SFG3916

Zhongzi Huayu

G. H. P. Z. J. Zi No. 1051

World Bank-Financed Anhui Aged Care System Demonstration Project

Environment and Social Management Plan (EMP)

Commissioned by: Department of Civil Affairs of Anhui Province

Prepared by: Beijing Zhongzi Huayu Environmental Protection Technology Co., Ltd.

Prepared in: December 2017

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Preface

The project has four components: (i) Suppporting the development of government stewardship capacity for the elderly care system; (ii) Strengthening the delivery and management of community and home-based services; (iii) Strengthening the delivery and management of nursing care; and (iv) Project management, monitoring, and evaluation, along with capacity building.

Component I includes developing a comprehensive aged-care service information system, creating an ability and demand evaluation system for the aged, developing aged-care service quality standards, and training people to be skilled elderly care providers. **Component II** includes upgrading 161 home-based aged care service stations in Anqing and Lu'an (16 stations in Lu'an will be upgraded later); purchasing 2 services by the municipal governments of Anqing and Lu'an; **Component III** includes and constructing or upgrading 7 community-based care centers (including nursing facility), 1 center for training and for recreational acvitities for the elderly, 1 central kitchen, and 1 big health management information data center in Wuhu; building 1 integrated medical and elderly care institution in Anqing and in Lu'an respectively; relocating and reconstructing Xuanzhou District Welfare Home and building 1 social welfare service center in Ningguo City; upgrading, expanding 35 rural nursing facilities in the Yongqiao District, Dangshan County, Xiao County, Si County and Lingbi County of Suzhou. **Component IV** will support project management-related work at the provincial and sub-provincial levels by establishing and maintaining Project Management Offices and by building the capacity of project management staff. This will ensure an effective and efficient implementation in compliance with the operations policies and procedures of the World Bank as well as with domestic rules. See table 1.4-1 for the project's components and details.

The project funds primarily come from the World Bank loan, the supporting funds provided by local governments, and the funds raised by construction contractors. The World Bank loan is 965,384,000 Yuan (equivalent to 140 million USD), accounting for 52.49% of the total investment; the supporting funds provided by local governments amount to 298,488,600 Yuan, accounting for 16.23% of the total investment; the funds raised by construction contractors stand at 452,368,200 Yuan, accounting for 24.6% of the total investment; other funds (including funds for TCM inheritance project and construction of general practitioner training base) 123,000,000

Yuan, accounting for 6.69% of the total investment.

Analysis of the environmental impact during construction and mitigation measures

During construction, the environmental impact of the five major sub-components (the nursing facility of the First People's Hospital of Anqing, the Multi-Functional Medical Building of Lu'an City Hospital of Traditional Chinese Medicine, Wuhu Health and Elderly Care Industry Base at Haoyan Rainbow Garden, Xuancheng Municipal Social Welfare Home Relocation and Reconstruction, and Ningguo Municipal Social Welfare Service Center Upgrades) has be analyzed.

Exhaust: exhaust comes primarily from the dust procuded during construction and transportation. Dust pollution prevention and control measures include strengthening construction site management, putting up construction signs, watering the roads on which vehicles travel during construction, building a platform for vehicle washing, using dust covers such as tarpaulin, promptly removing construction waste from the construction site, reducing dust, and prohibiting the use of asbestos and other materials.

Noise: noise is primarily produced by construction machinery and vehicles. Measures to reduce and prevent noise include properly scheduling time for using construction machinery, forbidding nighttime construction, using low noise mechanical equipment or preparing sound insulators or silencers, and properly arranging construction time and site.

Wastewater: construction wastewater should be first treated through sedimentation tanks and oil-water separators and then reused for construction instead of being discharged outside. Domestic sewage should be discharged into the city's sewage treatment plant through the municipal sewage network.

Solid waste: domestic waste should be collected separately based on their types and promptly removed. Construction waste should be dumped at the sites designated by competent authorities of cityscape and sanitation.

See table 2-1 for details

Analysis of the environmental impact during operation and mitigation measures

Wastewater: wastewater discharged from the nursing facility of the First People's Hospital of Anqing and the Multi-functional Medical Building of Lu'an City Hospital of Traditional Chinese Medicine will be first treated through the sewage treatment

stations at the these two hospitals; if the treated wastewater meet the pretreatment standards in Table 2 of the *Discharge Standard of Water Pollutants for Medical Organization* (GB18466-2005), it will be discharged into the city's sewage plant. The medical wastewater and domestic sewage discharged from other sub-components will be disinfected and treated respectively, and then discharged into the city's sewage plant if they meet the Class 3 standards in Table 4 of *Integrated Wastewater Discharge Standard* (GB8978-1996).

Solid waste: trash cans should be arranged for domestic waste; waste should be removed from trash cans everyday to the sites designated by the competent authorities of environmental sanitation for disposal. Special trash cans should be arranged for medical solid waste; medical solid waste should be disposed of by qualified organizations in a safe, harmless manner.

See table 2-2 for details

Social management plan and environment monitoring plan

In order to achieve the potential benefits and proposed development objectives (PDO) of the project, the social impact assessment survey team has surveyed the workers at the departments of civil affairs, the elderly care service stations in the affected project areas, and the elderly care facilities, along with relevant elders, their families, and other main stakeholders. Based on this survey and the analysis of relevant data, the team has identified the potential social impact and risks that are related to the project design and implementation and might affect the achievement of the PDOs of the project, and has proposed the measures to mitigate the impact or avoid the risks. See attached table 3-1 for details.

The project has impacts on the environment during construction and operation. In order to effectively control pollution and protect the environment, operation of environmental protection facilities and production equipment should be kept track of as a way to prevent pollution incidents. Moreover, the environment monitoring plan should be implemented. This plan includes monitoring period, environmental elements, monitoring sites/points, monitoring items, monitoring frequency, costs, and monitoring organizations. See Table 6.3-1 for details.

Institutional capacity assessment

Department of Civil Affairs of Anhui Province is responsible for the implementation of the project. This Department has set up a provincial project management office (PMO) for overall project management throughout project

implementation. The relevant civil affairs bureaus under the Department of Civil Affairs of Anhui Province have set up municipal PMOs for daily management of the project during its implementation. The provincial PMO will coordinate local PMOs during project preparation and implementation. Moreover, the provincial PMO will designate a person to be in charge of environmental management and staff this work with environmentalist and the employees from project management companies. All PMOs will be staffed with sufficient workers (including designated environmental managers). The PMOs will employ external monitoring agencies and resident supervisors to supervise the implementation of the environmental management plan (EMP). The capacity of the EMP implementation organizations will be enhanced by taking a few measures, including training the workers of PMOs and construction contractors, so as to efficiently implement the project. Many projects financed by the World Bank have been successfully implemented in Anhui province. During the preparation and implementation of the project, the Department of Finance of Anhui Province and the Anhui Development and Reform Commission will provide support and guidance to the Department of Civil Affairs of Anhui Province and the PMO.

EMP implementation cost estimate

The costs related to the environmental protection for the project consist of three parts: the cost of environmental protection measures (including operating cost), the cost of environmental monitoring and supervision, and the cost of capacity building (including the cost of environmental management training and the cost of environment consulting). These costs total 11.3285 million yuan. See Table 8.2-1 for details.

Public consultation and document disclosure

Public consultation is conducted in forms of discussion meetings and questionnaire surveys. Questionnaire surveys and discussion meetings were conducted in the project areas in Anqing, Lu'an, Wuhu, Xuancheng, and Suzhou. Information about the project is posted on the website of the Department of Civil Affairs of Anhui Province on July 21st of 2017. The disclosed information includes the cities involved in the project and the overview of the project and its components, along with the link to the EMP for the project. The information was also published on Xin'an Evening News on July 20th of 2017.

98.1% of the respondents are supportive of the project, while 1.9% of the respondents show indifference to the project. The respondents believe that the

project is conducive to the development of local elderly care facilities. Through the project, more rehabilitation, nursing, medical, and health services will be provided to functionally impaired and disabled elders.

1 Project overview

1.1 Project background

Being a Chinese province that has a big population, the population of Anhui ages relatively earlier than the population of most other provinces in China. By the end of 2016, the number of Auhui's elders (aged 60 and above) reached 11.022 million, accounting for 18% of the resident population of the province, whereas the number of Chinese elders accounts for 16.7% of its total population, so the number of Anhui's elders is higher than that of Chinese elders on average. The number of Anhui's elders who receive elderly care accounts for 28.3% of the total population of Anhui's elders, whereas the number of Chinese elders who receive elderly care accounts for 25.44% of the total population of Chinese elders, so the number of Anhui's elders who receive elderly care is larger than the number of Chinese elders who receive elderly care on average. In order to cope with the social problems caused by an aging population,the *Implementation Opinions of Anhui Provincial Government on Accelerating the Development of the Elderly Care Service Industry* (W. Z. [2014] No. 60), *Notice of Anhui Provincial Government on Implementation of 33 Projects in 2017 to Improve People's Wellbeing* (W. Z. [2017] No. 10), and the *2017 Implementation Measures for Development of An Elderly Care Service System* have proposed that by 2020, an elderly care service system that features complete functions and distinctive Anhui's characteristics will be established in Anhui to benefit its urban and rural residents. By then, every 1,000 elders in Anhui will have no less than 45 beds at elderly care facilities; standard community-based elderly care service facilities will be built in all urban communities; and integrated community-based elderly care service facilities and stations will be built in over 90% of township communities and over 80% of rural communities. However, Anhui's existing elderly care system is underdeveloped. According to the official data of the Department of Civil Affairs of Anhui Province, in 2016, there were a total of 366,000 beds at elderly care facilities in Anhui, which means there were 34 beds for every 1,000 elders; elderly care facilities were built at over 50% of rural communities; and the number of elderly care providers approached 10,000. Moreover, Anhui province faces the following problems: there is no unified system for assessing the elders' abilities and needs; there is no unified requirement on the assessment organizations and on the qualitifications of assessors or unified assessment standards; 16 elderly care service standards have been launched locally,

but no system for such standards is established. Therefore, there is still a long way to go before the development goals set for Anhui's elderly care service industry can be achieved; and efforts should be doubled to develop an efficient elderly care service system.

Anhui Aged Care System Demonstration Project is proposed by Anhui Provincial Government based not only on its decision to accelerate the establishment of an elderly care service system, but also on its implementation opinions on accelerating the development of the elderly care service industry. This project is conducive to achieving the PDO(s). Financed by the World Bank, the project is an attempt at addressing problems in Anhui's elderly care industry by importing advanced technologies and equipment and drawing on advanced foreign operation management concepts and methods, based on China's national conditions and its institutional reforms, so as to develop an elderly care service system that can narrow the gap between the high demand for and low supply of elderly care services.

1.2 Construction contractor

1. Commissioning organization

Department of Civil Affairs of Anhui Province

2. Project management organization

There are 7 PMOs for the project, including Anhui Provincial PMO, Anqing PMO, Lu'an PMO, Wuhu PMO, Xuanzhou PMO, Ningguo PMO, and Suzhou PMO (the latter six PMOs are under the Anhui Provincial PMO). These 7 PMOs are responsible for project management and task assignment.

1.3 Project Objectives

The Proposed Development Objective(s) of this project is to support the government of Anhui Province in establishing and managing a diversified (public and private) system of delivery of elderly care services, including home, community and residential services, that serves both urban and rural elders. This system will have three tiers: home-based care will be its bedrock, and it will be supported by community-based care and underpinned with institutional care. The main development objectives of the project are as follows:

1. Strengthening the capacity of the government of Anhui Province to exercise stewardship over the diversified elderly care service delivery system;

2. Strengthening the delivery capacity of the diversified service provision

systems of elderly care delivery in five municipalities (Anqing, Lu'an, Wuhu, Suzhou, and Xuancheng) in Auhui province.

3. Improving the balance of elderly care services in five municipalities in Anhui province;

4. Improving the affordability and quality of elderly care services in five municipalities in Anhui province.

1.4 Project details

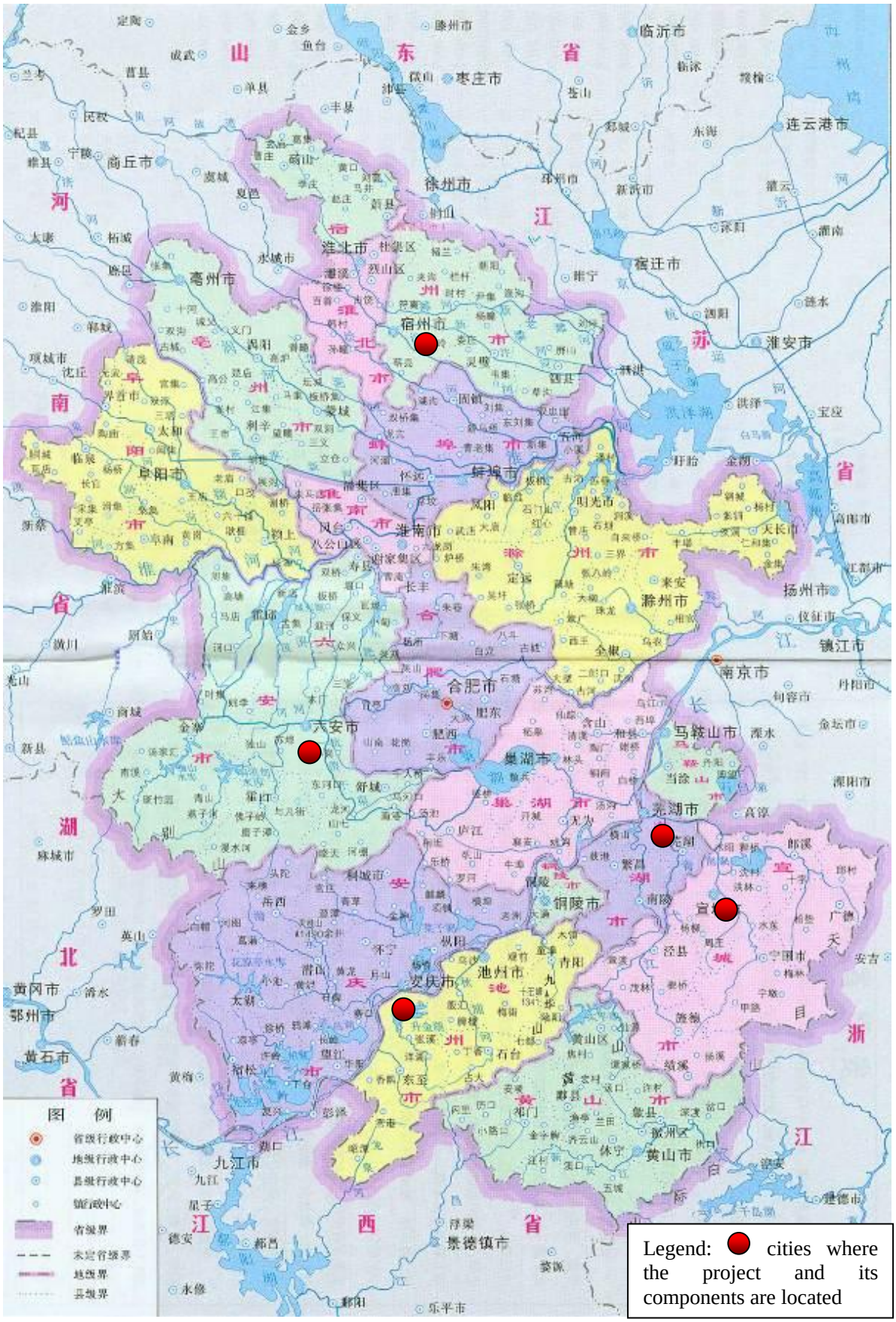
The project is implemented in Anhui Province, including the Yongqiao District, Dangshan County, Lingbi County, Xiao County and Si County of Suzhou City; various districts of Anqing; Lu'an City; Wuhu City; the Xuanzhou District of Xuancheng City; and Ningguo City. See map 1.4-1 for details.

