are likely to gather around to watch the activity. The other safety issue is that of traffic, especially along access roads close to settlements. To reduce the hazards, the following mitigation measures will be implemented:

- Local people will be informed in advance when work is about to start in an area.
- This may result in people keeping young children away from work areas.
- Machinery will never be left unattended.
- Safe driving practices will be adopted, particularly while passing through settlements.

Nature of impact: Direct

Duration: long term

Timing: construction / operation phase

Reversibility: irreversible

Likelihood: moderate to high

Consequences: moderate if all safety measure will be taken care

Impact significance: Significant

- ***Environmental standards***

Topography:

The project will not change the topography of the area as proponent committed to sustainable development of the proposed project. The infrastructure of the area will be maintained after the construction activities.

Residual Impact:

The residual impact of project activities on the topography of the area is expected to be insignificant.

The residual effects are summarized below:

Nature of impact: direct

Timing: construction Phase

Duration: during construction activities

Likelihood: Nil

Consequences: no change

Impact significance: Not significant

Mitigation measures:

The project design should include measures to maintain the project landscape that matched the pre project natural green features achievable through extensive plantation. Project activities must be executed in a way it will not harm naturally available resources.

Land Acquisition Resettlement:

One of the major impacts includes acquisition of land from the land owners and the resulting displacement of their families and disturbances in the livelihood of the affected persons (AP) in the project area. But present project land is ownership of M/s Roomi Fabrics Limitedand do not involve any type of land acquisition and resettlement activity.

Residual Impact:

The residual impact of project activities for the land acquisition & resettlement of the area is expected to be insignificant.

The residual effects are summarized below:

Nature of impact: direct

Timing: Planning stage

Duration: not applicable

Likelihood: Nil

Consequences: no change

Impact significance: Not significant

Mitigation measures:

If any resettlement involve, proponent must consult the affected persons and incorporate their interests and demands.

Changes in Land Use:

The current land use of the area is mainly industrial. Project is expected to increase land use value particularly near the main road creating easy economic and employment opportunities for locals.

Residual Impact:

The residual impact of project activities on land use of the area is expected to be insignificant.

The residual effects are summarized below:

Nature of impact: direct

Timing: construction phase

Duration: not applicable

Likelihood: Nil as it is not involving any constructional activity that may cause change in land use

Consequences: no change

Impact significance: Not significant

Mitigation measures:

The impact of change in land use must incorporate in planning stage so that it may not cause any hindrance during the constructional phase.

Solid waste/ sludge management:

Proper solid waste management system is necessary for the prompt, timely and efficient disposal of solid waste & sludge for the reduction of its impacts. Impacts due to solid waste & sludge are expected to be temporary and minor in nature.

Nature of impact: Direct

Duration: Short term

Timing: operation/ construction

Reversibility: Not applicable

Likelihood: Low (unlikely) as mitigation measures will ensure that Solid waste management will be efficient

Consequences: Mild, as it will be removed from site within few hours

Impact significance: Low, based upon low likelihood and mild to moderate consequence.

Mitigation measures:

- Planning of solid waste disposal sites with reasonable distance from the human settlements
- A minimum distance of 1 km should be maintained between the solid waste disposal site and nearest human settlement
- Devise plan & develop guidelines for the safe handling, storage & disposal
- Sludge must not be placed at the site after cleaning of wastewater treatment tank
- PPEs are strongly recommended for workers for the handling of sludge

Residual Impact:

After implementing the mitigation measures listed above, the residual impact of the solid waste/ sludge is expected to be insignificant.

Air Quality Potential Impact:

Air emissions from project-related activities are likely to include:

- Dust raised on dirt tracks by project-related vehicles.
- Combustion products (nitrogen oxides, sulfur dioxide, particulate matter, carbon monoxide, and volatile organic compounds) from vehicles used for project-related activities

Assessment of Impact

1) Dust Emissions:

Dust emissions caused by vehicular traffic on dirt track are an important concern, primarily when such traffic passes near community settlements. Dust emissions cause the amount of particulate matter in the air to increase, and thus become a health concern. Dust clouds also reduce road visibility, creating a traffic hazard.

2) Gaseous Emissions:

Emissions produced by vehicles and equipment will be similar to those produced by generators in terms of the resulting pollutants (SO_2, NO_X, PM, etc.). However, the extent to which they are produced will be kept considerably lower, since much smaller engines are used in vehicles and construction machinery.

