



EXECUTIVE SUMMARY

INTRODUCTION

This executive summary presents an overview of the main findings of the Environmental Impact Assessment (EIA) report for **“M/S Al Noor Maqbool Smart City (Housing Scheme)” located at Link Baghuchi Pull Road, Chak No.8/BC, Near IUB, Tehsil Bahawalpur City, District Bahawalpur.** The proposed project is about to construct a housing scheme of about **629 residential plots**. Indeed, it is a legal requirement in Pakistan to obey the environmental laws during carrying out any developmental activities and get it approved from the concerned regulating agencies before embarking on the development activities. Provincial environmental legislation also requires similar environmental approvals from relevant provincial authorities (provincial environment departments). In addition, the aim of the EIA study is to ensure sustainable development in Pakistan. This EIA report provides an assessment of anticipated positive and negative environmental impacts of the proposed Project, along with the appropriate measures to further enhance the beneficial impacts and to mitigate any adverse impacts.

SALIENT FEATURES OF PROJECT

1.	Project title	“M/S Al Noor Maqbool Smart City (Housing Scheme)”
2.	Location GPS Coordinates	Located at Link Baghuchi Pull Road, Chak No.8/BC, Near IUB, Tehsil Bahawalpur City, District Bahawalpur. Latitude: 29.369752, Longitude: 71.747776
3.	District	Bahawalpur
4.	Name of proponent	Muhammad Ijaz S/o Allah Bakhsh (Managing Director)
5.	Address	R/O Al Noor Garden House No.72, Super Chowk, District Lodhran.
6.	Area of the project	2455695.00 SFT (451K).





7.	Type and category of project	This project falls in Schedule 11 (EIA) – Category H-1 Urban Development and Tourism (Housing Schemes more than 300 Kanals).
8.	Nature of the Project	The said project is about the housing scheme including 629 residential plots They will start their activities after the approval by EPA As per requirement.
9.	Total cost of the project	200 million in PKR
10.	Availability of resources	Transportation, water supplies, electricity are available at that specified area.
11.	Source of electricity	Energy is available at that specified site. STANDBY generator will also be available.
12.	Manpower requirement	30-35 workers in constructional site and 20-25 workers in operational site.
13.	Water requirement	The whole project will require about 3000 gallons of water per day.
14.	Solid waste and its management	Solid waste generated at the site involves broken bricks, wrappers, gravel which will be collected and transported to the collection station by vehicles.
15.	Wastewater and its treatment in proposed project	Domestic wastewater will be generated which will be treated by septic tank. & disposed off in main Domestic drain which is mostly nearby the project site.
16.	No. of Plots	629 residential plots
17.	No. of plot reserved for WWTP	20 Marla land will be reserved which is adjacent with plot no. 10-B (highlighted with yellow color on right side of the layout map)

Environmental Consultants:

An Environmental Impact Assessment (EIA) (EIA) study report has been prepared to identify and predict the significant environmental impacts likely to arise from the





commencement of the proposed project along with environmental impact statement followed by delineation of appropriate Environmental Management Plan and Environmental Monitoring Plan to check the implementation of the EMMP.

Proponent of “**M/S Al Noor Maqbool Smart City (Housing Scheme)**” located at Link Baghuchi Pull Road, Chak No.8/BC, Near IUB, Tehsil Bahawalpur City, District Bahawalpur., environmental consultants, Ecosphiron Environmental Services, Office # 5, F-2, 9 Kashmir Block, Jalal Center, Allama Iqbal Town, Lahore.

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Email Address: ecosphiron@gmail.com

List of Team involved for preparation of this EIA Report

Names	Designation	Roles and responsibilities	Qualification
Ms. Shakeela Rani	Manager (Environmental legal)	Technical Support.	M.Phil. Environmental Sciences
Mr. Manzoor Ahmad	Manager (Operations)	Baseline study/ Report preparation	M.Phil. GIS & RS Master in Geophysics
Ammar Abdullah Hashmi	Manager (Finance)	CFO	M.Phil. (Business and Finance)
Amna Sayed	Manager (Technical)	Coordinator for all project activities	Master in Sociology Master in English
Mr. Ahmed	Assistant Manager Operation	Logistic and report preparation	B.Com
Mr. Ali Raza	Field Coordinator	Assist for Baseline Study	F.A



**A Brief Outline of Project:**

Respective project is an open area where there will be a residential settlement according to the new approved parameters. There will be a proper solid waste management. The objective of the proposed Project is to build a modern Housing Scheme for providing the residents a clean and green environment so that they could live a comfortable life. Proponent have made a proper plan to make the scheme one of the most developed Schemes. For maintaining the natural beauty, Proponent has made provision of trees, plants and green belts in the landscaping of the Project.

The proposed project site will be provided a mosque for a prayer. WAPDA supply will be used and there will be only domestic wastewater for which purpose septic tank will be constructed while for domestic solid waste or process waste (sacs) local sanitary workers of that area will be hired who will collect these solid waste. There is already small green belt around the project which will enhance the aesthetic as well as environment beauty of the project site.

Project Specific Environmental impacts and mitigation measures:

Environmental Impacts: Environmental Impacts during construction phase will be emission of dust, generation of noise & solid waste. While during the operational phase of the project, main considerable environmental impacts will include generation & disposal of waste water and solid waste.

Mitigation Measures: Environmental impacts of construction phase will be minimized by regular water sprinkling, transportation of material in an environmental friendly manner and proper solid waste management. During operational phase waste water will be collected through underground sewage system at disposal station and will be discharge after treatment through septic tanks into Sewerage Domestic drain which is passing near the housing scheme. The solid waste after door to door collection will be laid up at specified transfer station and be disposed off to waste Management Company.

Proposed Monitoring:

For proposed monitoring, proper monitoring strategy will be adopted. The purpose of a monitoring strategy is to define the scope and focus of a grantee's monitoring efforts, including establishing a framework for determining the appropriate level of monitoring for sub recipients





based on the resources available. A grantee's work plan should include time to conduct a risk analysis on each sub recipient as well as where and when the grantee will apply staff and travel resources for monitoring, training, or technical assistance of its sub recipients.

Monitoring at the proposed sites has been conducted for ambient air, Noise level and ground water and the reports demonstrated that results are within the limits prescribed by PAK-PEQS (2016). The values of these parameters are present in baseline study of project.

Conclusion

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

It is further concluded that all potential environmental concerns associated with the project have been adequately addressed, and no further study is required in this context.





The main persons involved in finalizing EIA report are following;

Ms. Shakeela Rani
(Environmentalism)

Mr. Manzoor Ahmad
(Environmentalism)

For the Proponent

I have reviewed the project EIA report and found the contents to be valid and true to the best of knowledge and belief.

Muhammad Ijaz S/o Allah Bakhsh (Managing Director)
(Proponent)

“M/S Al Noor Maqbool Smart City (Housing Scheme)”, District Bahawalpur



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ANNEXURES

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I	Glossary
II	List of Abbreviations
III	References
IV	List of Individuals carried out this EIA report Study
V	Proponents CNIC
VI	TORs
VII	Cost Breakup of the Project
VIII	Pictorial Presentation by GPS Map Camera
IX	Socioeconomic Survey Forms





CHAPTER I

INTRODUCTION

1.0 Purpose

The study of the proposed project namely “**M/S Al Noor Maqbool Smart City (Housing Scheme)**” located at Link Baghuchi Pull Road, Chak No.8/BC, Near IUB, Tehsil Bahawalpur City, District Bahawalpur., has been carried out to estimate the potential environmental and social impacts, positive and negative, on the environment as well as socio-economic of the surrounding environment during construction as well as operational phase. This report intends to provide satisfactory mitigation measures to avoid/eliminate any chance of adverse environmental impact on the socio-cultural, economic and environmental components. This report also intends to fulfill the regulatory requirements set under Punjab Environmental Protection Act 1997 (Amended 2012) and its consequent legislative framework for IEE/EIA including the IEE/EIA Regulations 2022 and the guidelines drafted for IEE and EIA under numerous sectorial heads. The entire set of legislative framework requires any new development project to undergo an IEE or EIA based on the categorization of the project under Schedule I and/or Schedule II.

1.1 Identification of the Proponent Contact Person

Muhammad Ijaz S/o Allah Bakhsh (Managing Director)

Address of the Proponent: R/O Al Noor Garden House No.72, Super Chowk, District Lodhran.

Identification of the Project:

“**M/S Al Noor Maqbool Smart City (Housing Scheme)**” located at Link Baghuchi Pull Road, Chak No.8/BC, Near IUB, Tehsil Bahawalpur City, District Bahawalpur.

1.2 Environmental Consultants:





The Environmental Impact Assessment (EIA) (EIA) has been carried out by aptly skilled and duly qualified group of professionals working for the environmental consulting Services namely Ecosphiron Environmental Services. The consulting team can be approached through the following contact details:

Ecosphiron Environmental Services

Office # 5, F-2, 9 Kashmir Block, Jalal Center, Allama Iqbal Town, Lahore

Contact No. 0301 4276787, 0322-4908520; ecosphiron@gmail.com

List of Team involved for preparation of this EIA Report

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Mr. Ahmed	Assistant Manager Operation	Logistic and report preparation	B.Com
Mr. Ali Raza	Field Coordinator	Assist for Baseline Study	F.A

1.3 Nature and Size of Project

The project aims to construct an “**M/S Al Noor Maqbool Smart City (Housing Scheme)**” (PROPOSED PROJECT). The said project has been planned on the norms of sustainable designs and patterns provided under the legislative and sectorial guidelines of Environmental Protection Agency, Punjab. The total area of the proposed project is





2455695.00 SFT (451K). having 629 residential plots and cost of the project is 200 million in PKR.

The design of “M/S Al Noor Maqbool Smart City (Housing Scheme)” has been finalized while keeping all the environmental factors under consideration. A total of 30-35 people will work on the project during its construction and operational phase also 20-25 will be engaged for employment like loading/unloading, staff for look after and maintain the record etc.

An efficient disposal system for domestic wastewater has been incorporated into the basic structural design. The nature of wastewater will be domestic. This is further explained under Environmental Impacts and Mitigation Measures as the proposed project will be small project. For domestic wastewater septic tank will be made in the premises of project site. An important aspect to be kept under consideration is that the proposed project is planned on an open area.

