2025

EIA

Environmental Impact Assessment

M/S RYK City Housing City

Mouza Rahim Yar Khan, Mouza Bindoor Tehsil & District Rahim Yar Khan

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4.2 Design and Layout Alternatives

Various design alternatives were explored during the planning phase, focusing on infrastructure efficiency, aesthetic appeal, environmental compatibility, and cost-effectiveness. The chosen layout includes:

- A balanced mix of residential plots (varied sizes), commercial zones, parks, and community facilities.
- Hierarchical road networks and walkways designed for safe, efficient circulation and emergency access.
- Allocation of green belts and open spaces in accordance with the Punjab Private Housing Schemes & Land Subdivision Rules, 2021.

Modern urban planning principles, such as zoning, utility corridors, and drainage flow design, were integrated to ensure long-term resilience and comfort. This layout was selected over conventional grid or block planning due to its superior space utilization and environmental responsiveness.

4.3 Environmental Alternatives

Environmental sustainability was central to the project's planning. While alternative environmental strategies were reviewed, the final plan emphasizes:

- Green Space Allocation: Parks, tree-lined streets, and green belts are planned to mitigate the urban heat island effect
- Stormwater Management: A sustainable drainage system is designed to manage rainwater and prevent flooding.
- Solid Waste Management: Designated waste collection points and an agreement with municipal authorities ensure hygienic waste handling.
- Noise and Dust Mitigation: Plantation buffers and construction phase protocols help reduce temporary disturbances.

These features collectively minimize the project's ecological footprint while improving residential livability.

Allocate green areas, parks, and open spaces within the project to maintain environmental balance. Sprinkle water on unpaved areas during construction to control dust emissions. Use noise barriers or schedule high-noise activities during daytime hours to minimize disturbance. Ensure that construction machinery is fitted with appropriate noise suppression equipment. Implement landscaping plans that use native tree and shrub species.

7.5 Impacts and Mitigation Measures in Construction Phase

i. Air Pollution

Impacts:

During the construction phase, significant dust emissions are expected from activities such as land clearing, excavation, movement of vehicles, and material handling. Construction machinery powered by diesel engines will also release particulate matter (PM), carbon monoxide (CO), and nitrogen oxides (NOx) into the atmosphere, potentially deteriorating local air quality. Dust may cause respiratory problems among workers and nearby residents if left uncontrolled.

Mitigation Measure:

Dust emissions, one of the major concerns, will be controlled through regular water sprinkling on all unpaved roads, open construction sites, and storage areas, particularly during dry and windy conditions. Additionally, construction material transport vehicles will be covered with tarpaulin sheets to prevent dust dispersion. Machinery and equipment will be regularly maintained to ensure that emissions remain within permissible limits, reducing air pollution.

ii. Noise Pollution

Impacts:

Construction activities, including excavation, operation of heavy machinery, and material transport, will generate high noise levels, potentially affecting the quality of

6 DESCRIPTION OF ENVIRONMENT

An environmental baseline study is intended to establish a database against which potential impacts can be predicted and managed subsequently. The EIA of the project covers a comprehensive description of the project area, including regional resources which are expected to be affected by the project, as well as those which are not expected to be directly affected by the construction and operation of the project.

A site visit was conducted to survey the field area for collection of relevant data. Interviews were conducted with the public and stakeholders of the project area to seek the public opinion on the implementation of the project. Various Governmental and Non-Governmental Organizations (NGOs) were also visited for the collection of relevant data and their views on the project were recorded for incorporation into the EIA report. The environmental impacts of any activity or process will be assessed based on deviation from the baseline or normal situation. The following components form part of the baseline:

- Physical Environment
- Ecological Environment
- Socioeconomic Environment

6.1 Physical Environment

The following section provides an overview of the information on physical environment of the proposed Project study area collected from primary as well as secondary sources. The major parameters covered include Physiographic and Topography, Geology, Soil, Seismicity, Climate and Meteorology, Ambient Air & Noise, Water Resources, Solid Waste, and Land Use.

6.1.1 Topography

Rahim Yar Khan District is situated in the southernmost part of Punjab and serves as a transition zone between the fertile alluvial plains of Punjab and the arid expanse of the Cholistan Desert. It lies between 27°40′ to 29°16′ north latitudes and 60°45′ to 70°01′ east longitudes. The district shares its boundaries with Bahawalpur District to

