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ANKARA ETLİK
INTEGRATED HEALTH CAMPUS PROJECT
ENVIRONMENTAL AND SOCIAL IMPACT
ASSESSMENT (ESIA) REPORT
NON-TECHNICAL SUMMARY

MAY 2013



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ANKARA ETLIK

INTEGRATED HEALTH CAMPUS PROJECT

ESIA REPORT

NON-TECHNICAL SUMMARY

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1 INTRODUCTION

This document is a Summary of the Environmental and Social Impact Assessment (ESIA) report for the 'Etlik Integrated Health Campus Project' (referred to as Etlik IHCP or simply 'the Project') for the public consultation purpose. Etlik is a large urban development on 107 ha of land near Etlik in the Kecioren district of Ankara province. It will include a hospital complex, two heliports, a power plant and administrative buildings. The Project location is shown in Figure 1.1.

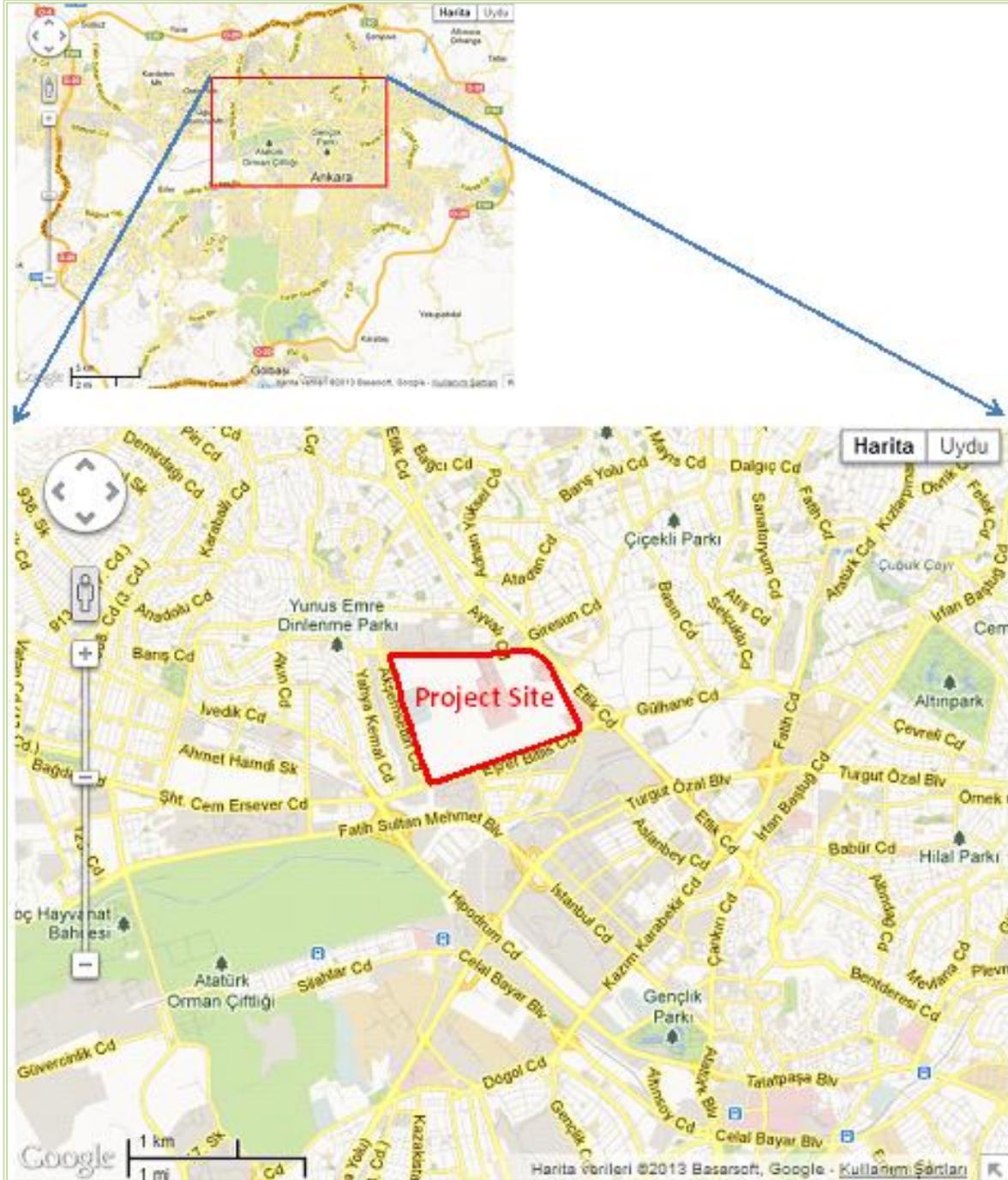


Figure 1-1. Location of the Project Site within the City of Ankara

The ESIA is a study into the effects of construction and operation of the Project on the physical, biological and social environment. The ESIA Report describes the Project, the impacts it is predicted to have on environmental and social conditions and explains how the Project has been designed and how it will be implemented in order to minimise its adverse impacts and maximise its benefits. This document is a summary of the main ESIA Report.

2 WHO HAS COMMISSIONED THE ESIA

The ESIA has been commissioned by *Ankara Etlik Hastane Sağlık Hizmetleri İşletme Yatırım Anonim Şirketi* (the 'Project Company') and undertaken by 2U1K a Turkish environmental consultancy.

The Project Company has been established through a consortium of Astaldi Concessioni s.r.l., Astaldi SpA, Türker Gayrimenkul Geliştirme ve Yatırım İnşaat Anonim Şirketi, Türkerler Holding Anonim Şirketi and Türkerler İnşaat Turizm Madencilik Enerji Üretim Ticaret ve Sanayi A.Ş., who have been awarded the contract for construction and operation of the Ankara Etlik IHCP by the Turkish Ministry of Health (MoH). Under the terms of the contract the Project Company will construct the Project (over a period of approximately 42 months) and take on dual management of the campus during its 25 year operation, specifically through the provision of support services. At the end of the operation period, the campus will be transferred to the Ministry of Health (MoH).

3 THE REQUIREMENTS FOR AN ESIA

The Ministry of Environment and Urbanization (MoEU) have concluded that the proposed Project does not require an EIA under the 1983 Turkish Environmental Law (amended in 2006, No. 5491) in accordance with Official Gazatte Date/Number 17.07.2008/26939. A Project Introduction File (PIF) is required to be submitted to the Provincial Directorate of the Environment and Urbanization for the concrete batching plant and power plant that are required for this Project, following which, a decision will be made as to whether EIA studies under national legislation will be required for these two facilities.

In the absence of a need for a Project impact assessment under national law, the requirement for this ESIA has arisen as a result of the Project Company seeking finance from international lenders to support the development of the Project. Such institutions have requirements for environmental and social due diligence which requires the preparation, public disclosure and consultation of an ESIA Report and accompanying Environmental and Social Management and Monitoring Plan (ESMMP), prior to the decision to approve finance for a project.

The finance for the Project will likely be sourced from a number of lenders, including multilaterals, export credit agencies and commercial lenders. The Project Company is currently negotiating with the European Bank for Reconstruction and Development (EBRD) as the major lender. Citigroup Global Markets Limited (Citi), UniCredit Bank AG (UCB) and

Yapı Kredi Yatırım A.Ş. (YKY) are acting as the financial advisors to the Project Company. Therefore, the Project Company is fully committed to the international lending requirements of the European Bank for Reconstruction and Development (EBRD) and the International Finance Corporation (IFC), which include:

- the European Bank for Reconstruction and Development (EBRD) Environmental and Social Policy (2008)¹;
- the European Bank for Reconstruction and Development (EBRD) Performance Requirements (2008)²;
- the International Finance Corporation (IFC) Performance Standards on Social and Environmental Sustainability (2012)³;
- the International Finance Corporation (IFC) Environmental, Health and Safety General Guidelines (2007)⁴; and
- the IFC specific Environmental, Health and Safety Guidelines for Health Care Facilities (2007)⁵

The project must also comply with all Turkish regulatory requirements and with EU Directives on protection of the environment and the community. An overview of applicable laws and standards is provided in *Section 3* of the main ESIA report.

