

Executive Summary

Title of the Project

This report presents the findings of “Environmental Impact Assessment of Naya Pakistan Housing Scheme - Sangjani, Islamabad.

Location of the Project

Naya Pakistan Housing Scheme - Sangjani is located in Sangjani, Islamabad on main GT Road. Presently, the project site is accessible through Shahrah-e-Mehr from GT Road.

Name of Proponent and Consultant

Naya Pakistan Housing Development Authority (NPHDA) intends to develop “Naya Pakistan Housing Scheme – Sangjani” through Public Private Partnership mode with M/s Bakshi Builders & Developers, Karachi.

M/s Bakshi Builders and Developers has hired the services of Project Procurement International to conduct the Environmental Impact Assessment (EIA) of the proposed Project to comply with the local laws and guidelines and to receive a No-Objective Certificate for the project.

Outline of the Project

The objective of the project is to provide a housing facility to the homeless population, accelerate economic activity in the country and provide job opportunities to the youth by providing all the required facilities in one place.

Naya Pakistan Housing Scheme - Sangjani is a residential complex that includes 77 (Ground+3 story) and 5 (Basement+Ground+12 story) residential apartment buildings (blocks) comprising 2,848 apartments, categorized into three types.

- Type A – 1,793 SFT (192 Apartments)
- Type B – 1,434 SFT (264 Apartments)
- Type C – 680 SFT (2,392 Apartments)

The project has been proposed on a piece of land measuring 40.29 acres (322.32 kanal), and the land use is such that it contains residential apartment buildings, parks and green belts, Community Centre, Graveyard and Mosque. The infrastructural works will include the provision of roads, water supply network, drainage, and sewerage network, electrification, solid waste management, and sewerage treatment plant.

The cost of the project is Rs. 12.6 Billion and will be completed in 30 months.

Environmental Baseline Conditions

In order to assess and evaluate the impacts and related mitigation measures in the project area, existing conditions of the physical, biological and socio-economic environment were studied as under:

Physical Environment

Topography: Islamabad is located on the Northern edge of the track known as Potohar Plateau. The Potohar Plateau has an uneven table, and land is gradually rising in elevation from 500 to 600 meters above sea level, and the highest point is 1,600 meters above mean sea level. The land gradually slopes towards the South. The land



is composed either of alluvium (clay or silt) or of gravel caps. The plains are formed of alluvial deposits laid by the past and the present river systems in varying thicknesses. A large part of the area is undulating, and at various places, it is badly dissected by gullies and ravines. The Korang River has been dammed at a place named Rawal to form the Rawal Lake. Another dam has been built on the Soan River to form the Simly Lake.

The project site is bounded by Bahudra Kass in the south, Shahreh Mahr in the North, GT Road in the East and agricultural lands in the West. There is a gentle slope towards the Bahudra Kass from the North.

Geology and Soil: The project site strata mainly consist of silty clay underlain by sand and boulders/rock beds.

Land Use: Presently, the land use of the project site comprises mostly of vacant land. However, there are small workshops at the corner of GT Road, Shahrah-e-Meher, Marble Factories, Shrine, 132 KV Transmission Line and CNG Station at the front of the project site.

Surface Water: The main surface water body in the project area is Bahudra Kass. The surface water sample was taken from the project site and tested in the Pak-EPA approved laboratory. The results indicate that the concentration of 26 the parameters for surface water were within NEQS limits.

Ground Water: Ground Water is available at a depth of 170 – 190 ft in the project area.

Climate: Islamabad has distinct seasons marked by the wide variation in temperature. The climate remains very salubrious from April to October, but the winters get very cold due to snowfall in surrounding areas (especially in Murree). The coldest months are December, January, and February. The hottest months are June and July. Rainfall in April and May is occasional, but the heaviest rain is in July and August.

The temperature of capital territory Islamabad ranges between -1 °C to 46 °C. The coldest month is January, when the mean maximum temperature is 18.3 °C, and the mean minimum is 3.8 °C.

From February to May, the temperature rises at a rate of 5.0 °C per month. The highest temperature reached in May when the mean maximum temperature remains 39.1 °C.

Air Quality: The ambient air quality monitoring was carried out for 24h from 8th December 2020, 8:00 AM to 9th December 2020, at the Project site.