The project has four components: (i) Suppporting the development of government stewardship capacity for the elderly care system; (ii) Strengthening the delivery and management of community and home-based services; (iii) Strengthening the delivery and management of nursing care; and (iv) Project management, monitoring, and evaluation, along with capacity building. See table 1.4-1 for details.

Component I includes developing a comprehensive aged-care service information system, creating an ability and demand evaluation system for the aged, developing aged-care service quality standards, and training people to be skilled elderly care providers. **Component II** includes upgrading 161 home-based aged care service stations in Anqing and Lu'an (16 stations in Lu'an will be upgraded later); purchasing 2 services by the municipal governments of Anqing and Lu'an. **Component III** includes and constructing or upgrading 7 community-based care centers (including nursing facility), 1 center for training and for recreational acvitities for the elderly, 1 central kitchen, and 1 big health management information data center in Wuhu; building 1 integrated medical and elderly care institution in Anqing and in Lu'an respectively; relocating and reconstructing Xuanzhou District Welfare Home and building 1 social welfare service center in Ningguo City; upgrading, expanding 35 rural nursing facilities in the Yongqiao District, Dangshan County, Xiao County, Si County and Lingbi County of Suzhou. **Component IV** will support project management-related work at the provincial and sub-provincial levels by establishing and maintaining Project Management Offices and by building the capacity of project management staff. This will ensure an effective and efficient implementation in

compliance with the operations policies and procedures of the World Bank as well as with domestic rules.See table 1.4-1 for the project's components and their sub-components.

The project funds primarily come from the World Bank loan, the supporting funds provided by local governments, and the funds raised by construction contractors. The World Bank loan is 965,384,000 Yuan (equivalent to 140 million USD), accounting for 52.49% of the total investment; the supporting funds provided by local governments amount to 298,488,600 Yuan, accounting for 16.23% of the total investment; the funds raised by construction contractors stand at 452,368,200 Yuan, accounting for 24.6% of the total investment; other funds (including funds for TCM inheritance project and construction of general practitioner training base) 123,000,000 Yuan, accounting for 6.69% of the total investment.



1.4-1 Location of the cities where the project and its components are located

Table 1.4-1 The project's components and their details

Components		Construction items
Component I	Developing an information system for the delivery of a continuum of care	Building elderly-care data centers; developing integrated service platforms for elderly care, including data collection platform, service management platform, information disclosing platform, and elderly care service application platform; establishing a unified standard for the information system; upgrading aged-care related information management system
	Creating a system for disability certification/ability evaluation	Establishing standards for disability certification/ability evaluation; developing evaluation tools; training evaluation workers; evaluation implementation and supervision
	Developing service standard systems	Developing a general service standard and service provision standard system, a service management standard system, a service quality guarantee standard system, and a service evaluation standard system.
	Building the capacity of elderly care providers	Training senior management of elderly care facilities; training the management of the department of civil affairs to improve their management capabilities.
Component II	Home-based care service stations	It is proposed that 127 home-based care service stations will be updated in Anqing, with a gross floor area of 59915 square meters. The stations have residential elderly care centers and aged day care centers; they also provide elderly care services at home; 200 beds are arranged for the time being for each residential elderly care center.
		In the areas under the jurisdiction of Lu'an City, 34 home-based elderly care stations with a combined floor area of 20513.33m^2 will be upgraded. Elderly care stations will contain aged day care centers, recreation rooms, libraries, gyms, and ancillary service rooms.
	Government purchased services	The services purchased by the Anqing Municipal Government encompass visiting empty nesters, assessing the ability of low-income elders, providing home-based elderly care services to the elders to whom the local government guarantees food, clothing, housing, medical care and burial expenses, home-based elderly care services for the low-income elderly people, caring and nursing services for the low-income disabled elderly people with dementia, and providing respite care service. This component does not involve construction and decoration.
		The services purchased by the Lu'an Municipal Government include caring and serving empty nesters in cities, assessing the ability/needs of people aged over 60, buying necessities for the needy elders, providing home-based respite care service to disabled elders, supervision of project implementation by a third party, and mid-stage assessment, and post-assessment in the project. This component does not involve construction and decoration.

Components		Construction items
	Care centers for functionally impaired or disabled elders in which community-based care has been integrated	In Wuhu, 7 community-based elderly care centers (including nursing homes), 1 center for training and for recreational acvitities for the elderly, 1 central kitchen, and 1 big health management data center will be upgraded; these 10 centers have a combined floor area of 66150.55m^2 and 1,243 additional beds will be arranged at the centers (of the 1,243 beds, 780 beds will be arranged at the base). There are exisiting buildings. This component involves decoration and equipment purchase.
Component III	Elderly care facilities in which medical care is integrated	At Longshan Branch of the First People's Hospital of Anqing, 1 nursing facility will be built. This nursing facility consists of 4 buildings (2-6F), 1 podium (1F), and 1 physical examination center (1F). Construction items include rooms for the elderly (service room, living room, health care room, rehabilitation room, recreation room, and social work room), administrative offices, and ancillary rooms. The nursing facility will cover an area of about 54,000m^2, with a gross floor area of 42,459.4 m^2. 1,000 additional beds will be arranged at the nursing facility. Civil works will be undertaken by construction contractors. This component involves decoration and equipment purchase.
		At Lu'an City Hospital of Traditional Chinese Medicine (TCM), 1 multi-functional medical building will be built. This building has a footprint area of 19,250 m^2 and a floor area of 92,100 m^2. It will encompass restaurants, famous and time-honored TCM clinics, physical examination centers for disease prevention, TCM pharmacies, medical care streets, scientific research rooms, multi-disciplinary joint consultation rooms, clinical teaching and training areas, and wards (including a planned police station and ambulance station); 600 additional beds will be arranged (including 500 beds for elders who receive elderly care).
	Urban welfare homes	In Ningguo City, a social welfare service center will be built based on the land of 2,500m^2 of the "Lucky Star Paradise". The gross floor area of the center will be 9,054m^2 larger.260 additional beds will be arranged.
		The existing welfare home in the Xuanzhou District of Xuancheng City will be relocated and rebuilt. This welfare home will have 3 floors, with a planned land area of 40,000 m² in total (about 60mu) and a gross floor area of 19,500m². 400 additional beds will be arranged.
	Rural nursing facilities	The existing 35 rural nursing facilities in Yongqiao District, Dangshan County, Lingbi County, Xiaoxian County, and Sixian County will be upgraded, including building renovation and equipment upgrading. The total area is 25994.3 square meters; 1,446 additional beds will be arranged in these facilities.
Component IV	Project management, monitoring, evaluation, and capacity building	Including achievement monitoring and evaluation; project management and institutional capacity building.

2 Basis and standard

2.1 Basis for EMP Preparation

2.1.1 Chinese laws and regulations on environmental protection

2.1.1.1 Relevant national laws and regulations

(1) *Environmental Protection Law of the People's Republic of China* (implemented as of January 1, 2015);

(2) *Law of the People's Republic of China on Prevention and Control of Water Pollution* (implemented as of June 27, 2017);

(3) *Law of the People's Republic of China on Prevention and Control of Atmospheric Pollution* (implemented as of January 1, 2016);

(4) *Law of the People's Republic of China on Prevention and Control of Pollution from Environmental Noise* (implemented as of March 1, 1997);

(5) *Law of the People's Republic of China on the Prevention and Control of Environmental Pollution by Solid Waste* (implemented as April 24, 2015);

(6) *Law of the People's Republic of China on Environmental Impact Assessment* (implemented as of September 1, 2016);

(7) *Law of the People's Republic of China on Water and Soil Conservation* (implemented as of March 1, 2011);

(8) *Water Law of the People's Republic of China* (implemented as of July 2, 2016);

(9) *Regulations on Environmental Protection Management of Construction Projects* (implemented as of November 29, 1998);

(10) *Law of the People's Republic of China on the Protection of Wildlife* (implemented as of July 2, 2016);

(11) *Law of the People's Republic of China on the Protection of Cultural Relics* (implemented as of December 19, 2007);

(12) *Flood Control Law of the People's Republic of China* (implemented as of April 24, 2015);

(13) *Land Administration Law of the People's Republic of China* (implemented as of August 28, 2004);

(14) *Regulations of the People's Republic of China on Nature Reserves* (implemented as of December 1, 1994);

(15) *Regulations of the People's Republic of China on the Protection of Wild Plants* (implemented as of January 1, 1991);

(16) *National Outline for Ecological Environment Protection* (implemented as of April 10, 2001);

(17) *Notice on Issues Concerning Examining and Determining Total Emission Control Indicators of Major Pollutants of Construction Project*, document of General Office of State Administration of Environmental Protection, H. B. [2003] No. 25;

(18) *Catalogue of Classified Management of Environmental Impact Evaluation of Construction Project* (No. 41 Order of the Ministry of Environment Protection of the People's Republic of China, September 1, 2017);

(19) *Interim Measures for Public Participation in Environmental Impact Assessment* (H. F. [2006] No. 28 of the State Administration of Environment Protection, February 14, 2006);

(20) *Standard for Environment and Sanitation of Construction Site* (J. B. [2004] No. 66);

(21) *Medical Waste Management Regulation* (No. 2003-380 Order of the State Council);

(22) *National Catalogue of Hazardous Wastes* (No. 39 Order of the Ministry of Environment, August 1, 2016);

(23) *The Management Measures for Hazardous Wastes Manifests* (No. 5 Order of the State Administration of Environment Protection, 1999);

(24) *The Measures for Medical Wastes Management of Medical and Health Institutions* (No. [2003] 36 Order of the Ministry of Health of the PRC);

2.1.1.2 Relevant local laws and regulations

(1) H. J. [2002] No. 46 Document of Environmental Protection Bureau of Anhui Province: *Some Opinions on Further Improving the Quality of Environmental Impact Assessment* (April 10, 2002);

(2) H. P. [2006] No.113 Document of Environmental Protection Bureau of Anhui Province: Notice *concerning Printing and Distributing Regulations on Standardizing Preparation of Environment Impact Report of Construction Project (Trial)*, June 16, 2006;

(3) W. Z. [1997] No. 28 Document of Anhui Provincial People's Government: *Decisions of Anhui Provincial People's Government on Effectively Strengthening Environmental Protection Work*;

(4) *Environmental Protection Management Procedures of Anhui Province*, Environmental Protection Bureau of Anhui Province;

(5) *Regulations of Anhui Province on the Protection of Agricultural Ecological Environment* (revised), June 29, 2006;

(6) *Regulations of Anhui Province on Environmental Protection*, promulgated by Standing Committee of the Eleventh People's Congress of Anhui Province and implemented as of November 1, 2010;

(7) *Water Environment Function Zoning of Anhui Province*, Anhui Provincial People's Government, March 2003;

(8) *Notice Concerning Strengthening Public Consultation in Environmental Impact Assessment and Environmental Protection Final Acceptance of Construction Project* (W. H. F. [2013] No. 91), Environmental Protection Department of Anhui Province;

(9) *Implementation Plan of Air Pollution Prevention and Control Action Plan of Anhui Province* (W. Z. [2013] No. 89);

(10) *Decisions of Anhui Provincial People's Government concerning Accelerating Construction of Aged-care Service System* (W. Z. [2011] No. 20)

2.1.1.3. Applicable safeguard policies of the World Bank

See table 2.1-1 for the World Bank's operational policies and related explanations.

Table 2.1-1 The World Bank's operational policies and related explanations

World bank operational policy		Involved or not?	Impact of the project and the involvement of the World Bank operational policies in the project
OP4.01	Environmental assessment	Involved	The project will have impacts on the environment during construction and operation. It involves this policy.
OP4.04	Natural habitats	Not involved	The project is located in the areas that have been seriously affected by human activities. No natural habitat in the project areas will be disrupted by the project.
OP4.09	Pest management	Not involved	The project is about the establishment of an elderly care service system. It does not involve the production and use of pest control products.
OP4.10	Ethnic minorities	Not involved	None of the proposed project areas is located in the regions where ethnic minorities are concentrated, so the project does not involve this policy.
OP4.11	Tangible cultural heritage	Not involved	No tangible cultural resources in the project areas are disrupted by the project and its related activities, so the project does not involve this policy.
OP4.12	Involuntary resettlement	Involved	Land may be permanently and temporarily occupied for project construction. The project involves this policy.

OP4.36	Forest protection	Not involved	The project will not affect the health and quality of forests, nor will it affect the interests of forest owners and their dependency on the forests. The project does not involve this policy.
OP4.37	Safety of dams	Not involved	The project does not involve any dam construction and restoration or rely on any existing dams or the dams under construction, so it does not involve this policy.
OP7.50	International waters	Not involved	All construction sites for the project are located in China, so the project does not involve international waters.
OP7.60	Disputed areas	Not involved	All construction sites for the project are located in Anhui province; there is no disputed areas.
BP17.50	Information disclosure	Involved	All documents concerning environmental impact assessment (EIA) for the project will be disclosed to the public; public consultation in this regard will be conducted.
Environment,Safety and Health (ESH) guidelines for international financial corporations and ESH guidelines for the financial industry		Involved	Applicable to the project-related activities.

2.1.2 Technical specifications, industry norms, and ESH criteria

(1) *Technical Guidelines for Environmental Impact Assessment of Construction Project--General Outline* (HJ 2.1-2016);

(2) *Technical Guidelines for Environmental Impact Assessment-Ecological Impacts* (HJ 19-2011);

(3) *Technical Guidelines for Environmental Impact Assessment-Surface Water Environment* (HJ/T2.3-93);

(4) *Technical Guidelines for Environmental Impact Assessment-Atmospheric Environment* (HJ/T2.2-2008);

(5) *Technical Guidelines for Environmental Impact Assessment-Acoustic Environment* (HJ/T2.4-2009);

(6) *Technical Guidelines for Environmental Impact Assessment-Ground Water Environment* (HJ 610-2016);

(7) *Technical Guidelines for Environmental Impact Assessment of Construction Project* (HJ 616-2011);

(8) *Technical Specifications for Hospital Sewage Treatment Project* (HJ2009-2013); Ministry of Environmental Protection, July 1, 2013;

(9) *Technical Guidelines for Hospital Sewage Treatment*, H. F. [2003] No. 197, December 10, 2003;

(10) *Standard for Design of Residential Building for the Elderly* (GB/T 50340-2016);

(11) *Code for Design on Accessibility* (GB 50763-2012);

(12) *Code for Design of Buildings of General Hospital* (GB 51039-2014);

(13) *Code for Design of Aged-care Facilities and Buildings* (GB50867-2013);

(14) *Code for Fire Protection Design of Buildings* (GB50016-2014);

(15) *Standard for Construction of Nursing Home for the Elderly People* (J. B. 144-2010);

(16) *Standard for Construction of General Hospital* (J. B. [2008] No. 164);

(17) *Code for Design of Buildings of General Hospital* (GB 51039-2014);

(18) *Standard for Construction of Community Day-care Center for the Elderly People* (J. B. 143-2010);

(19) *Standard for Construction of Nursing Home for the Elderly People* (J. B. 144-2010);

(20) *Code for Fire Prevention in Design of Interior Decoration of Building* (GB50222-1995);

(21) *Technical Code for Fire Protection Water Supply and Hydrant Systems* (GB50974-2014);

(22) *Code for Construction and Acceptance of Pipeline Works for Water-supply and Drainage* (GB50268-2008);

(23) *Standard for Design of Automatic Sprinkling System* (GB50084-2001) (2005 edition);

(24) *Code for Design of Automatic Fire Alarm System* (GB50116-2008);

(25) *Standard for Construction of TCM Hospital* (J. B. [2008] No. 97);

(26) *Code for Design of Urban Roads and Buildings for Convenience of the Disabled* (JGJ50-88);

(27) *Standards of Social Welfare Institution for the Elderly* (MZ008-2001);

(28) *Service Standards, Technical Standards, Management Standards and Work Standards of the Aged-care Institution* (DB11T304-2005);