4 PROJECT DESCRIPTION

4.1 Need for the Project

Turkey requires substantial investment and improvement in its healthcare infrastructure. Many existing facilities have limited capacity, outdated technology and do not fully meet the current standards of the MoH. In order to address these issues, Turkey has been implementing the World Bank's Health System Strengthening (HSS) Program since 2003, supported by the World Bank through a lending program and policy dialogue. Turkey has achieved considerable success in expanding health insurance coverage for its population (especially poor people), improving access to health services (especially in rural areas) and building institutional capacity to sustain the HSS reforms.

The Etlik IHCP is a Public Private Partnership (PPP) project being developed as part of the World Bank's Health System Strengthening (HSS) Program. The PPP program involves the development of approximately 30 new healthcare facilities in Turkey, with a total capacity of over 26,000 beds and a total investment cost in excess of USD 10 billion. The private sector

¹ <http://www.ebrd.com/pages/about/principles/sustainability/policies.shtml>

² <http://www.ebrd.com/pages/about/principles/sustainability/requirements.shtml>

³ http://www1.ifc.org/wps/wcm/connect/Topics_Ext_Content/IFC_External_Corporate_Site/IFC+Sustainability/Sustainability+Framework/Sustainability+Framework++2012/Performance+Standards+and+Guidance+Notes+2012/

⁴ <http://www1.ifc.org/wps/wcm/connect/554e8d80488658e4b76af76a6515bb18/Final%2B-%2BGeneral%2BEHS%2BGuidelines.pdf?MOD=AJPERES>

⁵ <http://www1.ifc.org/wps/wcm/connect/bc554d80488658b6b6e6f66a6515bb18/Final%2B-%2BHealth%2BCare%2BFacilities.pdf?MOD=AJPERES&id=1323161961169>

finances the design, construction and supplementary facilities of the project and the MoH is responsible for providing clinical staff. There are currently at least 16 projects in planning and development. The health campuses provide a range of specialized health care services in one location with the aim of consolidating health care delivery. The Ministry of Health (MoH) regards integrated health campuses as an essential part of the Turkish healthcare system in order to increase access to healthcare, improve the efficiency and quality of healthcare services and ensure cost-effective healthcare service provision.

The Etlik IHCP is designed to contribute towards alleviating current pressure on healthcare infrastructure within the Ankara area. A similar development is also in planning to the west of the city in the Bilkent region.

4.2 Project Facilities

The Etlik IHCP will include a health complex, consisting of a general hospital, as well as specialist hospitals for orthopedics and neurology, cardiovascular illnesses, pediatrics, womens health, oncology, forensics, psychiatric care, and rehabilitation. There will also be two heliports, a trigeneration power plant (a combined cooling, heat, and power system) and administrative buildings. There are also plans to develop a medical hotel and commercial zone, but the details of the plan have not been determined as well as the international financial institutions are not currently considering to finance these facilities. The layout of the hospital is illustrated in *Figure 4.1*.



Source: Etlik IHCP Preliminary Feasibility Report, 2009.

Figure 4-1. Simplified General Layout

The Etlik IHCP will have a total of 3,566 beds and the main hospital will make up approximately 50% of the complex. It will contain a 24-bed burn unit, a 10-bed iodine therapy unit, a 300-bed rehabilitation hospital, a 100-bed forensic hospital and a 100-bed clinic hotel. There will also be an administrative building and car parking with the capacity for 8,923 cars underground and 360 cars above ground. A model of the hospital is illustrated in *Figure 4.2*.

There will be two heliports serving the campus. One will be located on top of the main hospital while the other will be located on the ground. There will also be a tri-generation power system installed (a combined cooling, heat, and power system) which will have six gas turbines, with a combined installed capacity of 25.8 MW.



Figure 4-2. Model view of the Etlik IHC

4.3 Construction and Operation of the Etlik IHCP

Construction of the Etlik IHCP is expected to take 42 months and it is estimated that a maximum of 4,000 workers will be required, up to 3,000 of which may be housed on site. The origin of the workforce will depend on the sub-contractors to be selected, but it is expected that the majority will be sourced locally.

Once operational, it is expected that 50,000 people will use the health campus each day and approximately 10,000 workers will be employed. It is expected that 4,000 of these will be clinical staff who will be transferred from other local hospitals in the area; around six of which will likely be closed as a result of the Etlik IHCP. The following six state hospitals are planned for closure: Dışkapı Training and Research Hospital, Dr. Abdurrahman Yurtasan

Ankara Oncology, Sami Ulus Pediatrics, Zekai Tahir Burak Maternity, Ulucanlar Eye and Ulus State. Two hospitals on the Project site will also close once the Etlik IHCP becomes operational. These are the Zübeyde Hanım Maternity and Child Hospital and the Dışkapı Polyclinic.

The health campus will be operated under a dual management system between the MoH and the Project Company. Under this system, The MoH will assign doctors, nurses and other clinical staff to the campus; the Ministry of Justice (MoJ) will provide security services to parts of the new forensic hospital; and the Project Company, will be responsible for the provision of support services including imaging, laboratory services, housekeeping, security, catering, cleaning, maintenance, information management systems, car parking and waste management services

4.4 Area of Influence and Associated Facilities

The ESIA assesses impacts within the Project's Area of Influence (AoI). This includes communities who will potentially be affected by cumulative impacts from the further planned development of the project and other similar projects and unplanned but predictable developments including the planned Bilkent Hospital, medical hotel and the commercial zone, all the assets and facilities within the health campus itself, as well as associated facilities whose services are essential for the operation of the Project. Associated facilities for this Project include the excavated material dump site of the Metropolitan Municipality, the Çadırtepe landfill, the Ankara Metropolitan Municipality wastewater treatment plant and the planned incineration plant at Çadırtepe.

4.5 Alternatives Considered

Alternative design options that were considered for the Etlik IHCP included: (i) alternative site options and (ii) technology alternatives.

4.5.1 Site Alternatives

The "2023 Master Plan of Ankara the Capital", prepared by Ankara Metropolitan Municipality, provides details of the two health complexes that are planned to be constructed in north and southwest Ankara. The site to the north of Ankara has been allocated to the Etlik IHCP and the area to the south allocated to the Bilkent IHCP.

The Project Site for the Etlik IHCP is owned by the Treasury. The Treasury in turn has granted land use rights to the Ministry of Health (MoH) for the purpose of providing healthcare services. The MoH has consent to use the site for a term of 49 years to establish health facilities pursuant to the Regulation on the Construction of Health Facilities on a Lease-and-Build basis (Official Gazette dated 22.05.2010 and #27588).

The Etlik IHCP is a large development and there are no other viable sites, close to the city centre. The allocated site has good transport routes. It is close to the inter-city bus terminal and the subway line that is currently under construction (planned to be completed in 2014).

4.5.2 Technology Alternatives

4.5.2.1 Medical Technologies

The Etlik health campus will utilize highly advanced and sophisticated medical technology which in turn will increase patient throughput. As an example, it is planned that proton therapy will be used in the health campus. This is an advanced treatment for cancer that is more effective than conventional x-ray therapy methods. Higher doses can be administered with less damage to healthy tissues and vital organs.

4.5.2.2 Energy Efficiency

The Project Company intends to build a health campus, which is superior to previous health facilities in terms of energy efficiency. Energy-efficient systems have been incorporated into the Project design, including the trigeneration plant. In this system, electricity, heat and cooling are produced simultaneously using natural gas as fuel. Traditional gas turbines typically operate at an efficiency of 35% whereas trigeneration systems operate at up to 85% by converting 45% of the source energy to electricity and 40% to heating and cooling. Heat and light losses typically take up the remaining 13% and 2% respectively.

Other energy-efficient systems included in the design are ground source heat pumps, grey water treatment systems, hot water supply, economizers and heat recovery systems, light-emitting diodes and solar powered outdoor lighting.

5 ESIA PROCESS AND APPROACH TO THE ASSESSMENT

The methodology for predicting impacts of the Etlik IHCP consisted of a multi-stage, iterative approach in order to predict and evaluate the potential effects the Project could have on the physical, biological and social environment. Measures were then identified that the Project will take to avoid, minimize, mitigate or compensate for any adverse impacts; and to enhance positive impacts where possible. Results will continue to be revisited and modified as the assessment progresses and as Project effects are monitored. The overall approach followed is shown schematically in *Figure 5.1*. Details on each of the individual stages within the ESIA process can be found in *Section 4.2* of the main ESIA Report.