Nature of impact: Direct

Duration: long term

Timing: operation/ construction

Reversibility: irreversible

Likelihood: moderate as mitigation measures will ensure that air pollution remains within acceptable limits.

Consequences: moderate, as pollutant levels in the ambient air will be well within acceptable limits.

Impact significance: moderate, based upon low likelihood and mild to moderate consequence.

Mitigation Measures

None of the potential effects discussed above are expected to exceed acceptable limits.

The mitigation measures given below will further reduce their impact, and ensure that they remain within acceptable limits.

- All equipment and vehicles used during the project will be properly tuned and maintained in good working condition in order to minimize exhaust emissions.
- Vehicle speed will be reduced on track passing through or close to shops
- Imposing speed limits and encouraging more efficient journey management will reduce the dust emissions produced by vehicular traffic. Water will be sprinkled where necessary to contain dust emissions.
- Management will make sure process is environmental friendly

Residual Impact:

After implementing the mitigation measures listed above, the residual impact of the proposed activities on ambient air quality is expected to be low.

Noise level:

Noise may be a major concern during the construction/ operation phase. It can be generated from the machinery used for construction and operations. Generators and boilers are another source of noise pollution.

Nature of impact: Direct

Duration: long term

Timing: operation/ construction

Reversibility: Not applicable

Likelihood: moderate

Consequences: slightly significant, if above mentioned mitigation measure will be strictly followed

Impact significance: moderate, based upon low likelihood and mild to moderate consequence.

Mitigation measures:

- Keep the traffic load aligned and minimum during working hours of project
- Machinery and vehicles must be well tuned and maintained
- Impose the limits on unnecessary use of horns
- Safety signs must be displayed and public & drivers must be well aware of them
- Do not work in night time

Residual Impact:

After implementing the mitigation measures listed above, the residual impact of the noise level will be slightly significant.

Conclusion

Management of M/s Roomi Fabrics Limited has to achieve the following goals.

- Identification of regulatory requirements that apply to the project activities in the context of environmental protection.
- Identification of the environmental features of the project area and the likely impact of the project on the environment,
- Recommendation of appropriate mitigation measures that management will incorporate into the project implementation to minimize all adverse environmental impacts.
- Baseline environmental and socioeconomic information collection from a variety of sources, including field surveys.

The impacts of project in area will be insignificant, provided the generic mitigation measures proposed in this report are implemented.

After assessing the project activities and investigating the project area, it is concluded that, if the activities are undertaken in this report, and the recommended mitigation and environmental management measures are adopted, the project will not result in any long-term or significant impacts on the local community or the environment.

Chapter # 08

Mitigation and Impact Assessment

Purpose of Mitigation measures

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

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

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

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

Where and how the problem should be addressed?

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

Whys of achieving mitigation measures

Changing in planning and design:

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

Improved monitoring and management practices:

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

Compensation in money terms:

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

Replacement, relocation and rehabilitation:

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

ENVIRONMENTAL MANAGEMENT PLAN OF M/s Roomi Fabrics Limited

Serial No.	Environmental Parameter/ Element	Mitigation measure/Enhancement Measures to be taken during:		
		Construction	**Regular operations**	**Responsibilities**
1.	Gaseous/ Dust emissions	**1-** Control speed of construction vehicles **2-** To minimize dust generation water should be sprinkled on the construction site and on drive ways as frequently as possible. **3-** Regular maintenance of equipment. **4-** People who are working and exposed to severe dust and exhaust fumes should be provided with PPEs. **5-** The use of low sulphur fuels in construction equipment and ensuring proper vehicle and equipment maintenance. **6-** Construction vehicles and machinery shall be equipped with standard	1- Air emissions from boiler stack will be controlled by installing dry scrubbers. 2- Management of M/s Roomi Fabrics Limitedwill ensure that PPEs i.e. masks will be provided to workers during the working hours. 3- Vehicles to be used for the transportation of raw materials at the project site should be properly tuned. 4- Generator shall cater for emergency situation only. Their exhaust will be emitted through	**HSE/Environment Manager**

		pollution-control devices to minimize emissions. **7-** Civil debris, if generated during construction phase, shall be disposed in low-lying areas for land filling. **8-** Construction materials i.e. sand, clay should be transported to the project site in covered trucks. **9-** All project vehicles should be checked regularly to ensure that engines are in sound working condition and are not emitting smoke. **10-** Construction materials i.e. sand, clay and like shall be transported to the project site during night time and will be stored away from the road or foot path. They will be kept under cover to avoid any fugitive dust.	an adequately fabricated stack. It will also be ensured that the generators will only function during emergency condition for limited period. 5- Monitoring should be conducted on Monthly basis as per EPA PEQS Rules.	