(29) *Needs, Evaluation and Improvement of Standard Service System of Aged-care Institutions* (DB11T303-2005);

(30) *Standard for Construction of General Social Welfare Home* (J. B. 179-2016);

(31) *Standard for Construction of Rural Nursing Homes (draft for comment)*;

(32) *Basic Standards of Rehabilitation Hospital (2012 edition)*;

(33) *Standard for Evaluation of the Capacity of the Elderly* (MZ/T039-2013);

2.2 Assessment standard

Table 2.2-1 Environmental standards for the implementation of the project

Standards		Anhui Province
Environmental quality standards	Environmental Quality Standards for Surface Water (GB3838-2002)	Class III and Class IV
	Ambient Air Quality Standards (GB3095-2012)	Class II
	Environmental Quality Standard for Noise (GB3096-2008)	Class 2, 4a
Pollutant emission/discharge standards	Integrated Wastewater Discharge Standard (GB8978-1996)	Class III standards in table 4
	Discharge Standard of Water Pollutants for Medical Organization (GB18466-2005)	Pretreatment standards in table 2
	Integrated Emission Standard of Air Pollutants (GB12697-1996)	Class II
	Emission Standard of Cooking Fume (GB18483-2001)	Standard
	Emission Standard of Environment Noise for Boundary of Construction Site (GB 12523-2011)	Standard
	Emisson Standard for Industrial Enterprises Noise at Boundary (GB 12348-2008)	Class 2
	Standard for Pollution Control on Hazardous Waste Storage (GB18597-2001) and its 2013 revision	Standard
	Discharge Standard of Water Pollutants for Medical Organization (GB18466-2005)	Control standards in table 4

Environmental quality standards

1. Surface water environment: surface water in the project areas should meet the Class III and IV standards of *Environmental Quality Standards for Surface Water* (GB3838-2002), see table 2.2-2 for details

Table 2.2-2 Limits in *Environmental Quality Standards for Surface Water* (Unit mg/L, pH is dimensionless)

Item	Class III standards	Class IV standards	Source
pH	6~9	6~9	*Environmental Quality Standards for Surface Water* (GB3838-2002)
COD	≤20	≤30	
BOD_5	≤4	≤6	
NH	≤1.0	≤1.5	
TP (by P)	≤0.05	≤0.3	
Number of fecal coliform	≤10000 /L	≤20000 /L	

2. Atmospheric environment: within the assessment scope, ambient air quality should meet Class II standards of *Ambient Air Quality Standards* (GB3095-2012), see Table 2.2-3 for details.

Table 2.2-3 Ambient Air Quality Standards (Unit: ug/m^3)

Pollutant	Concentration limits for each pollutant		Basis
	1 hour on average	24 hours on average	
SO_2	500	150	Class II standards of *Ambient Air Quality Standards* (GB3095-2012)
NO_2	200	80	
PM_{10}	-	150	

3. Acoustic environment: noise in the project areas should not exceed the Class 2 limits set for functional areas according to *Environmental Quality Standard for Noise* (GB3096-2008); noise in the areas on both sides of highways shoud not exceed Class 4a standards, see Table 2.2-4.

Table 2.2-4 Environmental quality standards for noise limits

Category of standards	Standard values [dB (A)]		Scope of standards application
	Daytime	Nighttime	
Class 2	60	50	Items to be protected from noise within the project areas and their surrounding areas
Class 4a	70	55	Areas on both sides of main highways in cities (35m)

Pollutant emission/discharge standards

1. Water pollutant discharge standards: discharge of water pollutants produced by the project should meet Class III standards in Table 4 of *Integrated Wastewater Discharge Standard* (GB8978-1996) or Table 2 Pretreatment Standards of *Discharge Standard of Water Pollutants for Medical Organization* (GB18466-2005), See Table 2.2-5.

Table 2.2-5 Wastewater discharge standards

Item	Table 2 *Pretreatment Standards of Discharge Standard of Water Pollutants for Medical Organization* (GB18466-2005)	Class III standards in table 4 of Integrated Wastewater Discharge Standard (GB8978-1996)
pH	6~9	6~9
COD (mg/L)	250	500
BOD_5 (mg/L)	100	300
SS (mg/L)	60	400
NH (mg/L)	-	15
Number of fecal coliform (MPN/L)	5000	-

2. Standards for air pollutant emissions: air pollutant emissions should meet Class II *standards of Integrated Emission Standard of Air Pollutants* (GB16297-1996); cooking fume emissions should meet the *Emission Standard of Cooking Fume* (Trial) (GB18483-2001), see the table below; see Tables 2.2-6 and 2.2-7 for detailed standard values.

Table 2.2-6 Integrated Emission Standard of Air Pollutants

Pollutant	Permissible maximum emission concentration (mg/m^3)	Permissible maximum rate of emission (kg/h)		Unorganized emissions monitoring point concentration limits (mg/m^3)	
		Height of exhaust funnel (m)	Class II	Monitoring point	Concentration
Particles	120	15	3.5	The highest concentration outside the boundary	1.0
SO_2	550	25	2.6		0.40
NO_x	240	15	0.77		0.12

Table 2.2-7 Emission Standard of Cooking Fume

Scale	Small	Medium	Large
Permissible maximum emission concentration (mg/m^3)	2.0		
Minimum removal efficiency of purification facility (%)	60	75	85

3. Noise emission standards: noise at the boundary of construction sites during construction should not exceed the limits set out in *Emission Standard of Environment Noise for Boundary of Construction Site* (GB12523-2011), see Table 2.2-8 for noise limits. Noise emission at the boundaries of the project construction sites should meet the Class 2 standards of *Emisson Standard for Industrial Enterprises Noise at Boundary* (GB12348-2008), see table 2.2-9.

Table 2.2-8 *Emission Standard of Environment Noise for Boundary of Construction Site* (GB 12523-2011) Unit: dB(A)

Noise limits	
Daytime	Nighttime
70	55

Table 2.2-8 Excerpt of *Emisson Standard for Industrial Enterprises Noise at Boundary* Unit: dB(A)

Category of standards	Daytime	Nighttime
(GB12348-2008) Class 2	60	50
(GB12348-2008) Class 4	70	55

4. Solid waste: disposal of the medical waste and sludge produced by the project

should meet the Control standards in Table 4 of *Discharge Standard of Water Pollutants for Medical Organization* (GB18466-2005) and the *Standard for Pollution Control on Hazardous Waste Storage* (GB18597-2001) and its 2013 revision.

3 Environment

3.1 The environment of Anqing City

As of the end of 2015, Anqing City had jurisdiction over 3 districts and 6 counties along with 1 county-level city (Anqing's jurisdiction over this county-level city is authorized by authorities at higher levels). Anqing Municipal Government is located at No. 123, Wanjiang Road in New Town in the east of New Anqing District. The built-up area of Anqing covers a total of 100km^2; the city has 1.06 million permanent residents.

Affected by subtropics monsoon climate, Anqing has four distinct seasons, abundant rainfall, mild weather, and long frost-free period. In this city, the average annual precipitation is 1,363mm, the annual maximum precipitation is 2,294.2mm, the maximum continuous precipitation is 520.3mm (from July 11th to 18th of 1951), and the daily maximum precipitation is 247.0mm (on July 15th of 1996). Moreover, precipitation is concentrated from June to September, accounting for about 65% of annual precipitation; the annualamount of rainwater that evaporates is 1,617.4mm and relative humidity is 60% to 70%; the highest temperature is 44.7 ℃, the lowest temperature is -12.5 ℃, and the maximum depth of frozen ground is 13cm; the frost free period lasts 210 to 235 days. Anqing has 2,030-hour sun exposure per year.

In Anqing, 52% of the time the observed direction of the wind was from northeast; 24% of the time the observed direction of the wind was from southwest; 15% of the time of the observed wind is calm. The annual average wind speed is 3.2m/s and the maximum wind speed is 20m/s.

3.1.1 Component III - The Integrated Medical and Elderly Care Institutions (the nursing facility of the First People's Hospital of Anqing)

3.1.1.1 The nursing facility of the First People's Hospital of Anqing

At Longshan Branch of the First People's Hospital of Anqing, 1 nursing facility will be built. This nursing facility consists of 4 buildings (2-6F), 1 podium (1F), and 1 physical examination center (1F). Construction items include rooms for the elderly (service room, living room, health care room, rehabilitation room, recreation room, and social work room), administrative offices, and ancillary rooms. The gross floor area of the nursing facility has been determined as 42,459.4 m^2. Of the 42,459.4 m^2, the ground floor area is 41,467 m^2 and the underground floor area is 992.4 m^2.1,000

additional beds will be arranged at the nursing facility. Of the 1,000 beds, 200 are arranged for disabled elders, 450 are arranged for functionally impaired elders, 50 are arranged for elders who need terminal care, and 300 are arranged for elders who need elderly care in general.

With regard to the project, the construction period begins in August of 2016 and ends in September of 2018; decoration and equipment purchase will start in October of 2018. This sub-component only involves interior decoration and equipment purchase rather than construction.

This sub-component (the nursing facility) is located in the east of the First People's Hospital of Anqing in the New Town of Northern Anqing. To the east of the sub-component is Huanggan Road (Jingsan Road) and across Jingsan Road is Zongpu Community (Beiyuan Housing Estate); to its south is Yixiu Road and across Yixiu Road is Anqing Zhonghua Vocational School (closed down now); to its west is Xuefu Road and to its northwest at the corner is the government of Dalongshan Town; and to its north is Weidansan Road and across this road is a vacant lot. The sub-component site is generally leveled and construction has begun. See picture 3.1-1 for the sub-component site and sensitive points.

Figure 3.1-1 Project Land Utilization and Surrounding Sensitive Spots

According to investigations into the project site and visits to units concerned, there are no ecologically sensitive and vulnerable areas, areas requiring special protection, areas of social concerns and other environmental sensitive areas (e.g. graves). The sensitive spot surrounding this project is the Zongpu Community (Beiyuan Housing Estate).

Zongpu Community (Beiyuan Housing Estate): It is a resettlement complex established in 2012. The construction area of this Community is 100000 m², including 50 blocks of 6-storey buildings accommodating about 3600 people from 1000 households. 14 buildings and about 1000 people therein are near to the project site.

See Table 3.1-1 for sensitive spots surrounding the project site and Figure 3.1-2 for the surrounding environment.

Table 3.1-1 Schedule of Sensitive Spots around the Project Site

Subproject name	Environmental protection target	Distance (m)	Position	Size	Environmental impact factors	Applicable standard
Nursing Home for the Elderly People of the First People's Hospital of Anqing	Zongpu Community (Beiyuan Housing Estate)	60	E	300 households /1000 people	Noise	Class-2 Standard in *Environmental Quality Standard for Noise* (GB3096-2008).

Note: The First People's Hospital of Anqing is not considered as the sensitive spot as the project will be completed and put into use simultaneously with this hospital.

Figure 3.1-2 Environment Surrounding the Project Site

3.1.1.2 Supporting projects

1. Longshan Branch of the First People's Hospital of Anqing

Longshan Branch of the First People's Hospital of Anqing is located at the new urban district in the north of Anqing (the east of Xuefu Road, south of Weisan Road, west of Jingsan Road, and north of Yixiu Avenue). The total area of used land and total construction area are 188444.2 m² and 243450 m² respectively. The area of the constructed general hospital, old people's home, general practice training base, nuclear medicine and radiotherapy complex building, underground garage and underground radiotherapy complex building total to 201685m², 42958m², 7500m², 3727m², 40000m² and 1765m² respectively. This hospital is categorized into the Grade 3, Class A general hospital based on its construction scale, and its investment totals to 610,000,000 Yuan. The constructed hospital owns 2700 beds in total, including 1500 sickbeds, 200 beds of the Occupational Disease Precaution Department and 1000 beds of the Nursing Home for the Elderly People. 36000 patients are received by this hospital annually. The civil engineering of this project starts on August 2016 and ends on December 2017.

EIA documents containing environment impact assessments of the construction project of Longshan Branch of the First People's Hospital of Anqing were firstly announced on Anqing Environmental Protection Bureau website on September 8, 2015 for 10 working days. On November 3, 2015, environment impact assessments of this project were announced for the second time on Anqing Environmental Protection Bureau website for 10 working days. During those two announcements, the construction unit carried out a questionnaire survey for the project by distributing 100 questionnaires to the public. Finally, 100 questionnaires were recovered, contributing to a recovery rate of 100%. According to the survey result, no objection was identified and 80 respondents showed the favorability, representing a favorability rate of 80%. 20 respondents were indifferent to this project, accounting 20% of total respondents. It can be found that the majority of the public were favorable to this project. The *Environment Impact Report on the Construction of Longshan Branch of the First People's Hospital of Anqing* was accepted by Anqing Yixiu District Environmental Protection Bureau. The publicity period lasted 10 working days from December 10, 2015 to December 23, 2015. Anqing Yixiu District Environmental Protection Bureau proposed to approve the *Environment Impact Report on the Construction of Longshan Branch of the First People's Hospital of Anqing* which would be announced for 5

working days from December 24, 2015 to December 30, 2015. On December 31, 2015, this report was examined and approved by Anqing Yixiu District Environmental Protection Bureau, with the approval document numbered Y. X. H. J. H. [2015] No. 75.

By consulting with the First People's Hospital of Anqing and Anqing Yixiu District Environmental Protection Bureau, Longshan Branch of the First People's Hospital of Anqing has implemented the "three simultaneous" system of environmental protection, carried out the pollution control measures in EIA Report and met the standards of pollutants discharge in EIA Report during the construction. No offence was reported by the public to Anqing Yixiu District Environmental Protection Bureau. So, there is no environmental problem during the construction period and the environmental impact is acceptable.

Table 3.1-2 Major environmental protection measures of Longshan Branch of the First People's Hospital of Anqing

Category	Pollution source	Main contents of environmental protection project	Expected treatment effect
Waste water	Hospital sewage	Take special medical wastewater pretreatment measures, install a sewage treatment station for the hospital for non-infectious diseases (with the design treatment capacity of 3080m^3/d), and construct the rainwater and sewage pipe network	Meet the pretreatment standards in Table 2 of *Discharge Standard of Water Pollutants for Medical Organization* (GB18466-2005).
Waste gas	Natural gas boiler	Install one 8m high (or higher) exhaust funnel	Meet the emission standard of flue gas for gas-fired boiler in Table 2 of GB13271-2014.
	Sewage treatment station	Fan+ activated carbon adsorption deodorizing device+ 15m exhaust funnel	Meet the exhaust emission requirements mentioned in GB18466-2005
Noise	Fan	Use low noise equipment, install a silencer on the fan outlet, use sound insulating materials and sound absorbing materials for outer wall	Buildings in the hospital can meet the Class 2 Standards in *Environmental Quality Standard for Noise* (GB3096-2008).
	Sewage pump	Provide vibration reducing and fixing measures for the pipeline base, and install sound absorbing materials and silencers	
	Cooling tower unit	Control the noise from water drops, install a silencer on the fan outlet, use sound insulating materials and sound absorbing materials for outer wall.	
	Boiler Room	Install soundproof doors and windows	
Solid waste	Solid waste	Provide a number of garbage collecting bins in hospital	Transport the garbage to environmental sanitation department for centralized disposal. Clean up the garbage produced every day.
		Provide a number of medical solid waste collecting bins throughout the hospital, and set up a temporary storage yard for medical solid waste at the basement of Inpatient Building No.3, with the construction area of 64 m²	The disposal of solid waste is entrusted to Anqing Development, Investment and Environmental Protection Technology Co., Ltd.
		A temporary sludge storage tank	

Note: The environment impact of the radiation caused by the construction and operation of this project will be separately evaluated by the construction unit after the project is completed in accordance with the *Law of the People's Republic of China on Environmental Impact Assessment, Regulations on Environmental Protection Management of Construction Projects, Notice on Strengthening the Environmental Impact Assessment and Management of the Construction of Hazardous Waste, Medical Waste and Radioactive Waste Disposal Project* (H. B. [2004] No. 11) , other relevant regulations and requirements stipulated by departments concerned.