In summary, potential Project interactions with the environmental and social environment are identified and the significance of resulting impacts rated as Negligible, Minor, Moderate or Major. Once the significance of a given impact has been characterised, appropriate mitigation or enhancement measures are identified and the significance of resultant 'residual impacts' assessed. Residual impacts are also rated as Negligible, Minor, Moderate or Major. Positive impacts are not assigned a degree of significance, but simply stated as being positive.

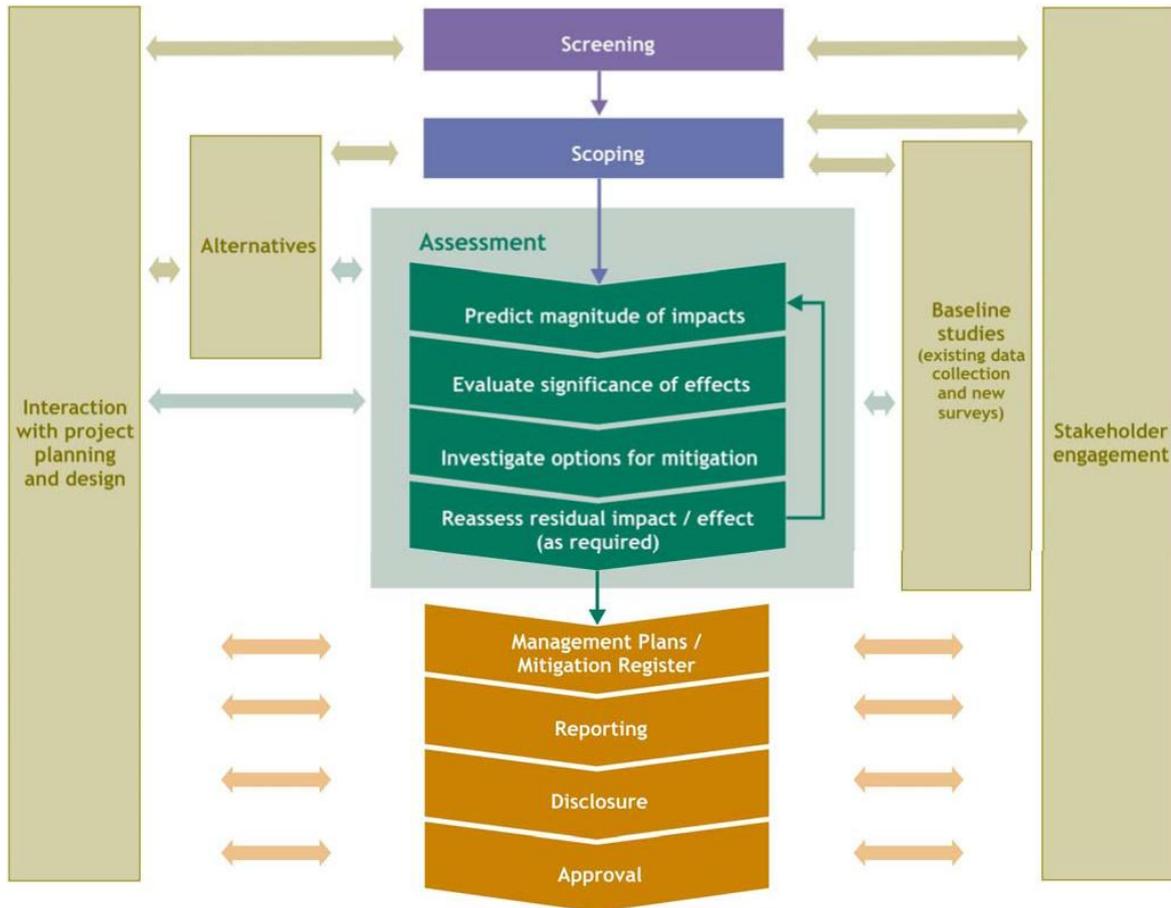


Figure 5-1. ESIA Approach

It is important to note that this ESIA has been prepared taking into account the results of stakeholder engagement to date and review by the Lenders and their advisors. An Environmental and Social Management and Monitoring Plan (see *Section 5* of the main ESIA Report) has been prepared to cover all the mitigation measures identified to minimize potential environmental and social impacts that might result from the Project. Based on the gaps and the improvement areas identified during the ESIA process An Environmental and Social Action Plan (ESAP) has been developed with which the Project Company and the Lenders must comply with to ensure that Lenders’ environmental and social requirements are met for the Project. This ESIA and ESMMP will be publically disclosed for 60 days in order to collect comment and feedback prior to finalization of the ESIA report. The final report will then be publically available for review throughout the lifetime of the Project and regular reports on progress with implementation will be published.

6 SUMMARY OF IMPACTS

6.1 Air Quality

6.1.1.1 Impacts During Construction

The principal air quality concern during construction will be dust, resulting from building demolition, earthworks, vehicle movements etc. In addition, airborne emissions generated by combustion of fuel in vehicle engines will contribute to impacts on air quality. Key receptors for these impacts will be the hospitals remaining on site during construction and houses, businesses and facilities close to the Project site. Patients in the hospitals on the Project site are considered to be particularly sensitive receptors.

Baseline calculations indicate that ambient air quality within the Project Area is currently beneath the legally specified limits for Particulate Matter (PM₁₀), Sulfur Dioxide (SO₂) and Nitrogen Dioxide (NO₂).

In order to predict the impact of the Project on ambient air quality, dispersion modelling was carried out for the Project. The results of this modeling indicated that the legal limits for dust will be met within a distance of 700m of the construction works. It has been established that there are no sensitive receptors within this distance of the construction site.

The following mitigation measures will be put in place to minimize impacts on air quality during construction:

- All inner roads (within the Project site) and areas where there are truck movements will be watered regularly under warm, dry and windy weather conditions;
- Loading and unloading processes will be undertaken carefully to avoid spillages;
- 30 km/hour speed limit will be set and enforced on non-paved roads;
- Trucks carrying excavated and other loose materials will be covered; and
- Exhaust emissions from heavy machinery will regularly monitored and controlled by staff from authorized institutions such as the MoEU.

Following the implementation of mitigation measures the residual impacts on air quality during construction are assessed as negligible.

6.1.2 Impacts During Operation

During operation, the trigeneration power plant that will supply power to the Etlik IHCP is considered to be the major source of air emissions. It will consist of nine gas turbines, fueled by natural gas, each with an installed capacity of 4.5 MW.

In order to predict the impact of the Project on ambient air quality during operation, an air quality modeling study using seven different design scenarios was undertaken for the trigeneration plant. Only two of the scenarios resulted in air emissions below the national

limits for nitrogen oxide (NO_x) and one of these was very close to the prescribed limits, leaving only one really viable option for the Project. This option has a maximum stack height of 14m and will be the design used for the Project. The trigeneration plant will be designed to comply with the relevant national and EU air emission standards.

With the implementation of this design, air emissions during operation are predicted to be within national limits and therefore the significance of the impact is assessed as minor. No further mitigation measures have been identified as required.

6.2 Noise

6.2.1 Impacts During Construction

Noise impacts associated with construction activities will be a key impact of the Project. This is particularly important due to the sensitive receptors located in the vicinity of the construction site, namely the medical facilities of Diskapi Polyclinics and Zuebeyde Hanim Maternity Hospital, as they will still be operational during the construction phase.

The Turkish limit for noise from construction sites is 75 dB(A) during the day and 65 dBA and 60 dBA for the evening and nighttime, respectively. The IFC Environmental, Health and Safety General Guidelines (2007) require 55 dB(A) during the day-time (07:00-22:00) and 45 dB(A) for night. Modelling of potential construction works and activities shows that the night time levels specified in the IFC guidelines will only be satisfied at 3km from the construction site boundary.

