

## 1. EXECUTIVE SUMMARY

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The Capital Development Authority (CDA), Government of Pakistan, Islamabad, is developing an upscale housing scheme in two phases known as Park Enclave, in Village Kurri, off Park Road and Kurri Road, Zone IV, Islamabad, offering state-of-the-art gated suburban living to ease housing pressures within the city.

### 1.1 ENVIRONMENTAL SETTING

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Islamabad holds the unique distinction of being a planned, modern city and its model has been referenced for designing a number of new cities across the world. The planners envisaged Islamabad eventually absorbing Rawalpindi entirely and stretching across the National Highway. It was designed to provide a healthy climate and pollution free atmosphere with vast green areas, typical of a modern city able to meet future needs adequately. The entire surrounding area of the proposed project is rolling countryside, and a healthy cover of vegetation in the form of crops, trees and wild shrubs. Land in the general project area, wherever flat, is under *barani* cultivation. Consultation with landowners in the project area has indicated presence of groundwater, which is mined through tube-wells and wells. There is no major source of air pollution in the project area other than vehicular noise and emissions. Though covered with wild vegetation, most of the project site is uneven, comprising clay, pebbles and some boulders, and not quite suitable for cultivation. The site is part of Zone IV, which comprises Islamabad Park and rural periphery wedged between Murree Road towards the north and Lehtrar Road towards south, and extending beyond Simly Road up to Islamabad Capital Territory limits in the north east. Measuring around 282.5 square kilometres, this zone excludes Margalla Hills National Park and Rawal Lake. Zone IV has been earmarked in the master plan of the city for agro-farming, institutional uses and controlled urban development, subject to planning approval under a broad development plan.

### 1.2 PHYSICAL AND BIOLOGICAL ENVIRONMENTS

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Socio-physical aspects of the area are described briefly in the following sub-sections.

#### 1.2.1 Ecological Environment

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Details of fauna and flora resources in the project area are given in Sections 6.3.2 and 6.3.3 of this report. As observed, project implementation and operation shall not adversely impact on the local fauna and flora.

#### 1.2.2 Socio-economic and Cultural Environment

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Aspects covering cultural and socio-economic aspects of the city insofar as these relate to the project under review are covered under Sections 6.5.1 and 6.5.2 of this

study. There shall not be any adverse impact from the project on any of the parameters described therein.

### 1.2.3 Physical Environment

- **Topography:** Islamabad is situated at the northern edge of Potohar Plateau, where land gradually rises in elevation from five to six hundred metres above sea level, with highest elevation of about 1,600 metres. The plateau has uneven water table and is *barani* in nature;
- **Geology and Soil:** The region has complex geological history of mountain formation, alluvial-loess depositions, and erosion cycles. Soil in the area is generally shallow clayey with low productivity;
- **Climate:** The project area has distinct seasons characterised by wide variation in temperature. Rainfall is occasional but extremes are witnessed during monsoon. Temperatures range between -1° and 46° Celsius;
- **Air Quality:** The project site is within a less congested part of the city where air quality is generally chaste, as brought out by environmental testing<sup>1</sup> for ambient air carried out during this study;
- **Surface Water:** Other than Rawal Lake to the north, there is no major surface water close to the site. A *nullah* and its tributary however cut across the enclave, flowing down from the north-east towards Korang River. The *nullah* has medium to high flow during heavy rains only but has otherwise usually a slow trickle. It does not impact on the site in any significant manner;
- **Groundwater:** Groundwater was not encountered in any of the nine boreholes during geotechnical investigations down to a maximum depth of 18 feet, but its presence has been reported by neighbours, and
- **Noise:** Due to rural nature of the area despite being gradually transformed into urban, noise levels are well below limits set down under the National Environmental Quality Standards, as evinced from noise testing carried out at the project site.<sup>2</sup>