2. Sewage treatment facility of Longshan Branch of the First People's Hospital of Anqing

Waste water of this project will be treated by sewage treatment facilities of Longshan Branch of the First People's Hospital of Anqing. According to the site survey, the Longshan Branch area of the First People's Hospital of Anqing is under the construction. A sewage treatment station (3080m^3/d) will be constructed to treat the waste water to meet the pretreatment standards mentioned in Table 2 of *Discharge Standard of Water Pollutants for Medical Organization* (GB18466-2005). Pretreated waste water will be directed to Anqing Northern New Town Sewage Treatment Plant via pipelines.

According to *Technical Specifications for Hospital Sewage Treatment Project* (HJ2009-2013), mixed waste water from the hospital shall be treated by the Class I intensified primary treatment process which is applicable for the treatment of waste water from the hospital for non-infectious diseases as indicated in Figure 1 therein.

The Class I intensified treatment process is as follows:

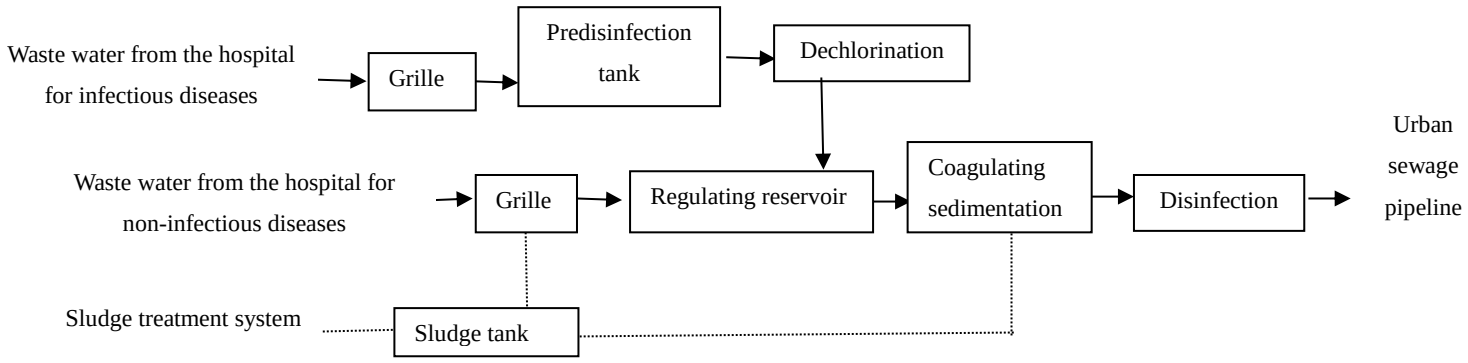


Figure 3.1-3 Treatment process of the sewage treatment station of the hospital in this project

3. Anqing Northern New Town Sewage Treatment Plant

In 2008, Anqing Northern New Town Investment and Development Limited Liability Company acquired 36 mu lands (6.0 ha in the long-term planning) at the northwest corner of the intersection between the Yixiu Avenue and Huanyi Road in the Northern New Town of Anqing City at the expense of 82,580,000 Yuan. This land was used to construct a sewage treatment plant which is capable of treating 20,000 m^3 waste water per day (60,000 m^3 waste water per day in the long-term planning). In 2011, the *Report Form of Environment Impacts of the Phase-I Project of Anqing Northern New Town Sewage Treatment Plant* was approved by Anqing Environmental Protection Bureau under the approval document numbered H. J. H. [2011] No. 420. In 2015, Anqing North Drainage and Environment Development Co., Ltd. continued the construction of the Phase-I project of Anqing Northern New Town Sewage Treatment Plant. This company planned to implement the advanced treatment project to upgrade this plant basing on original treatment process. On May 4, 2016, the upgrading and reconstruction proposal was approved by Anqing Yixiu District Environmental Protection Bureau under the approval document numbered Y. X. H. J. H. [2016] No. 11. Based on demonstration results, Anqing North Drainage and Environment Development Co., Ltd. proposed to replace the improved oxidation ditch technology with the A2/O technology and reserve the advanced treatment project for the upgrading and reconstruction of this plant at the end of 2016.

The construction of Anqing Northern New Town Sewage Treatment Plant has been completed and this plant is to be put into operation in December, 2017.

By consulting with Anqing Northern New Town Investment and Development Limited Liability Company and Anqing Yixiu District Environmental Protection Bureau, Anqing Northern New Town Sewage Treatment Plant has strictly implemented the “three simultaneous” system of environmental protection, carried out the pollution control measures in EIA Report and met the standards of pollutants discharge in EIA Report. No offence was reported by the public to Anqing Yixiu District Environmental Protection Bureau. So, there is no environmental problem during the construction period.

In this project, the waste water treated by the sewage treatment station can be directed to Anqing Northern New Town Sewage Treatment Plant for further treatment via pipelines.

4. Anqing Development, Investment and Environmental Protection

Technology Co., Ltd.

The medical waste produced due to the project is temporarily stored in the temporary storage room for medical waste in Longshan Branch of the First People's Hospital of Anqing, and those waste is entrusted to the centralized medical waste disposal center of Anqing Development, Investment and Environmental Protection Technology Co., Ltd. for safe and harmless disposal. To this end, the Consignment Agreement on the Disposal of Medical Waste has been signed on March 1, 2017.

(1) Introduction to the centralized medical waste disposal center

As one of those 300 medical waste disposal projects stipulated by the *National Planning on the Construction of Hazardous Waste and Medical Waste Disposal Facilities*, the centralized medical waste disposal center of Anqing City is mainly responsible for the centralized and harmless disposal of medical wastes from the urban area and seven counties (county-level cities). This project adopts the incineration technology and it can treat 5 tons of medical wastes per day. The construction site is located at the Huijiachong, Liansheng Village, Shankou Town, Daguan District, Anqing City. The occupied area totals to 12.03 mu, and the total investment amounts to 1,940,3700 Yuan.

In November 2007, Anqing Development, Investment and Environmental Protection Technology Co., Ltd. was established by Anqing Development and Investment (Group) Corporation upon the request of Anqing Municipal Government and the approval from State-owned Assets Supervision and Administration Commission of Anqing Municipal Government. Anqing Development, Investment and Environmental Protection Technology Co., Ltd., acting as the project entity for the construction of the centralized medical waste disposal center, is responsible for the construction, operation and management of this project.

(2) Project operation

The centralized medical waste disposal center was formally put into trial operation on April 21, 2011.

On January 22, 2013, Anhui Development and Reform Commission, Environmental Protection Department of Anhui Province jointly organized an expert group and convened a meeting for the final acceptance of the medical waste disposal project in Yixiu District. After the review and discussion, the final acceptance of this project was approved.

On April 23, 2013, the Environmental Protection Department of Anhui Province

issued the approval document for the final acceptance of the medical waste project. Since then, the medical waste project entered the formal operation stage.

By consulting with Anqing Development, Investment and Environmental Protection Technology Co., Ltd. and Anqing Environmental Protection Bureau, the centralized medical waste disposal center has strictly implemented the "three simultaneous" system of environmental protection, carried out the pollution control measures in EIA Report and met the standards of pollutants discharge in EIA Report during construction. No offence was reported by the public to Anqing Environmental Protection Bureau. So, there is no environmental problem left.

5. Waste incineration plant

Domestic waste generated by this project is collected by Anqing municipal environment and sanitation management department, and then sent to the Phase-I Incineration Power Plant operated by Anhui Wenergy China Sciences Environmental Protection Power Company Limited.

Anhui Wenergy China Sciences Environmental Protection Power Company Limited is jointly invested and registered by Anhui Wenergy Environmental Protection Power Company Limited and Beijing China Sciences General Energy & Environment Co., Ltd. This company is located at Shankou Town, Daguan District, Anqing City, and the land it covers is about 105 mu.

The construction of this project is divided into two phases. The Phase-I Project costs a total investment of 280,000,000 Yuan and it covers 71 mu lands. It can treat 800 tons of wastes per day and generate 120,000,000 kWh of electricity annually. The *Environment Impact Report on Anqing Domestic Waste Incineration Power Generation Project* of Phase-I Project was approved by the original Environmental Protection Bureau of Anhui Province on May 23, 2008 (H. P. H. [2008] No.556). The Phase-I Project is mainly proposed to construct the circulating fluidized bed waste incineration boiler (2×500t/d) and the condensation steam power unit (2×12MW). Supporting facilities to be constructed include the waste reception system, waste storehouse, coal house, ash storehouse, dregs storehouse, cooling water and circulating water system, flue gas purification system and sewage treatment facilities etc. This project was inspected and accepted by Environmental Protection Department of Anhui Province on December 31, 2012 (the document is numbered H. J. H. [2012] No. 1583). According to the approval document, major constructions and major environmental protection facilities were in conformity with approved ones.

By consulting with Anhui Wenergy China Sciences Environmental Protection Power Company Limited and Anqing Environmental Protection Bureau, the domestic waste incineration power plant has strictly implemented the “three simultaneous” system of environmental protection, carried out the pollution control measures in EIA Report and met the standards of pollutants discharge in EIA Report during construction. No offence was reported by the public to Anqing Environmental Protection Bureau. So, there is no environmental problem left.

Figure 3.1-3 Position Relationship between Supporting Projects and this Project

3.1.2 Subproject II - Current situation and surrounding sensitive spots of home-based aged-care service stations

There are 127 home-based aged-care service stations in Anqing City, including 26 in Daguan District, 12 in Anqing Economic and Technological Development Zone, 60 in Yixiu District and 29 in Yingjiang District. The occupied area of this project remains unchanged, without new construction area. Instead, the construction of this project is based on the upgrading and decoration of existing buildings. See Figure 3.1-4, 3.1-5, 3.1-6 and 3.1-7 for the detailed locations of projects in various districts of Anqing City

Table 3.1-3 Table of Home-based Aged-care Service Stations in Anqing City

Jurisdiction	No.	Community name	Location	Construction area (m^2)
Daguan District	1	Binjiangyuan Community, Yulinlu Street	No. 44, Binjiangyuan	600
	2	Taipingshi Community, Yulin Street	1st Floor, Building 2, Longmen Housing Estate	300
	3	Sifangcheng Community, Longshanlu Street	No. 115, Dekuan Road, Daguan District	300
	4	Daguanting Community, Dekuanlu Street	No. 82 Guanyin Street	300
	5	Huamao Community, Linghu Street	No. 14, Fangzhi West Road, Daguan District	300
	6	Yiyuan Community, Linghu Street	No. 16, Hubin Street	630
	7	Caishan Community, Jixianlu Street	No. 3, Majialing	300
	8	Huatinglu Street	Next to Gaohuating Primary School	800
	9	Nancun Community, Huatinglu Street	Building 15-1, Huatingnan Village	300
	10	Dahu Community, Shihualu Street	No. 2-3, Anqing Water Park	300
	11	Tianqiao Community, Shihua Street	No. 3, Jingyi Road, Shihuayi Village	300
	12	Yaertang Community, Shihualu Street	No. 151, Caishan Road, Anqing City	400
	13	Liansheng Village,Shankou Town	Shuangtang Group, Liansheng Village, Shankou Town	300
	14	Toupo Community, Shankou Town	Wancheng Road, Shankou Town (Diagonally opposite to the Neighborhood Committee of Toupo Community)	300
	15	Shankouzhen Village,Shankou Town	Wancheng Group, Shankouzhen Village	400
	16	Nangeng Village, Haikou Town	Nangeng Group, Nangeng Village	700
	17	Hegang Community, Haikou Town	Hekou Street (former marine department)	350
	18	Haikou Village, Haikou Town	Near to the memorial gateway of Haikou New Village	500
	19	Zhenjiang Village, Haikou Town	Committee of Zhenjiang Village	300

	20	Juwang Village, Haikou Town	Yushan Group, Juwang Village	500
	21	Peiwen Village, Haikou Town	Xincun Group, Peiwen Village	600
	22	Baoying Village, Haikou Town	Committee of Baoying Village	300
	23	Anyuan Community, Haikou Town	Ermiao Group, Anyuan Community	400
	24	Changning Village, Haikou Town	Former Village Hall of Changning Village	500
	25	Wuli Village, Shilipu Town	Village Hall of Wuli Village	300
	26	Maoling Community, Shilipu Town	Former Village Hall, Chengwu Group, Maoqing Road	600
Anqing Economic and Technological Development Zone	27	Fangxingyuan Housing Estate, Laofeng Town	Huihuang Phase II	600
	28	Fangxingyuan Housing Estate, Laofeng Town	Resettlement site of Fangxingyuan in Laofeng Town	600
	29	Fangxingyuan Housing Estate, Laofeng Town	The 2nd resettlement site in Laofeng Town	600
	30	Jinxing Community, Laofeng Town	Jinxing Community, Laofeng Town	480
	31	Xinyuan Community, Laofeng Town	Yuanqiao Group, Yuanqiao Village, Laofeng Town	600
	32	Wuling Community, Lingbei Street	No. 311, Minsheng Road, Anqing City	300
	33	Luochong Community, Lingbei Street	Building 75, Yingbin Beiyuan	210
	34	Jinghai Community, Lingbei Street	Near to Building 7, Jinghai Garden, Zhongxing Street	200
	35	Guangcai Community, Lingbei Street	No.18, 3rd Floor, Central Business District G1, Phase III, Guangcai Market	240
	36	Youlin Community, Lingbei Street	No. 36, Huangtukeng East Road	200
	37	Shugang Community, Lingbei Street	No. 56, Linghu North Road	200
	38	Tianzhu Community, Lingbei Street	No. 318, Jixian North Road	200
Yixiu District, Anqing City	39	Yuexing Community, Baizehu Town	Resettlement site of Yuexing Community	1200
	40	Baize Community, Baizehu Town	Heju Group, Baize Community	600
	41	Duxiu Community, Baizehu Town	Zhaojia Group, Duxiu Community	700
	42	Dafeng Community, Baizehu Town	Dafeng Crossroad	2000
	43	Shitang Community, Baizehu Town	Diagonally opposite to Baize Secondary School	860
	44	Huangshi Village, Baizehu Town	Bomao Group, Huangshi Village	1080
	45	Bamao Village, Baizehu Town	Zhushan Group, Bamao Village	800
	46	Longhua Village, Baizehu Town	Zhuoju Group, Longhua Village	1200
	47	Xianfeng Village, Baizehu Town	Xiaoxue Group, Xianfeng Village	1400
	48	Taoyuan Community, Dalongshan Town	Huangwu Group, Taoyuan Community	300
	49	Central Community, Dalongshan Town	No. 8, Xingyi Road, Yixiu District	300
	50	Liaoyuan Community, Dalongshan Town	Qiwa Group, Liaoyuan Community	620
	51	Xinxin Community, Dalongshan Town	Lianhua Group, Xinxin Community	300