The concentrations of SO₂, CO, NO, NO₂, O₃, NO_x, PM₁₀, PM_{2.5}, and CO concentrations (i.e., 34.75 µg/m³, 0.455 mg/m³, 17.49 µg/m³, 24.67 µg/m³, 9.13 µg/m³, 42.16 µg/m³, 72.18 µg/m³, 24.03 µg/m³) meet the NEQS limits (i.e., 120 µg/m³, 5 mg/m³, 40 µg/m³, 80 µg/m³, 130 µg/m³, 120 µg/m³, 150 µg/m³, 35 µg/m³) were within limits.

Noise and Vibration: At present, there is high traffic in peak time at GT Road, which is approximately 10m from where the project site starts. The noise level monitoring was carried out at the project site. The 24h averaged noise level was 51.80 at the project site, which is within the compliance limits of NEQS (i.e., 55 dB). During the construction of the project, special care will be taken for noise and vibration.

Traffic and Transportation: The proposed project site is accessible via G.T Road (N-5) Peshawar Road. Residents of the Scheme are expected to access other parts of Islamabad and Rawalpindi via G.T Road (N-5), Peshawar Road.

The traffic survey on G.T Road and Shahrah-e-Mehr Road was carried out on the weekend (Sunday, 17th January 2021) and one weekday (Tuesday, i.e. 19th January 2021) from 08 00 hrs to 19 00 hrs.

The traffic survey revealed that daily, 14,148 vehicles travelled towards Taxila from Sangjani Toll Plaza. At the same time, 12,758 vehicles travelled towards Rawalpindi from Sangjani.

Ecological Environment

Flora

The vegetation of Islamabad is representative of the Dry Subtropical Scrub Forest, which is dominated by *Acacia Modesta* (Phulai), *Ziziphus mauritiana* (Ber); *Ziziphus nummularia* (Mullah), etc. Other associates existing in varying proportions include *Prosopis cineraria* (Jand), *Melia Azadirachta* (Dharek); *Morus alba* (Mulberry-Shahtoot); *Dalbergia sissoo* (Tahli-Shisham); *Acacia nilotica* (Kiker). In the undergrowth, *Cannabis sativa* (Bhang), *Calotropis Procera* (Desi Ak), *Parthenium hysterophorous* (Gandi Booti), and *Ocimum bacilicum* (Niazbo) are predominant.

The project site has very little vegetation and mostly comprises local grass (kana). No tree will be cut during the construction phase of the project.

Fauna

In its original form, the Dry Subtropical Scrub Forest constituted the habitat of wild fauna consisting of a host of animals and birds. As the disturbance increased to a maximum level with complete inhabitation, wildlife abundance and diversity decreased to a minimum degree. Mammals commonly found in the project area are Rat, Wild boar and Porcupine; birds include Quail, House Sparrow, and House Crow, and reptiles common in the area are Monitor Lizard and Spin tailed lizard.

Protected Areas/National Sanctuaries

The project site lies in between two housing schemes, i.e., Margalla View Housing Scheme (Sector D-17) in the South East and Multi Gardens (Sector B-17) in the North-West. There are no protected areas in the immediate vicinity of the project site. Margalla Hills National Park is in the North of the project area, approximately 5.5 km from the project site.

Major Impacts and Recommended Mitigation Measures

Physical Environment

Impacts: Soil-related issues include soil erosion, slope stability, and soil contamination. The land excavation and filling, construction activities and maintenance of equipment/vehicles may cause these issues. The quality of soil would be affected, as soil contamin

ation would occur because of the disposal of untreated wastewater or direct disposal of chemical and onsite preparation of materials. Oils, chemical spills, and waste from campsites may also deteriorate the quality of the soil.

Dumping of construction wastes/excavated material in the surrounding area may limit the use of land in the project area. The solid waste may be generated due to different construction activities, and it will mainly include surplus excavated and construction material.

Construction machinery and project vehicles will release exhaust emissions containing Carbon Monoxide (CO), Oxides of Sulfur (SO_x), Oxides of Nitrogen (NO_x), and Particulate Matter (PM). In addition, various burning activities involved in road construction will also cause air pollution.

These emissions can deteriorate the ambient air quality in the immediate vicinity of the project site. Furthermore, construction activities such as excavation, land levelling, filling and vehicular movement on unpaved tracks may also cause fugitive dust emissions.

Noise and vibration will be generated by construction machinery and vehicles.

The quality of water may deteriorate in the area. During the excavation, the aquifer may be hit, and the quality of water will be depleted. Because of the preparation of construction material on-site, leachate may be produced and percolated through the soil. It may then reach the water table and contaminate the water that may be consumed by the local people.