According to the IFC, the relative change in noise level at which noise abatement measures should be applied is identified as a maximum increase in background levels of 3 dB(A). Turkish legislation has the same requirement at 5 dB(A). Background noise at the closest receptors (the two hospitals) was found to be 57.1 and 57.0 dB(A). Noise modeling at these locations indicated that levels would be increased by 57.05 dB(A) during construction

The following mitigation measures will be put in place to minimize impacts of noise during construction:

- The temporary excavated material storage site will lie to the east of the site, between the hospitals and the construction site and as such will act as a sound barrier.
- Noise curtains will be installed; and
- All machinery will be regularly maintained to reduce noise from the machinery.

Following the implementation of these mitigation measures, noise levels during construction will be within the limits prescribed by Turkish legislation and the IFC Environmental, Health and Safety General Guidelines (April 2007). Therefore the significance of the impact, post mitigation, is assessed as negligible.

6.2.2 Impacts During Operation

During operation of the Etlik IHCP the main source of noise is expected to be the trigeneration power plant that will operate 24 hours a day, 7 days a week. There will also be noise generated as a result of helicopter and ambulance movements, as well as from emergency generators, when they are required.

The design of the Project ensures that all noise generating machinery and equipment, including the tri-generation plant, will be in facilities designed to contain noise to acceptable levels (compliant with IFC noise standards) using good standards of acoustic design.

With these embedded design measures, the significance of noise impacts during operation are assessed as negligible. No further mitigation measures have been identified as required.

6.3 Water, Soil and Groundwater

6.3.1 Impacts During Construction

Large construction sites, if not properly managed and operated, can lead to significant impacts on surface water and groundwater. There is no surface water on site and so only groundwater impacts need be considered. Groundwater samples taken from the Project site indicate that water quality is within the relevant thresholds prescribed in Turkish Water Pollution Control Regulation. In addition, observations and analysis of soil on site indicate that it is not polluted.

The main potential source of impact from construction activities will be from wastewater, if discharged directly onto soil. Oil and fuel spills also have the potential to impact groundwater. Water will be needed for use by construction staff, for cleaning of construction equipment, for concrete preparation and for other construction activities, such as dust suppression. It has been estimated that water consumption will be approximately 600 m³/day during the peak of construction and that nearly all of this water will be released as wastewater.

The Project has been designed so that wastewater is discharged into the municipal sewage system that passes through the Project site and transferred to the municipal wastewater treatment plant of the Ankara Metropolitan Municipality. Additional mitigation measures have also been put in place to minimize impacts on water, soil and groundwater, These include:

- The use of metal sheets or drip trays under machinery to prevent contamination. Spill kits will also be available on vehicles for immediate clean up of spills.
- Wastewater from concrete batching plants will be taken to a sedimentation tank to reduce suspended solids. Settled solids will be transferred to the municipal landfill and the remaining liquid lying above the solid residue will be used for watering roads and dust suppression;
- Secondary containment will be built around the chemical and fuel tanks.

- Following any accidental spill, contaminated soil will be immediately stripped and taken to the hazardous waste temporary storage area on site.

Following the implementation of these mitigation measures, impacts on water, soil and groundwater during construction are assessed as negligible significance.

6.3.2 Impacts During Operation

During operation, total water consumption is expected to be around 1,900 m³ per day, most of which will be converted to wastewater. There will also be contaminated wastewater discharged from medical wards, operating theatres, laboratories, pharmaceutical and chemical stores and x-ray development facilities. Leakages and spills of fuel, oil, chemicals, waste oil and hazardous waste are also a possibility during the operation of the health campus.

The design of the Etlik IHCP has incorporated several features to minimize impacts on water soil and groundwater:

- “Grey water”, such as that from the hotel kitchen will be used for irrigation of the grounds of the campus, following treatment on site.
- Hazardous wastewater from laboratories will be treated in a treatment plant outside the hospital building before being discharged into the municipal sewerage system. The detailed design of this treatment plant is yet to be confirmed.
- Site runoff will be collected in an equalization basin before being discharged into the municipal network. The extra flow generated by the Etlik IHCP is currently being discussed with the municipality and it is expected that a new wastewater treatment plant will be built within 24 months to manage the wastewater flows from the Project, once operational.

Additional mitigation measures have also been put in place to minimize impacts on water soil and groundwater. These include:

- Placing fuel tanks in secondary containment to prevent spills or leakages;
- Employing waste segregation measures in line with the IFC’s Guidelines for Healthcare Facilities. These include:
 - procedures and mechanisms for separate collection of bodily fluids from patients treated with geno-toxic drugs to avoid their entry into the wastewater stream;
 - the collection of large quantities of waste pharmaceuticals for separate treatment or for return to the manufacturer. Small quantities of mild, liquid pharmaceuticals, excluding antibiotics or cytotoxic drugs, may be discharged to sewer systems with a large water flow.

- The safe handling, storage and disposal of pesticides in accordance with good international industry practice, such as the Food and Agriculture Organization International Code of Conduct on the Distribution and Use of Pesticides; and
- The prohibited use of pesticide products that fall within the World Health Organization classification of 'extremely hazardous' (class 1a), 'highly hazardous' (class 1b) and moderately hazardous (class II) products.

Following the implementation of these mitigation measures, impacts on water, soil and groundwater during operation are assessed as negligible significance.

6.4 Geohazards

The most significant geo-hazard during the operational phase of the Project is an earthquake. According to the Earthquake Research Department of the General Directorate of Disaster Affairs, Ankara lies in a 'fourth-degree' risk zone for earthquakes. First degree zones are the highest risk and fifth degree zones the lowest. The Project is therefore not situated in a critical earthquake zone. The Project has, however, still been designed (and will be constructed and operated) in accordance with good international standards for protection against seismic activity and as a result, risks should be as low as technically and financially feasible.

With the implementation of these design measures, seismic risks are assessed as minor significance. No further mitigation measures have been identified as required.

6.5 Wastes

6.5.1 Non-Hazardous Waste During Construction

Several types of non-hazardous waste will be produced during construction of the Etlik IHCP, including: domestic solid waste, construction waste (steel, cables, copper, empty containers etc), packaging waste (paper, plastic, wood etc.) and excavated material.

It has been estimated that there will be approximately 4,600kg of domestic solid waste produced from construction workers on site. In addition, excavated material has been calculated by the design team to total 2,497,207 m³. Quantities of construction waste and packaging waste are not currently known.

Improper management of solid waste could result in soil and groundwater contamination as well as health and safety issues if it attracts vermin or releases odours to the environment.

The Project is committed to best practice regarding waste management. Wastes will be separated and recycled where possible. Astaldi (a consortium members of the Project Company), has been implementing a waste segregation process for packaging from construction materials and this process will be applied to the construction of the Etlik IHCP. A licensed firm will be contracted to collect recyclable waste.

In addition, the Keçiören and Yenimahalle municipalities will collect solid wastes generated at the construction site on a daily basis and transport it to the landfills of the metropolitan municipality.

Excavated soil will be carefully managed. Top soil will be separated for reinstatement following construction. In addition, excavated waste material will be taken to local landfills (e.g., Çadırtepe and Mamak) and other licensed disposal areas of the metropolitan municipality.

The following additional mitigation measures will be put in place to minimize impacts of non-hazardous wastes during construction:

- Top soil will be stored separately in a temporary storage area for later reinstatement;
- Top soil will be grassed to prevent soil loss; and
- A waste management plan for the Project will be prepared and implemented by the construction contractor, clearly detailing waste management processes.

Following the implementation of these mitigation measures, impacts from non-hazardous wastes during construction are assessed as negligible significance.

6.5.2 Non-Hazardous Waste During Operation

The key sources of non-hazardous waste during operation are expected to be domestic solid waste and packaging wastes. Exact quantities are not currently known, but 10.7 tons per day has been estimated based on the 50,000 daily users.

The design for the Project assumes that non-hazardous waste generated during construction will be temporarily stored at a waste storage centre next to the Technical Building, to the south of the site. Waste will then be collected by the Keçiören and Yenimahalle municipalities who will transport it to the landfills of the metropolitan municipality. Consultation with the local municipalities has confirmed that these volumes of waste can be managed within the existing facilities.

The following mitigation measure will also be put in place to minimize impacts of non-hazardous wastes during operation:

- A Waste Management Plan (WMP) for the Project will be prepared and implemented, clearly detailing waste management processes during operation.