	52	Baihua Community, Dalongshan Town	Yaotang Village, Baihua Community	300
	53	Yonglin Community, Dalongshan Town	Yonglin Housing Estate, Yonglin Community	500
	54	Yong'an Community, Dalongshan Town	Simin Group, Yong'an Community	300
	55	Zongpu Community, Dalongshan Town	Nanshanyuan Housing Estate, Zongpu Community	800
	56	Bamaoxiang Community, Daqiao Street	No. 283, Longmianshan Road	1200
	57	Xiaokeng Community, Daqiao Street	Building 9, Sanjiao Housing Estate, Xiaokeng Community	726
	58	Hongguang Community, Daqiao Street	Hongguang Community	300
	59	Shengbu Community, Daqiao Street	Complex Building of Shengbu Primary School	400
	60	Wuzui Community, Daqiao Street	Wuzui Housing Estate	800
	61	Meishan Village, Daqiao Street	Former site of Meishan Primary School	300
	62	Sugang Community, Daqiao Street	Neighborhood Committee of Sugang Community	300
	63	Yeci Community, Daqiao Street	Eastern District of Yeci Housing Estate	600
	64	Sanyi Community, Daqiao Street	Inside Sanyi New Village	150
	65	Shaqiao Community, Daqiao Street	Qianting Group, Shaqiao Community	200
	66	Taiping Village, Daqiao Street	Zhafan Group, Taiping Village	200
	67	Qiaobei Community, Daqiao Street	Building 9, Sanjiao Housing Estate, Xiaokeng Community	150
	68	Wuxiang Community, Daqiao Street	No.8, Keshan Group, Wuxiang Community	300
	69	Committee of Jiutang Village, Daqiao Street	Village Hall of Jiutang Village	1300
	70	Chaoyang Community, Daqiao Street	Chaoyang Community	550
	71	Qingfeng Community, Daqiao Street	Winners Residence, Qingfeng Community	200
	72	Xiangshan Village, Daqiao Street	Xiangshan Village	210
	73	Huangmei Village, Luoling Town	Zhuxinwu Group, Huangmei Village	600
	74	Linchun Village, Luoling Town	Wangling Group, Linchun Village	300
	75	Miaoshan Village, Luoling Town	Liuchong Group, Miaoshan Village	530
	76	Xiaolongshan Community, Luoling Town	Luochong Group, Xiaolongshan Community	300
	77	Fengxi Community, Luoling Town	Bamiao Group, Fengxi Community	300
	78	Luoling Community, Luoling Town	Longtang Group, Luoling Community	480
	79	Laoshan Community, Luoling Town	Qianjin Group, Laoshan Community	300
	80	Huayuan Village, Luoling Town	Central Group, Huayuan Village	300
	81	Yuegong Community, Wuheng Town	Dawu Group, Yuegong Community	1000

	82	Wuheng Community, Wuheng Town	Yueqiao Group, Wuheng Community	1700
	83	Bailin Village, Wuheng Town	Dengchong Group, Bailin Village	900
	84	Yangting Village, Wuheng Town	Forestry Station, Yangting Village	330
	85	Hushan Village, Wuheng Town	Comfortable Dwelling Center of Hushan Village	300
	86	Longshan Community, Yangqiao Town	Shewa Group	300
	87	Xuandian Community, Yangqiao Town	Xuanlou Group	320
	88	Yangqiao Community, Yangqiao Town	Guantang Group	300
	89	Cangfang Community, Yangqiao Town	Heshan Group	300
	90	Poganghu Community, Yangqiao Town	2nd Resident Group, Poganghu Community	300
	91	Yudun Village, Yangqiao Town	Xibian Group	300
	92	Yuwan Village, Yangqiao Town	Tuanjie Group	300
	93	Xi'an Village, Yangqiao Town	Shewan Group	400
	94	Lushan Village, Yangqiao Town	Huaizhuang Group	400
	95	Guanbing Village, Yangqiao Town	5th Group	300
	96	Baochonghu Village, Yangqiao Town	Caolou Group	300
	97	Huashan Village, Yangqiao Town	5th Group	300
	98	Luoshan Village, Yangqiao Town	Longwan Group	300
Yingjiang District, Anqing City	99	Mawo Community, Binjiang Street	Fangxingyuan Housing Estate	750
	100	Xihu Community, Binjiang Street	Pinghu Housing Estate	330
	101	Qintanhu Community, Binjiang Street	Anqing Country Garden No.1 Park	550
	102	Demonstration Community, Binjiang Street	1st Cluster, Phase IV, DFL Graceful Scenery Town	841
	103	Xinhe Community, Xinhelu Street	Shengcheng Sunny City	720
	104	Dizhi Community, Xinhelu Street	No. 21, Linghu South Road	300
	105	Demonstrative Aged-care Service Center, Xinhelu Street	Future Land inJoy Plaza	700
	106	Qianpailou Community, Yicheng Street	2nd Floor, Building 12, Jianshe Road	300
	107	Tianhougong Community, Yicheng Street	No. 1-3, Yicheng Road	300
	108	Nanshui Hui Nationality Community, Yicheng Street	No. 1, East Lane, Dananmen Street	600
	109	Wuyue Community, Yicheng Street	No. 118, Jianshe Road	300
	110	Hehuatang Community, Xiaosu Street	No. 56, Menweikou Street	550
	111	Committee of Shuangjing Community, Xiaosu Street	No. 37, Ximazhuang Street	400
	112	Neighborhood Committee of Shuanglian Community, Xiaosu Street	No. 9, Jiechu Lane	298
	113	Xilin Community, Xiaosu Street	Building 5, No. 2, Xiaosu Road	320
	114	Dongzheng Community, Renminlu Street	Room 201, No. 5-1, Yangjiashan Street	250
	115	Hongqi Community, Longshiqiao Town	South 2nd Land, Huazhong East Road	400

	116	Qianjin Community, Longshiqiao Town	No.497, Huazhong Road	300
	117	Changqing Community, Longshiqiao Town	No.284, Huazhong East Road, Yingjiang District	350
	118	Airport Community, Longshiqiao Town	No.109, Wanjiang Avenue	350
	119	Rendian Community, Longshiqiao Town	Rendian New Village	400
	120	Yuqiao Community, Longshiqiao Town	Building 33, District A, Yuqiao New Village	350
	121	Yurun Community, Longshiqiao Town	Building 13-15, District B, Gelin Town	620
	122	Tianran Village, Xinzhou Town, Yingjiang District	Tianran Village, Xinzhou Town	300
	123	Kangning Village, Xinzhou Town, Yingjiang District	Kangning Village, Xinzhou Town	300
	124	Nanmu Village, Xinzhou Town, Yingjiang District	Nanmu Village, Xinzhou Town	300
	125	Hexing Village, Changfeng Town, Yingjiang District	Hexing Village, Changfeng Town	260
	126	Jiangjun Village, Changfeng Town, Yingjiang District	Jiangjun Village, Changfeng Town	260
	127	Yingpan Village, Changfeng Town, Yingjiang District	Yingpan Village, Changfeng Town	300
Total				59915

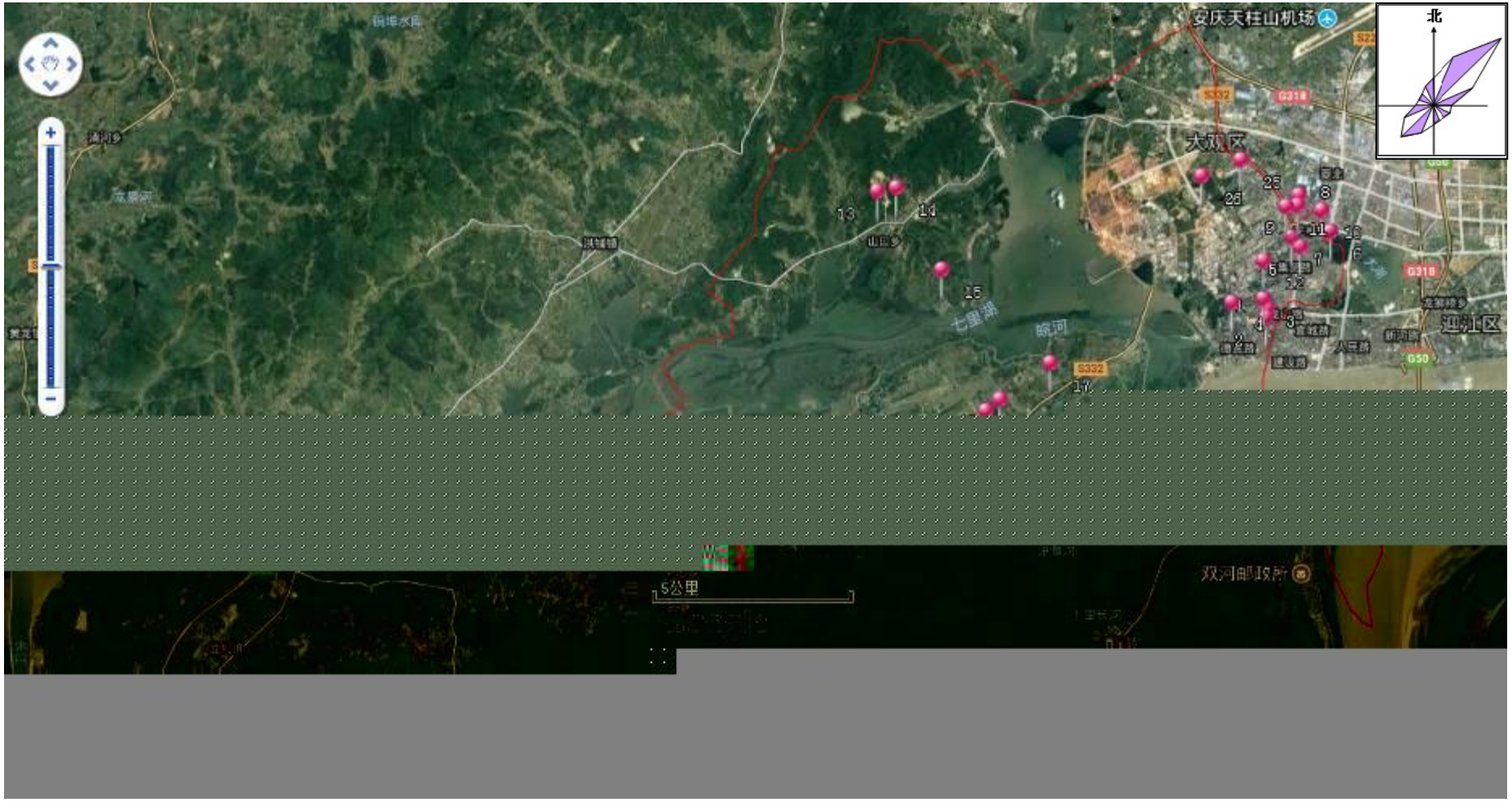


Figure 3.1-4 Location of 26 Home-based Aged-care Service Stations in Daguan District of Anqing City

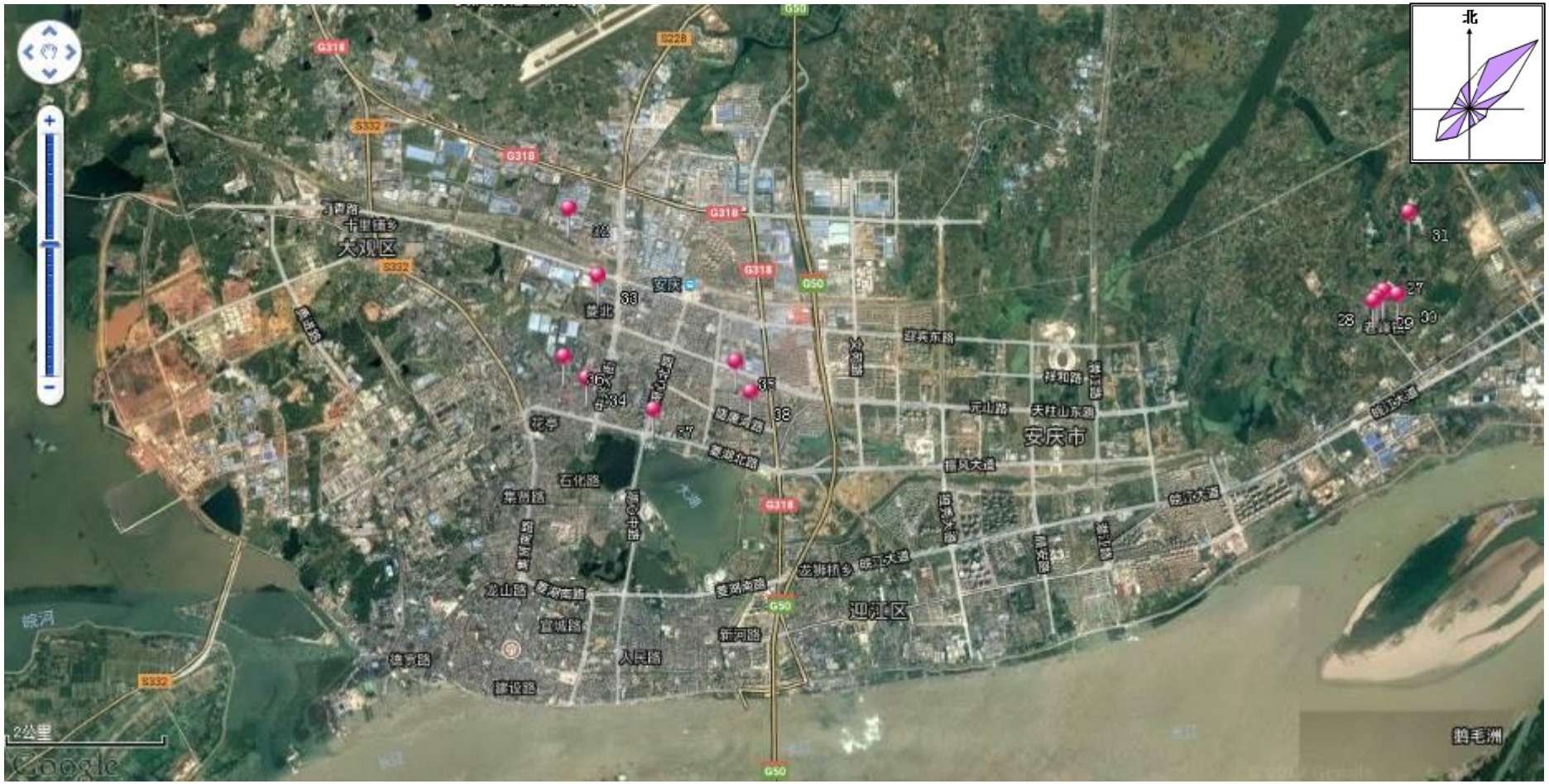


Figure 3.1-5 Location of 12 Home-based Aged-care Service Stations in Anqing Economic and Technological Development Zone

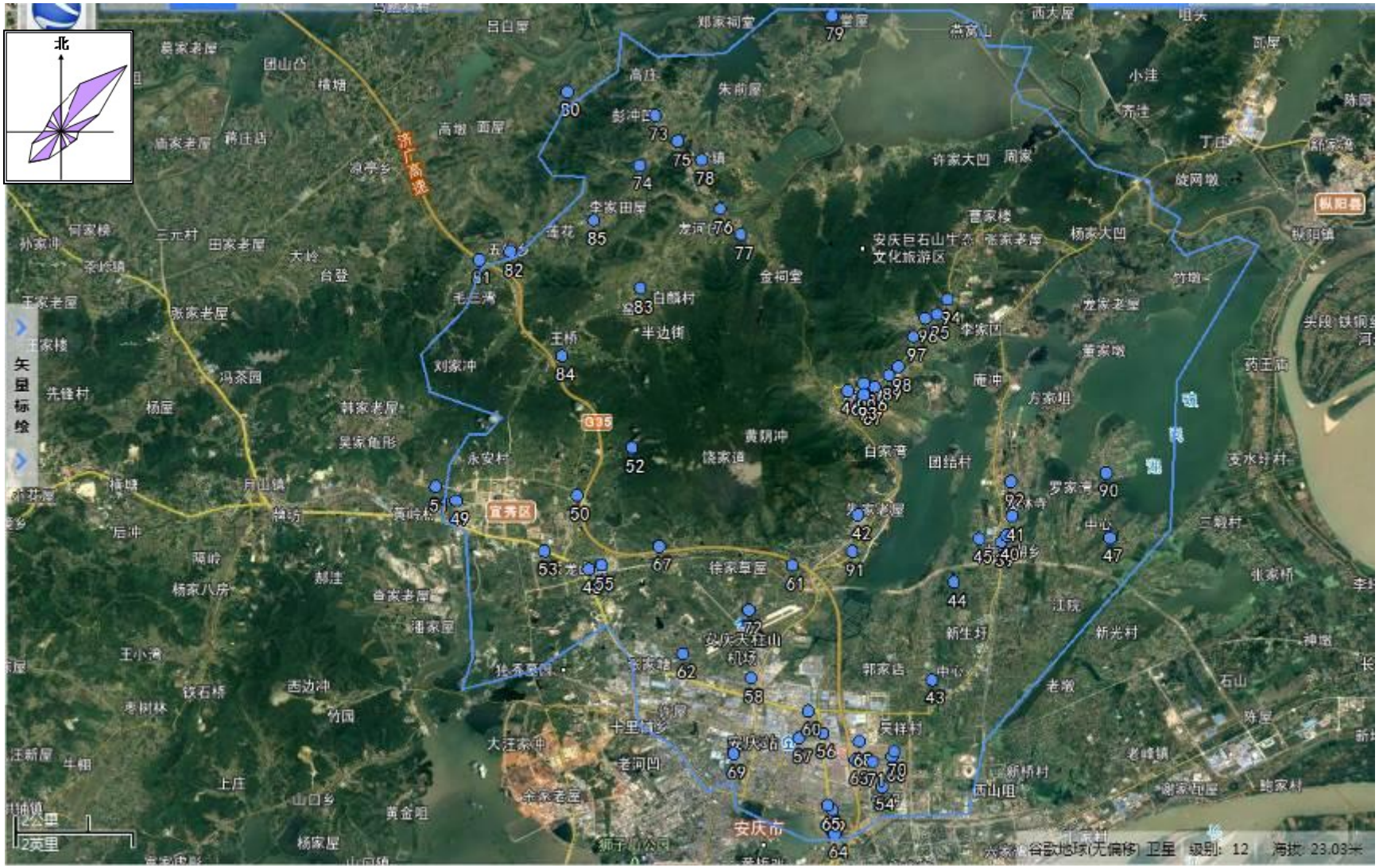


Figure 3.1-6 Location of 60 Home-based Aged-care Service Stations in Yixiu District of Anqing City

