Environmental and Social Impact Assessment for Bursa Integrated Health Campus Project

Non-Technical Summary (NTS)
Final

October 2016

BRS SAĞLIK YATIRIM A.Ş.

ELC GROUP Consulting & Engineering Inc

a company of

Royal HaskoningDHV
Enhancing Society Together

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TABLE OF CONTENTS

ABBREVIATIONS

bgl	Below Ground Level
BMM	Bursa Metropolitan municipality
BRS A.S.	BRS Saglik Yatirim A.S.
CCTV	Closed Circuit Television
dBA	Decibel
EBRD	European Bank for Reconstruction and Development
EHS	Environmental Health and Safety
ESS	Environmental and Social Standards
EIA	Environmental Impact Assessment
EIB	European Investment Bank
ELC	ELC Group Consultancy and Engineering
EN	European Norms
EPRP	Emergency Preparedness and Response Plan
ESAP	Environmental and Social Action Plan
ESIA	Environmental and Social Impact Assessment
ESMP	Environmental and Social Management Plan
ESMS	Environmental and Social Management System
ESWL	Extracorporeal Shock Wave Lithotripsy
EU	European Union
FIs	Financial Institutions
FRH	High Security Forensic Psychiatric Hospital
IBC	International Building Code
IFC	International Finance Corporation
IHC	Integrated Health Campus
ISO	International Organization for Standardization
m	Meter
m^2	Square Meter
m^3	Cubic Meter
MEUP	Ministry of Environment and Urban Planning
MH	Main Hospital
MoH	Ministry of health
MTA	General Directorate of Mineral Research and Exploration
MW	Megawatt
NFPA	National Fire Protection Association
NGOs	Non-Governmental Organizations
NTS	Non-Technical Summary

OHSAS	Occupational Health and Safety Assessment System
PDEU	Provincial Directorate of Environment and Urbanization
PM	Particulate Matter
PM_{10}	Particulate matter with diameter of 10 µm or less
PPP	Public Private Partnership
PR	Performance Requirements
PS	Performance Standard
RFID	Radio Frequency Identification System
SEP	Stakeholder Engagement Plan
SPV	Special purpose vehicle
TAEK	Turkish Atomic Energy Authority
TPH	Total Petroleum Hydrocarbon
TUIK	Turkish Statistical Institute
WWTP	Wastewater Treatment Plant

1.0 INTRODUCTION

1.1 Background

This document is a non-technical summary (NTS) of the Final Environmental and Social Impact Assessment (ESIA) Report for the Bursa Integrated Health Campus Project (IHC or Project) located in the Nilüfer district of Bursa province situated in the Marmara Region of Turkey. The Project will be developed on a 745,364.79 m^2 area at the location shown in Figure 1-1.

Figure 1-1: Project location with site boundaries shown with red shaded area (a) and red line (b)

A bid was tendered by the Ministry of Health (MoH) for the *Construction Works and the Provision of Products and Services for Bursa Integrated Health Campus* under a Public Private Partnership (PPP) model, and awarded to a joint venture whose pilot members built the current partnership structure

in time and established a Special Purpose Vehicle (SPV) named BRS Saglik Yatirim A.S. (BRS A.S.) which will undertake the construction, operation and maintenance phases of the Project.

The IHC with a total of 1,355 bed capacity will have the following components: 1,055-bed Main Hospital (including a 275-bed General Hospital, a 253-bed Women and Pediatric, General and Psychiatric Hospital, a 275-bed Cardiovascular Diseases Hospital and a 252- bed Oncology Hospital), 200-bed Physical Therapy and Rehabilitation Hospital and a 100-bed High Security Forensic Psychiatric Hospital. BRS A.S., the Project Company, is planning to finance the Project bringing together multinational financial institutions (FIs), international, commercial lenders and institutional investors. In order to be in line with good international practice and to meet the requirements of the FIs, BRS A.S. has commissioned ELC Group Consulting and Engineering Inc. to undertake the ESIA study.

The purpose of the ESIA study is to describe the Project, identify the environmental and social impacts that will or may occur as a result of the Project and determine mitigation measures that can be taken to avoid and/or minimize the adverse impacts and maximize benefits. This document summarizes key points and findings of the ESIA Report which was prepared in line with the FI requirements for the IHC Project.

1.2 National Environmental Impact Assessment (EIA) Requirements

In terms of Turkish regulatory requirements, hospital projects do not fall within the scope of the Turkish Environmental Impact Assessment Regulation (EIA) (Official Gazette date/number: 25.11.2014/29186). Upon the application of Bursa Provincial Directorate of Health to Bursa Provincial Directorate of Environment and Urbanization (PDEU) for the evaluation of the Project as per Turkish EIA Regulation (i.e. asking for a screening opinion), the PDEU has provided an official letter to Bursa Provincial Directorate of Health stating that the Project does not fall within the scope of Annex-1 and Annex-2 of Turkish EIA Regulation.

Apart from the main hospital components previously discussed, there will be a trigeneration plant, boilers and concrete batching plant to be used as auxiliary facilities within the scope of the Project. The total energy need of the health campus will be 41 MW. The trigeneration system will have a total of 18 MW rated thermal capacity and the rated thermal capacity of the boilers will be 44.7 MW. The trigeneration plant and the boilers will not be operated in full capacity together and the operating scheme will change according to system needs and/or season. The trigeneration system and the boilers will be subject to EIA Regulation requirements according to the 20 MW threshold mentioned in Annex-2 of the EIA Regulation. Once the design process is completed and the capacities of the trigeneration system and the boilers are confirmed, necessary document (i.e. Project Description Document) as per the Turkish EIA Regulation will be prepared and submitted to the Bursa PDEU by the MoH.

In addition, there will be concrete batching plant (with a capacity of 90 m^3/h) to be used during construction. The capacity of the concrete plant is lower than the 100 m^3/h threshold that would have triggered the EIA Regulation requirements (i.e. Annex-2 of the EIA Regulation). For this reason, concrete plant will be exempt from the requirements of the Turkish EIA Regulation. This is also confirmed with an official letter (dated 11.01.2016) issued by Bursa Provincial Directorate of Environment and Urbanization to Bursa Beton Santrali San. Tic. A.S. which will be operating the concrete batching plant during the construction of the Project.

1.3 ESIA Requirements

In order to be in line with good international practice and being aware of the fact that the Project is an important public infrastructure project, BRS A.S. has decided to carry out an ESIA study for identifying potential environmental and social impacts and risks of the Project and subsequently developing mitigation measures appropriate to the nature and scale of the Project. The ESIA study has been conducted to meet the requirements of the following international standards:

- EIB Environmental and Social Standards (December 2013)
- EBRD Environmental and Social Policy including Performance Requirements (May 2014)
- IFC Performance Standards on Social and Environmental Sustainability (1 January 2012)
- IFC General Environmental, Health and Safety (EHS) Guidelines (30 April 2007)
- IFC EHS Guidelines for Healthcare Facilities (30 April 2007)
- EBRD Sub-sectoral Environmental and Social Guidelines for Health Services and Clinical Waste Disposal (October 2009)

In addition to these standards, the Project must comply with Turkish environmental and social legislation. The relevant European Union (EU) Directives are also applicable to the Project as per the EIB/EBRD requirements.

The ESIA Report includes the findings of the assessment of the potential environmental and social impacts associated with the construction and operation of the Project in detail. It describes measures to avoid or mitigate identified impacts and to monitor compliance through an Environmental and Social Management Plan (ESMP). Key findings of the ESIA and ESMP measures are presented in Section 4 of this NTS.