The whole project will require about 2500 gallons/day of water during constructional phase and approximately 2000 gallons/day of water during operational phase. This will be met by ground water. The construction will be completed after getting Environmental Approval.

Solid waste during construction phase will be re-used in construction activities while solid waste during operational phase will be managed by sanitary workers of that area and also for gardening. Adequate firefighting arrangements will be provided at the proposed project site to deal with any case of emergency. Adequate and safe ducting and routing has been designed for electricity and telecommunication lines.

Along with the secondary facilities, the proponent of the proposed project has planned provision of the basic facilities/utilities for the proposed project. Provision of natural gas, infrastructure for provision of telecommunication services will be developed to meet the future demand. Adequate open space has been provided around the city in order to maintain the aesthetic beauty of the area.



1.4 Eco-Friendly Features of the Project

Special feature of the project is its eco-friendly design through provision of unique elevation and landscaping. The basic idea of the concept is to create a safe, modern as well as environmental friendly design to ensure improved working conditions required by the potential users. The reason of adopting sustainability or 'bioclimatic' approach to the design provides opportunities to address problems relating to energy usage and air quality.

1.5 Location

The proposed project is located at “**M/S Al Noor Maqbool Smart City (Housing Scheme)**” located at Link Baghuchi Pull Road, Chak No.8/BC, Near IUB, Tehsil Bahawalpur City, District Bahawalpur.



Fig 1.1: Google Map of the project

**The project site is surrounded by:**

East: Open Land/Agricultural Area

West: Al Rehab Garden LSD - 500Feet

North: Bahawalpur Islamia University – Baghdad Campus

South: Main Road (Hasilpur Road / Sadran Bypass – 165 Feet)

There are no industrial and agricultural zones by which project area will be affected. It is totally environment friendly. Based on the current land use of the proposed project, the said project is not located in an ecologically sensitive area.

1.6 Extent/scope of EIA Study

EIA is conducted under the legal framework of Punjab Environmental Protection Agency (PEPA). As per legal requirements, the Project will be reviewed in light of the provisions of Punjab Environmental Protection Act, (PEPA-2012) and IEE/ EIA Regulations 2022, issued by Pakistan Environmental Protection Agency (Pak EPA) and adopted by the EPA Punjab.

Secondary information for this Study was collected from the relevant departments and literature to identify physical, socio-economic and environmental issues of the Project Area. Relevant information available with the proponent on the physical, technical and institutional aspects of the Project was also utilized. The EIA process followed all the complementary stages described in the guidelines for IEE/EIA preparation and review. A brief flowchart exhibiting the different stages involved is in figure 1.1



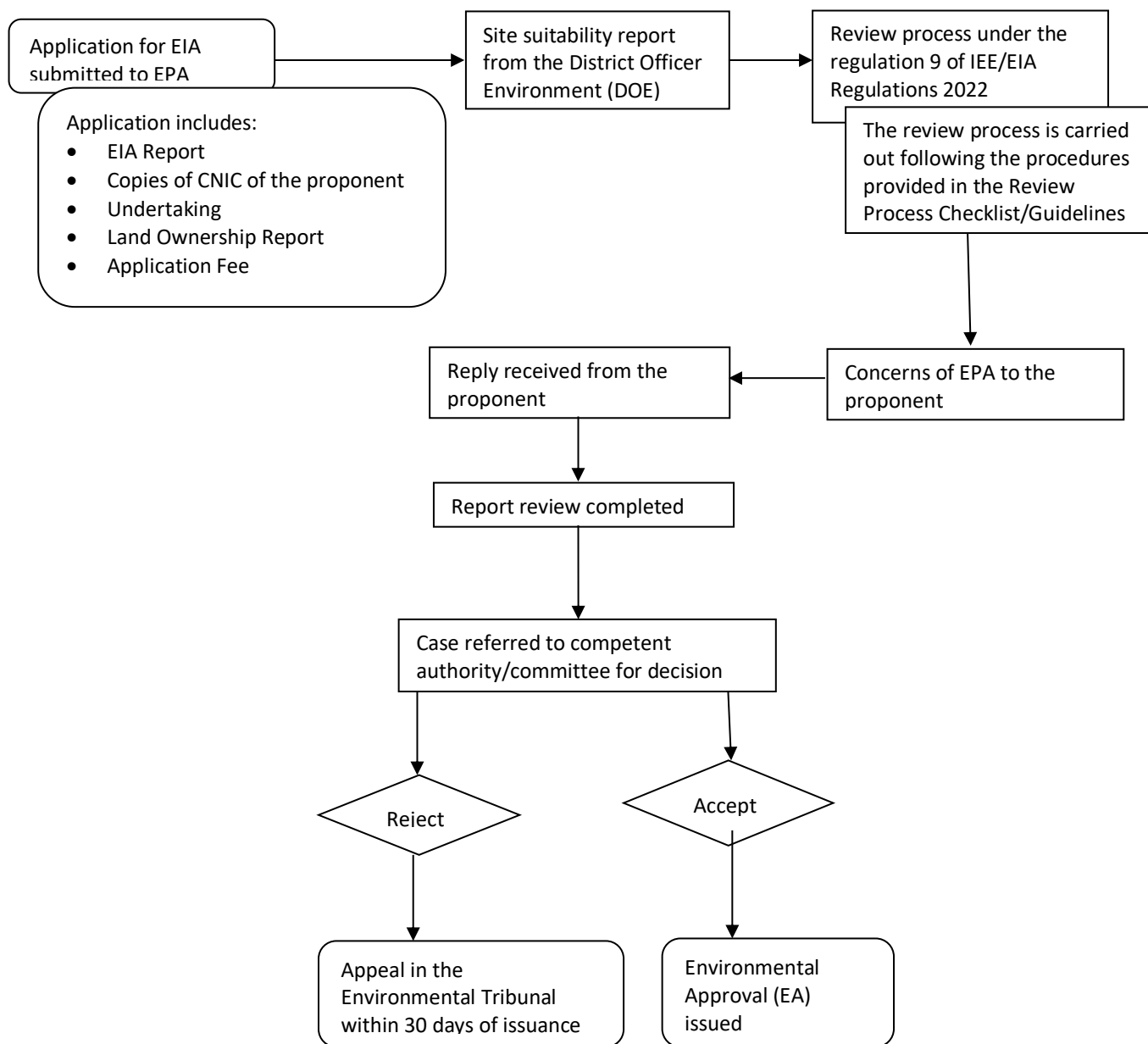


Fig 1.2: The EIA process flow chart





CHAPTER II

DESCRIPTION OF THE PROJECT

2.0 Type and Category of the Project

According to projects categorization for environmental assessment studies, the proposed project that is “**M/S Al Noor Maqbool Smart City (Housing Scheme)**” falls in Schedule 11 (EIA) – Category H-1 Urban Development and Tourism (Housing Schemes more than 300 Kanals) for Environmental Impact Assessment (EIA) due to the cost, size and nature and overall severity and frequency of impacts. This report is required to fulfill the legal requirements set under section 12 of the Punjab Environmental Protection Act, 1997 (Amended 2022). This section of the study renders a detailed account of the project and its salient features, such as location and various phases. Inputs and discharges relevant to different phases of the project, such as electricity & materials etc. have also been examined as a response to possible environmental concerns.

2.1 Objectives of the Project

The objective of the proposed Project is to develop a modern housing scheme for providing the residents a clean and green environment so that they could live a comfortable life. Proponents have made a proper plan to make the scheme one of the most developed housing schemes. For maintaining the natural beauty, Proponent has made provision of trees, plants and green belts in the landscaping of the Project.

2.2 Alternatives Considered

The developing of a Housing Scheme is a commercial venture. Availability of land at the best convenient place and at reasonable price was yet the other considerations for the site selection. Availability of access roads, communication facilities, electricity, gas, basic infrastructure, sewer etc. was yet the other necessary requirements. Of course neat and clean environment was also the other consideration.

Keeping these requirements and their availability, the present site is the best suited for the construction of the project. The area is far away from the dense industrial activity. All the





other basic infrastructural requirements are available at the selected site. Accordingly, the selected site is ideally suited for construction of the Scheme.

Keeping these considerations in mind three alternatives considered which were: **Alternative I – No Project:** The “M/S Al Noor Maqbool Smart City (Housing Scheme)” is going to establish a modern housing scheme where people will feel free to live in healthy environment. The condition makes issue if there is no proper sanitary system or healthy life style. Even more the utilization of the cultivable land for the construction schemes. The schemes will become the hindrance in natural resource consumption and utilization in different manners. So by considering these conditions, there should be restriction for establishing the housing society. So there would be not any project which makes unhealthy life for people as well as affect the health of the environment.

Alternative II “M/S Al Noor Maqbool Smart City (Housing Scheme)”: Though this would have provided an ideal opportunity to “M/S Al Noor Maqbool Smart City (Housing Scheme)” for establishing the housing society. However, this alternative was rejected due to the facts that construction within the open plots where facilities are not available then this housing scheme will be not ideal choice for people.

- i) **Alternative III availability of land resources:** by keeping in the mind, the modern life of every person wants to live in a comfortable life zone. People directly don't have access to the suitable land. If yes its cost is too much that might they not be able to pay. This housing society had an enough space for construction of houses and as well as all the necessary components that need to be establishing inside the housing society. By considering the leisure and availability of the land there is a need of this project.
- ii) **Alternative IV Scope of Residential Area:** “M/S Al Noor Maqbool Smart City (Housing Scheme)” Scheme is the need of hour. Because the population of the subject area is increasing day by day. The current project is vital and suitable for the establishment of new housing scheme to provide the comfortable place and a greener environment for the people of the area. Need of residential area is necessary to provide them a suitable and a standard place to live while meeting the national standards as well as the provincial standards.



- iii) **Alternative IV-Proposed Location within Premises of Daily Life Commodities for Healthy Life/Sustainability Aspects:** Sustainable Design: Though this alternative does not relate to identification of site, however, this is an equally important alternative which has been considered by the management of “M/S Al Noor Maqbool Smart City (Housing Scheme)”. This modern housing scheme is going to establish where there is no industry or any such activity which pollute the environment. Moreover, the markets will also be established with the housing scheme which will be directly connected to other markets of the city. There will be all fundamental necessities which are essential for healthy life. There will be great educational trend within the housing scheme. There will be proper management for the solid waste and wastewater eradication. So, this housing society will be an ideal and healthy site for living with comfort.