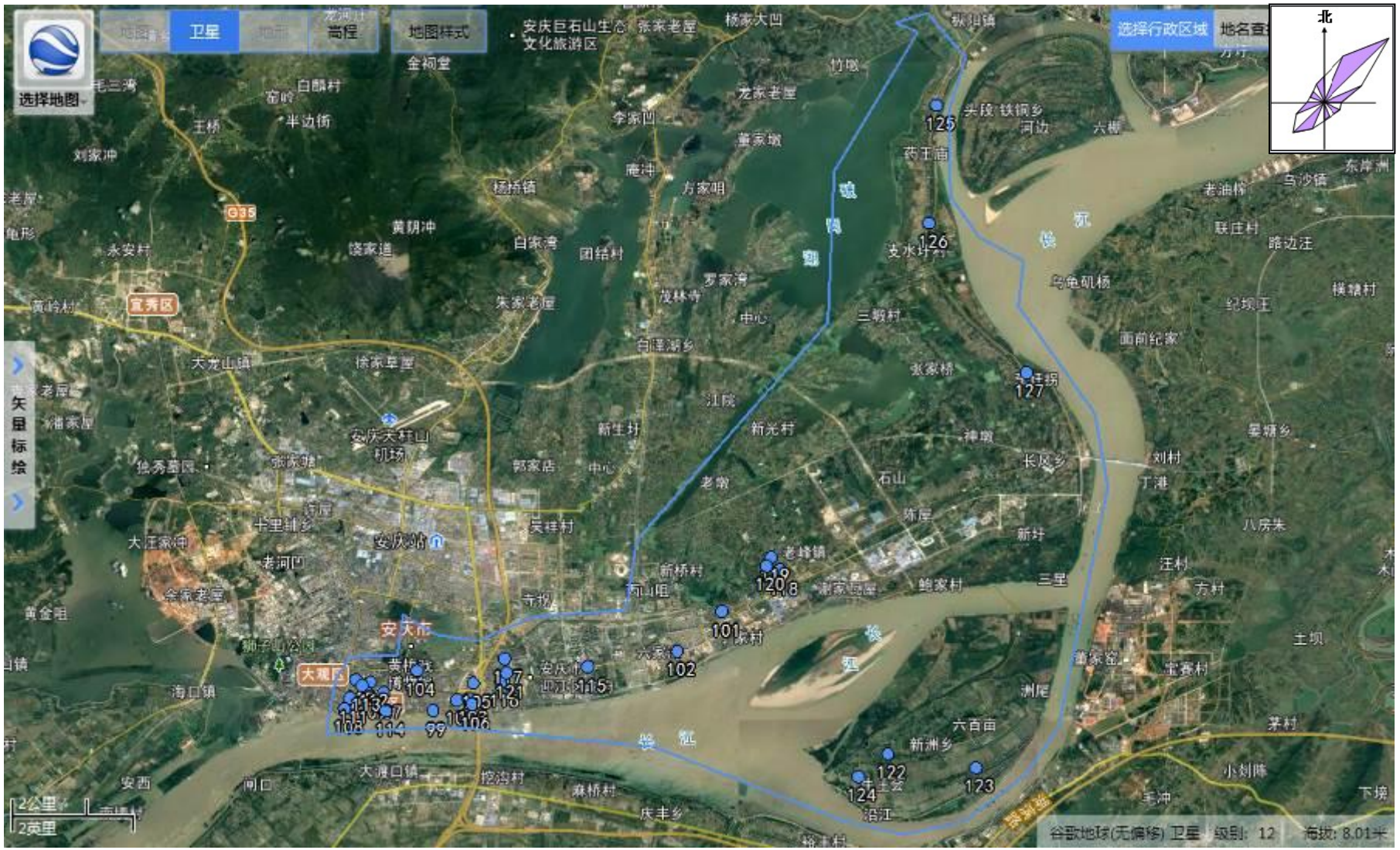


Figure 3.1-7 Location of 29 Home-based Aged-care Service Stations in Yingjiang District of Anqing City

Since all constructions of 127 home-based service stations in Anqing City are based on the upgrading and decoration of existing buildings and the increase of necessary service facilities, this EIA is carried out at the Home-based Aged-care Service Station in Huamao Community located at the Linghu Street to assess the current situation and surrounding sensitive spots.

The Home-based Aged-care Service Station in Huamao Community is located at Fangzhi West Village, No. 14, Fangzhi West Road, Linghu Street, Daguan District, Anqing City. This project proposes to upgarde the existing aged-care buildings and its construction area is 300m². The project will upgrade the existing water and power utilities, fire-fighting facilities, wheelchair accessible passages and building appearance. Necessary service facilities will be increased, too.

The details are shown in Figure 3.1-8 Project Status and Surrounding Sensitive Spots.

Figure 3.1-8 Project Status and Surrounding Sensitive Spots

After investigating the project site and visiting the relevant units, we find that the sensitive spots around the project are residential buildings, and the main impact factor of the project on the sensitive spots is the decoration noise. Reasonable arrangements shall be made for the use of noise-producing equipment. Constructions shall be avoided during the nap and at night. Strict avoidance, prevention and mitigation measures shall be taken throughout the project in the light of possible pollution impacts.

3.2 Environmental profile of Lu'an City

Lu'an City has jurisdiction over Jin'an District, Yu'an District, Huoqiu County, Jinzhai County, Huoshan County, Shucheng County, Lu'an Economic and Technological Development Zone, Yeji Reform and Development Pilot Zone and Lu'an Industrial Transfer Demonstration Park. Lu'an City has 156 towns, 8 streets, 92 urban communities and 2081 village committees. The total area of this city is 14,990 square kilometers, and 5.8 million people live in this city.

Lu'an City is located at the climate transition zone and the north margin of the northern subtropical humid monsoon climate. Thus, this city is featured by the moderate climate, abundant rainfall and sunlight, and long frost-free season. It is hot and rainy in summer while cold and dry in winter. The rainfall is unevenly distributed during the year and the interannual variation of rainfall is large. The average annual rainfall is 1093.5mm, the maximum rainfall is 1448.6mm and minimum rainfall within the year is 647.7mm. The maximum rainfall per hour is 63.2mm and the maximum rainfall within 24 hours can reach 250.22mm. The mean perennial air temperature is 15.4℃, the absolute maximum air temperature is 41.0℃, and the absolute minimum air temperature can be -18.9℃. The perennial average relative humidity is 76%, the maximum relative humidity is 99%, and the minimum relative humidity is 10%. The maximum snow depth is 44cm and the maximum frozen soil depth is 10cm.

In Lu'an City, the prevailing wind direction of the whole year is ESE and SE, and the wind direction frequency is 10%. In summer (June, July and August), the prevailing wind direction is SE and the wind direction frequency is 11%. The secondary prevailing wind direction is ESE and the wind direction frequency is 10%. In winter (December, January and February), the prevailing wind direction is ESE and the wind direction frequency is 10%. The maximum wind speed and average wind speed over the years is 20m/s and 2.4 m/s respectively.

3.2.1 Sub-project III - Medical and aged-care institution of Lu'an City (Multi-functional medical building of Traditional Chinese Hospital of LuAn)

3.2.1.1 Multi-functional medical building of Traditional Chinese Hospital of LuAn

One multi-functional medical building will be built in Traditional Chinese Hospital of LuAn. The floor area and construction area of this building are 19,250 m²

and 92,100 m² respectively, including 56,300 m² aboveground construction area and 38,500 m² underground construction area (including 28,000 m² parking lot). The building has 23 floors aboveground and 2 floors underground. It will encompass restaurants, famous and time-honored TCM clinics, physical examination centers for disease prevention, TCM pharmacies, medical care aisles, scientific research rooms, multi-disciplinary joint consultation rooms, clinical teaching and training areas, and wards (including a planned police station and ambulance station). 600 additional beds will be arranged (including 500 beds for elders who receive elderly care). The civil

Status and Surrounding Sensitive Spots.

Project site status

Traditional Chinese Hospital of LuAn (Phase II)

Figure 3.2-1 Project Site Status and Surrounding Sensitive Spots

According to investigation of project site and visit to units concerned, there is no ecologically sensitive and vulnerable area, areas requiring special protection, areas of social concerns and other environmental sensitive areas (e.g. graves) within the project impact area. The sensitive spots around the project site include Phase I and Phase II projects of Traditional Chinese Hospital of LuAn and Jin'an Lijingyuan Resettlement Complex under construction.

Jin'an Lijingyuan Resettlement Complex under construction: The "Jin'an Lijingyuan Resettlement Complex Project" in Lu'an City mainly includes the construction of 15 residential buildings, 1 office building and provision of partial supporting commercial facilities; lands used: residential lands.

See Table 3.2-1 for environment sensitive spots around the project site and Table 3.2-2 for surrounding environment of project site.

Table 3.2-1 Schedule of Sensitive Spots around the Project Site

Subproject name	Environmental protection target	Distance (m)	Orientation	Scale	Environmental impact factors	Applicable standard
Construction of Multi-functional Medical Building of Traditional Chinese Hospital of LuAn	Traditional Chinese Hospital of LuAn, Phase II	50	S	1000 households /3500 people	Construction dust and noise	Grade 2 Standards as mentioned in *Ambient Air Quality Standards* (GB3095-2012); Class 2 Standards as mentioned in *Environmental Quality Standard for Noise*
	Traditional Chinese Hospital of LuAn, Phase I	20	W	1500 beds		
	Jin'an Lijingyuan Resettlement Complex under construction	150	E	2000 households /7000 people		

Figure 3.2-2 Peripheral Relation Diagram around Aged-care Center of Traditional Chinese Hospital of LuAn

3.2.1.2 Supporting projects

1. Traditional Chinese Hospital of LuAn

Traditional Chinese Hospital of LuAn is a large Class-III, Grade-A general traditional Chinese medicine (TCM) hospital integrating medical treatment, teaching and scientific research. Founded in 1978, the hospital is located in the downtown of Lu'an City, covering an area of 5.5 hectares. It has 1,500 open beds and 1,560 staff, with over 360,000 outpatient visits annually and over 36,000 inpatients annually.

The Environmental Impact Report on Traditional Chinese Hospital of LuAn Reconstruction and Extension Project (including New General Ward Building Project) was approved by Lu'an Environmental Protection Bureau on July 30, 2008 (H. J. [2008] No. 51) and the project was accepted by Lu'an Environmental Protection Bureau on November 5, 2013 (L. H. P. [2013] No. 85), confirming that the main construction content and environmental protection facilities were consistent with that of being approved.

The Environmental Impact List of Accelerator and Other Ray Apparatus, Afterloading Unit, Nuclear Medicine and Other Nuclear Technology Application Projects in Traditional Chinese Hospital of LuAn was approved by Environmental Protection Department of Anhui Province (Anhui Radiation Report [2013] No. 12) in March 2013 and the project was accepted by Environmental Protection Department of Anhui Province (W. H. H. [2015] No. 674) on June 5, 2015, confirming that the main construction content and environmental protection facilities were consistent with that of being approved.

The environmental impact assessment (EIA) documents for complex building and multi-functional medical building projects of Traditional Chinese Hospital of LuAn (including Phase II and Phase III) were loaded to Lu'an Environmental Protection Bureau website on November 19, 2014 for the first announcement of the project environment impact assessment for 10 working days. The EIA documents were loaded to Anqing Environmental Protection Bureau website on January 24, 2015 for the second announcement of the project environment impact assessment for 10 working days. During the second announcement period, the construction unit carried out a questionnaire survey for the project. It issued 50 questionnaires to the public and took back 49 questionnaires, with a recovery rate of 98%. The construction of this project was supported by all the public with no objection. Thus, Lu'an Environmental Protection Bureau proposed to approve the *Environmental Impact Report on Complex*

Building and Multi-functional Medical Building of Traditional Chinese Hospital of LuAn which would be announced from February 13, 2015 to February 26, 2015 (5 working days). The report was examined and approved by Lu'an Environmental Protection Bureau on February 27, 2015, with approval No.: L. H. P. [2015] No. 20.

The Phase II project is the construction of Complex Building, with construction area of 44,000 m^2 and with 20 floors above ground and 2 floors underground. The building is provided with emergency center, emergency operation room, rehabilitation department, department of radiotherapy, hospital ward etc. The construction began in April of 2016.

The Phase II project is expected to be completed in July 2018. By consulting with Traditional Chinese Hospital of LuAn and Lu'an Environmental Protection Bureau, the complex building and multi-functional medical building projects of Traditional Chinese Hospital of LuAn (Phase II) has strictly implemented the "three simultaneous" system of environmental protection, carried out the pollution control measures mentioned in EIA Report and met the standards of pollutants discharge mentioned in EIA Report during construction. And the Lu'an Environmental Protection Bureau has received no report from the masses. So, there is no environmental problem during the construction period and the environmental impact is acceptable.