1.4 Stakeholder Engagement

The stakeholder engagement is an integral and crucial part of an ESIA process, aiming to provide an opportunity to affected and/or interested individuals, groups and organizations to express their views and concerns about the project, which are taken into account during the assessment of impacts and identification of mitigation measures. The ESIA study has included consultation activities that were initiated during the scoping stage to consider the views/concerns raised by the public and/or other organizations during the assessment of impacts and for identifying mitigation measures. A stand-alone Stakeholder Engagement Plan (SEP) has been developed for the Project to help structure systematic communication with the stakeholders.

The main communication methods and mechanisms that were used to consult with key stakeholders included:

- Information about the Project and potential impacts to be provided to stakeholders via project document and leaflets during the scoping stage
- Face-to-face meetings with selected governmental authorities
- Face-to-face meetings with selected muhtars
- Face-to-face meeting with selected school
- Public consultation meeting
- Local newspapers (for announcements related to public consultation meeting)
- Distribution of handouts to local people for announcing the public consultation meeting
- Project website (for providing information about the Project)

Identified governmental authorities (a total number of 77) and NGOs (a total number of 121) were sent a Project Information Document together with a cover letter and asked to comment on the Project, its potential impacts and to provide information that may be important for the ESIA study. A project information pack (including 5 Project Information Documents, 25 Project Information Leaflets and 25 Comment/Complaint Form) were sent together with a cover letter to muhtars of 49 neighborhoods (including surrounding neighborhoods and neighborhoods at a wider distance within approximately 10 km). A Public Consultation Meeting was held on 25th November 2015 in Dogankoy Neighborhood, Nilufer District. Approximately 50 people attended the meeting. The meeting was announced via advertisements in one national and one local newspaper eleven days in advance on 14th November 2015 and the advertisement was repeated at the same newspapers a week later on 21st November 2015. The meeting was also announced through handouts distributed to local people.

An email address (info@rsy.com.tr) was created to be used during ESIA study to collect opinions via e-mail. Furthermore, a Project specific website (www.pppbursahastanesi.com) was established where the Project Information Document is made available to the public.

1.5 Report Structure

The report structure is as follows:

- Project Description
- Environmental and Social Impacts and Mitigation
- Project Environmental and Social Management System

The full ESIA Report and related documents can be found in Project website:
www.pppbursahastanesi.com

2.0 PROJECT DESCRIPTION

2.1 Project Need

Existing Conditions

Bursa province, situated in the South Marmara region, has a population of 2,842,547 inhabitants (Turkish Statistical Institute - TUIK, 2015) and covers an area of 10,819 km^2. Bursa is located at a distance of 95 km to Bilecik province and 159 km to Adapazarı province to the east; 132 km to Kocaeli province and 69 km to Yalova province to the north; 177 km to Kutahya province to the south and 151 km to Balikesir province to the west. Bursa is classified as the second province in Marmara Region ranked after Istanbul in terms of number and quality of medical facilities as well as by occupying the latest technology medical equipment. Due to its centralized location within the region, Bursa province provides health services to not only people living in Bursa but also people coming from the surrounding and further provinces.

There are currently 17 public hospitals (11 State Hospitals - 2 in central Bursa and 9 in other districts-, 1 Higher Education and Research Hospital, 1 Oncology Hospital, 1 Chest Diseases Hospital, 1 Oral and Dental Hospital, 1 Pediatric Hospital and 1 Spastic Children Hospital) that are affiliated with MoH as well as 3 Integrated District Hospitals (in Harmancık, Buyukorhan and Keles Districts), 1 Military Hospital, 19 private hospitals and Uludag University Faculty of Medical Sciences Hospital. Moreover, there are 3 Oral and Dental Health Centers, 26 Medical Centers, 12 private dialysis centers, 13 polyclinics, 9 in-vitro fertilization centers and 3 genetic diagnosis centers in Bursa province.

The number of beds per 10,000 people in Bursa province is lower than the values for Turkey as well as the World and EU average. It is also important to note that the number of qualified hospital beds (1, 2, 3 or 4 beds per room with a bathroom and shower) is 50 % of the total number of beds; however this percentage covers private hospitals as well. In order to increase the number of qualified beds, particularly in public hospitals; it can be confirmed that there is a need for undertaking new health investments.

Most of the existing hospitals in Bursa province center are old, they do not have sufficient car park and green areas; moreover, they do not have appropriate areas for expansion of medical services to include changing and evolving technology of the medical devices and equipment except the Sevket Yilmaz Higher Education and Research Hospital and Bursa Dortcelik Pediatric Hospital. Therefore, new areas are needed to be established for the installation of these equipment and provision of qualified medical services. Moreover, service units such as the operating theater, intensive care, emergency, laboratory, imaging center and polyclinics do not meet the standards in terms of physical structure and equipment. These hospitals are unable to physically expand in these already condensed areas. In addition, reinforcement and repair works, if planned any, will cost almost as much as building a new hospital. For this reason, it is more feasible to undertake new investments instead of reinforcing and repairing the old buildings. Also, considering the growing population of Bursa province and increase in the incoming migration rates to Bursa province, the need for healthcare services will likely increase within the coming years. In this context, Bursa IHC will contribute to health services with 1,355 bed capacity, rooms with one or two beds, and up-to-date technical infrastructure and overall it will modernize the healthcare facilities in Bursa.

Need for High Security Forensic Psychiatric Hospitals

Currently, there are no forensic psychiatric hospitals in Turkey. According to the 2014 data provided by MoH in Annual Health Statistics Report, there are 9 psychiatric hospitals (two of them are in Istanbul, the others are in Manisa, Bolu, Samsun, Elazig, Adana, Trabzon and Tokat) and 2 community mental health centers (in Ordu and Eskisehir) across Turkey that serve under the responsibility of MoH, with a total bed capacity of 4,259. Psychiatric services are also provided in some of the general hospitals, university hospitals and private hospitals. The psychiatric hospitals which are affiliated with MoH serve as regional hospitals that provide services for a number of provinces in a defined region. Local hospitals which are not able to provide the necessary service for the diagnosis, treatment and rehabilitation of psychiatric patients refer the patients to the regional psychiatric hospital responsible from their province.

According to the National Mental Health Action Plan (2011-2023) prepared by MoH, it is decided to establish high security forensic psychiatric hospitals in 16 provinces with a total bed capacity of 2000, and hospitals having prisoner psychiatry beds in 5 provinces with a total bed capacity of 350. Bursa IHC will contribute to high security psychiatry service with a 100 bed capacity High Security Forensic Psychiatric Hospital. According to the feedback given to BRS A.S. by the MoH; the MoH decided to remove the forensic part from the High Security Forensic Psychiatric Hospital as a result of MoH's overall planning. For this reason, the High Security Forensic Psychiatric Hospital design that will be submitted to MoH's approval is being finalized to function as a high security psychiatric hospital and therefore will not host forensic psychiatric patients. It should be noted that, to be consistent with the Project documents, this ESIA study will continue to use the contractual title "High Security Forensic Psychiatric Hospital" while referring to the high security psychiatric hospital within the Project.

Need for Physical Therapy and Rehabilitation Hospitals

The need for Physical Therapy and Rehabilitation health services is also increasing due to increasing aging and high rates of traffic and occupational accidents in the country. However, there is presently insufficient bed capacity specifically for providing active rehabilitation services across Turkey. The existing Physical Therapy and Rehabilitation Hospitals (1,949 bed capacity based on 2014 MoH Health Statistics Yearbook) are able to provide physical therapy services only to the patients with little provision of rehabilitation services. In addition, existing Physical Therapy and Rehabilitation Hospitals are located in large provinces such as Ankara and Istanbul resulting in the need for patients and patients' relatives to travel to those provinces.