In addition, many important criteria have been kept under consideration while making any decisions regarding site selection and project designs. The site should have adequate facilities for drainage, waste collection, run off prevention, communication, transportation, and electricity. These have been considered while selecting the choicest alternative. As for the design, different criteria were considered for finalization of a safe design. For this, a site where fundamental necessities are available will be feasible for project as well as will be good decision for project. The most positive thing for this project is that it is located in the open plots where no industrial activity is running.

2.3 Location Plan/Map

Title of proposed project is “M/S Al Noor Maqbool Smart City (Housing Scheme)” which will start construction after getting environmental approval from EPA, Punjab. The said project is located “M/S Al Noor Maqbool Smart City (Housing Scheme)” located at Link Baghuchi Pull Road, Chak No.8/BC, Near IUB, Tehsil Bahawalpur City, District Bahawalpur, and project layout plan is attached herewith this report as annexure. The proposed project is surrounded by open land/agricultural area. Exact coordinates of the



project are given in Table: 1

Table 1: Project Co-ordinates

Coordinates	Location Type
East	Open Land/Agriculture land
West	Al Rehab Garden LSD
North	IUB Campus
South	Main Road

2.4 Land use on the site:

Proposed project site is about “M/S Al Noor Maqbool Smart City (Housing Scheme)” which is intended to start their project after getting environmental approval from EPA, Punjab. Layout plan of land is attached with this report.

2.5 Road Access:

The proposed project site is near the main Hasilpur/ Sadran Bypass Road which is quite passing through the project. The said project surrounded by agricultural land.

2.6 Vegetation features of the site:

At present, most of the Project Area is consisted of some bushes and grass. The proposed project area has open plots on its right, left and back sides of the project site, while road is in front of the project site.

2.7 Magnitude of the Operation Including Capital Cost and Associated Activities

The proposed project intends on constructing “M/S Al Noor Maqbool Smart City (Housing Scheme)” with total area of approximately 2455695.00 SFT (451K). The said project is open plot having total cost of the project as 200 million in PKR. It includes the city planning work, site survey, geotechnical investigations, site clearing work, infrastructure work, structural work, electrical and mechanical works and Activities of construction includes the followings:



- Site clearing
- Demarcation of the Area for various facilities
- Infrastructure works (roads, water supply, sewerage and drainage, gas, electrical works etc.)
- Installation of street lights
- Plantation of plants and grass

2.5 Water Requirement

The surplus water during the construction phase of the whole project will be estimated to meet any unforeseen situation. The water demand will be fulfilled from ground water. Water demand for various uses has been estimated on the basis of WASA specifications. Water requirement for maintenance of green belts will be done on daily basis by ground water through pumps and pipes to avoid wastage of water. The water requirement for the construction phase will be 2500 gal/day while during operational phase water requirement will be 2000 gal/day. The water will be in operation phase for sake for cleaning and drinking purpose.

2.6 Wastewater Generation and Disposal

The management of the project will lay down sewer pipe line up to the main sewerage and will also construct septic tanks for primary treatment to affect the wastewater quality before its discharge in the main sewer. Septic tank will be installed in every house to treat the domestic wastewater. The waste water of the “M/S Al Noor Maqbool Smart City (Housing Scheme)” will be disposed off nearby Domestic drain.

2.7 Solid Waste Generation and Disposal

Estimated quantity of solid waste during construction phase is varied. The reason being, solid waste will have excavation material as major part of its overall composition. However, the earth material will be reused within the site eventually leaving zero waste due to excavation activities. Therefore, solid waste during construction phase will include the solid waste generated due to workers activities. To get rid from solid waste, sanitary workers of this area will collect this waste.



During operational phase, solid waste will be managed by solid waste manager and sanitary workers of that area will collect the solid waste on daily basis.

2.8 Energy Demand

The energy will be supplied by WAPDA and also generators will be installed as back up energy resource.

2.9 Manpower Required

The man power during construction phase will be 30-35 persons, while 20-25 persons will perform their duties during operational phase of the proposed project for maintenance and management. Thus the project is source of employment for economic development activities of the area.

2.10 Proposed Schedule of Implementation

It is estimated that the entire project will take five to six months for completion of construction phase, if the activities go as per the plan.

Activities involved are:

- Land acquisition – already done (Land ownership documents are along with this report)
- Lay out plan of project (attached herewith this File)
- Leveling of land
- Excavation for foundation building
- Work on pavements, roads, sewer system, electricity and telecommunication grid installation etc.
- Construction of site
- All finishing work of the entire construction work will be furnished after last step.

2.11 Details of Restoration and Rehabilitation Plan:

2.11.1 Purpose and Scope:

The purpose of restoration and rehabilitation plan development is to structure individualized services that will enable the individual to obtain and maintain suitable

employment, and/or to maximize independence in daily living. The structure of the plan allows the counselor and the individual to translate the findings of the initial evaluation into specific rehabilitation goals and objectives.

When starting a comprehensive rehabilitation project in informal settlements, the first thing to take into consideration is a comprehensive understanding of the parameters that characterize the community.

2.11.2 Required Elements of Rehabilitation Plans:

- Program goal
- Objectives designed to meet the goal
- Anticipated completion dates
- Services to be provided
- Duration of services
- Service providers
- Evaluation criteria
- Evaluation schedule of at least once every 12 months

2.11.3 Housing projects:

Self-built houses, not necessarily with sustainable construction methods, shape the settlements and define a community of people. Housing is guaranteed by the same population, in contrast to the social, environmental, and physical issues. However, cases of housing substitution due to natural risks, housing improvement projects, and associations of houses in legal entities are some of the initiatives in uncontrolled settlements that may significantly contribute to a better quality of life for its inhabitants.

The “**M/S Al Noor Maqbool Smart City (Housing Scheme)**” located at Link Baghuchi Pull Road, Chak No.8/BC, Near IUB, Tehsil Bahawalpur City, District Bahawalpur. will staff more people for the proper maintenance of the proposed project under the skilled supervision of the site supervisors. Regular maintenance can increase the life expectancy of such project considerably. However, if and when the end of life time period of the project comes, safety measures will be adopted.



2.12 Government Approvals

Acquisitions of necessary approvals from the government departments for the said project have been taken except environmental approval because said project is small project and environment friendly at all aspects.

2.13 Safety Measures at Housing Scheme

Through inspection processes, ensure housing scheme facilities are capable for healthy life. Develop and distribute clear-cut guidelines dealing with housing scheme's policy on safety. Every individual involved in the project should know what is expected and how to perform the assigned tasks. Get together of society members will be done for more improvement will be done. Further, if an unsafe work practice is noticed, corrective action should be taken immediately. Don't let production issues result in a disregard for safety.

2.14 Current Vegetation Features on Site:

At present, most of the Project Area is consisted of some bushes and grass. The proposed project area has open plots on its right, left and back sides of the project site, while Road is in front of the project site.

2.15 Steps involved for the process of the project:

Land Filling_____Leveling_____Roads_____Plotting_____Sale out

CHAPTER III

STATUTORY REQUIREMENTS

3.1 General

Sustainable development and green economy is a concept that has emerged over the past decades to describe a new framework aimed at economic and social development while maintaining the long term integrity of the ecological system and environmental resources. The principal of sustainable development is in the process of being incorporated into the national policy and legislation through various statutory instruments. This chapter describes the current legal responsibilities of the proponent in context of environmental and sustainable development, and the institutions that exist in the country that may influence the environmental management of the project.

This section deals with the current policy as well as legal and administrative framework related to carrying out of Environmental Impact Assessment (EIA) (EIA) of the project. An efficient and effective organizational structure is essential for successful implementation of the mitigation measures identified for the project. Like other projects, the project, before its implementation, is required to go through an Environmental Assessment, in accordance with the provisions of the Punjab Environmental Protection (Amendment) Act 2012.

3.2 Existing Legislation and Legal Framework

The Federal Ministry of Environment was responsible authority for policy making on environmental protection in Pakistan but after 18th Amendment in the Constitution, the Provincial Governments have taken over the subject of Environment. This EIA study has been carried out in the light of the policy guidelines of the Preparation of EIA/EIA Reports under the procedures and practices formulated by the Pak EPA and adopted by the Punjab Environmental Protection Agency (EPA).



3.3 Institutional Setup

3.3.1 Environmental Protection Councils

The Punjab Environmental Protection Council (PEPC) is the apex decision-making body of Punjab. It has been developed under the provision of Punjab Environmental Protection (Amendment) Act 2012. It is headed by Chief Minister of Punjab with other members. The purpose of EIA is basically to obtain Environmental Approval from the Environmental Protection Agency (EPA), Punjab in compliance with Pakistan Environmental Protection Act (PEPA) - 1997, now having been replaced by Punjab Environment Protection (Amendment) Act 2012.

3.3.2 Environmental Protection Agencies

Pak EPA has been established at the Federal level and EPAs are established at Provincial level also. In Punjab an independent Environmental Protection Agency is constituted headed by the Director General.

3.3.3 Environment Protection Department, Punjab

The Punjab Government has established Environment Protection Department (EPD) administratively controlled by the Secretary, Government of Punjab. The EPD has its independent Minister. According to the provisions of the Punjab Environmental Protection (Amendment) Act, 2012, EPD has a significant role in policy making and implementation of the environmental laws in the Punjab Province.

3.3.4 Relevant Legal / Institutional Framework

The applicable laws for the environmental study of the project are briefly given below. The proponent of the project will abide by the applicable laws and regulations.

A number of laws have been promulgated by the Government of the Pakistan to deal with the environmental and social aspects related to the implementation of various development projects in the country. In 1983, the Government of Pakistan issued an Environmental Protection Ordinance (EPO) that was replaced by the PEPA, 1997,



through an Act of Parliament. According to the 18th Amendment in Constitution, the PEPA 1997 has been confined to Federal Area and provinces have been allowed to formulate their own environmental legislation in the subject of environment. Under the PEP Act, it is mandatory to carry out EIA or EIA for all development projects. The Pak EPA has also framed guidelines for environmental assessment of projects in various developmental sectors, According to PEPA 1997; the National Environmental Quality Standards (NEQS) were established for effluents discharges and gaseous emissions of various Municipal and Industrial sources. The latest revision of NEQS as carried out in year 2000. Provincial Environmental Protection Departments are also working on the formulation and enforcement of environmental statutes and by-laws. The Pak EPA has issued several policies guidelines and adopted measures for streamlining the environmental assessment. Though, the need for environmental screening and assessment has received some weight during the recent past, strict implementation of the NEQS is still a dream to be realized. The applicable laws for the environmental study of the Project are briefly described below:

3.4 Pakistan Environmental Protection Order (PEPO) 1983

In 1983, the Government of Pakistan issued an Environmental Protection Ordinance (EPO) 1983. It was the first legislation promulgated for the protection of environment. According to PEPO, 1983 it was necessary to carry out IEE / EIA for all development projects, but there were no IEE / EIA regulations under that ordinance.