## 1.3 PROJECT DESCRIPTION

The project site is east of Islamabad and lies within the jurisdiction of the CDA for approval of town planning of the housing scheme and structures, building plans of individual residential units, and ultimately for municipal services to the area. Phase One of the completely self-contained residential estate shall offer a total of seven hundred and eighty-one residential and thirty-five commercial plots of various sizes. Phase Two shall comprise three hundred and fifteen residential plots, twelve commercial plots, a superstore and a marriage hall/marquee. When fully developed, the enclave will offer top drawer community living to about ninety-one hundred and forty-five residents. The designing of this housing project is based on most modern and strict criteria, making optimum use of a quiet, serene setting in the countryside, which shall be developed with an eco-friendly approach while assuring safe and secure living for residents. Town planning caters for provision of infrastructural

support, such as subterranean electrification, water supply, natural gas, sewerage disposal, telecommunications, storm water drainage, internal telephone exchange, sewerage treatment plant, cable television network, and fenced perimeter. Phase One measures 1,727.85 *kanals*. Estimated cost of this segment of the project is a tentative Rs. 2,686.386 million and is targeted to be completed within twenty-four months of launching of the project. Initial construction works at the site commenced in February 2015 and are presently at a fairly advanced stage. Phase Two of the project, to be launched in 2016, shall cover an area of 658.8 *kanals* whereas development costs are estimated to be Rs. 1,229 million. Although the PC-1 for Phase Two is yet to be finalised, the layout plan was approved on November 23, 2015.

#### 1.4 ENVIRONMENTAL IMPACT ASSESSMENT

The objectives of this Environmental Impact Assessment are primarily to:

- Assess existing environmental and socio-economic conditions in and around the project site, particularly with reference to potential environmental or social sensitivities;
- Pinpoint key impacts of intended development works on natural and socio-economic environment, predict and evaluate these quantitatively and qualitatively in order to determine their significance in the perspective of technical and regulatory concerns, as well as those related to public perceptions;
- Propose appropriate mitigation and monitoring measures that can be built into the project design or project implementation plan to minimise, if not totally eliminate, any adverse impacts or long-term negative externalities of the proposed venture, and
- Prepare a document for consideration of the Pakistan Environmental Protection Agency to obtain Environmental Approval for the project.

#### 1.5 ENVIRONMENTAL CONCERNS

Key environmental issues associated with the project and proposed mitigation measures are:

- **Construction Impact:** Construction impacts of Park Enclave could include noise, dust emissions, possible soil contamination, solid and liquid waste from construction activities, construction camp effluent, vehicular traffic and exhausts from vehicles, machinery and equipment. **Mitigation:** Most of the construction impacts shall be mitigated through a comprehensive construction management plan. Construction-related provisions of the Environmental Management Plan placed in Chapter 7 will ensure that environment-friendly techniques alleviate negative externalities of development works;
- **Noise:** There shall be some noise during project implementation during construction. Similarly, there shall be some generation of noise on account

of vehicular activities and upon eventual colonisation of the estate. **Mitigation:** Mitigation shall include noise abatement measures discussed in subsequent sections of this study. Noise monitoring carried out at the site has however indicated that there is virtually no disturbance being caused by construction works during implementation of Phase One of the project;

- **Removal of Vegetation:** The project site has vegetation, some of which shall be removed to clear the land for construction of roads and other facilities. Similarly, some of the remaining vegetation shall be removed later when individual plots are prepared for house construction. **Mitigation:** Suitable plantation, including 6,750 trees of different varieties, 28,250 shrubs of various species, and 500,000 square feet of Dhaka grass around Phase One will more than compensate for losses in vegetation. An additional 788 trees of different varieties, 3,300 shrubs of various species, and 58,400 square feet of Dhaka grass will be planted during development of Phase Two;
- **Influx of Workers:** Just over one hundred and fifty workers are expected at the site at peak of construction, with a minimum of twenty-five during initial works in both phases. Influx of a large number of workers into a project area can result in social tensions between local residents and labourers. The situation can exacerbate further if preference is not given to engagement of local labour. **Mitigation:** Maximum number of opportunities are being offered to local workers, subject to availability, and instructions shall be issued to all workers to desist from interfering with local customs and traditions, or from wandering into residential areas without sufficient cause;
- **Wastewater Disposal:** There shall be wastewater generation during both construction and project operation. **Mitigation:** Various wastewater disposal measures, such as conservation of water and minimisation of liquid waste, shall be adopted during project implementation to ensure that local environment is not impaired;
- **Solid Waste:** The estate size allows convenient accommodation in Phase One for a maximum of seven hundred and eighty-one families or five thousand two hundred and thirty-three people based on average national family size of 6.7 for urban areas, and excluding domestic help. Accommodation in Phase Two shall be for a maximum of three hundred and fifteen families or two thousand one hundred and eleven people based on the same average national family size, and excluding domestic help. An estimated ninety-one hundred and forty-five people, including domestic help, retail workers and estate management, but excluding visitors, shall be present through a single day at an average, and not particularly at one single point in time. Accordingly, there shall be generation of substantial solid waste requiring effective disposal. **Mitigation:** In the absence of national or domestic regulations and a comprehensive waste collection system in the project area, a waste management plan, following best possible environmental practices, will be developed for disposal of waste. This will include keeping records of solid waste generated at the site, segregation of waste, maximising recycling and reuse, storage and handling of hazardous materials, if any, in accordance with hazard

characteristics, disposal at approved facilities, and regular waste audits. Most significantly, the proponents have their own civic sanitation service for removal of all forms of solid waste during project implementation as well as operation. Chapter 9 discusses solid waste management in detail;