		11- The site proposed for the M/s Roomi Fabrics Limitedis located away from humansettlements. **12-** All equipment, generators, and vehicles used during the project construction will be properly tuned and maintained in good working condition in order to minimize exhaust emissions.		
2.	Noise	1. Ensure Noise level compliance according to Rules and Regulation 2. Ensure all construction machinery are maintained and serviced in accordance with the contractor's specifications 3. Ensure exhaust mufflers and engine enclosures are in place and in good working order for all construction equipment and industrial trucks.	1- All activities will be under PEQS level of noise during operation phase. 2- PPEs i.e. ear muffs should be provided to workers in case of high noise. 3- Ensure all production machinery are maintained and serviced in accordance with its specifications.	**HSE/Environment Manager**

		4. Ensure Noise generation activities to be relegated during daytime. 5. Ensure that vehicles undergo routine maintenance 6. Notifying the neighbor in case there would be some noisy events. 7. Ear plugs will be provided & implemented in case of heavy noise.		
3.	Health & safety	1- Workers/people will be informed in advance when work is about to start at the project site. 2- Machinery will never be left unattended. 3- Safe driving practices will be adopted, particularly while passing through human settlements. 4- Basic health facilities will be provided to workers.	1. The EMP guidelines will be followed strictly (committed by the management of Roomi Fabrics Limited) 2. Training of workers will be conducted regarding health and safety. 3. PPEs will be provided and implemented. 4. First aid measures will be provided to workers. 5. Shift Rotation, proper	**HSE/Environment Manager**

		5- Construction worker safety shall be in accordance with site specific health and safety plan that identifies site specific risks, safety equipment,action plans, and hospital locations. 6- Daily site inspections should be done to ensure safe work practices. 7- All workmen should be provided with personal protective equipment.	ventilation will be provided to workers in case of thermal stress. 6. Safety signs, safety boards, exit arrows etc. will be placed on site. 7. An Assembling point will be kept to gather in case of emergency situation such as fire hazards. 8. Floors will be kept clean without slippery to avoid any hazard. 9. Firefighting system will be installed to avoid any health hazards. 10. Electrical wires, D.Bs will be kept covered to avoid electrical hazards. 11. Machinery will never be left in running condition.	

4.	Soil and water pollution	5. Prevention of accidental oil or chemical spillage, solid matters, contaminants, debris and other pollutants and wastes from entering into surface and ground water. 6. Awareness on environmental protection. 7. Avoid deposition of stockpiling materials near or on stream banks or other watercourse perimeter. 8. No grey water runoff or uncontrolled discharges from the site/working areas (including wash down areas) without treatment shall be permitted. 9. Water containing pollutants such as cement, concrete, lime, chemicals and fuels shall be discharged into a conservancy tanks for removal from site. 10. Spills during construction or	1- Water pollution will not be created by this proposedunit. 2- Process water generated from production units will be treated in septic tanks because it will not contain any hazardous material.After treatment it will dispose of into nearby Rohinala drain. Copy of Effluent Charges Bill paid to Irrigation dept is attached as **Annexure-E** of this report.	**HSE/Environment Manager**

		operations shall be absorbed with absorbent blankets, socks, or absorbent material and disposed of in accordance with applicable laws and regulations. 11. Contractor must dispose solid wastes away from the site to an approved disposal site. 12. Potential pollutants (If any) of any kind and in any form shall be kept Stored and used in such a manner that any escape can be contained and the water table not endangered. 13. Equipment Storage or wash areas shall be placed and constructed in such a manner so as to ensure that the surrounding areas (including groundwater) are not polluted. 14. During construction, standard engineering practices such as silt fencing, erosion control material, and		

		construction tracking pads should be implemented to control runoff, erosion, and sedimentation that could affect watersheds. 15. Proper handling and storage procedures for hazardous wastes e.g. fuel oil should be stored in areas with hard standing and containment to handle spills. 16. Minimize waste production by utilizing best available techniques for site preparation.		
5.	Generation of domestic & project process related solid waste	1. Waste management on site shall be strictly controlled and monitored. Only approved waste disposal methods shall be allowed. 2. Ensure that all site personnel are instructed in the proper disposal of all waste.	1. Domestic, process related solid waste and sludge will be stored in solid waste bins and will be handed over to contractors.	**HSE/Environment Manager**