According to the planning by the MoH, a total of 3,585 bed capacity for Physical Therapy and Rehabilitation services will be introduced in the health regions across Turkey, among which 200 bed capacity will be within the scope of Bursa IHC Project.

2.2 Project Site

Alternative sites were evaluated for Bursa IHC prior to deciding on the finally selected location. Current site was selected based on two major criteria which were as follows: (i) the land was large enough for Project development (ii) the land which covers an area of 1,019,513.90 m^2, was under the ownership of Ministry of Finance (the Project comprises an area of 745,364.79m^2 for which necessary permit has been obtained from the Ministry of Forest and Water Works), and did not require expropriation. In addition, based on information obtained from the traffic consultants of the

Contractor of BRS A.S., the authorities had previously planned road development projects around the Project site as part of the city development plans, which will provide/ease the accessibility to the health campus.

2.3 Project Components and Design

The Project comprises of the development of an integrated health campus with a total capacity of 1,355 beds consisting of three hospitals. The layout of the hospitals and other units are shown in Figure 2-1 and Figure 2-2.

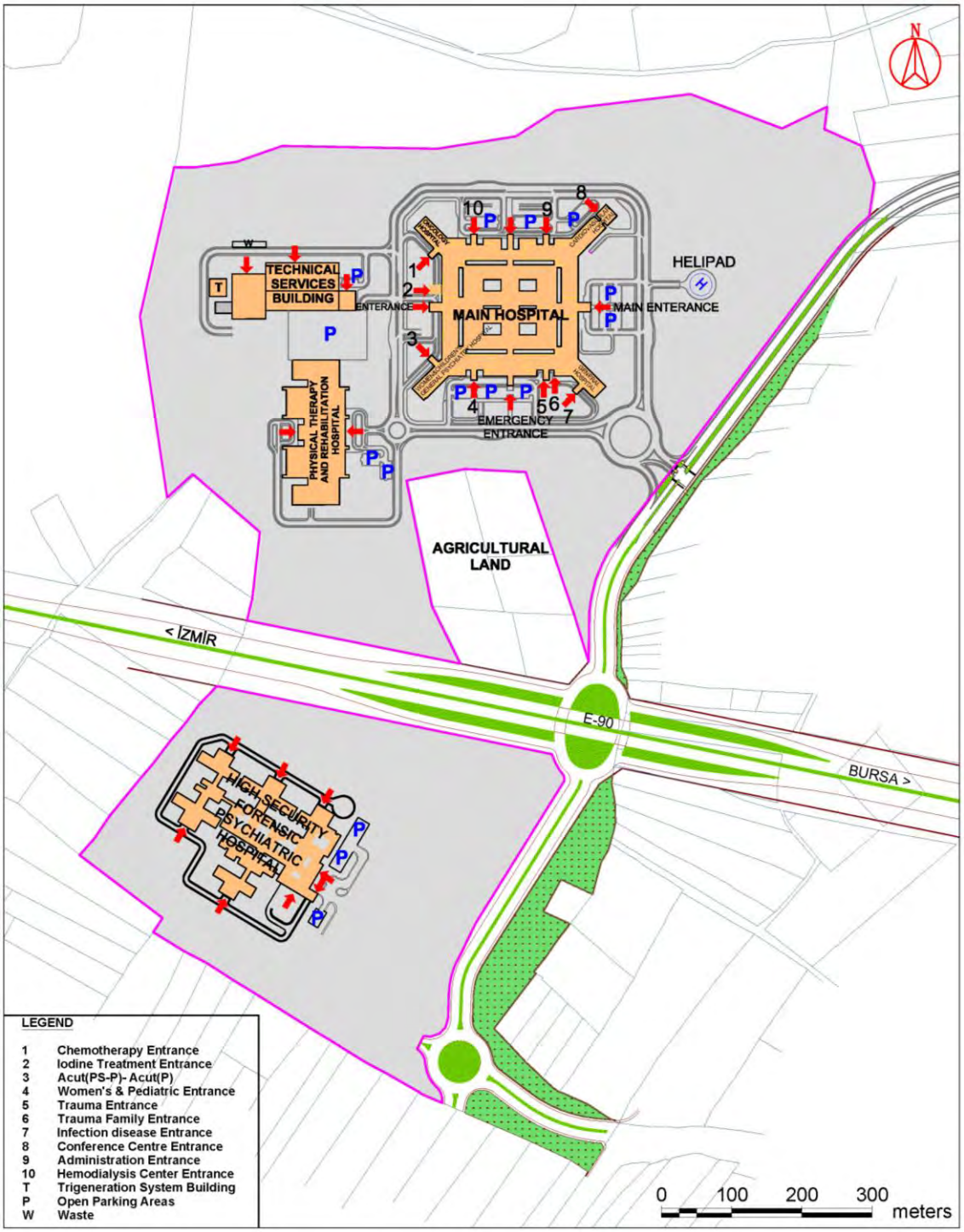

Figure 2-1: Layout of the hospitals and other units with IHC

Figure 2-2: Layout and 3D-view of Main Hospital

2.3.1 Main Hospital (MH)

MH will consist of four patient blocks surrounding a common core. The four tower blocks will include the following specific hospitals with a total of 1,055 bed capacity:

- 275-bed General Hospital
- 275-bed Cardiovascular Diseases Hospital
- 252-bed Oncology Hospital
- 253-bed Women and Pediatric, General and Psychiatric Hospital

The Main Hospital will consist of the following services and units: Acute care units, suite and VIP acute care units, intensive care units, newborn intensive care units, trauma unit, burn unit, LDRP patient rooms, palliative treatment unit, iodine treatment unit, family hotel, patient admission, general clinic modules, infection unit (clinic and wards), endoscopy unit, surgery suite, pre/post operation area, day surgery, advanced pathology unit, genetic diseases, , radiation oncology, sterile processing department, radiology, nuclear medicine, ESWL (extracorporeal shock wave lithotripsy), transfusion center, emergency service, chemotherapy, hemodialysis, robotic medicine preparation unit, TPN (total parenteral nutrition) unit. The total gross area of the MH for medical areas will be 325,946 m^2 and there will be an associated closed parking area of 92,160 m^2.

2.3.2 High Security Forensic Psychiatric Hospital (FRH)

The High Security Forensic Psychiatric Hospital will have a capacity of 100 beds. The total gross area for the hospital will be 24,000 m^2. Due to safety reasons, no closed car parking areas will be planned inside the hospital building. Instead open car parking areas (with an estimated capacity of 50 cars) will be arranged close to the main entrance of the building.

Inpatient sections within the FRH will be planned based on gender segregation and different security levels with shared rehabilitation areas (Social Hub) that will be arranged for treatment and adaptation to daily life. Besides, there will be outpatient clinics that will also be used by inpatients. Inpatient wards will be planned for male – female and adolescent patients in different security levels

as; Low, Medium and High. The design of the FRH is currently at an early stage. The High Security Forensic Psychiatric Hospital design that will be submitted to MoH's approval is being finalized to function as a high security psychiatric hospital and therefore will not host forensic psychiatric patients.

2.3.3 Physical Therapy and Rehabilitation Hospital

The Physical Therapy and Rehabilitation Hospital will have a capacity of 200 beds. The total gross area of the Physical Therapy and Rehabilitation Hospital for medical areas will be 51,749.46 m^2 and there will be an associated closed parking area of 33,954.72 m^2 for 862 cars. Additionally, there will be open car parking areas at three locations.