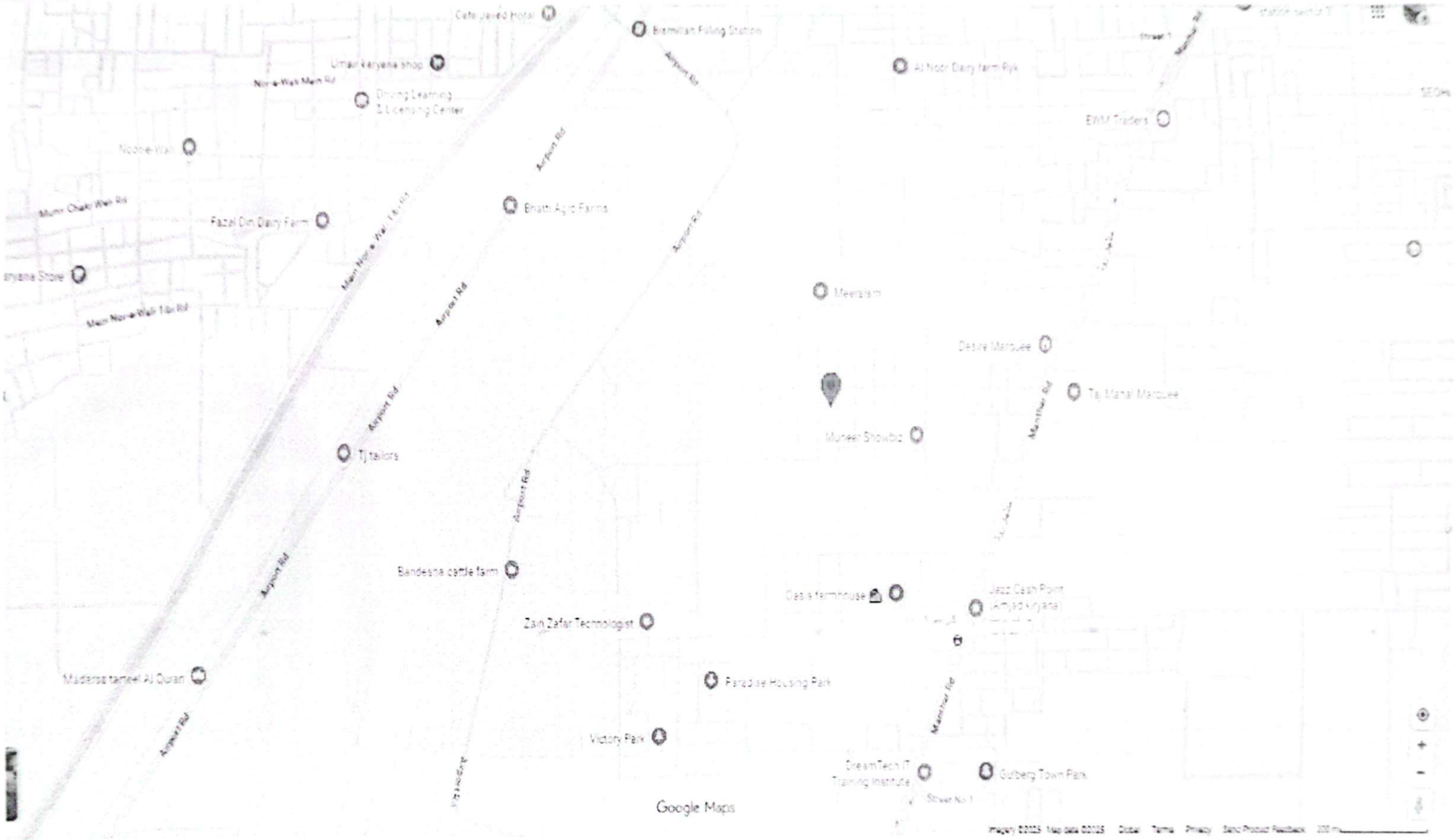

Figure 2 Rod Access Map

4.4 Economic Alternatives

To enhance the project's economic viability and community benefits, several cost-effective and resource-efficient strategies were selected over conventional methods:

- Energy-Efficient Street Lighting: Adoption of LED lighting reduces operational energy use.
- Water Conservation Measures: Provision for rainwater harvesting and water-efficient plumbing fixtures.
- Job Creation: The project supports employment for engineers, architects, laborers, and service providers, stimulating the local economy.
- Affordable Housing Segments: A portion of the scheme is reserved for lower and middle-income households to promote inclusive growth.

These economic considerations not only reduce project costs but also provide long-term social returns, making the selected approach more sustainable and inclusive.

1.6 Scope of the EIA Study, Area of Influence, and Magnitude of Efforts

The Environmental Impact Assessment (EIA) study has been undertaken to evaluate the potential environmental and social impacts associated with the proposed development of RYK City Housing Scheme. The primary objective is to ensure that the project complies with environmental regulations and integrates mitigation measures from the planning stage.

The scope of this study includes assessment of baseline environmental conditions, identification of potential impacts during construction and operational phases, and formulation of practical mitigation and monitoring strategies. It also addresses compliance with the Punjab Environmental Protection Act, 1997 and the Review of IEE & EIA Regulations, 2022.

The area of influence covers the project site and its immediate surroundings, extending up to a 2-3 km radius, encompassing local settlements, natural features, and infrastructure likely to be affected by project activities, such as air quality, water resources, noise levels, traffic flow, and waste disposal

The magnitude of efforts involved includes baseline surveys, consultations with stakeholders, site reconnaissance, and technical assessments of environmental components. The study aims to support informed decision-making for environmental approval and ensure long-term sustainability of the project.

By establishing a robust environmental management framework, the project aims to minimize its environmental footprint, ensure the safety of its workers, and contribute positively to the local ecosystem and community.

8.6 Environmental Budget

Table 7 Environmental Budget

Environmental Component	Quantity	Amount Pak Rs.	Details/Basis
Landscaping/Plantation	1000-2000 approx.	01 million	Cost includes plantation and maintenance up to three years
Solid waste management	L.S	1.5 million	Lump Sum
Health & Safety Measures	L.S.	0.5 million	Lump sum
Wastewater management	L.S.	1.5 million	Lump sum
Miscellaneous Cost	L.S.	01 million	Lump sum
Air Quality Monitoring	2	12,000	2 samples @ 6000/sample
Water Quality Monitoring	2	12,000	2 samples @ 6000/sample
Noise Level Monitoring	2	10,000	2 samples @ 5000/sample
Soil Tests	2	10,000	2 samples @ 5000/sample
Training		15,000	Lump sum
External Monitoring		100,000	
Total Environmental and Social Management Cost		**7.5 million PKR**	