		3. Ensure that all facilities are maintained in a neat and tidy condition. Measures shall be taken to reduce the potential for waste and negligent behavior with regard to the disposal of all refuse. 4. At all places of work provide bins, containers and refuse collection facilities for later disposal. 5. Solid waste may be temporarily stored on site in a designated area prior to collection and disposal. Waste storage containers shall be covered, tip-proof, weatherproof and scavenger proof. 6. No burning, on-site burying or dumping of waste shall occur. 7. All solid waste shall be disposed of offsite at an approved landfill site. 8. The HSE Officer shall provide metal refuse bins or equivalent plastic		

		refuse bins, all with lids, for domestic waste. Refuse shall be collected and removed from all facilities at least twice per week. 9. Construction waste will be utilized for landscaping, road repairing and maintenance purposes.		
6.	Waste effluents	1- The waste water to be generated from domestic/constructional sources should be treated in site camp septic tank and then it should be disposed off.	1. The sewage to be generated shall be treated in septic tanks and then will be drained out in the nearby drain or used for irrigation purposes.	**HSE/Environment Manager**
7.	Water supply	1- It shall be ensured that no activity tempers with the water supply system and water availability	1. It shall be ensured that no activity tempers with thewater supply system and water availability	**HSE/Environment Manager**
8.	Soil erosion/Land Degradation	1. The project site has few and scattered amount of vegetation which will not be removed. 2. The land is almost clear and free of	1. Plants will be planted during operation phase of the subject Unit.	**HSE/Environment Manager**

		dense vegetation. 3. Every care shall be taken to check soil erosion 4. Landscaping 5. Ensure management of excavation activities 6. Provide soil erosion control and conservation structures where necessary 7. In areas where construction activities have been completed and where no further disturbance would take place, rehabilitation and re-vegetation should commence as soon as possible. 8. Ground clearance should be minimized and if possible concentrated only to the specific building foundation areas, and only when it is necessary. 9. Prompt reclamation of exposed soils should be done.		

		10. Construction during long rains period should be done with caution to avoid soil from being washed away. 11. Topsoil excavated from buildings foundations should be stored for re use on other areas for rehabilitation		
9.	Enhancement of aesthetic beauty of the building and the area.	------	1- Flower pots containing flowers and plants will be provided in front of the building to add to the improvement of the environment around. 2- All other necessary measures will be taken to maintain standards of cleanliness so that the building may add to the scenic/aesthetic beauty of the area around.	**HSE/Environment Manager**
10.	Staff for cateringthe Environmental Management Plan	**---**	1- Special staff will be recruited to implement this Environmental Management Plan on regular basis.	**HSE/Environment Manager**

CHAPTER # 9

CONCLUSION AND RECOMMENDATIONS

Based on the study conducted for Environment Impact Assessment (EIA) for the subject project, the following conclusions are made:

Conclusions

- The EIA study reveals that the project is economically viable, socially acceptable and environment friendly.
- It will generate additional jobs during construction and operation phases.
- The proponent has committed to implement the project in the environment friendly manner.
- M/s Roomi Fabrics Limited intends to register the project with local Government.
- M/s Roomi Fabrics Limited has prepared and implemented very comprehensive Emergency Preparedness's and Response Standard Operating Procedures.
- M/s Roomi Fabrics Limited has prepared and implemented very comprehensive Security and Fire Fighting Standards Operating Procedures.

Recommendations

- In view of the comprehensive screening process and findings of the present study there is no need of conducting further investigations.
- Tree plantation inside the unit and near the unit is recommended.
- The untreated wastewater will not be reused for irrigating the vegetation and lawns.
- High standards of bio-security and safety will be enforced during operation stage. Safety of the workers will be top priority for the management.
- The management of M/s Roomi Fabrics Limited will continue to assist thelocal communities as a corporate/social responsibility.
- The present EIA report is enough to meet the administrative and legal framework. Therefore, the environmental approval may be accorded for the present project.