Table 3.2-2 List of Major Environmental Protection Measures for Complex Building and Multi-functional Medical Building Project of Traditional Chinese Hospital of LuAn

Category	Pollution source	Main contents of environmental protection project	Expected treatment effect
Waste water	Hospital sewage	Treat the medical and living sewage in the expansion project with the existing sewage treatment station (1200m^3/d). After the sewage is treated up to standard, discharge it into the sewage treatment plant in the north of Lu'an City. Construct a rainfall and sewage pipe network.	Meet the pretreatment standards in Table 2 of *Discharge Standard of Water Pollutants for Medical Organization* (GB18466-2005).
Waste gas	Natural gas boiler	One 8m high (or higher) exhaust funnel	Meet the emission standard of flue gas for gas-fired boiler in Table 2 of GB13271-2014
	Sewage treatment station	Ultraviolet disinfection+ activated carbon adsorption deodorizing device+ 15m exhaust funnel	Meet the exhaust emission requirements mentioned in GB18466-2005

Noise	Fan	Use low noise equipment. Install a silencer on the fan outlet. Use sound insulating materials and sound absorbing materials for outer wall.	The Hospital buildings can meet the Class 2 standards in *Environmental Quality Standard for Noise* (GB3096-2008).
	Sewage pump	Provide vibration reducing and fixing measures for the pipeline base. Install sound absorbing materials and silencers.	
	Cooling tower unit	Control the drip of water. Install a silencer on the fan outlet. Use sound insulating materials and sound absorbing materials for outer wall.	
	Boiler Room	Soundproof doors and windows	
Solid waste	Solid waste	Provide a number of garbage collecting bins in hospital	Haul the garbage to environmental sanitation department for centralized disposal. Clean up the garbage produced every day.
		Provide a number of medical solid waste collecting bins in hospital and set up a temporary storage yard for medical solid waste.	Entrust Lu'an Jiekang Environmental Protection and Centralized Medical Waste Disposal Co., Ltd. for disposal
		A temporary sludge storage tank	

Table 3.2-3 List of Major Environmental Protection Measures for Accelerator and Other Ray Apparatus, Afterloading Unit, Nuclear Medicine and Other Nuclear Technology Application Projects in Traditional Chinese Hospital of LuAn

SN	Object	Acceptance content
1	Accelerator room	Install indicator lamp and set radiation warning signs in striking place outside the room. Install door-machine interlocking safety facility. The wire conduits passing through shielding walls shall not reduce the shielding effects of the walls. The ventilation capacity of the room shall be no less than $3m^3/h$. The room shall be constructed in accordance with design strictly.
2	Afterloading unit room	Install indicator lamp and set radiation warning signs in striking place outside the room. Install door-machine interlocking safety facility. The wire conduits passing through shielding walls shall not reduce the shielding effects of the walls. The room shall be constructed in accordance with design strictly. The afterloading unit shall be relocated during the replacement of radioactive sources, to avoid danger caused by handling of radioactive sources in the hospital.
3	Nuclear Medicine Department	Carry out construction in accordance with the design strictly. Establish a standing book of nuclear medicine department. Strengthen the management of radioactive solid wastes and temporarily store and dispose of radioactive solid wastes in accordance with EIA requirements. Post up on the wall the total a <lBq/L, total P<10Bq/U and other relevant systems for monitoring of wastewater from general outlet of decay pool. Purchase enough protective equipment. The ground and walls in the control area of nuclear medicine department shall be connected seamlessly. The discharge outlet of fume hood pipe shall be set in the main building roof. Set up an access control system in nuclear medicine department and set up food taking windows in the protective doors of wards, so that patients can't leave the wards internally.
4	Protective equipment and auxiliary protective facilities	The hospital shall be provided with protective equipment as needed in various radioactive workplaces in accordance with requirements of GBZ130-2013 and radiation therapy center shall be provided with protective equipment that can meet the working requirements. The accelerator room needs to be equipped with 4 15mm lead-equivalent,

		160mm neutron-shielding BPE steel-lead alloy sliding doors, and door-machine interlocking system. The afterloading unit room shall be equipped with 1 10mm lead-equivalent protective door. The nuclear medicine department shall be equipped with 2mm lead-equivalent protective doors and 2 thyroid cancer wards shall be equipped with 10mm lead-equivalent protective doors. Besides, the lead equivalent in the pigs (6), decay cabinet for solid waste (1), automatic source separating boxes (2), three-way injection window (1), three-way injection lead shield (1), oral lead window (1), mechanical injectors (2) and other protective articles to be purchased by nuclear medicine department shall be no less than 6mmpb. The nuclear medicine department shall build decay pool, ventilation systems and monitoring systems in accordance with the design.
5	Personal dose management	The new staff shall be tested for personal dose. The personal dosimeter shall be used for test according to set time. No missing test or refusal to return the dosimeter is allowed. Establish dose management limit and dose evaluation system. Evaluate those exceeding the dose management limit and track and analyze the cause to optimize the practice. The staff of nuclear medicine department shall be tested for hand doses.
6	Door-machine interlocking	The door-machine interlocking shall be applied for the design of protective doors and control room of medical electron linear accelerator room and afterloading unit room. When the protective door is open, the equipment can't emit rays. If the protective door is opened accidentally, the equipment emitting the rays will automatically stop immediately. There shall be an emergency stop button in the room. When the staff in the room pushes the button, the equipment shall stop immediately.
7	Training and assessment	The hospital shall immediately organize the existing and new staff to participate in the radiation safety and protection training
8	Equipment management	Be equipped with quality control test equipment, prepare corresponding quality assurance program and quality control monitoring plan, and assign medical physics personnel.
9	Monitoring equipment	Purchase a surface contamination monitor and particle microdetector, and appraise the monitoring equipment regularly.
10	Records management	Strengthen the records management, and assign special personnel for centralized storage of the records.
11	Relevant system requirements	The hospital shall optimize the application and operation procedures for nuclear technology, retrain the radiation safety and protection every four years, organize the staff to take physical examination annually and organize the new staff to receive pre-job physical examiniation and pre-post training and establish records according to practice and management experience.
12	Discharge acceptance requirements	The wastewater from hospital must meet the discharge standards in Table 2 of *Discharge Standards of Water Pollutants for Medical Organization*. The medical solid wastes shall be collected, transported and disposed of by Lu'an Jiekang Environmental Protection and Centralized Medical Waste Disposal Co., Ltd.. The hospital noise at boundary shall meet the Class 2, 4a standards as mentioned in *Emission Standard for Industrial Enterprises Noise* at Boundary.
13	Decommissioning places	After the project is completed, the accelerator room and afterloading unit room in current radiation therapy center of the hospital will be abandoned. The hospital shall entrust qualified EIA organization to carry out EIA for the decommissioning sites. The sites can be used for other purposes only after Environmental Protection Department of Anhui Province approves its decommissioning.
14	Annual monitoring and annual evaluation reports	The hospital shall entrust qualified monitoring unit to monitor the nuclear technology application sites regularly (once a year at least). The hospital shall regularly submit the monitoring reports to Radiation Department of Environmental Protection Department of Anhui Province for future reference in accordance with requirements of environmental protection authorities. The hospital shall prepare annual assessment report every year and submit the reports to Radiation Department of Environmental Protection Department of Anhui Province regularly for future reference.

2. Existing sewage treatment station of Traditional Chinese Hospital of LuAn

According to requirements of Lu'an Municipal Environmental Protection Administration, the hospital wastewater shall be treated up to standard before

discharge. In the early stage, in the Traditional Chinese Hospital of LuAn Project (Phase I), the original sewage treatment station is expanded, with design treatment capacity of 1200t/d (completed and has passed the acceptance testing). According to the operation record of sewage treatment station obtained on site and verification of tap water charges of the hospital, it is estimated that the sewage treatment station treats 500-600m^3/d wastewater actually. After the completion of Complex Building and Multi-functional Medical Building Project of Traditional Chinese Hospital of LuAn (Phase II and Phase III), wastewater quantity will be 348m^3/d. As for sewage quantity of whole hospital, it can be calculated as follows: sewage quantity of expansion project (348m^3/d)+ original sewage quantity (643.2m^3/d)= 991.2m^3/d; considering the sewage variation coefficient, the sewage quantity is estimated to be 1,090m^3/d < 1,200m^3/d. Therefore, the wastewater in the project can be treated by existing sewage treatment station on the basis of diversion of rain and sewage water. The process flow diagram is as follows:

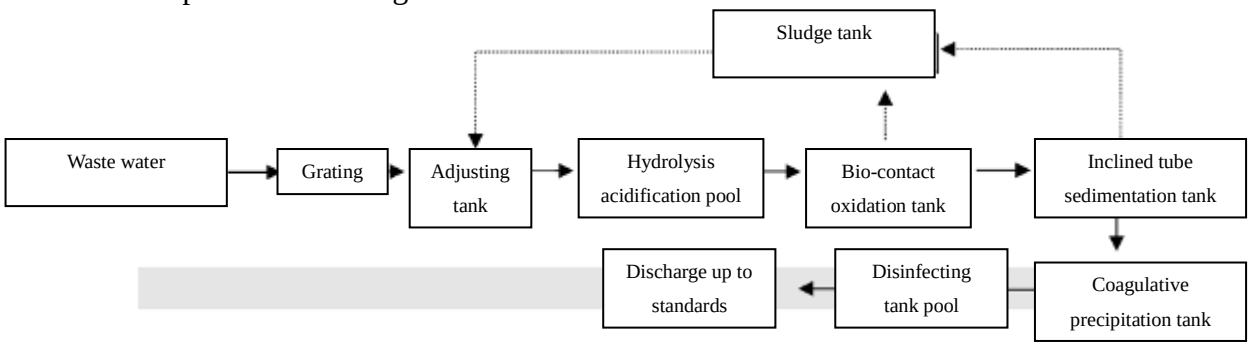


Figure 3.2-3 Process Flow Diagram of Existing Sewage Treatment Station of Traditional Chinese Hospital of LuAn

Figure 3.2-4 Picture of Existing Sewage Treatment Station of Traditional Chinese Hospital of LuAn

3. Lu'an Chengbei Sewage Treatment Plant

Lu'an Chengbei Sewage Treatment Plant is a water pollution control project of Huaihe River Basin implemented with national debt and World Bank loan. The project is designed to treat 80,000 tons sewage per day and to serve 300,000 people in the near future. The recent design capacity is 80,000 m^3/d for sewage treatment. With application of improved oxidation ditch technology, the effluent quality shall meet the Grade 1, A standards mentioned in *Discharge Standard of Pollutants for Municipal Wastewater Treatment Plant* (GB18918-2002) after upgraded secondary treatment. The project was commenced in 2000 and completed and operated on June 29, 2004. Lu'an City upgraded and reconstructed the sewage treatment plant with KFW loans in September 2012. Lu'an Environmental Protection Bureau approved the test run of the plant in January 2014. And the plant passed the environmental acceptance check in April 2014. The process works stably with effective treatment.

By consulting with the construction unit and Lu'an Environmental Protection Bureau, Lu'an Chengbei Sewage Treatment Plant has strictly implemented the "three simultaneous" system of environmental protection, carried out the pollution control measures mentioned in EIA Report and met the standards of pollutants discharge mentioned in EIA Report during construction. And the Lu'an Environmental Protection Bureau has received no report from the masses. So, there is no environmental problem left.

4. Lu'an Jiekang Environmental Protection and Centralized Medical Waste Disposal Co., Ltd.

The medical waste of the project is temporarily stored in the completed

temporary storage room for medical waste in Traditional Chinese Hospital of LuAn, and is entrusted to Lu'an Jiekang Environmental Protection and Centralized Medical Waste Disposal Co., Ltd. for safe and harmless disposal.

Located in Ziyuan Village, Chengnan Town, Yu'an Economic and Technological Development Zone, Lu'an City, Lu'an Jiekang Environmental Protection and Centralized Medical Waste Disposal Co., Ltd. covers an area of 20mu with treatment capacity of 1650t/a. It mainly adopts the high temperature and high pressure steam sterilization technology which was put into operation in October 2007. The project was accepted by Lu'an Environmental Monitoring Center in 2008 (W. H. W. [2008] No. 5). According to the routine monitoring data of the environmental protection department, all the pollutants of the project were discharged up to the standard.

By consulting with the construction unit and Lu'an Environmental Protection Bureau, Lu'an Jiekang Environmental Protection and Centralized Medical Waste Disposal Co., Ltd. has strictly implemented the "three simultaneous" system of environmental protection, carried out the pollution control measures mentioned in EIA Report and met the standards of pollutants discharge mentioned in EIA Report during construction. And the Wuhu Environmental Protection Bureau has received no report from the masses. So, there is no environmental problem left.

5. Lu'an municipal solid waste incineration power plant

Domestic waste generated by this project is collected by Lu'an municipal sanitation department and transported to Lu'an municipal solid waste incineration power plant.

Located in Ziyuan Village, Chengnan Town, Yu'an District, Lu'an municipal solid waste incineration power plant is invested by Chongqing Sanfeng Environmental Industrial Group Co., Ltd., the first BOT project invested by Sanfeng Environment in Anhui Province. The project was prepared in November 2011 and approved by Anhui Development and Reform Commission at the end of 2012. The project investment is 248.98 million yuan and the installed capacity of the generator is a 12MW. Currently, the garbage power plants can treat 600 tons municipal solid waste per day, and 219 thousand tons waste per year.

The German technology is applied in the core equipment in the power plant, i.e. incinerator and the mature, reliable, efficient and economical "SNRC denitration+ semi-dry spray tower+ activated carbon injection+ bag-type dust collector" technology is introduced from Germany companies for flue-gas treatment, so that the

garbage can be fully burnt and the hazardous substance generated by incineration can be fully decomposed. To effectively prevent secondary pollution, the power plant installs an on-line monitoring system for flue gas in the outlet of flue to carry out on-line analysis and dynamic monitoring of liquified hydrogen, sulfur dioxide, carbon monoxide and other flue gas, so that the final emissions can meet the national emission standards and dioxin emission can meet the existing EU emission standards.

Lu'an municipal solid waste incineration power plant project (Phase I) was operated in trial on September 4, 2014 and connected to the grid on September 5.

By consulting with the construction unit and Lu'an Environmental Protection Bureau, Lu'an domestic solid waste incineration power plant has strictly implemented the "three simultaneous" system of environmental protection, carried out the pollution control measures mentioned in EIA Report and met the standards of pollutants discharge mentiond in EIA Report during construction. And the Lu'an Environmental Protection Bureau has received no report from the masses. So, there is no environmental problem left.

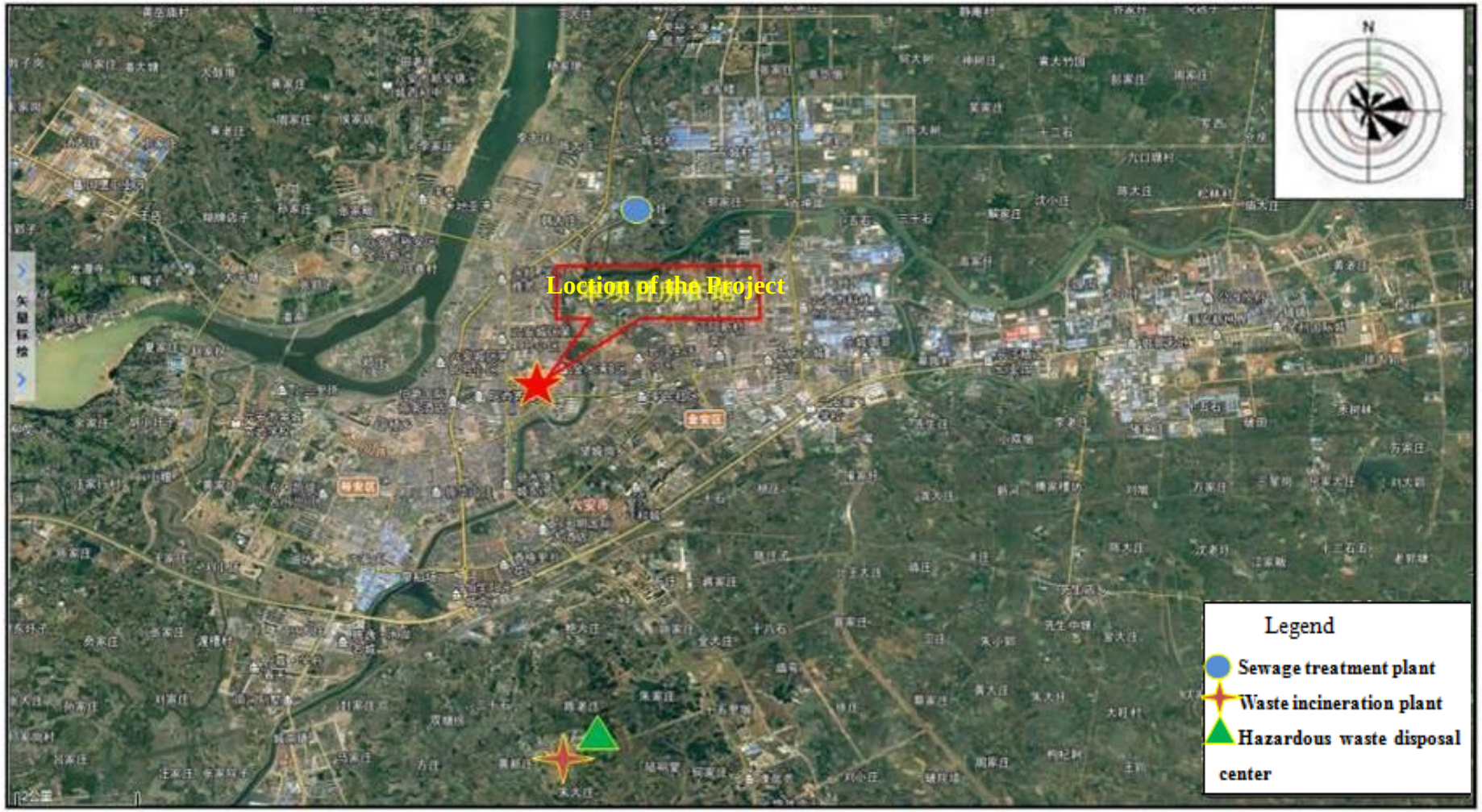


Figure 3.2-6 Position Relationship Map between Support Project and the Project

3.2.2 Subproject II - current situation and surrounding sensitive spots of home-based aged-care service stations

There are 18 home-based aged-care service stations in Lu'an City and 9 in Jin'an District, 9 in Yu'an District. The project floor space remains unchanged without new construction area. Instead, the project is to decorate and renovate the existing buildings. The details are shown in Figure 3.2-7 Location Distribution Map of Lu'an Projects.