3.5 Punjab Environmental Protection (Amendment) Act 2012

Section 12 of the Punjab Environmental Protection (Amendment) Act 2012 makes it mandatory for the proponent of a project to file with the Environmental Protection Agency either an Environmental Impact Assessment (EIA) (EIA) or Environmental Impact Assessment (EIA), as the case may be, in respect of the project.

As per definition given in the Punjab Environmental Protection (Amendment) Act 2012, Environmental Impact Assessment (EIA) (EIA) means an environmental study comprising collection of data, prediction of qualitative and quantitative impacts,

comparison of alternatives, evaluation of preventive, mitigatory, and compensatory measures, formulation of environmental management & training plans & monitoring arrangements, and framing of recommendations and such other components as may be prescribed. The provision of Section 12 has been incorporated “as it is” in the new Punjab Environmental Protection (Amendment) Act, 2012.

3.6 National Environmental Policy 2005

Government of Pakistan has notified National Environmental Policy 2005, for different projects/aspects in which guidelines/priorities have been given to undertake/commence the projects having significant environmental impacts.

The National Environmental Policy (2005) provides a framework for addressing the environmental issues (particularly pollution of fresh water bodies and coastal waters, air pollution, lack of proper waste management, deforestation, loss of bio diversity, desertification etc.) confronting Pakistan. It recognizes the goals and objectives of the Pakistan National Conservation Strategy (PNCS, 1992), National Environmental Action Plans, and other existing environment related national policies, strategies, and action plans. It also provides broad guidelines to the Federal Government, Provincial Governments, federally administrated territories and local governments to address their environmental concerns and to ensure effective management of their environmental resources.

3.7 Review of IEE / EIA Regulations 2000

The Pak EPA has issued Review of the Environmental Impact Assessment (EIA) Regulations 2002, to review the Environmental Impact Assessment Environment Impact Assessment (EIA) reports. Categorization of the projects for IEE and EIA is one of the main components of the Regulations. Projects have been classified on the basis of expected degree of adverse environmental impacts. Projects type listed in Schedule I are designated as potentially less adverse effect, schedule I projects require an EIA and projects given in schedule II require EIA to be conducted.

Salient features of the Regulations are listed below:

- Categories of project requiring IEE and EIA are issued through two schedules attached with the regulations.
- A fee depending on the cost of the project has been imposed for the review of IEE and EIA.
- The submittal is to be accompanied by an application in prescribed format included as Schedule IV of the Regulation.
- The EPA is required to issue conformation of compliance within 15 days of receipt of request and complete documentation.
- The IEE / EIA approval for construction of the project will be valid for three years from date of accord.

3.8 Guidelines for the Preparation of IEE/EIA Reports

The Pak EPA has also framed Guidelines for the Preparation of IEE / EIA of projects in various developmental sectors.

3.9 The Punjab Local Government Ordinance, 2001

Schedules 4 and 8 of this Ordinance pertain to environmental pollution. There are not withstanding any specific provisions, every local government may perform functions conferred by or under the Punjab Local Government Ordinance, 2001, and in performance of such functions may exercise such powers, which are necessary and appropriate. Under the ordinance, the local councils are authorized to restrict projects causing pollution to air, water or land. They may also initiate schemes for improving the environment.

3.10 Pakistan Penal Code, 1860

This defines the penalties for violations concerning pollution of air, water bodies and land. Sections 272 and 273 of this Act deal with the adulteration of food or drink. Noise pollution has been covered in section 268, which defines and recognizes noise as a public nuisance. "A person is guilty of a public nuisance who does any act or is guilty of an

illegal omission which causes any common injury, danger of annoyance to the public or the people in general who dwell or occupy property in the vicinity, or which must necessarily cause injury, obstruction, danger or annoyance to persons who may have occasion to use any public right".

3.11 The Land Acquisition Act, 1894

The Land Acquisition Act (1894) deals with the acquisition of private properties for public purposes. There are 55 sections in this Act mainly dealing with area notification, surveys, acquisition, compensation, apportionment awards, disputes resolution, penalties and exemptions.

Although quite old, this act laid out the legal basis for any property affected by a project and for compensating the effected owners of the land.

3.12 Factories Act, 1934

The clauses relevant to the project are those that concern the health, safety, and welfare of workers, disposal of solid waste and effluent and damage to private and public property. The Factories Act also provides regulations for handling and disposal of toxic and hazardous materials. Given that construction activity is classified as ‘industry’, these regulations will be applicable to the project contractors.

3.13 Labor Laws

Construction and operational activities during the course of construction may affect occupational health of workers. Employers are required to abide by labor laws in respect of their own employees and also to ensure that contractors to follow the relevant labor laws and rules relating to safety of the workforce and creating a healthy working.

CHAPTER IV

BASELINE DATA & ENVIRONMENTAL PROFILE

4.1 GENERAL

The existing environment around the site of proposed project has been studied with respect to physical, ecological and socio-economic resources. The existing information to establish a database for the IEE of the project was collected from different departments, review of previous studies and through the site visits carried in out in the project area.

4.2 PHYSICAL ENVIRONMENT

The study examines the physical resources, topography, soil, climate, surface and ground water and geology is of not only the project site but also the city as whole to assess whether the project under review can or does impact on any of these parameters. The description of physical environment of District Bahawalpur and the project site is present in the following sub sections.

4.2.1 Geological Formation

Bahawalpur city lies just south of the Sutlej River, is the site of the Adam wahan Empress Bridge, the only railway bridge over the Sutlej in Pakistan. It is a fertile alluvial tract in the Sutlej River valley that is irrigated by floodwaters, planted with groves of date palm trees, and thickly populated forests. The district is land marked from all the sides. In the south and south east the Cholistan reaches the Indian boarder whereas in the north it runs parallel to the southern part of the Punjab plains and river Sutluj makes a common border with the Lodhran and Muzaffargrah districts.

The district can be divided into three main physical features i.e. (a) Riverine area, (b) plain area and (c) Desert area which is called Cholistan. The Riverine area of the district lies close on the river Sutluj which flows in the north along its boundary with Lodhran district and Vehari districts.

4.2.2 Climate

The climate of the city is hot and dry in summer and cold in winter. The summer season

is lengthy which begins in April and continues till October for about seven months. The hottest months are May, June and July. The winter is pleasant. The coldest months are

4.2.3 Temperature

The mean maximum and minimum temperatures during summer period are 42 and 29 degree centigrade respectively. During winter period the mean maximum and mean minimum temperatures are 21 and 5 degree centigrade respectively.

4.2.4 Rainfall

Most of the rain falls during monsoon season from July to September. Winter rain is very scarce. Annual rainfall is about 16 centimetres.

4.2.5 Topography

Bahawalpur is located south of the Sutlej River and lies in the Cholistan region near the Thar Desert. The city is well connected to the major cities Multan (90 km), Lahore (420 km), Burewala (122 km), Vehari (90 km), Faisalabad (270 km) and national capital, Islamabad is about 700 km

4.2.6 Water Resources

- **Surface Water**
- **Ground Water**

Ground water in the Municipal area is generally saline except along the irrigation canals and the river.

4.2.6.1 Drinking Water Quality

Drinking water supply situation of Bahawalpur is much below as compared to all other cities; the service coverage is about 3% of population. The city faces similar issues related to drinking water supplies i.e Low coverage ratio, Poor water quality delivered to users, Illegal connections, not enough trained and qualified staff, the water quality is reported to be poor.

The water supply network in Bahawalpur covers 10% of the town and 3% of the population and the water quality is reported to be very poor. PCRWR carried out a

survey of major cities in the Punjab among which was Bahawalpur. The results of the survey indicated that around 24% of the sampled water was polluted with E.Coli, 52% samples were found to be contaminated with Coliform bacterium, and 76% possessed excess Arsenic (As) - most of the samples contained more than 50 ppb which is 5 times more than the limits set by the WHO. PHED is presently executing Rehabilitation and Augmentation of Urban Water Supply Scheme Bahawalpur City. Additionally, in 2006 the World Bank and the Government of Punjab developed an “Urban Water and Sewerage Reform.” Plan .However, there is still no overall water supply plan has been developed

4.3 BIOLOGICAL ENVIRONMENT

The fauna and flora of the area include:the most common animals in the city include the hog deer, ravine deer, black buck and blue bull. Fox, jackals, hares, wild boars, porcupines, mongoose, arks, owls and hawks are also found in large numbers.

4.3.1 Flora

Trees, also called the ‘lungs’ of the earth, are important for the restoration of the eco-system. People can benefit immensely from their survival and existence. Trees have also been a source of medicine for thousands of years and a refuge for various species of birds. Several species of the trees in Lahore are being used in medicines. Some trees of significant medicinal value are grown easily in the city.

The main crops which Bahawalpur is recognised for are Cotton, Sugarcane, Wheat, Sun Flower Seed, Rape/Mustard Seed and Rice. Bahawalpur Mangoes, Citrus, Dates and Guavas are some of the famous fruits exported out of the country as well as Onion, Tomato, Cauliflower, Potatoes and Carrot. Being an industrial expanding city the government has revolutionised and libertised various markets allowing the Caustic Soda, Cotton Ginning & Pressing, Flour Mills, Fruit Juices, General Engineering, Iron & Steel Re-rolling Mills, Looms, Oil Mills, Poultry Feed, Sugar, Textile Spinning, Textile Weaving and Vegetable Ghee & Cooking Oil industries to flourish.