The services and units within the scope of the hospital will include clinics, treatment areas, common grounds for patients, outpatient clinics, general support areas, administration offices, imaging area, laboratories and technical areas.

2.3.4 Other components

There will be a technical service building, located west of the Main Hospital, to house a boiler system to include five boilers (among which one boiler is spare) each with a rated thermal capacity of 9.8 MW. The design of the technical service building and trigeneration system building is currently ongoing.

In addition there will be one helipad located east of the MH. The helipad will serve the ambulance helicopters which are directly under the service of MoH. An average of 1 cycle/day and on peak, 3 cycles/day are expected (depending on the severity and priority of the possible incident) for Bursa IHC helipad.

2.3.5 Fire Safety

Health facility operations are exposed to life and fire safety risks, as they are accessible to the public. Bursa IHC is being designed in accordance with the Turkish Regulation on the Fire Protection of the Buildings (Official Gazette Date/No: 19.12.2007/26735 revised on 09.07.2015). The Contractor of BRS A.S. has assigned a fire consultancy company for the identification of necessary life and fire safety design criteria. As reported by BRS A.S., the overall design, construction and operation of Bursa IHC will be based on Turkish Regulation on the Fire Protection of the Buildings. However, when local standards are not sufficiently detailed and are incomplete, internationally accepted life and fire standards (NFPA standards, IBC Codes and EN standards) will be applied. For this reason, mapping of Turkish requirements for life and fire safety will be conducted by BRS A.S. in order to identify the insufficient areas and incorporate them into the design based on the international standards.

2.4 City Planning and Components near the Project area

There are different scale zoning plans that cover the Project site. The Project will be developed on a treasury land (Block No.6763 Parcel No: 4) that was designated as a forest area for which permit has been given to MoH by the Ministry of Forest and Water Works for the development of the health campus and use of the site for 49 years. When the existing conditions and zoning plans of Bursa province are reviewed, it can be seen that the province has been expanding in the west direction where the Project site is also located and the surrounding of the Project site is planned to be developed as urban residential area, whereas the land use pattern to the south of the Project site

includes agricultural lands. These components are included in the zoning plans and under the jurisdiction of public authorities and outside the scope of the Project.

When the existing overall planning in the Bursa province are reviewed (based on review of Bursa Metropolitan Municipality (BMM) 2015-2019 Strategic Plan), it can be seen that the infrastructure and transport systems will be improved. The Strategic Plan indicated the following works as required to be undertaken (i) the urban transformation projects within Bursa province will continue in an effective manner (ii) road and public transportation network in the city as well as in the near region of the Project site will be developed (iii) current waste management practices will take into account the emerging technologies and approaches and an "Integrated Waste Management System" will be maintained in Bursa province.

2.5 Construction

2.5.1 Overview

The planning of the Project is still ongoing. This ESIA study is based on the construction schedule provided by the EPC Contractor, which assumes a 36 months of construction period following the occurrence of the Site Delivery Date as defined in the Project Agreement. Since then, the EPC Contractor has already started pre-construction activities (i.e. site preparation, mobilization and earthworks) and the construction is now planned to be completed in 30 months from the Site Delivery Date which is expected to occur in Q3 2016. It should be noted that the updated schedule will not have an impact on the results of this ESIA study. The construction work timeframe is proposed to be 24 hours per day in shifts and 7 days per week. The construction site facilities (including offices, camping area, cafeteria, resting areas, infirmary, workshop, material storage areas) will be located inside the Project site.

2.5.2 Excavated Soils to be Disposed

It is anticipated that approximately 1,410,000 m^3 of excavated soil will be generated in the Project site. As reported by BRS A.S., approximately 350,000 m^3 of soil has been excavated between 01.09.2015 – 01.01.2016 and placed within the Project site at the steep northern boundary of the northern part of the Project site. The remaining excavated soil is planned to be sent to off-site disposal and this should ensure compliance with the Regulation on Control of Excavated Soil, Construction and Demolition Wastes (Official Gazette Date/No: 18.03.2004/25406).

The contractor of BRS A.S. has signed a contract with BURKENT A.S. (authorized operator of excavated material disposal sites on behalf of BMM) for the disposal of excavated soil at the designated excavated material storage located close to Akcalar Zafer neighborhood in Nilufer district at a distance of approximately 25 km to the Project site.

2.5.3 Workforce

The maximum workforce that is anticipated during the construction phase is 3,000 people. Workforce will be supplied locally to the extent possible including local sub-contractors. Appropriate pre-fabricated facilities will be provided to those employees who need on-site accommodation.

2.6 Operation

2.6.1 Responsibilities and Organizational Management

The management of the Bursa IHC will be shared between MoH and BRS A.S. during the operation phase. MoH will be responsible for providing doctors and the support health personnel, and the general management of the clinical hospital activities will be undertaken by the administrative staff provided by MoH. MoH administrative staff will be responsible for the tasks excluding those under the responsibility of BRS A.S. as described below. Staff other than the doctors and support health personnel will be provided by BRS A.S.

BRS A.S. will be responsible for the management of services classified as obligatory services (P1) and optional services (P2) as listed below:

- P1 - Obligatory services include building and land services, extraordinary maintenance and repair, management of common services, furniture services, ground and garden care, and other medical support services.
- P2 - Optional services include *non-medical services* including pest control, car parking, cleaning, implementation and operation of the hospital information management system, security, guidance and escort for patients/help desk/reception/carrying services, laundry, food and waste management; and *medical support services* including laboratory, imaging, sterilization and disinfection, and rehabilitation services.

2.6.2 Traffic and Access Management

The closest junctions on the Ring Road, which provide access to the Project site, are located at 3 km east of the Project site (i.e. Mudanya Junction) and at 4 km west of the Project site (i.e. Gorukle Junction). However, in the current situation there is no direct access from the Ring Road to the Project site. The Project site can be accessed through connection roads to the Mudanya and Gorukle junctions and also accessed through narrow roads of Dogankoy Neighbourhood (i.e. Cumhuriyet Street, 8 m width on the average) from the southeast direction, after which the Project site is accessible through a 6 m wide paved road connected to Cumhuriyet Street. It should be noted that construction traffic will not pass through Dogankoy neighborhood. The northern part of the Project Site is not directly accessible; it can be reached from the southern part through a culvert which passes under the Bursa Ring Road.

It is estimated that approximately 33,000 people will visit the IHC daily during its operation. It is assumed in the traffic assessment study that 95% of the trips will be made by private vehicles while 5% of the trips will be made by public transport alternatives. The Project site is easily accessible by private vehicles. Currently, the only public transportation alternative for accessing the vicinity of the IHC site is the public buses that operate continuously from the city center to the Dogankoy neighborhood (i.e. approximately 1.5 km to the Project site). There are planned road developments in the vicinity of the Project site including a junction on the Bursa Ring Road. These will provide easier and direct access to the IHC by private vehicles and public transportation is expected to be developed prior to the commencement of the IHC. Moreover, there are plans to develop light rail system to have direct access to the IHC.

Figure 2-3: Road network around the Project site (Red shaded area indicates the Project site)

2.6.3 Emergency Preparedness and Response

An Emergency Preparedness and Response Plan (EPRP) will be prepared by BRS A.S. prior to operation as part of the Environmental and Social Management System to be established for the IHC. The EPRP will cover issues related to occupational accidents, fire, fuel and chemical spills, natural disasters such as flooding and earthquakes.

2.6.4 Security

An electronic security system will be provided in the IHC and will consist of CCTV cameras, Access Control System, Intrusion Detection System and Radio Frequency Identification System (RFID). CCTV cameras will be located at exterior entrances, main entrance lobbies, elevator lobbies, car parks, loading docks, pharmacy, service corridors and material storage area.