Following the implementation of this mitigation measure, impacts from non-hazardous wastes during operation are assessed as minor significance.

6.5.3 Hazardous Wastes During Construction

The main source of hazardous waste expected to be generated during construction are oily rags, used air and oil filters, fluorescent lamps used printer cartridges, oil, batteries and tyres. It has been confirmed that there will not be any asbestos waste generated during construction. The exact volumes of hazardous wastes to be generated during construction are not currently known.

Without appropriate management, hazardous wastes could cause soil, water and groundwater contamination. As such, specific storage areas for hazardous waste will be built on the construction site. These will be concrete-sealed, fenced and covered in order to prevent spills or leakage. Following storage, hazardous wastes will be transferred to the hazardous waste landfill which Invest Trading and Consulting AG (ITC) is planning to construct at Çadırtepe, approximately 40 km to the west of the Project site

With the implementation of these mitigation measures, risks associated with hazardous wastes are assessed as minor significance.

6.5.4 Hazardous Wastes During Operation

Sources of hazardous waste during operation are expected to include empty chemical containers, used cartridges, fluorescent lamps, used batteries and oily rags used in maintenance work. Waste oil, batteries and tyres are also expected. The exact volume of hazardous waste to be produced during operation has not currently been quantified.

Without appropriate management, hazardous wastes could cause soil, water and groundwater contamination. As such, specific storage areas for hazardous waste have been built into the Project design. These will be in the waste storage area, next to the technical building, to the south of the site, concrete-sealed, fenced and covered in order to prevent spills or leakage. Following storage, hazardous wastes will be transferred to the hazardous waste landfill which ITC is planning to construct at Çadırtepe, approximately 40 km to the west of the Project site

With the implementation of these design measures, impacts associated with hazardous wastes during operation are assessed as minor significance. No further mitigation measures have been identified as required.

6.5.5 Medical Wastes During Construction

During the construction phase, medical waste will be restricted to that generated in response to accidents and emergencies, as well as that produced in the infirmary on site (for example needles used in vaccinations).

Without appropriate management and disposal, hazardous wastes can cause severe adverse impacts on the environment as well as human health. Wastes are considered to be hazardous if they are ignitable, corrosive, reactive, or toxic.

Hazardous wastes produced during the construction phase are expected to be limited and the following mitigation measures will be put in place to minimize impacts:

- All medical wastes generated in the infirmary will be put in double layered red coloured medical waste bags with the label “Medical Waste”, pursuant to the Medical Waste Control Regulation;
- Used needles and other sharps from the infirmary will be put in closed containers made of hard plastic; and
- All medical waste will be taken to the nearest health institution by the camp site doctor.

With the implementation of these mitigation measures, risks associated with medical wastes during construction are assessed as minor significance.

6.5.6 Medical Wastes During Operation

During the operation phase of the Etlik IHCP, medical wastes will include the following:

- Microbiological laboratory wastes;
- Waste blood samples and objects contaminated with blood;
- Used surgery clothes;
- Dialysis wastes (wastewater and equipment);
- Air filters containing bacteria and viruses;
- Needles; and
- Broken glass.

It has been estimated that there will be 6,000 tons of waste generated by outpatients each day, with a possible increase of 2,000 tons per day generated as a result of efficiency measures in the new health campus.

Without appropriate management and disposal, hazardous wastes can cause severe adverse impacts on the environment as well as human health. To adequately manage these impacts the Project design has included a waste storage building to the south of the site, near the Technical Building. All medical wastes will be stored in this facility until they are collected by licensed vehicles of the Metropolitan Municipality of Ankara. They will then be taken for disposal at the incineration plant to be constructed at the Çadırtepe landfill site of the metropolitan municipality.

The following mitigation measures will also be put in place to minimize impacts of medical wastes during operation:

- All medical waste will be managed in line with the Medical Waste Management Plan being developed for the health campus, under the Health Care Waste Management System (HCWMS). Under the HSWMS, the management of the campus will monitor

generated waste to facilitate waste management planning. Opportunities for waste minimization will be continuously examined.

- The Medical Waste Management Plan will contain specific management measures, such as disposing of medical waste in double layered, red coloured medical waste bag with the label "Medical Waste", pursuant to the Medical Waste Control Regulation. In addition, used needles and other sharp materials will be put in closed containers made of hard plastic.

With the implementation of these mitigation measures, risks associated with medical wastes during operation are assessed as minor significance.

6.5.7 Radioactive Wastes During Operation

During operation of the Etlik IHCP it is expected that there will be radioactive wastes. These are likely to include solid, liquid, and gaseous materials that have been contaminated with radionuclides. Radioactive wastes originate from activities such as organ imaging, tumor identification, radiotherapy, and other research/clinical laboratory procedures. Such wastes may include glassware, syringes, solutions, and excreta from treated patients. Without adequate management, radioactive wastes can have severe adverse impacts on the environment as well as human health.

The following mitigation measures will be put in place to minimize impacts of radioactive wastes during operation:

- All radioactive wastes will be stored in containers behind lead shields that are appropriately labeled;
- Radioactive wastes will be managed in line with Turkish Wastes Generated due to the use of Radioactive Substances (Official Gazette dated 02.09.2004 and numbered 25571); the IFC's Environmental, Health and Safety Guideline for Health Care Facilities (April 30th, 2007); and the IAEA Draft Strategy Guide DS 160 'Management of Waste from the Use of Radioactive Materials in Medicine, Industry and Research, 7 February 2003; and
- A radioactive substance management plan will be developed prior to operation of the Etlik IHCP.

With the implementation of these mitigation measures, risks associated with radioactive wastes during operation are assessed as minor significance.

6.6 Traffic During Construction and Operation

Traffic congestion is a particular concern of Project stakeholders. There is expected to be a major influx of vehicles as a result of the Etlik IHCP, particularly during the operation phase when it is estimated that there will be an additional 3,800 vehicles per hour in and around

the site. During the construction phase there will also be a significant increase in the number of truck movements.

The area in and around the Project site is already heavily congested, with it estimated that there are approximately 10,650 vehicles per hour during peak morning traffic. Congestion is a particular issue on Etlik Street to the east of the Project site. Etlik Caddesi to the north-east of the boundary is also one of the main arterial road connecting the northern part of Keçiören region to the city center.

The design for the Project has carefully considered traffic planning, incorporating visitor drop-off areas, allocated routes for emergency vehicles etc. in order to avoid congestion on site.

The following mitigation measures will also be put in place to minimize traffic impacts:

- The Metropolitan Municipality is currently implementing a project with Gazi University to prepare a Main Transportation Plan for Ankara. This project considers future developments in the city, including the two health campuses. The Project Company will work closely with the Metropolitan Municipality as this transport plan for Ankara is developed, to support measures to minimize traffic impacts associated with the Etlik IHCP.
- A traffic study was undertaken as part of the ESIA studies. This study will be shared with the Metropolitan Municipality so that the results can be incorporated into the Main Transportation Plan for Ankara.
- A Traffic Management Plan (TMP) is being developed for the Project (an outline of which is presented in Appendix-K. of the ESIA Report). The TMP is intended to be used as a guideline for the Project Company and its sub-contractors to prepare site-specific traffic management plans.

With the implementation of these mitigation measures, traffic impacts are assessed as moderate significance.

6.7 Ecology

Impacts to ecology are anticipated to be minimal during construction of the Etlik IHCP, due to the low biodiversity value of the Project Area. There are no endemic or threatened plant species identified as present on the Project site and there is limited evidence of animal activity. Impacts are likely to be restricted to:

- Habitat loss as a result of land clearance on the Project site;
- Noise disturbances to fauna;
- Possible introduction of “alien” or invasive species during landscaping works; and
- Excavation works and land clearance may clog plants stomata, reducing growth, as a result of dust emissions.