Inventory of some Flora of District Bahawalpur

S.no	Common Name	Scientific Name
1	Indian Lilac	<i>Azadirachta indica</i> L.
2	Chinese date	<i>Ziziphus mauritiana</i> Lamk
3	Yellow	<i>Terminalia chebula</i> Retz.
4	Temple plant	<i>Crataeva adansonii</i> DC.
5	Bombax	<i>Bombax ceiba</i> Linn.
6	Bistula	<i>Cassia fistula</i> Linn.
7	India laburnum	<i>Acacia nilotica</i> (Linn.) Delile.
8	Indian banyan	<i>Ficus benghalensis</i> Linn.
9	Buddha tree	<i>Ficus religiosa</i> Linn.
10	Benzoil tree	<i>Moringa oleifera</i> Lam.
11	Devil tree	<i>Alstonia scholaris</i> (L.) R.Br.
12	Rosewood	<i>Dalbergia sissoo</i> Roxb.
13	Mango	<i>Mangifera indica</i> L.
14	Spanish cherry	<i>Mimusops elengi</i> L.
15	Jujube	<i>Ziziphus zizyphus</i> Mill.

4.3.2 Fauna

The most common animals in the city include the hog deer, ravine deer, black buck and blue bull. Fox, jackals, hares, wild boars, porcupines, mongoose, arks, owls and hawks are also found in large numbers. The Bahawalpur Zoo, one of the few zoos in Pakistan, is located in Bahawalpur. Spread over an area of several acres inside the city, it contains a variety of animal species, including Asiatic lions, Bengal tigers, hyenas, leopards, and peacocks. The zoo has a collection of 130 animals and 700 birds from tropical regions, particularly those found in the Cholistan region. The zoo occasionally breeds and supply animals to other zoos in the country. It also has an aquarium and zoological museum with stuffed rare birds and animals. Located 35 kilometres east of the city is the Lal Suhanra National Park, one of the few safari parks in the country housing large animals including lions and rhinoceros.

Inventory of some Fauna of District Bahawalpur

S.no	Common Name	Scientific Name
1	Intermediate Egret	<i>Egretta intermedia</i>
2	Indian-Pond Heron	<i>Ardeolagrayii</i>
3	Red-Wattled Lapwing	<i>Hoplopterusindicus</i>
4	Common Sandpiper	<i>Actitishypoleucos</i>
5	White Wagtail	<i>Motacilla alba</i>
6	Yellow Wagtail	<i>Motacillaflava</i>
7	Red-vented Bulbul	<i>Pycnonotuscafer</i>
8	House Sparrow	<i>Passer domesticus</i>
9	Common Myna	<i>Acridotherestrictis</i>
10	Bank Myna	<i>Acridotheresginginianus</i>
11	Pied Myna	<i>Sturnus contra</i>
12	House Crow	<i>Corvussplendens</i>
13	Nectariniaasiatica	<i>Purple sunbird</i>
14	Black Drongo	<i>Dicrurusmacrocersusvieillot</i>
15	Black kite	<i>Milvus migransmigrans</i>
16	Blue rocky pigeon	<i>Columba livia</i>
17	Little brown dove	<i>Streptopeliasenegalensis</i>
18	White-breasted Kingfisher	<i>Halcyon smyrnensis</i>
19	Little Green Bee eater	<i>Meropsorientalis</i>
20	Golden-backed woodpecker	<i>Dinopiumbenghalense</i>
21	Hoopoe	<i>Upopaepops</i>
22	Pheasant-tailed jacana	<i>Hydrophasianuschirurgus</i>

Some birds and few animals like Buffaloes, cows, goats, donkeys, hens, rats, cats and dogs are present in the vicinity of proposed site. Some reptiles like lizards are also present. The only amphibian seen the project area is frog. No threatened or endangered species are found in the project site. Similarly no wildlife is present.

4.4 SOCIO ECONOMIC ASSESSMENT

Social change is the consequence of almost any intrusion into the community life of any society. The intrusion can be in the form of any developmental projects or nonspecific, less tangible forms such as increased exposure to other cultures, technological changes

and so on. The social change that results from intrusion into community life can also be beneficial, but can have undesirable or negative outcomes. Even that change in the long run may have positive effect on the social well being of a community.

Social Impact Assessment is a methodology used for examining social change due to external sources, especially specific developmental projects, but also government policies, technological changes and social processes or anything that has a social impact.

The objectives of the given study are outlined as follow:

- To carry out the assessment of social impact.
- Acquire socioeconomic data to evaluate and identify the project interventions.
- Assess needs of community related environmental concerns.
- To assess adverse and beneficial socioeconomic and health impacts of the activity.
- To suggest remedial measures and solutions to improve socio economic conditions.
- To analyze socio economic conditions of community, with special reference to environment and conservation of natural resources.

4.4.1 Demographic Profile of Lahore

The demographical profile of city shows that it became city in 1847, became tehsil in 1901, there are 18 UCs, and total area of the City is 96 Sq Km, total Population of the City (Population reported by Urban Unit) was 481,858 in 1998, literacy rate of the City was 58.5%, average household size 7.1, annual growth rate during 1981-98 was 2.93 %.(District Census Report 1998). Present Projected population is 644,872. Bahawalpur Cantonment also existed adjacent to Bahawalpur City. The cantonment area population was 51769 in 1998 and average growth rate was 3.62 during 1981-1998. The present projected population of Cantonment area is 79,322.

Saraiki is the local language, while Urdu and English are official languages used in various educational and government institutions.

4.4.2 Health facilities

In Bahawalpur Victoria Hospital has capacity of 1409 beds and addition two new blocks (cardiology and cardiac surgery block and urology centre) this will add 200 beds. There are about 51 Private hospitals. These all produce about 3 tons hospital waste. This is either burnt or disposed openly in barren areas. On the issuance of notices by District Environment Officer the principal of Quaid-e- Azam Medical College (QMC) and Medical Superintendent Bahawalpur Victoria Hospital are now trying to obtain funds for the installation of incinerator/ autoclave to dispose the hospital waste properly.

4.4.3 Educational Facilities

List of educational institutions in Bahawalpur

- Dominican Convent Higher Secondary School Bahawalpur.
- Government Sadiq College Women University.
- Islamia University Bahawalpur.
- Allied Schools, a project of Punjab Group of Colleges.
- The Educators.
- ILM Group of Colleges.
- Quaid-e-Azam Medical College.

4.4.4 Transportation and Communication

Presently Urban transport is becoming burning issue of Bahawalpur City, because of its rapid population and urbanization growth. It requires immediate attention to plan for present and future needs for urban transport services. Currently urban transport services in Bahawalpur are similar as have in other cities, like use of Motor Cycle Rickshaws, and Auto Rickshaws as urban transport.

No urban transport services are available except for motorcycles, rickshaws and auto rickshaws. The effective capacity of the new road system is reduced by poor traffic management, poor compliance with traffic regulations and the mix of motorized and nonmotorized traffic.

Bahawalpur city lies south of the Sutlej River. It is situated in the south of Punjab province, 90 km from Multan, 420 km from Lahore, 122 km from Burewala, 90 km from Vehari, 270 km from Faisalabad and about 700 km from Islamabad. It is linked to these other cities by major railway and four sub-regional roads.

The road infrastructure in Bahawalpur is generally good for existing requirements. As with other cities under review, there are no signals on any Chowk and no urban bus or van services are available. Mixed motorised and non-motorised traffic increase congestion on roads.

Bahawalpur has its own airport built by the Dubai Civil Aviation Department. Bahawalpur Airport links the city with various Pakistani cities such as Dera Ghazi Khan, Islamabad, Karachi and Lahore with the national flag carrier, Pakistan National Airlines.

The airline has launched international flights to Dubai and plans to introduce more international destinations. There are also daily bus and train services to and from Multan, Lahore, Sukkur and Karachi.

4.4.5 Industrial Activities

The Punjab Small Industries Corporation (PSIC) has established a Craft Development Center for Cholistan area, outside Farid Gate, Bahawalpur from where handicrafts manufactured in Cholistan can be purchased.

The Most famous industries lying in this area include Fertilizer, Sugar, Cotton, and Textile, Beverages, flour & Cottage Industries. Fuji Fertilizer Company, Unilever, Jamal Din wali Sugar Mill, Hamza Sugar mill, Itehad Sugar Mills are the most important industries playing fundamental role in the economy of the area.

4.4.7 Water Supply

The water supply network covers 10% of the town and serves 3% of the total population. Presently PHED is executing rehabilitation and augmentation of Urban Water Supply Scheme for Bahawalpur City. This would help in drinking water supply needs and increase in service coverage. Southern Punjab Basic Urban Services Project (SPBUSP) also helping in water supply service provision and expenditure has been made of Rs 414.203 million and physical progress is 93%.



4.5 Conclusion

Comparison of potential adverse and beneficial impacts of the project shows that project will prove to be beneficial for the inhabitants of the area. The project will provide job opportunities for the local inhabitants. Hence improve their socio economic status. Employment opportunities generated by the project will include workers, helpers and guards. The overall socio economic impact of the project is interpreted in relation to the existing environmental conditions.

The project, overall, does not have major adverse impacts on the existing environment and people with due implantation of the mitigation measures, there will be very insignificant adverse impacts on the socio economic environment. The project has more beneficial impacts on the socio economic environment than adverse impacts. In conclusion, it can be said that overall the project would have positive impacts on the socio economic status of the neighboring community inhabitants.