- **Traffic:** Since the two phases combined will have one thousand and ninety-six residential plots, with a minimum of that number of families, a large number of people are likely to be at the premises at any given time. Therefore, additional traffic will be generated on roads servicing the project. **Mitigation:** This impact will be mitigated through provision of avenues, wide roads and streets for steady flow of vehicular traffic. These traffic channels, ranging from a minimum width of fifty to a maximum of a hundred and fifty feet, will also be sufficient for temporary roadside parking of vehicles. Moreover, traffic into and out of the enclave shall be regulated by security guards;
- **Socio-economic Impact:** Operation of Park Enclave will not impact adversely on socio-economic conditions prevailing in the area. **Mitigation:** Construction activities have so far resulted in generation of employment opportunities for eleven people within the project implementation team, and twenty-five workers during preliminary works, which shall increase to about one hundred at fifty at peak of development. A total of twenty positions are likely to be created for maintenance on operation of the project and a further one hundred and thirty-eight jobs will become available in retail establishments. Similarly, jobs will also be created in the clubhouse, marriage hall/marquee, petrol pump, and the school when these are outsourced. Moreover, total investment of approximately Rs. 3,915.39 million on the two phases shall offer hordes of opportunities for local businesses;
- **Building Shadows:** Park Enclave will not have any tall structures, except for overhead water tanks that shall rise a maximum of sixty feet from the ground, and will cast shadows mainly on open spaces. There are thus concerns that these shall cause loss of sunshine hours and solar radiation for affected areas. **Mitigation:** The selected size and height of the overhead water tanks is necessary so as to ensure not only that there is enough storage of water to meet residents' needs but also that there is sufficient pressure for quick and effective distribution of water by gravity and thus avoid resort to pumping stations that can require underground reservoirs and noisy electric pumps. Moreover, placement of overhead water tanks within large open spaces shall ensure that shadows are minimal on built-up portions of the estate, and
- **Visual Intrusion:** Physical presence of a housing estate can interfere with aesthetic values of a project area and cause visual intrusion through obstruction of view of local residents. **Mitigation:** There are no visual resources within the project area that shall be lost as a direct consequence of project development, except views of open green land that shall come under houses and other structures. Measures proposed to reduce albeit minimal visual impact of the project include modern town planning, development of parks and green areas, landscaping, planting of suitable flora around the colony, and using colour schemes that harmonise well with the locale.

## 1.6 POSITIVE IMPACTS

Despite environmental concerns indicated in preceding section, the project shall have some major positive impacts as described in detail in latter parts of this report, which can be summarised as under:

- A new housing scheme shall ease pressure on existing housing resources in the city, which have been caused by delay in development of residential sectors towards western parts of Islamabad;
- Two access roads from Park Road and Kurri Road will be thoroughfares and thus available for the immediate neighbours;
- A model housing scheme will act as a catalyst for other housing development leading to swift and planned growth of eastern Islamabad;
- The project has created a minimum of twenty-five jobs for skilled and unskilled workers during preliminary works;
- Eleven jobs for skilled, semi-skilled and unskilled workers have been created during project implementation by the proponents in the form of a project team;
- A maximum of one hundred and fifty-two additional jobs for construction workers shall be generated during implementation stage of the project;
- More than eighteen hundred permanent/temporary, full-time/part-time jobs shall be created in residential units, retail units, services and maintenance when the project comes into operation;
- Project cost of Rs. 3,915.39 million shall create immense economic opportunities for local businesses, such as suppliers of construction and furnishing products;
- CDA estimates Phase One revenue generation of Rs. 10.13 billion from sale of residential plots and Rs. 0.57 billion from disposal of commercial sites, which could raise approximately Rs. 10.70 billion from the proposed venture;
- Similarly, development of Phase Two will generate a minimum of Rs. 3.79 billion from sale of residential plots and Rs. 0.65 billion from disposal of commercial sites. This will help recover not only the cost of land development but also enhance CDA's income, thereby leaving a sufficient revenue surplus to cover additional needs arising from provision of civic amenities to the area;
- Subsequent operation of the enclave shall similarly provide opportunities for various service sectors;
- Almost the entire unskilled labour force, and some skilled workers, shall hail from the project area, thus benefitting local population directly. Project operation shall similarly create jobs in particular for local unskilled workers, gardeners, sanitary workers, maids, *chowkidars* and drivers, and
- Private sector housing developments around Islamabad may offer top quality facilities in some cases but carry a very high price tag beyond reach of many families. CDA has not developed any sectors for quite some time, especially in this part of the city, and provision of high quality housing plots at a low premium will provide relief to eventual residents.