The following mitigation measures will be put in place to minimize ecological impacts:

- Post construction landscaping works will use native species, where possible, and specific measures will be put in place to prevent the transfer of invasive species to the site;
- An Integrated Pest Management system will be established for the Project in line with the European Bank of Reconstruction and Development's (EBRD) Performance Requirement 3 (PR3). This system will ensure:
 - minimizing or, where possible, elimination of the use of pesticides;
 - replacing harmful active substances with safer (non-chemical) alternatives, where possible;
 - selecting pesticides that are low in human toxicity and have minimal effects on non-target species and the environment;
 - using low-input or pesticide-free plantation;
 - minimizing damage to natural enemies and preventing the development of resistance in pests.

With the implementation of these mitigation measures, impacts on ecology are assessed as minor significance.

6.8 Resettlement

The Etlik IHC Project will require 1.07km² of land which is located between Yenimahalle and Kecioren Districts of Ankara. Prior to 2006, the land comprised of parcels owned by the Municipality of Yenimahalle and the Social Security Institution (SGK). After 2006 the land was owned by the Treasury. The Treasury granted land use rights to the Ministry of Health (MoH) for the purpose of providing healthcare services. The land is owned and will remain owned by the Treasury for the life of the Project. The transfer of the land to the Treasury was completed in accordance with Article 30 of the Expropriation Law.

There are a number of facilities on site including the SGK housing complex, the national archive, Etlik Specialized Hospital, Zübeyde Hanım Maternity and Child Hospital; and Dışkapı Polyclinic. There are also three privately managed enterprises: a hospital canteen, taxi stand and leisure complex. The SGK housing complex, Etlik Specialised Hospital and its canteen have already been closed as part of Project development. In addition to facilities on the site, there are likely to be businesses affected in the six hospitals that will be closed as a result of the Project.

Further review will be carried out to assess the processes involved and to determine whether mitigation measures will be required. If so, respective plans shall be developed to assure appropriate action is taken.

6.9 Influx

Approximately 4,000 workers will be required for the construction of the health complex, with up to 3,000 of these being housed in temporary worker accommodation. It is expected that the construction workers will mainly come from within Ankara and neighbouring cities.

During the operation phase, it is estimated that over 10,000 workers will be required 24 hours a day, 7 days a week. Whilst it is unlikely that there will be any permanent in-migration into the area, it is anticipated that up to 50,000 people may use the site on a daily basis, constituting an increase of approximately 50% on current baseline conditions.

Key impacts associated with influx are likely to be traffic noise and congestion (as discussed under environmental impacts) and impacts associated with interactions with construction workers.

6.9.1 Interactions with Workers During Construction

Stakeholders expressed specific concern over construction workers causing social problems within the local communities and impacting on safety and security. These concerns have come about as a result of previous projects where there have been issues with construction workers that have led to physical aggression between the workers and some local residents.

The following mitigation measures will be put in place to minimize impacts associated with workers during construction:

- A strict code of conduct will be developed and implemented for construction workers, outlining expected behavior with respect to their daily interactions with local residents and users of public amenities. This will be part of the labour force management plan to be developed for the project;
- The labour force management plan will also include requirements for induction and training on expected behaviors and on disciplinary procedures (including dismissal procedures for unacceptable conduct). Construction workers will be made aware of the grievance mechanism and stakeholder engagement process, explaining that stakeholders have the right to register grievances through a formal procedure.

The significance of this impact is expected to reduce to negligible with the implementation of the described mitigation measures.

6.10 Local Economy and Local Livelihoods

The Project is expected to result in benefits to the local economy and therefore local people. These benefits are expected throughout both construction and operation phases. Economic impacts are also expected around the hospitals to be closed as a result of the Project.

6.10.1 Benefits to the Local Economy and Local Livelihoods During Construction and Operation

Whilst the approximately 4,000 construction workers are likely to be sourced from the local area, they will be working directly in and around the site for approximately 42 months. This is likely to increase trade for local businesses. During the operation phase, up to 50,000 people are expected to visit the hospital complex each day, which could further boost trade for local businesses.

In addition, the Project will be a major employer in the area with opportunities during both construction and operation. Opportunities for local people are most likely to be for non-medical staff positions during operation, of which 4,700 will be required. Additional employment opportunities will also be created through the growth of local business trade. Therefore the Project is expected to boost the local economy as well as the economy of Ankara.

In order to enhance these Project benefits, the Project Company will:

- have a Business Ethics Policy/Good Neighbour Policy that commits the Project to 'Buy Local'; and
- develop and implement human resources policies that will include requirements and targets around the hiring of local workers. In addition, there will be clauses around gender equality and non-discrimination with specific targets for ensuring equal opportunities.

The significance of this impact is expected to be positive.

6.10.2 Economic Impacts as a Result of Hospital Closures

This Etlik IHCP is expected to result in the closure of six existing state hospitals in Ankara. These closures will impact hospital workers as there will be potential retrenchment of up to 15,000 employees. Hospital closures will also impact on local businesses and privately run hospital canteens. Patients residing close to these hospitals may also have to travel further to reach Etlik IHCP.

In order to minimize these impacts, the Project Company will:

- prepare a Human Resources Policy for hospital workers;
- have a transparent tender process with an emphasis on re-employing retrenched hospital workers, as well as those from local businesses that will be closed as a result of the Project;
- further assessment of retrenchment, development and implementation a a retrenchment plan as needed to mitigate adverse effects of job losses on the workers concerned;

- work in close cooperation with the Metropolitan Municipality to examine transport options to the health campus.

The significance of this impact is expected to reduce to moderate with the implementation of the described mitigation measures. Further studies are also currently being undertaken to address possible economic displacement and retrenchment. The findings of the study will be incorporated into the SEP process, and specific mitigations will be developed where necessary and adequate.

6.11 Community Health, Safety and Security

Increased traffic associated with the Etlik IHCP was a key concern of stakeholders, particularly during operation. Key issues include congestion, impacts on air quality and noise (covered under environmental impacts), and impacts on community health and safety.

Other impacts identified include security measures in and around the site, issues associated with the poor management of waste and hazardous materials (described under environmental impacts), infectious disease control and impacts associated with emergency events, such as fire.

6.11.1 Health and Safety Impacts due to Increased Traffic during Construction and Operation

It is estimated that during construction there will be an additional 136 trucks carrying excavated material to the landfill. There will also be trucks carrying construction materials to the site. During operation, the number of additional vehicles is expected to be approximately 3,800 vehicles per hour. A key issue associated with an increase in traffic is the increased potential for accidents affecting other drivers, passengers or pedestrians.

In order to mitigate these impacts the Project Company (in close coordination with the Metropolitan Municipality) will:

- develop and implement a Traffic Management Plan to adequately manage traffic within the Project site. Efforts will be made to identify measures to improve traffic flow on busy commuter roads. An outline traffic management plan is presented in Appendix-K of the ESIA report;
- undertake additional studies to better understand traffic flows around the Project area, to assess how Project-related traffic will affect traffic more broadly across Ankara. The results of these studies will feed into the Traffic Management Plan for the Project, which will be disclosed as part of stakeholder engagement activities;
- implement an awareness raising campaign with local stakeholders regarding the risks related to the movement of heavy vehicles and increased traffic in the area. The main focus of this campaign will be during the construction phase and will focus on local residents, children (in schools) and the users of local amenities. It will be implemented in

coordination with local community groups and the Mukhtars. Details of this campaign will be presented as part of ongoing stakeholder engagement activities;

- develop an Emergency Response Plan for the Project. This will provide details of what will happen in the case of a major traffic related incident and define roles and responsibilities. This plan will also be disclosed as part of the stakeholder engagement activities;
- place warning signs at entrance gates where trucks enter and exit the construction site.

The significance of this impact is expected to reduce to minor with the implementation of the described mitigation measures.

6.11.2 Security Within and Around the Project Site during Construction and Operation

Concerns have been raised by stakeholders regarding security of the site during construction and the potential for accidents and injury to people who might enter the site. In addition, during operation, the hospital complex will contain a high security forensic hospital for convicted criminals with mental health issues and criminals charged with crimes who are undergoing mental assessment. Without appropriate security such a unit could result in critical impacts on community health, safety and security.