CHAPTER V

SCREENING OF POTENTIAL ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

5.1 GENERAL

The environmental impacts were assessed during both construction and operation phase. The mitigation measures and monitoring program were also proposed. The detail explanation of environmental impacts and mitigation measures are described in this chapter. “**M/S Al Noor Maqbool Smart City (Housing Scheme)**” located at Link Baghuchi Pull Road, Chak No.8/BC, Near IUB, Tehsil Bahawalpur City, District Bahawalpur. Impacts are evaluated on the basis of magnitude, immediacy and sustainability. Evaluation criteria are as follows:

- Magnitude
Type of impact (direct, indirect and cumulative)
- Immediacy
Temporal extent (during construction, after construction)
Spatial extent (local, widespread)
- Sustainability and Reversibility
Mitigability (fully, partially)
Monitoring (fully, partially)

Environmental Problems Due to Project Location

Said project site situated located at Link Baghuchi Pull Road, Chak No.8/BC, Near IUB, Tehsil Bahawalpur City, District Bahawalpur. The potential impacts assessed due to project location are change in land use pattern, pressure on the existing natural resources, natural hazards like floods, earth quake, changes in the socio-cultural patterns of the local community, local community displacement issues, and obstruction of accessibility to the community already residing in the locality. A detailed explanation of each potential impact is given hereunder in tabulated form:

**Table 5.1: Environmental Problems/Mitigation Measures Due to Project Location**

	POTENTIAL IMPACTS	MITIGATION MEASURES
1.	Change in Land Use Pattern	
	Any new intervention has its first and foremost impact of changing the land use pattern of the area. The impact of this nature is irreversible therefore site selection needs to have careful consideration of the impacts that may arise due to the changes in land use patterns.	Prior to selection of site, the project proponent had careful consideration of site alternatives and hence due to current land use nature, price, and comparatively less environmental impacts the site was selected out of the two alternatives. Another factor adding to the feasibility of the proposed site was that it involved no displacement of local community, closeness to existing commercial hub and zero energy consumption for transportation.
2.	Pressure of Resources	
	Yet another impact to be considered prior to site identification is the availability of already existing resources e.g. water, gas, electricity, etc. any new intervention can exert pressure and marginalize the existing community. This could eventually create a sense of deprivation among the already existing community and may eventually result in social unrest.	Considering this very important factor, the site identification was done after evaluating the extent of provision of resources. The water requirements, energy requirement, social services (identified in the previous chapters) was done and based on the availability of resources to meet the present and future demand, the mentioned site was identified.
3.	Natural Hazards	
	It is very important to assess the extent of damage any natural hazard e.g. earthquake, floods, landslides may cause. The geological formation of the capital territory is such that it	The proposed site identified within environmentally /geologically safe and does not fall in any of the earthquake zones in which the capital territory is





	has been categorized into earthquake zones.	divided.
4.	Displacement of Local Community	
	Displacement of local community can tend to create social issues and aggravate negative feelings from the existing population towards the project.	The proposed project is planned on a site which has already been acquired by the proponents after going through its socio-culture, environmental and economic considerations. Land of the project lies at that location from where there is no more displacement of the local community.
5.	Accessibility Issues to the Local Community	
	Another important impact considered was obstruction or changes in the patterns of transportation and increase travel time/distance for the local community.	The proposed project site is located in that area where there is easy approach i.e. lies transport facility and easy travelling to local community because Chenab City is on the main Hasilpur/ Sadran Bypass road.
6.	Presence of Sensitive Areas	
	Development interventions can degrade the quality and life expectancy of ecologically, socially and historically sensitive areas.	There are not sensitive areas of any nature be it ecological, social or historical in the proposed area.
7.	Availability of Existing Infrastructure and Services	
	Unavailability of infrastructure can render the entire project void and impractical due to absence of important community infrastructure.	The proposed project is well connected to the rest of the city through major asphalt roads. Thus transportation and delivery of is not a big issue at project site.



Environmental Problems Due to Project Design

Environmental issues may also arise during project design phase which may cause potential threats to the overall project life is not considered timely. The potential problems associated with project design phase are identified in the **table 5.2** hereunder:

Table 5.2: Environmental Problems/Mitigation Measures Due to Project Design

	POTENTIAL IMPACTS	MITIGATION MEASURES
1.	Increased Energy Consumption	
	The design of site plays a vital role in determining the energy demand. Unplanned design may lead to overall rise in energy demand.	The proposed project that is “M/S Al Noor Maqbool Smart City (Housing Scheme)” has a proper design and need a proper energy plan.
2.	Traffic Congestion	
	Unplanned traffic management and traffic infrastructure development may lead to traffic related issues such as accidents and traffic congestion.	According to planning vehicles will be entered in the project site. Thus issue for traffic congestion is not a big issue.
3.	Fire Exits /Emergency Evacuation Plan	
	Emergency evacuation plans especially for the project is necessary. Fire issues due to electric short circuit, gas leakages etc.	The project is an open site and there is no extra work except construction of the houses. Thus there is need for exit plan in emergency.

5.2 IMPACT DURING CONSTRUCTION / DEVELOPMENT PHASE

The potential environmental impacts of the proposed project at site and surrounding area during the development / construction phase are described as follows:

5.2.1 Physical Environment

The main impacts of the project during development / construction of the new roads, civil works, development of parks, installation / laying pipelines, sewer system and installation of utility and equipment will be the dust and noise from transportation of construction



materials and equipment. Standard Engineering Practices will be enforced on the construction / development site.

5.2.3 Traffic Congestion and Disturbance to People

Due to the construction/development activities, the traffic in the project area will increase and may result in traffic disruption if proper parking facilities are not provided in the proposed Scheme. This will be a moderate negative impact.

- **Mitigation**

Adequate parking facilities will be provided within the boundary of the project area for construction machinery and tractor-trolleys bringing the material into the project area.

5.2.4 Impact on Soil

During construction phase the soil quality may be affected due to very small amount of discharges during vehicle and equipment maintenance and leakage from equipment and vehicles. The impact is not significant. Depending on the nature of the material, location of spill and quality of spill, soil can get contaminated. But if mitigation measures applied, the overall impact on soil during construction phase is minor.

5.2.5 Impact on Geology

The geology of the area is flat. No hills, mountains and slopes are present, so during construction phase there will be no impact on geology of area.

5.2.6 Impact on Topography

The topography of project area is nearly flat and remains unchanged during construction phase.



5.2.7 Ecological Impacts

The project area is devoid of any trees cover or any endangered or threatened animal species. The impact will be Nil.

5.2.8 Impact on Water Bodies

No fresh water bodies are known to exist in the vicinity of the project area. Therefore, there will not be any deterioration of surface water quality. As the ground water is the source of water in the city. Ground water will be the source of water for the proposed project site. During construction phase, the water will be used for wetting/ soaking bricks and for masonry construction.

5.2.9 Groundwater Consumption

Development of “**M/S Al Noor Maqbool Smart City (Housing Scheme)**” located at Link Baghuchi Pull Road, Chak No.8/BC, Near IUB, Tehsil Bahawalpur City, District Bahawalpur. will increase the water supply demand of the whole area. Prolonged and high water consumption may in the long run lower the underground water table and affect water supply system of surrounding areas due to the continuous withdrawal of water. This will be a moderate negative impact.

5.2.10 Impacts on Air Quality

Following potential impacts on air quality may occur during construction phase.

5.2.10.1 Emission of Dust and Particulate Matter

During the development / construction vehicles and machinery will be employed. These will generate some dust and smoke temporarily which will stop on completion of the construction work. During construction phase due to continuous operation of machinery and movement of heavy trucks and vehicles can generate gaseous emissions and can have a slight adverse effect on the surrounding environment. Combustion exhaust from vehicles and construction equipment during construction phase can affect ambient air quality of project area. This impact is classified to be short term, reversible and limited,



as it will only occur during the excavation activities. Also these impacts are expected to be contained within the site boundaries.

5.2.10.2 Vehicular Exhaust Emission

During construction, the continuous operation of machinery and movement of cranes, heavy trucks and vehicles may generate gaseous emissions and may have an adverse impact on the surrounding environment. The overall impact on the quality of air during the construction stage will, however, be of less intensity. This will be of moderate negative impact.

5.2.10.3 Noise

The project area is adjacent to a very busy road and is already noisy. Therefore, during construction stage there will not be any unusual noise or vibration to disturb the workers.

5.2.11 Health and Safety of Workers

During construction phase minor and severe injuries to workers due to operation activities may occur but if managed properly this impact can be mitigated. However, hospitals are very nearby the “M/S Al Noor Maqbool Smart City (Housing Scheme)”.

5.2.12 Proposed Mitigation Measures during Construction / Development Phase

The potential negative impacts during construction and operational stage of the project should be mitigated to an acceptable level. Following environmental protection measures are adopted to eliminate adverse environmental impacts or to reduce them to an acceptable level within the legislative and regulatory framework. The proposed mitigation measures are listed below:

- Appropriate waste disposal mechanism should be followed during the construction phase. The construction waste would be disposed in a manner that does not contaminate surface or groundwater.
- The construction waste generated will be used for earth filling within the project site premises.

- The Contractor needs to make sure that their machinery and equipment are properly tuned and serviced and there is no leakage of oil from construction equipment and machineries.
- Contractor should give assurance of quality of machineries and equipment which will be used during excavation and construction process.
- All vehicles, machineries, equipment and generators used during construction activities should be in good working condition and be properly maintained in order to minimize exhaust emissions.
- Construction labor must be trained in safety procedures for all relevant aspects of construction.
- Helmets or hard hats should be worn by workers at all time of work and everywhere on the Project Site.
- Regular checks should be carried out to ensure that the contractor is following safe working procedures and practices.
- Workers should be provided with personal protective equipment (PPE's) such as safety jackets, ear plugs or ear muffs, special boots and dust masks.
- Use of up-to-date and well maintained machineries or equipment with reduced noise level.
- Confining excessively noisy work to normal working hours in the day, as much as possible.
- Providing construction workers with suitable hearing protection like ear cap, or ear muffs and training them in their use.
- Ear muffs or ear caps should also be provided to those people living in nearby area.

5.3 IMPACTS DURING DEVELOPMENT/CONSTRUCTION PHASE

The anticipated environmental impacts related to the proposed Project have been studied for the development/construction stage as discussed herewith.

5.3.1 Disposal of Construction Waste/Excavated Material

Dumping of construction wastes/excavated material in the surrounding area of the proposed scheme may limit the use of land in the Project Area. This will be a moderate negative impact.

- **Mitigation**

Management of construction activities will ensure minimum degradation to the soil around the project area and dumping of excavated waste will be used for earth-filling and in the depressions within the project area. The administrator will be bound to take care of the waste generated from the construction activities.

5.3.2 Air Quality

Substantial quantity of dust in and around the active construction area may be generated from the excavation operations, traffic/machinery movement and transportation of construction material at the Project Site. Prolonged exposure to dust might result in respiratory tract infections and asthmatic problems to the construction workers, the natives of the area and commuters. During construction, the continuous operation of machinery and movement of the heavy trucks and vehicles may generate gaseous emissions. These emissions may create public health risks and nuisance on the bio-physical environment. This will be a minor negative impact.