Naya Pakistan Housing Scheme - Sangjani is being developed in an area with a mixed commercial and residential setting along GT Road. There is a need to implement mitigation measures during the construction and operational phase to minimize the potential negative impacts on these areas.

Mitigations: Soil erosion can be minimized by appropriate land clearing, levelling, and grading. Excavated slopes will not be left untreated/unattended for long durations, and appropriate slope stabilization measures will be taken as per the design.

For the domestic sewage from the contractor's camp, a septic tank with a soaking pit will be constructed having adequate capacity. Waste oils will be collected in drums and sold to the recycling contractor.

The recyclable waste from the project site (such as cardboard, drums, broken/used parts, etc.) will be sold to recycling contractors, or where appropriate, to reuse/recycle. The hazardous waste will be kept separate and handled according to the nature of the waste. While storing, hazardous waste will be marked.

Appropriate sewage treatment mechanisms such as septic tanks of adequate sizes will be incorporated in the design for the treatment of sanitation water where the municipal sewage system is not available or does not exist.

Water quality analysis will be carried out at the project site and at the campsite quarterly during the construction phase.

Ecological Environment

Impacts: The area allocated for Naya Pakistan Housing Scheme - Sangjani has limited natural vegetation cover with no trees. It is an open area with scarce shrubs on project site boundaries. No tree will be cut during the project, while the shrubs will be cleared before the construction phase.

The project site is in a periurban area. The loss of natural vegetation and other project activities will potentially have limited adverse impacts on the faunal resources and habitat of the area as well. The construction of the project will ultimately cause them to leave the area and move to other locations.

Mitigations: Naya Pakistan Housing Scheme - Sangjani will implement recommended mitigation measures to ensure minimal impact on the aesthetic beauty and vegetation of surrounding areas.

The plantation plan is recommended for the beautification of the project area. It will not only provide an aesthetic view but will also improve the natural vegetation cover and sequester carbon dioxide from the atmosphere.

All preventive measures will be adopted to control the spill-over of chemicals and other effluents on the ground to protect soil fauna and ensure microbial activity in accordance with NEQS.

Socio-Economic Environment

Impacts: The project is in a mixed residential area may pose some safety hazards to the local population situated near the project area during the construction phase of the project.

Construction workers may be susceptible to eye and respiratory diseases due to their routine exposure to dust and exhaust emissions on site. Injuries could happen primarily by occupational-related accidents, animal bites, etc. Activities such as land clearing, earthworks, and construction of facilities present various occupational hazards to the workers on the project site.

There are no reported sites of the archaeological or historically significant site at the project site. However, in case an artefact of such significance is found during the construction activities, the Archeology Department, the Government of Pakistan will be informed.

Mitigations: Eye and respiratory diseases will be mitigated through routine health screening and training of contractor's employees. The physical injury will be mitigated through the provision of appropriate training and emergency response procedures. Protected fencing will be fixed around the construction site.

The provision of Personal Protective Equipment (PPE) to the workers will be ensured. Protective fencing will be fixed around the construction site.

Unauthorized access within the construction area will not be allowed. A vehicle speed of 20 km/hr at the project site will be implemented. Appropriate light diffusers and reflectors will be used, if required, to minimize the public nuisance caused by light pollution.

Environmental Management Plan and Proposed Monitoring

The purpose of the Environmental Management Plan (EMP) is to minimize the potential environmental impacts due to the project. The EMP reflects the commitment of the Naya Pakistan Housing Scheme - Sangjani to safeguard the environment as well as the surrounding population.

The EMP provides a delivery mechanism to address the adverse environmental impacts, to enhance the project's benefits and to introduce standards of best practices to be adopted for all phases of the project.

Bakhsi Builders & Developers will prepare a Quarterly Environmental Monitoring Report of project activities that will be carried out during the construction phase of the project. These reports will be submitted to the Pakistan Environmental Protection Agency, Government of Pakistan for their review and consideration. The total estimated Environmental Mitigation and Monitoring Cost is **Rs 9.962 million**.

Conclusion and Recommendations

Based on the overall impact assessment, more specifically, the nature and magnitude of the residual environmental impacts identified during the present EIA, it is concluded

that Naya Pakistan Housing Scheme - Sangjani can mitigate potential negative issues provided that the project activities are carried out as mentioned in the report, and the mitigation measures included in this report are completely and effectively implemented.

There are no remaining issues that warrant further investigation. This EIA is considered adequate for the environmental and social justification of the project.