In order to minimize these impacts the Project Company has committed that:

- All security personnel will be trained and will operate in accordance with the 'International Code of Conduct for Private Security Providers' as well as Turkish Law No. 5188 on Private Security Services;
- Measures will be taken to discourage entry onto the construction site during construction. This will be via fencing and the requirement for identity cards to enter the site;
- Engagement activities prior to construction will ensure that local stakeholders are informed of the risks and consequences of entering the site;
- Security personnel will patrol the site area to prevent any unauthorized access onto the site. They will also ensure that protocols for entering the construction site are enforced;
- A management plan for security personnel will be developed and implemented by the Project Company outlining expectations around security, in line with international and Turkish law. This will be done in coordination with the MoJ and MoH who have joint responsibility for security in the forensic unit in order to understand planned security protocols. Security measures in the Forensic Hospital will include high fences, motion detectors and CCTV. The rooms in the part of the Forensic Hospital where criminals with mental health issues stay will be equipped with locked windows, reinforced glass and double locking systems. Hence, the Forensic Hospital will be physically isolated from other hospitals in the campus;
- The grievance mechanism for the Project will capture all grievances raised in relation to security and safety issues. These will be addressed promptly and actions will be taken.

The significance of this impact is expected to reduce to minor with the implementation of the described mitigation measures.

6.11.3 Infectious Disease Control

In such a large health campus environment, the spread of infectious diseases has been considered a key impact during the operational phase. Infectious diseases can be spread as a result of improper waste management practices (especially medical waste), through air conditioning systems and as a result of poor sterilization, primarily during operations and medical treatment.

In order to minimize these risks, robust health management practices will be followed to reduce the likelihood of any infectious diseases outbreaks. Specific mitigation measures will include:

- The active enforcement and implementation of all waste management and hazardous material management plans;
- The development of a protocol for managing infectious diseases as part of the Dual Management system for the hospital. The specific details of this plan have yet to be confirmed and will need to be established as a matter of priority;
- The establishment of an occupational health and safety management system for all staff with specific training on exposure to vector-borne diseases; and
- Adherence to the IFC Environment, Health and Safety Guidelines for Healthcare Facilities (April 2007);

The significance of this impact is expected to reduce to minor with the implementation of the described mitigation measures.

6.11.4 Healthcare Provision

The key benefit of the Etlik IHCP is the provision of a new, state of the art medical facility providing improved health services for a large proportion of the Ankara population. This service will be available to the most vulnerable and poorest for free through the “green card” system. This is the main Project benefit, resulting in positive impacts.

6.11.5 Emergency Event: Fire Safety

6.11.5.1 Fire Safety During Construction

It is important to consider the risks of fire on construction sites and the subsequent effects this may have on construction staff and local stakeholders.

In order to minimize the risks of fire during construction the Project Company will:

- require the EPC Contractor to prepare a Construction Management Plan (CMP) and Emergency Preparedness and Response Plan (EPRP) to manage any such incidents on the construction site.

The significance of this impact is expected to reduce to negligible with the implementation of the described mitigation measures.

6.11.5.2 Fire Safety During Operation

The risk of fire in health care facilities is significant due to the storage, handling, and presence of chemicals, pressurized gas, boards, plastics, and other flammable substrates.

In order to minimize these risks the project design has included a number of important fire prevention design features. In addition, the Project Company will:

- undertake a third party life and fire safety audit to ensure that the Project complies with Turkish life and fire safety law and standards as well as international benchmarks;
- develop a life and fire safety master plan;
- develop an Emergency Preparedness and Response Plan (EPRP) and Policy that will outline the roles and responsibilities of the Project Company and government emergency response units. The Plan will also outline the organizational structure for responses, communication, procedures, training and resources for responding to emergencies. This plan will identify all major accident and hazard risks and outline measures in the event of a major accident or hazard. These measures will include response to not only fire, but also flood and earthquake. The Emergency Preparedness and Response Plan will also contain measures for review of response procedures and other measures at least on an annual basis

The significance of this impact is expected to reduce to minor with the implementation of the described mitigation measures.

6.12 Access to Services and Infrastructure

There are a number of key services within the local area used by local people. There is a concern that the influx of people and the associated traffic will reduce access to these services. In addition, the new healthcare services of Etlik IHCP may not be as accessible as the current hospitals that are planned for closure. This will particularly affect the poorest, who are most likely to use these State hospitals.

In order to mitigate these impacts the Project Company will:

- develop and implement a Traffic Management Plan that will be the basis for reducing the traffic load;

- liaise with the local Municipality to identify appropriate mitigation measures associated with reduced access to schools as a result of increased traffic in the local area; and
- work with the local municipality to support campaigns encouraging people to use public transport to minimize vehicular traffic.

Impacts are expected to reduce to minor with the implementation of the described mitigation measures.

6.13 Occupational Health, Safety and Working Conditions

6.13.1 Occupational Health and Safety

The Project Company will be responsible for human resources for the construction period and for non-clinical staff for the operation period. Turkey is currently in the middle of a harmonisation process with the European Union and labour laws are being reviewed to ensure alignment. The Project will comply with national labour, social security and occupational health and safety laws as well as the principles and standards of the ILO convention.

Receptors for occupational health and safety impacts include direct Project Company employees, all sub-contractors and MoH staff working at the hospital complex. Additional receptors include employees and sub-contractors working in industries that support the hospital operations.

The impacts on workers' health and safety for both the construction and operation phase are considered together as similar consequences can arise from both phases. During the construction phase, 4,000 workers will be employed at peak construction times in months 16, 18 and 25. A temporary accommodation site will be established to accommodate up to around 3,000 of these workers. During operation, the hospital complex is expected to employ up to about 10,000 staff including medical, technical, service and maintenance staff, administration and waste management. As a consequence of Project activities, the following impacts have been considered:

- **Occupational Health and Safety:** Construction work involves high risk activities with the potential for accidents that may result in injuries and potential fatalities. During operation, cleaning, medical, waste management and other staff will be exposed to clinical waste including sharps, other hazardous waste which may expose hospital staff to general infections, blood-borne pathogens and other infectious materials during care and treatment, as well as during collection, handling, treatment and disposal of medical waste. While the Project Company and MoH will implement procedures to manage health and safety risks, meeting EBRD PR2 standards may be a challenge, especially for some contractors.

- **Workers' Rights:** Although workers employed directly by the MoH and Project Company are likely to have workers' rights in line with the ILO conventions including collective bargaining rights, these need to be clearly written into management practices. In particular, the Project Company and the MoH must ensure that direct employees can work free of any discrimination, regardless of race, religion or belief, gender, disability, age, nationality, sexual orientation or ethnicity. In addition, responsible procurement processes must work to ensure the supply chain does not violate workers' rights, do not use child labor or forced labor and allow freedom of association and collective bargaining.
- **Retrenchment:** Retrenchment of workers is likely to be required particularly during the transition from construction to operation. As a result of the closure of the existing hospitals, there is the potential of retrenchment of up to 15,000 employees. While efforts will be made to minimize retrenchment, any retrenchment of workers will be undertaken in line with national law and international best practices, and will include providing skills to enable individuals to secure alternative employment.
- **Workers' Accommodation:** The Project will build temporary worker accommodation on site for up to 3000 workers. Workers' living conditions need to be of international standard to ensure on-site living conditions provide adequate sanitary and waste management and the provision of potable water. These standards will be maintained for the lifespan of workers' accommodation.