- **Mitigation**

The majority of dust problems caused during the development/construction phase of the project can be effectively mitigated by the implementation of simple procedures by the Contractor by adopting measures other than as under:

- All the excavation work and access roads will be sprinkled with water
- Construction workers will be provided with masks for protection against the inhalation of dust.
- Regular monitoring of all vehicles, equipment, and machinery used for construction. All vehicles, machinery, equipment and generators used during construction activities will be

kept in good working condition and properly tuned and maintained in order to minimize the exhaust emissions.

5.3.3 Noise and Vibration

When the construction work is undertaken, constant rattle of heavy machinery will raise the noise level in the Project Area. This noise and vibration will affect directly the residents of nearby areas. Noise due to the construction will be a minor negative impact.

- **Mitigation**

Mitigation measures mentioned below will be adopted to minimize the noise pollution. Those measures include, but are not limited to the following:

- Selection of up-to-date and well maintained plant or equipment with reduced noise levels ensured by suitable in-built dampening techniques or appropriate muffling devices.
- Confining of excessively noisy areas and limiting the work to normal working hours in the day.
- Providing the construction workers with suitable hearing protection like ear cap, or earmuffs and training them in their use; and
- Regular checkups and maintenance of the construction equipment, and oiling and greasing of the noise making mechanical parts.

5.3.4 Flora

Construction of the proposed Project will involve cutting of bushes and herbs. There are no trees in the vicinity of project area. This will be a minor negative impact.

- **Mitigation**

After construction besides introducing new ornamental plants, local tree and plants species, as uprooted from the Project Site, will be planted for landscaping. In addition to providing a better view to the area, the proposed vegetation will help minimize the excess noise, vehicular emissions and dust pollution.



5.3.5 Fauna

There is no wildlife present in the Project area. Also, the local animals and bird species of the area are very much domesticated and will not be adversely affected by the Project execution.

- **Mitigation**

Not required

5.3.6 Relocation of Utilities

The construction of the proposed infrastructure will not be involved relocation of any public utilities.

- **Mitigation:** Not required

5.3.7 Traffic Congestion and Disturbance to People

During the construction phase, the movement of heavy machinery and transportation of raw material and equipment may cause traffic congestions. As a result the daily activities of the people of nearby localities as well as of the visitors may be disturbed, which will require proper mitigation measures. This will be a moderate negative impact.

- **Mitigation**

During construction, following mitigation measures will be followed:

- Observation of timing by the vehicles carrying construction material of infrastructure to cause minimum disturbance to traffic on existing road. The construction equipment and machinery must be stationed in the boundary premises to avoid the traffic congestion on the main road.
- Transportation of raw material and heavy machinery will be done early in the morning.





- There will be coordinated planning of traffic movement by the Traffic Police and the Transport Department in accordance with the construction program with advance warnings to the affected residents and road users.
- All the machinery will stay inside the periphery of scheme so it will not cause disturbance in the traffic.

5.3.8 Poverty Alleviation

Construction of the proposed Housing Scheme will generate the employment opportunities for the population living in the surrounding areas. This will be a potential minor positive impact.

- **Mitigation**

Not required

5.3.9 Sanitation and Solid Waste Disposal

There will be a health risk of sanitation to the workers. This will be minor negative impact.

- **Mitigation**

All the solid waste will be disposed off in accordance with the regulations of Tehsil Municipal Administration. This work will be done by sanitary workers of that area.

5.3.10 Workers Safety and Hygienic Conditions

The construction activities impose certain negative impacts on health and safety of the workers and public in case of unsafe and/or unfavorable working conditions. Mitigation measures will be required to minimize health and safety related negative impacts of the project. This will be a minor negative impact.

- **Mitigation**

Implementation of the following measures will ensure health and safety of the workers and the public during the construction phase:

- The Administrator will ensure that the construction workers/labors are trained in safety procedures for all relevant aspects of construction;
- Construction workers will be provided with proper safety equipment such as helmets, goggles, masks, etc.;
- Formal emergency procedures will be developed for construction site in case of an accident. First aid kits and other necessary equipment will be kept available at site along with the list of emergency phone numbers to be contacted in case of any emergency/accident;
- The safety of the public at all stages of the construction will be ensured through appropriate public education and safety measures such as use of sign boards, barriers and flags; and
- Proper illumination will be provided at night.

5.4 IMPACTS OF OPERATIONAL PHASE

The anticipated impacts related to the proposed project have been studied for operational stage and is discussed as follows:

5.4.1 Air Quality

During operational stage of “**M/S Al Noor Maqbool Smart City (Housing Scheme)**” located at Link Baghuchi Pull Road, Chak No.8/BC, Near IUB, Tehsil Bahawalpur City, District Bahawalpur., the continuous operation of air conditioners, exhaust fans etc. may deteriorate the quality of air if not managed properly. Increase in traffic volume during office/school starting and closing times will also deteriorate the air quality. This will be a minor negative impact.

- **Mitigation**

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

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

5.4.2 Noise

During the operational stage, noise levels are anticipated to increase. Noise will be generated mainly due to movement of vehicles on the roads, for which proper mitigation measures are required. This will be a moderate negative impact.

- **Mitigation**

World Bank's Pollution Prevention and Abatement Guidelines for ambient noise for the receptors are i.e. 55 and 45 dB (A) during daytime and night time respectively for residential, institutional and educational areas and the same shall be maintained. There will be prohibition on the use of horns in the scheme. Plantation along the roads will act as a noise barrier.

5.4.3 Groundwater Consumption

Prolonged water consumption may in the long run lower/deplete the underground water table. This will be a moderate negative impact.

- **Mitigation**

Residents of the scheme will be trained in water conservation measures such as use of water efficient/ economy appurtenances and reuse of wastewater for gardening. Less water consumption will also reduce the load on the sewerage system. Following operational measures will be adopted for water conservation:

- It will be made sure that all faucets, circulating pumps etc. do not leak and are in good condition.
- Repair Any leaking or dripping faucet, pump or toilet will be reported immediately; and
- Use of water-saving equipment will be practiced both in houses and green areas.

5.4.4 Wastewater

Wastewater generated from “**M/S Al Noor Maqbool Smart City (Housing Scheme)**” located at Link Baghuchi Pull Road, Chak No.8/BC, Near IUB, Tehsil Bahawalpur City, District Bahawalpur, will be domestic waste water which will be collected in the sewer system of the scheme and then finally will be discharged into the municipal drain where treatment plant will be installed during construction phase.

- **Mitigation**

Water supply and sewerage has historically been the responsibility of the municipal local bodies like Municipal Corporations and Municipal Committees. Most of these municipal bodies have now been made TMAs, which are responsible for providing water supply and sanitation services under the Punjab Local Guidelines Ordinance (PLGO) 2001. The proponent of the project will lay down sewerage system of the whole scheme. All the wastewater will be discharged through main sewerage pipelines which have sufficient size to cater all sewage and drainage of scheme into the Municipal waste water drain after treatment.

5.4.5 Solid Waste

Solid waste generated from “**M/S Al Noor Maqbool Smart City (Housing Scheme)**” will be mostly paper, plastics, polythene shopping bags and food waste. Total solid waste generated from the scheme will be approximately 200 kg per day which will have to be properly managed. Small waste storage bins will be installed outside the boundary wall of each house. From there the waste will be collected through the sanitary workers, who will shift it to waste collection site after that solid waste will be moved from housing society location to the dumping site by the sanitary worker.

Mitigation

Small waste storage bins will be installed outside the boundary wall of each house. The waste from these bins will be collected by the sanitary workers and will shift it to a big container / skip which have already been provided by TMA. The waste will be disposed off in accordance with the procedures of Tehsil Municipal Administration.

5.4.6 Traffic Management

After construction of the houses and commercial setups, the number of vehicles entering/exiting the project area will increase. This may result in traffic jams, problems to the pedestrians, and poor condition of the main Road, especially at peak hours. This will be a moderate negative impact.

- **Mitigation**

Tehsil Municipal Authority and Traffic Engineers will be contacted to solve this problem and improve and widen this main Road. Level of Services (LOS), signalized intersection and service lanes will be provided before main entrance to mitigate traffic congestion. To mitigate blockage in flow of traffic service lanes can be provided before entrance.

5.4.7 Socio-economic Impact

When a development project is launched in a community, it helps in boosting up the socio-economic conditions by providing the people different economic opportunities. The

construction of “M/S Al Noor Maqbool Smart City (Housing Scheme)” located at Link Baghuchi Pull Road, Chak No.8/BC, Near IUB, Tehsil Bahawalpur City, District Bahawalpur., would have a great impact on the commercial activities of the locals.

The socio-economic impacts like employment, education, life, style and cultural uplift are the direct benefits during this stage for the people of the Project Area. Local people will be hired for different jobs, i.e. gardening, housekeeping, cooking, tuitions, driving etc. Facilities like commodity market and medication will also generate working opportunities for the shopkeepers of nearby communities. The human resources will be developed at local level for future development activities in the area. The institutional facilities like roads, dispensaries, proper drainage and sewerage will help improve the lot of the people. Operation of the project will also result in the increase land values. All the Project related job opportunities will ultimately improve per capita income of the population in the area. This is a major positive impact.

- **Mitigation:** Not required

Potential Environmental Enhancement Measures

In order to enhance the environment the following measures will be adopted:

1. Trees will be planted within the premises to beauty the surrounding area.
2. A special budget will be designated for the environmental improvement of the environment on annual basis probably PKR 160,000/-. The administration will be responsible for spending of this budget. The team leader will prepare the inventory of environmental improvement activities and communicate it with the rest of the team for implementation.

CHAPTER VI

ENVIRONMENTAL MANAGEMENT AND MONITORING PLAN

6.0 SCOPE OF ENVIRONMENTAL MANAGEMENT PLAN

Several measures have been identified in this EIA report to prevent or mitigate the adverse environmental impacts of “**M/S Al Noor Maqbool Smart City (Housing Scheme)**” located at Link Baghuchi Pull Road, Chak No.8/BC, Near IUB, Tehsil Bahawalpur City, District Bahawalpur.. To ensure that these measures are incorporated in the operation phase of the project, it is necessary to develop a comprehensive Environmental Management Plan (EMP). This section outlines the EMP. The plan addresses the mechanism through which the measures will be implemented; defines the responsibilities of the workers and the management; and lays down the required documentation, communication and reporting procedure.

Institutional Capacity

Its aims to enhance the capacity building of a system and project by the managing the sources to increase the efficiently effectively. The management work for continues improvement and development of the project to enhance the sustainability of project outcomes. It also includes the management worker and project associated persons to increase their moral by giving them training. Every associated person with the project being motivated with their duties and responsibilities to increase productivity of the project. The key motto is to decrease communication gap from top to bottom hierarchy.