2.6.5 Operational Workforce

The workforce requirement during the operation phase is anticipated to be 4,568 in total with 1,961 health service personnel and 371 administrative personnel to be employed by MoH and 2,217 service employees and 19 administrative personnel to be employed by BRS A.S. and its service providers.

3.0 ENVIRONMENTAL AND SOCIAL IMPACTS AND MITIGATION

3.1 Overview

The ESIA Report provides a description of the environment and social baseline and explains the Project's potential impacts and identifies the mitigation measures to avoid or minimize the significant adverse environmental and social impacts. The mitigation measures are also included in the ESMP that has been developed as part of the ESIA study, and includes description of the mitigation measures, responsible parties for the implementation of the mitigation measures, the timing, monitoring and audit requirements.

The topics that are included in the ESIA study include (1) Land Use and Zoning, (2) Geology, Soils and Contaminated Land, (3) Hydrology and Hydrogeology, (4) Material Resources and Waste Management, (5) Air Quality, (6) Noise, (7) Traffic Impact, (8) Socio-Economy, (9) Community Health and Safety and (10) Labor and Working Conditions. These topics and related impacts and proposed mitigation measures are summarized in the following sections.

3.2 Summary of Impacts and Mitigation Measures

3.2.1 Land Use and Zoning

The Project comprises development of an Integrated Health Campus within an area that is a treasury land which is designated as a forest area. Permit has been given by the General Directorate of Forestry of the Ministry of Forest and Water Works to use the site as a health campus area. No land take, expropriation, resettlement and/or economic displacement have occurred related to the Project. The construction activities will be undertaken within the defined Project site and no additional land is planned to be used.

There is a private land adjacent to the northern part of the Project site where cultivation is made by three people based on contacts with two landowners and one tenant. The access to this private land is made by passing through the main entrance of the Project site. People continue cultivating the land and have no grievances related to Project activities. Reportedly, there is no acquisition plan for this land by the authorities. Considering that people continue cultivating the land and also own and/or cultivate other agricultural lands for source of income, there is no need for the preparation of a livelihood restoration plan.

1/100,000 scaled Bursa Province Environmental Management Plan has been revised and approved in 2014 for Parcel No:21 (the name of Parcel no:21 has been changed to Block No.6763 Parcel No.4) where Project will be developed. With the revisions made, Block No.6763 Parcel No.4 was designated as a 'forest area' on which integrated health campus will be located as mentioned in the provisions of the revised plan. There is also a planned high-speed railway (Ankara-Bilecik-Bursa line) passing to the north of the Project site. In addition to the 1/100,000 scaled Environmental Plan, there is a 1/25,000 scaled zoning plan for Bursa Central Planning Region. The Project site was also classified as a forest area.

According to the 1/1,000 scaled implementation zoning plan, the Project site was classified as a "Health Facility Area" by BMM. There are planned road network developments were previously developed by the relevant authorities (BMM and General Directorate of Highways) as part of general city planning and therefore are not related with the Project. For this reason, any land take that may

occur related with these projects are outside the scope of the Project. No impacts are expected related to expropriation.

3.2.2 Geology, Soils and Contaminated Land

Bursa province is located within the influence zone of NAF. According to the map of seismic zones in Turkey, a large part of Bursa territories as well as the Nilufer District, where the Project site is located, is in the 1st degree seismic zone. The Project design will take into account the Turkish regulatory requirements (i.e. Regulation on Buildings to be built in Seismic Zones) related to seismic design and risk assessment. In addition, earthquake isolation system, by means of installation of seismic isolators, will be implemented in the Main Hospital building.

A geological/geotechnical site investigation was conducted to determine the geological and geotechnical properties of the Project site. A total of 77 boreholes were drilled to a depth of 25 m below ground level (bgl). Seismic refraction (10 locations), micro tremor (4 locations) and resistivity - vertical electrical sounding (10 locations) measurements were also carried out during the study.

The geological/geotechnical site investigation confirmed that the dominant geological formation under the Project site is the Neogene aged Mudanya formation which is primarily comprised of conglomerate, sandstone, marn, silt, clay and lacustrine limestone (MTA website, accessed: December 2015). The soil structure at the Project site is mainly comprised of a sand and gravel unit below the topsoil underlain by a clay layer which represents a geological matrix with medium to high permeability. Groundwater was also encountered in the southern part of the Project site at 10-15 m depth bgl (i.e. section of the Project site laying at the south of the Bursa Ring Road) where the High Security Forensic Hospital will be constructed. The review of the boring logs indicated that the groundwater found at these levels are most likely perched water rather than an evidence of an aquifer.

A dedicated soil and groundwater quality has not been undertaken at the Project site as industrial activities have not been carried out at or around the Project site to date. The site soil and groundwater is unlikely to have been impacted from industrial activities or contaminated surface water ingress from nearby sources of pollution.

Hazardous and non-hazardous materials and waste during operation will be handled according to the Integrated Quality, Environment, Health and Safety Management System to be prepared by BRS A.S. and where needed, further site-specific management plans will be developed (i.e. Hazardous Material Management Plan). Operation of a closed drainage system and implementation of Emergency Preparedness and Response Plan in the event of spills, fire etc. will prevent significant impacts on soils during construction and operation phases.

Fuels, oils and chemicals will be stored on an impervious base protected by bunds to 110% of capacity. Drip trays will be used for fueling mobile equipment. Any spillages from handling fuel and liquids will be immediately contained on site and the contaminated soil removed from the site for suitable treatment and disposal.

3.2.3 Hydrology and Hydrogeology

There are no surface water pathways within the Project site area except for natural surface water drainage pathways. The closest stream to the Project site is the Nilufer Stream, flowing along the northern boundary of the northern part of the site (at a closest distance of 50 m).

There are two surface water streams-creeks in the vicinity of the Project site and a groundwater table (i.e. perched water) has been detected at 10 – 15 m within the southern section of the Project site. However, these are not known to have direct use or do not contribute to any larger surface and groundwater resources. Nilufer stream is located approximately 50 m to the northern boundary of the Project site at its closest point, which flows at an average flowrate of 16.77 m^3/sec.

Nilufer Stream is flowing along the northern boundary of the Project site in the east-west direction; whereas Ayvali creek is flowing at the southwest of the Project site at a distance of approximately 850 m. As it is inferred from the 1/25,000 scaled zoning plan of the region, the Project site does not fall into the flood risk areas of the streambeds of two surface water bodies. Therefore, associated impacts related with the flood risk of these two streams are considered as minor significance.

Inappropriate storm water drainage conditions for the Bursa IHC facilities may result in flooding of the site. From health and safety perspective, flooding may result in impacts ranging from minor to major significance depending on the surface water runoff generated during rainfall events. Considering that the storm water will be connected to the municipal infrastructure no impacts are expected associated with this issue.

The mitigation measures that will be taken will include the EHS based design criteria and infrastructure requirements (as indicated in the Technical Specifications provided by MoH). Site specific mitigation measures will also include good construction practices, staff training, appropriate handling of hazardous materials and waste materials through the development and implementation of management plans. Specifically, the development and implementation of the Hazardous Waste Management Plan, Hazardous Material Management Plan and Emergency Preparedness and Response Plan will help protection of the surface water and groundwater media.