Annexure

Schedule-IV

Application Form

1	Name & address of proponent	Muhammad Akbar Mian S/O Mian Imam Din R/O House no.1485/C-1/C Sarwar Road, Near Lahore Cannt Police Station, Lahore Cannt, Lahore.		
2.	Description of Project	The said project is the proposed Towel manufacturing unit under the name of M/s Roomi Fabrics Limited at Plot no. 1C-6C, Quid-e-Azam Business Park, Sheikhupura. Total covered area for proposed unit is 294,728.79 SFT .		
3.	Location of Project	Plot no. 1C-6C, Quid-e-Azam Business Park, Sheikhupura		
4.	Objectives of the project	➢ To establish the business of proponent ➢ To create job opportunities for the locals ➢ To raise the socioeconomic status of the area		
5.	IEE/EIA attached?	Yes		
6.	Have alternative sites been considered and reported in IEE/EIA?	No		
7.	Existing land use and land Requirement	Proposed (Open Plot)		
8.	Is basic site data available or has it been measured?	Metrology(Rainfall) Ambient Air Quality Ambient Water Quality Ground Water Quality	Available Yes/**No** Yes/No Yes/No Yes/No	Measured Yes/No **Yes**/No **Yes**/No **Yes**/No
9.	Have estimates of following been reported?	Water Balance Solid Waste Disposal Liquid Waste Treatment	Estimate Yes/No (Demand= 1500 gallons /day) Yes/No(200-300 kg/day) Yes/No ($120 m^3$ /day L/day)	Reported **Yes**/No **Yes**/No **Yes**/No
10	Source of Power?	WAPDA		
11.	Labour Force? (Number)	Construction 200	Operation: 1700	

VERIFICATION: I do solemnly affirm and declare that the information given above and contained in the attached Schedules is true and correct to the best of my knowledge and belief.

Proponent

Muhammad Akbar Mian

Postal Address

House no.1485/C-1/C Sarwar Road, Near Lahore Cannt Police Station, Lahore Cannt, Lahore

Signature

TERMS OF REFERNCES

These terms of references are being submitted for the subject IEE study under 5 (f) of policy and procedures for the filing, review and approval of environmental assessment. These TORs of IEE has been prepared by the environmental consultant, in consultation with project proponent.

Introduction of Project:

Subject project for which this initial environmental examination (IEE) report has been conducted is the proposed Towel manufacturing & weaving unit under the name of M/s Roomi Fabrics Limited Plot no. 1C-6C, Quid-e-Azam Business Park, Sheikhupura

Total area of proposed unit is 33.45 Acre. Open area of proposed unit is 193088.05 SFT. Ground Floor covered area of proposed unit is 236197.00 SFT.Total covered area for proposed unit is 294,728.79 SFT.

The construction of this project falls under Clue 9 of category B of Schedule II of Review of IEE/EIA Regulations 2000, hence such projects require submission of EIA Report to obtain Environmental Approval, under Section 12 of Punjab Environmental Protection Act 1997.

Cost of Project:

The total cost of the project is approx. 6.140 Billion

Name & Address of proponent:

Name: Muhammad Akbar Mian

Designation: Proponent

Postal address: House no.1485/C-1/C Sarwar Road, Near Lahore Cannt Police Station, Lahore Cannt, Lahore

Environmental Consultant & Client:

Owner of Roomi Fabrics Limited has appointed the Safe Enviro-Solutions as the consultant for the subject project to conduct IEE. M/S Safe Enviro-Solutions will be called as ‘Consultant’ and Roomi Fabrics Limited as the ‘Client’

Objectives of the IEE study:

The objective of the study includes compliance of section 12 of PEPA 1997 (amended 2012) & NEQS.

Purpose of IEE:

- To assess and establish the existing environmental and socio-economic conditions of the area.
- To assess and evaluate the potential environmental and socio-economic impacts of the project activities and identify the issues of high concern.
- To implement and execute environmental safeguards.
- To propose mitigation measures and monitoring arrangements that can be incorporated into the operation of the project to remove or reduce any damaging effects as far as possible.
- To categorize the significant impacts requiring further consideration.
- To devise the Environmental Management Plan for the project.
- To prepare an IEE Report as per the relevant guidelines for submittal to EPA Punjab.