6.1 GOALS OF ENVIRONMENTAL MANAGEMENT PLAN

The following are the primary goals of EMP:

- Ensure implementation of mitigation measures.
- Ensure that the construction and operational phase of the proposed project meets all environmental related legal obligations.
- Provide a mechanism for taking timely actions for unanticipated environmental situations.

6.2 ENVIRONMENTAL MANAGEMENT PLAN

No further construction will be carried out on the project area; therefore, the Environmental Management Plan to be enforced during operational phase will be implemented by the proponent. Administration of the plant will manage all the environment related activities including its monitoring and reports. Administrator will be responsible person for all plant related activities. Monitoring program/ management plan has been prepared for the project and is given in table 6.1.

Table 6.1 Environmental Management Plan (EMP)

Aspects	Potential Impacts/Risks	Proposed Mitigation Measures	Responsibility
Changes in land value	Economic losses/gains	Minor positive	-
Seismic Hazard	Damage due to earth quake	Selection of a design for structure that must be safe against earthquakes	Project Contractor
Change of Land use	“M/S Al Noor Maqbool Smart City (Housing Scheme)” District Bahawalpur will be developed on open plot having residential and agricultural area in the surrounding. Construction of houses will change the land use.	Plantation will be done in the specified areas	Project Contractor
Traffic Movement	Movement of vehicles may result in traffic disruption if proper parking facilities are not provided.	Adequate parking facilities will be provided for the construction machinery and tractor-trolleys bringing the material into the Project Area	Project Contractor



Additional load on Existing Utilities	Additional load on water supply, sewerage system, electricity ,telephone ,gas and solid waste system	All the effects and mitigations of these utilities have already been covered in previous sections and no any problem will create due to load on existing facilities	
Disposal of Construction Waste/Excavated Material	Dumping of construction wastes / excavated material in the surrounding area may limit use of land	Waste generated due to construction will be reused and no dumping site will be needed.	Project Contractor
Air Quality	Dust produced due to construction activity can affect the health of employees and residents in the surrounding areas	Use of dust suppression techniques like water sprinkling etc. will be made to minimize the effect of dust. Construction workers will be provided with masks for protection against the inhalation of dust. Regular monitoring of all vehicles, equipment, and machinery used for construction. All vehicles, machinery, equipment and generators used during construction activities will be kept in good working condition and properly tuned and maintained in order to minimize the exhaust emissions.	Project Contractor
Noise and Vibration	Noise pollution due to increased construction machinery operation	Selection of up-to-date equipment and machinery with reduced noise levels ensured by suitable in-built	Project Contractor





		damping techniques; Regular checkups and maintenance of the construction equipment; and use of appropriate muffling devices,	
Flora	Construction will involve cutting of bushes	Plantation of four saplings will be done in place of each uprooted tree to make project area environment friendly	Project Contractor
Fauna	There is no wildlife present in the Project area. Also, the local animals and bird species of the area are very much domesticated	No Impact	
Relocation of Utilities	No relocation of any public utilities is involved	No Impact	
Traffic Management	Disturbance to routine traffic moving on the Road	Observation of timing by the vehicles carrying construction material to cause minimum disturbance to traffic on the main road. Construction equipment and machinery will be stationed in the boundary premises to avoid the traffic congestion on the approach road	Project Contractor
Poverty Alleviation	Construction of Scheme will generate the employment opportunities to the population living in the	Minor positive	-





	surrounding areas.		
Workers' Safety and Hygienic conditions	Health risks in case of unsafe and/or unfavorable work conditions	Enforcement of work safety measures such as wearing safety goggles, protective masks and boots and fixing of cautionary signs at designated sites during the construction phase of the Housing Scheme, First aid box and emergency relief will be provided at the Housing Scheme to meet the emergency needs. After that the patient will be referred to nearby hospital	Project Contractor
C- Operational Phase			
Air Quality	Air quality may deteriorate due to the continuous operation of air conditioners, exhaust fans etc. Increase in traffic volume during office/school starting and closing times will also deteriorate the air quality.	Plantation will be provided which will generate fresh oxygen; An air quality monitoring and improvement plan will be developed to keep the air pollution levels from generators, air conditioners etc. within the limits of Punjab Environmental Quality Standards (PEQS); Level of air pollution (as specified in the PEQS) will be monitored on regular basis; and vehicles with excessive smoke emissions will not be allowed to enter.	"M/S Al Noor Maqbool Smart City (Housing Scheme)" District Bahawalpur, Administration
Noise	Noise level may increase due to increased movement	Plantation along the roads will act as a noise barrier. There will be	"M/S Al Noor Maqbool Smart City





	of vehicles.	ban on the use of horn in the Scheme.	(Housing Scheme)” District Bahawalpur Administration
Groundwater	Prolonged water consumption may in the long run lower/deplete the underground water table.	Residents of the Scheme will be trained in water conservation measures such as use of water efficient/ economy appurtenances and reuse of wastewater for gardening.	“M/S Al Noor Maqbool Smart City (Housing Scheme)” District Bahawalpur Administration
Waste water Generation	Discharge of untreated sewage (about 80% of the total water consumption)	Each house will be having its own septic tank facility for the initial domestic water treatment. After that all the wastewater will be discharged into main sewerage pipelines which are reserved for the city. Pipelines have sufficient size to cater all sewage and drainage of scheme these pipelines will ultimately discharge their waste water into the main municipal waste water drain.	“M/S Al Noor Maqbool Smart City (Housing Scheme)” District Bahawalpur Administration
Solid Waste	Solid waste generated from “M/S Al Noor Maqbool Smart City (Housing Scheme)” District Bahawalpur, will be mostly paper, plastics, polythene shopping bags and food waste. Total solid waste generated from the Scheme	Small waste storage bins will be installed outside the boundary wall of each house. From there the waste will be collected through the sanitary workers, who will shift it to waste collection site after that solid waste will be moved from housing society location to the dumping site by	“M/S Al Noor Maqbool Smart City (Housing Scheme)” District Bahawalpur, Administration





	will be approximately 150kg per day which will have to be properly managed.	the sanitary worker. The work for the collection of solid waste will be done by following the Safety rule and regulations.	
Emergency Response	There are always chances of earthquakes and manmade disasters, fire, road accidents etc.	An Emergency Response Plan for earthquakes and manmade disasters will be developed by the Management. Emergency Response Plan.	“M/S Al Noor Maqbool Smart City (Housing Scheme)” District Bahawalpur, Administration
Traffic Management	After construction of the houses and commercial setups, the number of vehicles entering/ exiting the Project area will increase. This may result in traffic jams, problems to the pedestrians, and poor condition of the main road, especially at peak hours.	TMA will be contacted to solve this problem. The traffic conditions in the area can be improved by assigning signalized intersection and service lanes at main entrance.	“M/S Al Noor Maqbool Smart City (Housing Scheme)” District Bahawalpur, Administration
Socio-economic Impact	Emergence of new employment opportunities for the local people	Major positive	-

6.3) Staff Training Schedules:

Staff training is important parameter that needs to be fulfilled adequately in order to ensure the successful implementation of environmental objectives. Keeping this fact under consideration, project will ensure that the employees, contractors and workers receive appropriate environmental awareness training. This will be obtained through a variety of methods including training sessions, formal/informal meetings and discussion and formal presentations. Environmental awareness training would take place at various stages of the persons concerned with the proposed project. This would occur at the





induction of any new employee/contractor/workers and will be made a regular on-site feature. Records of training content and attendance will be maintained.

Project would require the persons involved during operational phase to be aware of following responsibilities and equipment, maintenance detail:

Their roles and responsibilities (including environmental incident reporting)

2. The environmental impacts (potential and actual) of their activities during construction and operation
3. Natural hazards such as earth quake and floods etc.
4. The potential consequence of poor environmental performance
5. Site emergency plans and their execution procedures

6.4 Persons involved during operational phase to be aware of following responsibilities and equipment, maintenance detail:

#	Description	Responsibility	Who will be involved	Outcomes
1	Air Quality	Administration	All employees	• Better understanding of the health impacts associated with air pollution • Develop a monitoring and reporting system for air pollution • Third party involvement especially EPA approved labs will be decided under potentially harmful circumstances
2	SWM	Administration	Staff	• Improved understating regarding health impacts associated with unplanned waste management • A monitoring and reporting system that would enable the supervisor to keep control of all unnecessary





				scattering
3	Wastewater	Administration	Employees but specific attention to the staff	• Improved understanding of the conservation techniques • Quality assurance through lab analysis if need be found • Overflow control in the drains through continuous cleaning
4	Noise	Administration	All employee	• Monitoring and reporting system for noise related issues if detected • Appropriate measures would be identified and implemented • Guidance to the employee on adopting good practices for noise and any other practice that otherwise could lead to environmental nuisance.
5	Landscaping	Administration	Staff	• Improved efforts for maintaining the green belts and tree plantations
6	Accidental Spills	Administration	All staff	• Improved understanding regarding how to react during minor and major spills according to the measures identified

6.5 Environment Enhancement Measures & Environmental Budget

In order to enhance the environment the following measures will be adopted:

3. Trees will be planted within the premises to beauty the surrounding area.
4. A special budget will be designated for the environmental improvement of the environment on annual basis .The administration will be responsible for spending of this budget. The team leader will prepare the inventory of environmental improvement activities and communicate it with the rest of the team for implementation.



**COST BREAKUP STRUCTURE FOR ENVIRONMENT**

Sr. #	Items	Cost
1	Tree Plantation	100,000/-
2	PPEs	20,000/-
3	1 st Aid Box	30,000/-
4	Safety Signs	10,000
Total		160,000/-

6.6 HOUSING SCHEME STRUCTURE & RESPONSIBILITIES

The housing scheme structure for the Environment Management Plan is outlined below:

6.6.1 Primary Responsibilities:

The primary responsibility for implementing EMP for this housing scheme is totally responsibility of management team of “M/S Al Noor Maqbool Smart City (Housing Scheme)” District Bahawalpur

6.6.2 Operational Management and Control

Conducting the operational activities in the environmentally sound manner will be the responsibility of the concerned Manager.

6.6.3 Supervision and Monitoring

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