3.2.4 Material Resources and Waste Management

It is anticipated that approximately 400,000 m^3 C30/C37 type ready-mixed concrete, 800,000 m^3 of aggregate, 400,000 m^2 of EPDM membrane, 40,000 tons of reinforcement, 50,000 m^2 of mold material, 10,000 m^2 supporting scaffold, 10,000 m^2 face scaffold, 20,000 m^2 face stone, 5,000 tons of steel carcasses and 10,000 tons of asphalt will be needed for the Project. The materials will be procured by the construction contractor from approved suppliers and at this stage their sources are not known except that there will be a concrete batching plant (with a capacity of 90 m^3/h) within the Project site. The construction material required for the Project will be transported to the site via roads from suppliers. No borrow areas or quarries will be operated by the contractor. Therefore, there should be no adverse impacts from the extraction of raw materials or production of finished materials that will be attributable directly to the Project.

There will be drinking and potable water usage by construction workers and during construction activities. The total daily water requirement for the construction activities would be 765 m^3/day. During the operation phase, there will be water uses related to general domestic and sanitary use (including laundry), food preparation processes, sterilizers and autoclaves, X-ray equipment (water

used in the processing of prints), and water used for gardens. The water consumption of the IHC is predicted to vary between 1,694 and 2,168 m^3/day. The domestic water will be provided from the existing water supply line of the municipality (the official letter BUSKI (dated 21.04.2016) confirms that the potable water during construction can be supplied from the municipal water supply network). The water supply increase during the construction and operation of the IHC Project can be considered negligible on the water supply requirements for the region. Bottled water will be procured to meet potable water demands of the staff. In addition, groundwater wells will be drilled in the Project site to supply water during construction phase.

The electricity, heating and cooling needs of the facility will be supplied from the trigeneration system and boilers that will be installed inside the IHC during operation. The trigeneration system and boilers will use natural gas. The yearly electricity consumption of the IHC would be 114,897,000 kWh. The natural gas will be used for heating and for producing warm water. Efficiency opportunities and associated tasks to achieve energy savings are being considered in the design and operation of the IHC Project.

There are seven main types of waste treatment/handling facilities for the management of the waste streams generated in Bursa province and its vicinity. These facilities are as follows:

- Yenikent solid waste disposal facility (under the responsibility of BMM)
- Inegol solid waste disposal facility (under the responsibility of BMM)
- Medical waste sterilization facility (under the responsibility of BMM)
- Authorized recycling and hazardous waste treatment facilities
- Authorized disposal areas for excavation materials and construction wastes
- Bursa West wastewater treatment plant (under the responsibility of BMM)
- Bursa East wastewater treatment plant (under the responsibility of BMM)

The capacity of the medical waste sterilization facility was noted to be sufficient to handle the medical waste generated during the operation of Bursa IHC. Considering that approximately 2,600 tons of solid waste is brought daily to the Yenikent solid waste disposal facility, additional 3.2 tons of solid waste generated daily in the IHC during its operation is not expected to lead to a significant overload on the capacity of the existing solid waste disposal facility.

Maximum wastewater generation of the IHC during its operation is expected to be 2,168 m^3/day. Considering that the existing capacity of the Bursa West WWTP is 87,500 m^3/day and the amount of treated wastewater is 51,205 m^3/day, the IHC wastewater load will result in an additional 4% increase in the existing flow rate. This figure will be within the treatment capacity of the WWTP. There will be no separate WWTP within the IHC; however, as reported by BRS A.S., wastewater from departments within the IHC will be collected via different piping systems and discharged directly into the sewer system, except for the wastewater that is contaminated with radioactive substances (i.e. from nuclear medicine department and laboratories) which will be collected separately and/or subject to neutralization prior to being discharged into the sewer system. The capacity of the medical waste sterilization facility was noted to be sufficient to handle the medical waste generated during the operation of Bursa IHC. Considering that approximately 2,600 tons of solid waste is brought daily to the Yenikent solid waste disposal facility, additional 3.2 tons of solid waste generated daily in the IHC during its operation is not expected to lead to a significant overload on the capacity of the existing solid waste disposal facility.

A waste management plan covering both construction and operation phases for Bursa IHC has been developed within the scope of the ESIA study. In addition, a Healthcare Waste Management System will also be established and implemented during the operation phase of the IHC.

The waste generation and management review indicate that the Turkish regulatory framework is in place for assigning specific waste codes to each of the waste stream to be generated in the construction and operation phases. Furthermore, the waste disposal infrastructure for domestic, medical, hazardous and wastewater streams are available and operational in Bursa province. The impacts of the generated wastes can be considered negligible if the IHC Project complies with the applicable regulations during construction and operation including disposal of the waste stream in licensed facilities.

3.2.5 Air Quality

During the construction of the Project, dust emissions will arise from earth movements, operation of concrete batch plant, transport of construction materials and resources, transport of excavated soils outside the Project site, working of machinery and vehicle movements inside the Project site. There will be also gas emissions from construction vehicles and equipment such as generators, excavators, bulldozers, trucks, cars. Transport of construction materials and transport of excavated soils outside the Project site will result in emissions related to construction traffic which may have the potential to affect the ambient air quality.

The transport routes to the Project site pass through settlements which may be affected by the emissions. This type of transportation will be temporary and the significance of impacts might range between minor to major, depending on the amount of transportation and the location of receptors. It is expected that these impacts will be reduced to impacts of less significance.

There will be impacts on the air quality from the health campus during the operation phase which will be mainly related with the emissions from the trigeneration and boiler systems, open car parking areas and fugitive emissions (released from sources such as medical waste storage areas, medical technology areas and isolation wards) that may be potentially contaminated with biological agents, pathogens, or toxic materials. It is expected that necessary exhaust/treatment systems will be included in the design of the health campus to eliminate mentioned emissions and no significant impacts will occur. There will be also impacts related to increase in emissions from road traffic during the operation of the health campus.

Air quality baseline measurements were undertaken during the ESIA study that included PM deposition and PM_{10} (parameters related to construction phase activities representing dust emissions) and NO_2 (parameter related to trigeneration/boiler emissions). Air dispersion modelling study (for PM_{10} and PM dispersion) was undertaken to estimate the air quality impacts associated with the construction. Baseline PM_{10}, PM deposition and NO_2 concentrations were found to be in compliance with the national and EU limit values. The results of air quality modelling showed that the TPVs of dust emissions during construction and TPV of NO_2 emissions during operation are in compliance with the national and EU limit values.

In addition, there will be a generation of greenhouse gas emissions during the operation of the trigeneration and boiler systems which is calculated as 111,556 tons CO_2/year. According to the IFC Performance Standard 3, for projects that produce more than 25,000 tons of CO_2 equivalent annually, there is a need to quantify the direct and indirect emissions annually. The Project will be

expected to meet this requirement and undertake necessary actions to minimize the greenhouse gas emissions.

An Air Quality Control and Monitoring Plan and Construction Traffic Management Plan will be developed and implemented during construction and operation phases.

3.2.6 Noise

Main noise sources during construction activities include use of construction machinery and equipment during earthworks and structural works, operation of concrete batch plant and construction traffic related to the transportation of excavated soils and construction materials. Increased noise levels during construction activities have the potential to result in negative impacts to the background noise levels including health risks at nearest sensitive receptors. The actual impact level due to construction activities will depend also on aspects such as the type of equipment to be used, time period and duration, and the perception of specific noise patterns (e.g. continuous, regular intervals, irregular). No piling or blasting which are important sources of vibration will be conducted at the Project site. For this reason, potential vibration impacts will be related to the truck movements and use of construction machinery at the Project site. The transfer of construction materials to the site and excavated materials off-site for disposal may cause disturbance particularly to the residents of Dogankoy neighborhood as a result of frequent truck movements.