## **1.7 IMPACTS AND MITIGATION MEASURES**

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The study has covered all possible as well as probable impacts from project activities during all phases --- pre-development, pre-construction, construction and post-construction --- and has suggested mitigation measures, wherever necessary, for implementation by the proponents and the construction contractor.

## **1.8 COMPENSATION AND RESETTLEMENT**

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A Land Acquisition and Resettlement Plan associated with a project provides basis for mitigation of its socio-economic impacts. Legislation covering procedures for land acquisition and compensation thereof is contained in Land Acquisition Act, 1894, and Project Implementation and Resettlement of Affected Persons Ordinance, 2001. A Land Acquisition and Resettlement Plan defines compensation to be paid to affected population and is discussed in Chapter 14. The project site is owned by the proponents since 1968 and accordingly no land acquisition proceedings were necessary. There has thus not been any dislocation of previous owners from the project site. There were some unauthorised squatters scattered around the project site most of whom have been removed to free up the land for development works. These squatters have no legal claim over the parts of the project site that they occupy and their origin is indeterminate. There are no restraining orders from any court regarding these illegal squatters.

## **1.9 LEGAL ISSUES**

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Chapter Four describes the regulatory framework and compensation issues governing the project. The study indicates that the proponents have so far complied with all legal requirements, except obtaining prior environmental approval.

## **1.10 CONSULTATION**

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Consultation has been held with all key stakeholders connected with the project and a social survey has also been carried out, which shows that there are generally no undue concerns about the project.

## **1.11 ENVIRONMENTAL MANAGEMENT AND MONITORING**

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While carrying out Environmental Screening of the project, this study also suggests an Environmental Management Plan and an Environmental Monitoring Programme, both of which must be implemented by the proponents in order to ensure that project activities do not impinge the environment beyond acceptable limits. Environmental monitoring to examine possible effects of project implementation on the local environment is required prior to initiation of the project, at various occasions during implementation and after suitable intervals during operation as specified under

conditions of the environmental approval. Environmental costs covering post-project monitoring have been estimated at about Rs. 100,000 per year, as explained in Chapter 12.

### **1.12 ENVIRONMENTAL APPROVAL**

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An application along with this environmental study is to be submitted by the proponents to the Pakistan Environmental Protection Agency, Government of Pakistan, to obtain Environmental Approval in terms of Section 12 of the Pakistan Environment Protection Act, 1997 to ensure compliance of environmental laws.

### **1.13 CONCLUSIONS**

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In summary, the Environmental Impact Assessment concludes that while there are minor effects of the project, which can be suitably reversed or mitigated, there shall not be any major adverse impacts from project execution and operation, which will be discussed in detail in subsequent sections of this report. Appropriate environmental management will minimise such impacts during construction and operational phases. There are not expected to be any adverse socio-economic issues arising from the project either. Most significantly, effective implementation of the Environmental Management Plan shall ensure that nominal environmental impacts are properly managed. Based on findings of this report, it has been assessed that there will be insignificant environmental damage to the local land, water and biological resources and that residual impacts of the project shall be within acceptable limits provided the project is undertaken as discussed in this study, and appropriate mitigation measures are adopted. It has also been established through interviews with neighbours that preliminary works have not in any manner impaired the local environment. Moreover, the proponents have not received any complaints in this behalf. This study has been conducted after consultation and interviews with the proponents, reference to laws, rules and regulations, visits to the project site, discussions with all stakeholders including local residents, laboratory testing for soil characteristics, ambient air, noise, and guidance from environmental agencies sought by the environmental consultants in projects of similar nature and impact.