Scope of Work for Consultants:

- Secondary Data Collection
- Field Survey and Primary Data Collection
- Scoping Meeting
- Baseline Monitoring
- Public Consultation
- Socio-economic surveys (Interviews + Questionnaires)
- Compilation of Data
- Preparation of IEE Report according to Regulation (6) of Review of IEE / EIA Regulations, 2000 and Guidelines for Preparation and Review of Environmental Reports, 1997. Responding to any queries by EPA Punjab

Client Responsibility

- Proponent will be responsible to nominate a senior officer as Coordinator who will be responsible for all the coordination activities as required by the consultants and to whom the consultants will refer for information and assistance. All correspondence between the consultant and the client will be routed through the coordinator.

- Consultant will require free access to all the relevant information available with the client.
- The report developed for the client shall be property of the client and the consultants shall adhere to confidentially morally as well as legally.
- Client will provide relevant documents
    - Pay Order for Rs. 30,000/- as IEE review fee in the favor of D.G EPA Punjab.
    - Signed Application on company letter head
    - Undertaking on stamp paper as per EPA Format
    - Affidavit on Stamp paper as per EPA Format
    - Copy of CNIC of proponent
    - Dully Filled and Signed Schedule IV
    - Project description & relevant Information
    - Details of Firefighting arrangement's
    - Layout Map of Project
    - Other NOCs/Certificates from other concerned departments (if any)
    - Any other relevant documents/details

Signatures by:_____ Signatures by:_____

Environment Consultant Proponent

Safe Enviro-Solutions ***Roomi Fabrics Limited***

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- Pakistan Biosafety Rules 2005
- Pakistan Environmental Protection Act, 1997
- Pakistan Environmental Protection Agency (Review of IEE/EIA) Regulations, 2000.
- The Land Acquisition Act, 1894
- The Punjab Local Government Ordinance, 2001
- Punjab Environmental Protection (Amendment) Act, 2012

LIST OF ABBRIVIATIONS

CO	Carbon monoxide
CO_2	Carbon dioxide
NFPA	National Fire Protection Association
SO_2	Sulphur Dioxide
°C	Degree Celsius
PM10	Particulate Matter >10
EIA	Environmental Impact Assessment
EMMP	Environment Management & Monitoring Plan
EMP	Environmental Management Plan
EPA	Environmental Protection Agency
EPD	Environment Protection Department
PEQS	Punjab Environmental Quality Standards
SPM	Suspended Particulate Matter
HSE	Health Safety and Environment
UDT	Urban Development and Tourism
SEP	Standard Engineering Practices
ERP	Emergency Response Plan
SWM	Solid Waste Management
IEE	Initial Environmental Examination

Km	Kilometer
CUM	Cubic Unit per Meter
GWT	Ground Water Table
Ltd.	Limited
HC	Hydrocarbon
Mm	Millimeter
NEQS	National Environmental Quality Standards
No.	Number
NOC	No Objection Certificate
NO_x	Oxides of Nitrogen
PA	Protected Area
PEPA, 1997	Pakistan Environmental Protection Act, 1997
PEPA, 2012	Punjab Environmental Protection (Amendment) Act, 2012
PEPO	Pakistan Environmental Protection Ordinance
PKR	Pakistani Rupees
PM	Particulate Matter
PPEs	Personal Protective Equipments
Pvt.	Private
SFT	Square Foot
SOPs	Standard Operation Procedures
SO_x	Oxides of Sulphur
TMA	Town Municipal Authority
WAPDA	Water and Power Development Authority
WASA	Water and Sanitation Agency
WHO	World Health Organization

DETAIL OF TEAM CONDUCTING IEE STUDY WITH QUALIFICATION AND POSITION IN TEAM.

Name	**Qualification**	**Position in the EIA/IEE Team**
Muhammad Rehman Majeed	M.Phil (Environmental Science) GCU Lahore	Project Incharge And Supervisor
Muhammad Shahzad	M.Phil Environmental Science GCU Lahore	Team Leader and Coordinator (Author of the Report)
Mohsin Ali	M.Phil Environmental Science GCU Lahore	Senior Environmentalist (Field Analyst)
Ammara Anwar	MS Environmental Science (Punjab University Lahore)	(Author of the Report)
Anum Waheed	BS (Hons) Environmental Science (GCU Lahore)	Research Associate (Author of the Report)