Main noise sources during operation phase include the operation of the heating and cooling systems (i.e. trigeneration system, boilers, pumps, chillers and cooling towers) and the increase in road traffic from the operation of the facility. There will be also open car parking areas with a capacity of 654 cars. In addition, there will be ambulance helicopter movements causing occasional noise.

In order to predict the impacts of the Project on the existing background noise conditions, the assessment included (i) baseline environmental noise measurements at four locations, (ii) noise modeling study for construction and operation phases. Based on the baseline measurements and modeling study, cumulative noise levels were calculated. Construction phase cumulative noise levels were found to be below the national regulatory limit set for construction sites, but above the IFC limit value and also resulted in an increase in existing baseline noise levels by more than 3 dBA which is the maximum allowable increase indicated in IFC standards. Construction phase noise impacts will be temporary and can be mitigated with the implementation of measures. During operation phase, cumulative noise levels either do not result in a change or result in minor changes (i.e. maximum of 0.4 dBA increase) in existing background noise levels which meets IFC requirements. Noise impacts will be followed with the implementation of a Noise Control and Monitoring Plan during construction phase.

3.2.7 Traffic Impact

The urban development in the city of Bursa is concentrated at the center of the city (i.e. mainly Osmangazi, Nilufer and Yildirim districts). The City has developed around the D-200 state road which provides connection to Balikesir province to the east and Bilecik province to the west. Recently, the development has occurred along the northwestern direction where the Project site is located. BMM previously planned road developments almost adjacent to the Project site, at the northern and southern sides of Bursa Ring Road in order to connect both sides. There is also a planned junction on Bursa Ring Road (planned by General Directorate of Highways). These road developments and the planned junction were previously planned by BMM and General Directorate of Highways,

respectively irrespective of the Project, but as part of the wider road development plans in the city. In addition to the planned road network developments, the local zoning plans suggest development of a high-speed railway line adjacent to the northern boundary of the Project site together with a hub train station to the northeast of the Project site at approximately 2 km distance.

The IHC site is currently accessible through private cars but not public transport (bus, minibus, light-rail etc.). Estimated number of daily users of Bursa IHC is 32,818 people and a total of 17,749 daily trips (covering both private cars and public transport) are envisioned to occur at the IHC area and its surroundings. Based on the results of the interim traffic study, it can be concluded that (i) the operation of the IHC will result in an increase on the existing traffic coming from the city center (through Bursa Ring Road, from east side), (ii) a total of 17,749 daily trips (of which 16,914 (95%) will be made by private cars) are envisioned to occur at the IHC area and its surroundings, (iii) 15% of the total travel will occur during the morning peak hour (08:00-09:00) and will come from the southeastern direction.

There are plans to develop new road networks (i.e. planned road network around the area and junction on the Bursa Ring Road) as well as public transportation network extensions in the vicinity of the Project site. These projects were previously planned by BMM and General Directorate of Highways, respectively as part of wider road and public transportation development plans in the city. Although the traffic load of these road networks cannot be estimated at this time, the sensitivity of the receptors would be low considering that a wide road network will be developed in the area. As such, the significance of the impacts would be minor to moderate in terms of the capacity of the road network.

An IHC Traffic Management Plan will be developed and implemented within the campus that will take into account vehicular traffic, emergency conditions, pedestrian traffic entering, exiting and internal traffic. The traffic management plan will be developed before operation phase and it will address the potential noise and air pollution loads that may be generated from the traffic loads.

3.2.8 Ecology

Bursa Province is located within Marmara Region of Turkey. Population density in the region is quite high. Therefore, especially flat areas have lost their natural characteristics to a great extent. Since the Project site has lost its natural properties due to anthropogenic activities, there are mostly widespread cosmopolitan species in the area.

Two different ecological walkover surveys conducted in August and October 2015 by flora and fauna experts. As a result of field studies conducted in August and October 2015 at the Project site, a total of 192 taxa that belong to 54 families were identified. All of these species are either widespread cosmopolitan species or those that have been transferred to the site for plantation purposes. Therefore, the planned Project is expected to have no adverse impacts on flora in the area. Although it is mostly composed of modified habitats, the habitat loss to occur within the Project site will be mitigated to the extent possible, through implementation of mitigation measures to ensure that the Project-related impacts are minimized.

The area has some natural maquis parts and semi-natural parts as well as shrubby and plantation areas. Such areas seem to support some reptile, amphibian, bird and mammal species. As a result of terrestrial fauna studies, 75 vertebrate species found at the site were identified to be mostly widespread and cosmopolitan species. None of them is restricted range species. Only one species is

listed under threatened categories of IUCN. This species is Testudo graeca (Spur-thighed Tortoise) listed as VU (Vulnerable). There is no doubt that the Project may cause habitat loss. However, because of rarity of faunal element at the Project site and because all species in the area are common species, negative effects remain limited and any of the species would not disappear in the area because of the Project.

Additionally, the area is not within an Important Bird and Biodiversity Area (IBA) or Ramsar site; and does not meet the criteria for critical habitat for migratory and congregatory species.

The Project site is a treasury land which has been designated as a forest area. Permit has been given to MoH by the Ministry of Forest and Water Works for the development of the health campus and use of the site for 49 years. According to the permit issued by the Ministry of Forest and Water Works, at least two times larger than the permitted site shall be forested by the General Directorate of Forestry and BRS A.S. will make a payment as a forestation fee in line with the third clause of the Article 33 of Implementation Regulation of 17/3 and 18th Articles of the Forest Law (Official Gazette Date/Number: 18.04.2014/28976).

3.2.9 Socio-Economy

There will be employment opportunities related with the Project. The maximum workforce that is anticipated during the construction phase of the Project is 3,000 workers. This workforce will be sourced locally to the extent possible. All construction workers will be employed and remunerated in accordance with the provisions of Turkish law and IFC PS2/EBRD PR2: Labor and Working Conditions as well as EIB ESS8: Labor Standards. There will be on-site worker accommodations which will be established in line with the IFC/EBRD guidance note on worker's accommodation. A Construction Camp Management Plan will be developed and implemented together with Worker Code of Conduct to manage worker's behavior inside the construction site, camp and outside. During operation phase, the workforce requirement is anticipated to be 4,568 in total with 1,961 health service personnel and 371 administrative personnel to be employed by MoH and 2,217 service employees and 19 administrative personnel to be employed by BRS A.S. and its service providers. It is estimated that approximately 32,818 people will visit the Bursa IHC daily which will be an important source of income for the supporting service sector.

Based on consultation with the Bursa Provincial Directorate of Health, it is understood that there is a need for hospitals in Bursa province and accordingly, there are currently no plans for closing any hospitals. However, this will be clear with additional planning to be conducted. It should be noted that planning will not only be related to Bursa IHC Project but rather related to create a more efficient health service in Bursa province. In case of any hospital closures and/or new arrangements, MoH will be the responsible authority to manage staff relocation.

3.2.10 Community Health and Safety

Typical risks on community health and safety associated with the Project include safety risks, increased traffic, dust and noise, life and fire safety, infrastructure safety and security. The risks and impacts of the Project, in the context of health and safety of off-site communities, will be managed through a Community Health and Safety Management Plan to be developed and implemented by BRS A.S. In addition, Construction Traffic Management Plan, IHC Traffic Management Plan, Noise Control and Monitoring Plan, Air Quality Control and Monitoring Plan, Security Plan and Life and Fire Safety Plan will be developed and implemented for the Project.

During all construction works, the Regulation on Buildings to be constructed in Seismic Zones will be complied with.