The following mitigation measures will be implemented by the Project Company to minimise impacts associated with workers' rights, health and safety, retrenchment and workers' accommodation:

- The Project has already drafted an occupational health and safety management plan which will be a subset of the overall ESMMP system, tailored to the needs of the Project and the construction and operation phases. This plan will set standards that will be met by the Project Company;
- The Project will create and implement a health and safety management system for the Project. It will include mandatory health and safety training courses for Project Company workers and contractors, including handling hazardous material and medical waste. The Project will also monitor the implementation of occupational health and safety regulations by contractors through twice yearly audits by health and safety specialists. If contractors are found to be breaching the laws on occupational health and safety, it will result in the loss of their contract;
- The health and safety management system will also incorporate the following measures in compliance with IFC standards for health facilities: staff and visitors will be provided with information on infection control; and universal standards will be followed to treat all blood and other potentially infectious materials;
- The Project will abide by Turkish laws and regulations and ILO conventions. The Project will monitor the implementation and compliance to these standards by contractors and sub-contractors across the supply chain;

- The Project Company will require all contractors to sign an anti-corruption and responsible procurement policy. Emphasis will also be placed on anti-discrimination measures. Where young people below the age of 18 years are employed, it will be made clear that they will not be employed in hazardous work and their work will be subject to an appropriate risk assessment;
- The Project Company will liaise with the MoH to ensure alignment of both parties to Turkish law and ILO conventions with respect to workers' rights and anti-discrimination measures;
- Workers will have contracts which clearly state the terms and conditions of their employment and their legal rights. All workers will be able to join trade unions of their choice and have the right to collective bargaining;
- Wages, benefits and conditions of work offered will be comparable to those offered by equivalent employers in Ankara;
- Although an informal grievance mechanism is in place, the Project and all contractors will put in place a formal worker grievance mechanism. The Project's grievance mechanism will be open to all Project Company staff and their contractors. The Turkish Government also has a general grievance mechanism that is used for patient rights. "184-Patient Rights" is a phone line developed for patients living across the country and is accessible 24/7. For the Project-specific patient grievance is to be developed in the co-operation with MoH. The grievance mechanism will be publicly advertised by the Project in the workforce. It will be easily accessible by workers, free of retribution and will allow anonymous complaints to be raised and addressed;
- In the case where contractors are unable or unwilling to address issues raised through their grievance mechanism or through the Project's grievance mechanism, the Project Company will take actions to remedy the situation which might result in the loss of the contract by the contractor;
- A management plan will be put in place for the temporary worker accommodation camp, outlining not only a code of conduct for construction workers but also measures for managing the camp to ensure adherence to international standard for providing a safe environment that is clean and with adequate sanitary and waste management and the provision of potable water in accordance with IFC/EBRD Guidelines for Construction Temporary Accommodation.. The management provisions will also make it clear that workers are free to move to and from employer provided accommodation in accordance with a code of conduct with respect to the surrounding community;
- Following a more detailed assessment, a retrenchment plan will be put in place as needed to mitigate adverse effects of job losses on the workers concerned; and
- All management plans described above will clearly outline key roles and responsibilities and a monitoring framework.

If all workers related management plans and practices are put in place and international conventions are abided by and monitored, then the overall residual impact to working conditions will be positive with mitigation measures providing a secure and safe working environment free of discrimination.

6.14 Cultural Heritage

The baseline data collected for the ESIA shows that there were no cultural assets observed on site, except for a tumulus which was found during an archaeological survey. This tumulus is thought to be an underground shelter or archive/storage location. The hill close to it is thought to be a probable tomb.

The cultural significance of this structure requires protection, and as such, a 75m protection zone has been established, in line with the standards of the Code of Protection of Cultural and Natural Properties, managed by the Ministry of Culture. The Project design has also been adjusted accordingly. The Project Company will continue to implement a 'chance finds procedure' during construction to ensure that any further finds are suitably protected. It will also continue to liaise with the Ministry of Culture to ensure the safe management and protection of the site.

With the enhancement measures described, the Project will continue to have a positive impact on cultural heritage.

6.15 Cumulative Impacts

Cumulative effects result from the combined impacts of multiple developments. The impacts of a development in isolation may not be significant but when combined with other projects it may become significant.

Similarly, the project should not be considered in isolation. In the assessment of potential environmental and social impacts, it is important to include projects that may begin construction or operation within the same period as that of the proposed development. This Cumulative Effects Assessment (CEA) seeks to determine the effect of the development in combination with the other planned changes in the wider area and provide an assessment of the likely significance of any changes.

The Bilkent IHCP is being developed concurrently in Ankara, alongside the Etlik IHCP (at a distance of 6 km to the southwest of Etlik). Both of these projects are large urban development projects, and environmental and social impacts associated with these projects have been assessed in the context of a cumulative impact assessment.

Details of the cumulative impact assessment in the context of this ESIA are provided below.

6.15.1 Environmental Cumulative Impacts

6.15.1.1 Air Quality

Dust generation during construction activities, exhaust emissions from vehicles and the trigeneration plant emissions during operation are considered in this manner. Considering the fact that the Bilkent IHC Project is located far enough (i.e. 6 km) from the Project Site it is not expected to result in a cumulative air quality impact in an interactive or additive manner.

6.15.1.2 Noise

Noise and vibration impacts due to construction activities in both project sites only have the potential to affect receptors in close proximity. Therefore, construction and operational noise at Bilkent IHCP site (6 km away) will not contribute to the noise impacts of the Project due to the separation distance between the sites.

6.15.1.3 Infrastructure

Another important concern is the handling capacity of wastewater, solid waste, medical waste and hazardous waste by the municipal infrastructure. The most important aspect of this issue is creating a point source rather than sources distributed over the city (i.e. the hospitals to be closed). To ensure capacity is, or will be, made available in time for operation the team carried out consultations with the authorized staff of the relevant district municipalities and the Metropolitan Municipality of Ankara responsible for waste collection in the city. During these consultations, the authorized staff stated that infrastructure of the municipalities would be capable of handling the wastes generated from these two projects. Moreover, the Metropolitan Municipality of Ankara will erect a new wastewater treatment plant. This will serve as the second stage of the existing municipal wastewater treatment plant, which is already operating at full capacity.

6.15.2 Social Cumulative Impacts

6.15.2.1 Population

Ankara and the Bilkent Health campuses will be the biggest health campuses in Turkey and will serve nearby cities such as Çorum, Kırıkkale, Kırşehir, Yozgat, Çankırı, Karabük, Kastamonu, Zonguldak, Bartın and Bolu. A combined total of up to 100,000 people will visit the two Project sites each day.

A shopping mall is planned in the commercial zone of the Etlik IHCP. The detailed design of this mall has not yet been completed, but it will be important to consider the contributing impacts (such as population influx) of this mall once details are available.

6.15.2.2 Livelihood and Ankara economy

Both projects will provide development opportunity for the province of Ankara. Ankara's economy is expected to receive a further small boost from health tourism, as the Project expects to attract international patients.

6.15.2.3 Health Provision

The main consequence of these Projects is the provision of new, state of the art medical facilities providing improved health services for a large proportion of the Ankara population. These services will be available to the most vulnerable and poorest for free through the "green card" system. This will have a beneficial effect on the wider community.

Access to healthcare facilities will be improved, efficiency and quality of healthcare services will be enhanced, new technologies will be used, bed capacities will be slightly increased, contributing to overall regional development.

7 STAKEHOLDER ENGAGEMENT AND PUBLIC DISCLOSURE

Stakeholder engagement is a two-way process of communication between the Project Company and its stakeholders. It is a key part of the ESIA process, allowing stakeholders to express their views about the Project. The Stakeholder Engagement Plan (SEP) presented as part of this ESIA (Appendix J of the ESIA) has been developed with the aim of explaining how the Etlik IHCP will communicate with stakeholders that may be directly or indirectly affected by and / or interested in the Project. The SEP summarises engagement activities undertaken to date and includes details of the approach and mechanisms proposed for future engagement with stakeholders. It also includes details of a grievance mechanism for stakeholders to raise any concerns related to the Project.

Key stakeholders for the Project, including government representatives, local business owners and local communities have been engaged as part of Project development. A variety of mechanisms have been used including open meetings, focus group discussions, and announcements on the radio, in newspapers and on billboards.

A number of key concerns and recommendations have been raised during stakeholder engagement to date, all of which have been considered within the ESIA report

The ESIA report is now available for public comment. Any comments received will be reviewed and used to help shape the design of the Project. To access a copy of the ESIA document, or make a comment please attend one of the public engagement sessions that will be advertised in one of the nationwide newspapers (proposed timing for the first public hearing meeting is July 2013), or contact:

- Ms. Duygu Inan
- Tel: +90 (312) 492 03 06; Fax: +90 (312) 492 03 67

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- Email:dinan@turkerler.com
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Stakeholder engagement is an on-going process, and does not end with finalization of the ESIA. A Stakeholder Engagement Plan has been developed for the Project to ensure ongoing communication between the Etlik IHCP and key stakeholders throughout the life of the Project. The grievance mechanism developed for the Project also allows stakeholders to contact the Project Company with any queries, complaints or suggestions. Full details of this mechanism are contained in the SEP which is in Appendix J of the ESIA report.