IHC will be designed in accordance with the Regulation on the Protection of Buildings from Fire. A Life and Fire Safety Plan will be prepared identifying major fire risks, applicable codes, standards and regulations, and mitigation measures. Life and Fire Safety Plan will be approved by a third party acceptable to IFC, EBRD and EIB, prior to the construction of the facilities to ensure compliance with local and international standards (NFPA standards, IBC Codes and EN standards).

Related to the security measures at the FRH, there will be different measures that include walls, fences, remote control steel doors, closed circuit camera systems (CCTV), security buildings and security staff.

3.2.11 Labor and Working Conditions

BRS A.S. will fulfill the requirements of PR2/PS2/PR4/ESS8 and ESS9 by adopting and implementing an HR policy appropriate to its size and workforce during the construction and operation phases of the Project. A sound worker-management relationship will need to be established and maintained in line with the relevant national legislation and IFC, EBRD and EIB requirements. A grievance mechanism will be developed for employees.

BRS A.S will develop an Environmental and Social Management System covering OHSAS 18001:2007 requirements for the management of health and safety issues. The management system will ensure that all applicable national health and safety legislation as well as the requirements of PR2/PS2/PR4/ESS8 and ESS9, IFC EHS General Guidelines and IFC EHS Guidelines for Health Care Facilities for the operational stage are met during construction and operation phases of the Project.

Subcontractors will also be required to follow the requirements of PR2/PS2/PR4/ESS8 and ESS9 and contracts to be signed with subcontractors will include EHS requirements. Accordingly, a Subcontractor Management and Monitoring Plan will be prepared and implemented.

Of specific to operation phase, an Exposure Control Plan for blood-borne pathogens and Radioactive Substance Management Plan will be developed and implemented.

In case of a hospital closure, MoH will apply its own Relocation Policy for its own staff based on Turkish law. It is not clear at this stage whether MoH will develop a Retrenchment Plan (BRS A.S. will have no responsibility and control on the development of such a Retrenchment Plan). During its recruitment process, Service Provider of BRS A.S. will provide equal opportunity to the non-MoH employees of the closed hospitals, if any.

4.0 PROJECT ENVIRONMENTAL AND SOCIAL MANAGEMENT SYSTEM

This section describes the arrangements by how environmental, occupational and community health and safety, social and labor related *(altogether described as "environmental and social")* risks and impacts will be managed during the construction and operation phases of the Project. A management system is proposed to be used in order to manage these risks and also to meet applicable Turkish laws and regulations and EU directives as well as the Lenders' Requirements.

BRS A.S. will establish an integrated management system *(referred to here as the Environmental and Social Management System - ESMS*) for the construction and operation phases of the Project as it will be the main construction work contractor and the product and service provider of the Bursa IHC. ESMS will be established in line with ISO 9001:2008, ISO 14001:2004, OHSAS 18001:2007, IFC PS1 "Assessment and Management of Environmental and Social Risks", EBRD PR1 "Environmental and Social Appraisal and Management" and EIB ESS1 "Assessment and Management of Environmental and Social Impacts and Risks".

The ESMS will integrate planning, implementation, control and review of the processes in terms of environmental and social impacts. In addition to the ESMS, a Health Care Waste Management System will be established and implemented as per IFC requirements.

The management of the IHC will be shared between MoH and BRS A.S. during the operation phase. Due to the fact that there will be a shared management, it is expected that there should be cooperation between MoH and BRS A.S. for some specific areas during the development and implementation of the ESMS which are not clear at this stage. It is expected that necessary discussions and engagement will be made with MoH by BRS A.S. prior to the start of developing the operation phase ESMS in order to clarify these issues.

4.1 Environmental and Social Management Plan (ESMP)

An *ESMP* has been developed for the Project (covering construction and operation phases) in order to manage the adverse impacts on the environment. The ESMP is prepared based on the international standards and national laws and regulations. The ESMP includes description of the mitigation measures to avoid, minimize or compensate the adverse impacts during the construction and operation phases of the Project; responsible parties for the implementation of the mitigation measures; the timing of implementation; monitoring and audit requirements. The ESMP focuses on the avoidance of impacts, and where this is not possible, presents technically and financially feasible and cost-effective mitigation measures to minimize possible impacts to acceptable levels. The ESMP is based on the results of the ESIA study and is a framework document that specifies the necessary work to be conducted for the Project such as preparation of detailed management plans for each topic (e.g. air quality control and monitoring, noise control and monitoring, traffic management). The ESMP will be kept up to date with any required additional mitigation throughout the Project and to reflect the requirements of new and/or amended laws and regulations.

A Waste Management Plan has also been established as part of the ESIA. Waste Management Plan will be updated based on the final design and site layout plan. In addition to the updated Waste Management Plan, the following plans are described in the ESMP and will be developed to achieve EHSS objectives for the construction and operation phases:

For construction phase:

- Air Quality Control and Monitoring Plan
- Noise Control and Monitoring Plan
- Hazardous Material Management Plan
- Emergency Preparedness and Response Plan
- Construction Camp Management Plan
- Construction Traffic Management Plan
- Human Resources Management Plan
- Occupational Health and Safety Management Plan
- Community Health and Safety Management Plan
- Security Plan
- Archaeological Chance Find Management Plan
- Subcontractor Management and Monitoring Plan

For operation phase:

- Air Quality Control and Monitoring Plan
- Hazardous Material Management Plan
- Emergency Preparedness and Response Plan
- IHC Traffic Management Plan
- Community Health and Safety Management Plan
- Occupational Health and Safety Management Plan
- Exposure Control Plan for blood-borne pathogens
- Radiation Exposure Control Plan
- Radioactive Substance Management Plan
- Life and Fire Safety Plan
- Security Plan
- Human Resources Management Plan
- Subcontractor Management and Monitoring Plan

These plans will be supported with operational procedures and related instructions as necessary as part of the ESMS. The ESMS procedures and plans will be periodically (or when necessary) reviewed and revised. Additional procedures and plans will be developed as the Project progresses, as necessary.

4.2 Grievance Process

A Grievance Management Procedure will be established in order to ensure that all comments, suggestions and objections received from the Project stakeholders especially from nearby surrounding communities and facilities are dealt with appropriately and in a timely manner. It is important to note that there will also be a separate grievance management procedure for workers/employees during construction and operation phases, and for patients during the operation phase. At this stage, it is important to mention that BRS A.S. will only be responsible for the management of grievances related with the services it provides and also grievances of workers that are working at these services. Grievances related with the health services or grievances by the health personnel will be under the responsibility of MoH.

Local communities will be informed about the grievance management system during the consultation and disclosure activities. All grievances will be recorded, responded and resolved in a defined timeframe. The planning of the grievance management is currently at a planning stage. It is expected that comments and grievances can be sent to BRS A.S. via mail, e-mail, and fax during the construction and operation stages as well as through the Project website and telephone.

The procedure to handle grievances include consideration of all grievances submitted by in verbal and written, logging all grievances, evaluation of the grievances in a timely manner, and informing the complainant about the corrective actions to be taken to manage the grievance. Any grievance related to subcontractors' activities will also be managed in line with the same grievance mechanism. In addition to grievances, comments will also be reviewed once a week to identify if they require a response and reflected to a comment log.

The planning of the grievance management process particularly for operation phase is still ongoing. It is expected that a call center will manage the grievance system of BRS A.S during operation phase. If any grievance related with health services is obtained, the grievance will be conveyed to MoH and people giving the grievance will be informed about this action accordingly. It is important to note that there is already a hotline (184) known as 'MoH communication center' which is used to submit grievances related with health services all over Turkey. It is expected that this hotline will continue to be used during the operation of Bursa IHC through which MoH can receive grievances.