Table 3.2-3 Table of Home-based Aged-care Service Stations in Lu'an

Jurisdiction	SN	Community name	Site	Upgrading building area (m^2)
Jin'an District	1	Nanpingyuan Community, Wangcheng Sub-district	Nanpingyuan Community	460
	2	Anfeng Community, Wangcheng Sub-district	Feng'an Community	800
	3	Dongyuan Community, Wangcheng Sub-district	Dongyuan Community	500
	4	Zhengyang Community, Wangcheng Sub-district	Jinyu Community, Sanliqiao Sub-district	400
	5	Dongyue Community, Sanshipu Town	Youranlanxi Community, Sanshipu Town	600
	6	Litai Community, Qingshuihe Sub-district	Liuyuan Community, Qingshuihe Sub-district	300
	7	Qingshuihe Community, Qingshuihe Sub-district	Qingshuihepan Community	1450
	8	Jiuligou Community, Qingshuihe Sub-district	Wulidun Community, Dongshi Sub-district	600
	9	Qianjin Community, Zhongshi Sub-district	Youfangqiao Community, Zhongshi Sub-district	500
Yu’an District	10	Heshun Community, Xiaohuashan Sub-district	Hengsheng Sunshine City	500
	11	New Governmental Zone Community, Xiaohuashan Sub-district	Wanrong Lingxiu City	400
	12	Xiangzhang Community, Xiaohuashan Sub-district	Lishui Kangcheng City	300
	13	Yuanyichang Community, Xiaohuashan Sub-district	Shiji Jinxing Community	300
	14	Qing'an Community, Gulou Sub-district	Twin City	600
	15	Zhuizimiao Community, Gulou Sub-district	Baihuayuan Community	240
	16	Xialongzhua Community, Gulou Sub-district	Yulongwan Community	700
	17	Jinma Community, Pingqiao Township	Jinma Community	800

	18	Dongfanghong Community, Chengnan Town	Kaixuan Mansion	450
Total	19			10860

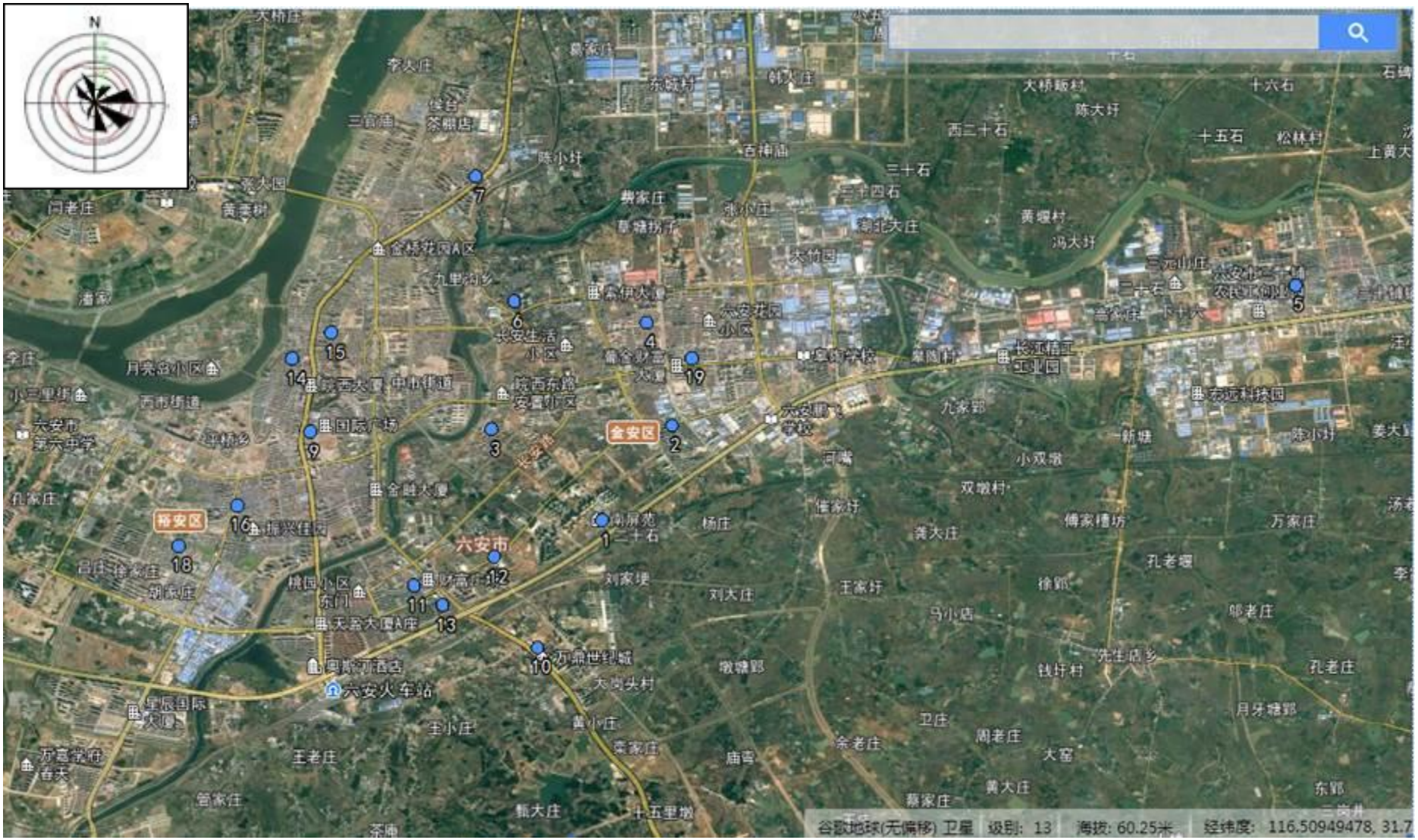


Figure 3.2-7 Location Plane of 18 Home-based Aged-care Service Stations in Lu'an City

Since all the construction projects of 18 home-based service stations in Lu'an City are to upgrade and decorate the existing buildings and increase necessary service facilities, this EIA will base on the Home-based Aged-care Service Station in Xialongzhua Community to assess the current situation and surrounding sensitive spots.

The Home-based Aged-care Service Station in Xialongzhua Community is located in Yulongwan Residential Complex, Xialongzhua Community, Yu'an District, Lu'an City, the project proposes to upgrade the existing aged-care buildings with construction area of 700m^2. Besides, the project is to upgrade the existing water and power utilities, fire-fighting facilities, wheelchair accessible passages and building appearance, and to increase necessary service facilities. The details are shown in Figure 3.2-8 Project Site Status and Surrounding Sensitive Spots.

Figure 3.2-8 Project Site Status and Surrounding Sensitive Spots

Through investigating the project site and visiting the relevant units, we find that the sensitive spots around the project are residential buildings, and the main impact factor of the project on the sensitive spots is the decoration noise. Reasonable arrangements shall be made for the use of noise producing equipment, and construction shall be avoided during the nap and at night; and strict avoidance, prevention and mitigation measures shall be taken throughout the project in the light of possible pollution impacts.

3.3 Wuhu City

Wuhu City covers an area of 5,988km^2 with 3.845 million registered people at the end of 2013, of which urban area is 1,292km^2. It has four counties, namely: Wuwei County, Wuhu County, Fanchang County and Nanling County and 4 districts, i.e.: Jinghu District, Yijiang District, Jiujiang District and Sanshan District. It has 2 national level development zones and 11 province-level development zones.

Wuhu City enjoys a subtropical humid monsoon climate, with abundant sunlight, abundant rainfall and four distinctive seasons. It has annual average temperature of 15~16 degrees Celsius, sunshine duration of 2,000 hours or so and annual precipitation of 1,200mm. Its frost-free period is 219-240 days per year.

3.3.1 Subprojetc III - Embedded Center for Disabled and Semi-disabled Elderly in Wuhu

Wuhu City has 10 subprojects to be constructed or upgrading, including 7 community day-care center (including nursing homes), 1 training center and elderly recreational and sports center, 1 central kitchen and 1 large health management information data center. These are upgarding of existing buildings. The details are shown in Figure 3.3-1 Location Distribution Wuhu Projects.

Table 3.3-1 Table of Embedded Center Project for Disabled and Semi-disabled Elderly in Wuhu

SN	Name	Location	Construction area (m^2)
1	Xuri Tiandu Comprehensive Aged-care Service Center	Xuri Tiandu, Jinghu District	4540
2	Binjiang Shimao Care Center	Binjiang Park, Jinghu District	2980. 8
3	Duchun Road Care Center	Next to The Second People's Hospital of Wuhu, Duchun Road, Duchun Road, Jinghu District	1747. 9
4	Yijiang Comprehensive Aged-care Service Center	Entrance to Bai Ma Qian Wan Community in the Yijiang District	5974
5	Yinhu Aged Nursing Home in "Haoyan Rainbow Garden" (Base)	On the north side of Yinhu, Yuexiu Road, economic development zone	5511. 23

6	Yinhu Community Aged-care Service Center	On the north side of Yinhu, Yuexiu Road, economic development zone	5806. 73
7	Yinhu Nursing Home in "Haoyan Rainbow Garden" (Base)	On the north side of Yinhu, Yuexiu Road, economic development zone	36966. 2
8	Intelligent Health and Aged-care Service Information Management Center	Crossing of Yuexiu Road and Pujiang Road, economic development zone	444. 42
9	Training Center and Elderly Indoor Activity Center	On the north side of Yinhu, Yuexiu Road, economic development zone	1536. 96
10	Central Kitchen	On the north side of Yinhu, Yuexiu Road, economic development zone	642. 31

Figure 3.3-1 Location Distribution of Wuhu Projects

3.3.1.1 Current situation and sensitive spots of "Haoyan Rainbow Garden" (Base)

The "Haoyan Rainbow Garden" (Base) is located in the southwest side of Yuexiu W Road and Yinhu N Road, Wuhu Economic and Technological Development Zone. There are six projects in the Base, namely: Yinhu Nursing Home in "Haoyan Rainbow Garden" (Base), Yinhu Aged Nursing Home in "Haoyan Rainbow Garden" (Base), Yinhu Community Aged-care Service Center in "Haoyan Rainbow Garden" (Base), a center for training and for indoor senior activities, a central kitchen, and

Intelligent Health and Aged-care Service Management Center.

Yinhu Aged-care Nursing Home project of "Haoyan Rainbow Garden" (Base) is located in the in the southwest side of Yuexiu W Road and Yinhu N Road, Wuhu Economic and Technological Development Zone. The existing building is of 4 floors and was completed in 2010. The project is to purchase the building, decorate and upgarde the building and install new equipment, including decoration and upgrading of walls, floors, water and power facilities, installment of fire-fighting barrier-free facilities and purchase of equipment (e.g. new medical service elevators and medical facilities), with overall floorage of 5,511.23 m^2.

The project status is shown in the figure below:

Figure 3.3-1 Current State of Yinhu Aged-care Nursing Home

The Yinhu Nursing Home Project of "Haoyan Rainbow Garden" (Base) is located in the in the southwest side of Yuexiu W Road and Yinhu N Road, Wuhu Economic and Technological Development Zone. The project is under construction. The civil works of the project shall be self-funded by construction unit; its construction begins in March of 2016 and ends in March of 2018. The building is a 6-storey building with 1 basement floor, with gross floor area of 36,966.2m^2, of which the above ground floor area is 23,648m^2 and the underground floor area is 9,587.2m^2.

The construction unit has prepared the registration form of EIA on *Yinhu Nursing Home Project of "Haoyan Rainbow Garden (Base)"* for filing according to List of Classified Management of Environmental Impact Assessment on Construction Projects. By consulting with the construction unit and Wuhu Environmental Protection Bureau, the project has strictly implemented the "three simultaneous" system of environmental protection, carried out the pollution control measures

mntioned in EIA registration form and met the standards of pollutants discharge mentioned in EIA registration form during construction. And the Wuhu Environmental Protection Bureau has received no report from the masses. So, there is no environmental problem during construction period. The project status is shown in the figure below:

Figure 3.3-2 Current Situation of Yinhu Nursing Home Project Site

The three projects of Yinhu Community Aged-care Service Center, Training Center and Elderly Indoor Activity Center and Central Kitchen are located in a 5-storey building, the former Polka Hotel. The building is to be used as follows: 1st floor used as Training Center and Elderly Indoor Activity Center and Central Kitchen and 2nd~5th floor used as Yinhu Community Aged-care Service Center. The project is to decorate and upgrade the building and install relevant equipment.

The Yinhu Community Aged-care Service Center of "Haoyan Rainbow Garden" (Base): It's located in 2nd~ 5th floor of former Polka Hotel; the project is to obtain the building by purchasing the property rights and to decorate and upgrade the building and install relevant equipment, with overall floorage of 5806.73m^2.

The Training Center and Elderly Indoor Activity Center of "Haoyan Rainbow Garden" (Base): It's located in 1st floor of former Polka Hotel; the project is to obtain the building by purchasing the property rights and to decorate and upgrading the building and install relevant equipment,with overall floorage of 1536. 96m^2.

The Central Kitchen Project of "Haoyan Rainbow Garden" (Base): It's located in 1st floor of former Polka Hotel; the project is to obtain the building by purchasing the property rights and to decorate and upgrade the building and install relevant equipment, with overall floorage of 642. 31m^2.

The project status is shown in the figure below:

Figure 3.3-3 Current Situation of Yinhu Community Aged-care Service Center

Intelligent Health and Aged-care Service Management Center project is located in the in the southwest side of Yuexiu W Road and Yinhu N Road, Wuhu Economic and Technological Development Zone. The project is to purchase the building, decorate and upgrade the building, including decoration and upgradeion of walls, floors, water and power facilities, installment of fire-fighting barrier-free facilities and purchase of equipment (including elevators), with overall floorage of 444.42m^2. The platform is provided with intelligent health and aged-care service center platform, call service platform and intelligent information management service platform. The project status is shown in the figure below:

Figure 3.3-4 Current Situation of Intelligent Health and Aged-care Service Information Management Center Project Site

Introduction to sensitive spots around the project site

Situation of sensitive spots: According to investigation of project site and visit

to units concerned, there is no ecologically sensitive and vulnerable area, areas requiring special protection, areas of social concerns and other environmental sensitive areas (e.g. graves) within the project impact area. The scale and influence range of pollution sources the subprojects are limited, and strict prevention, precaution and mitigation measures has been taken for potential pollution impact throughout the project implementation.

For the location of "Haoyan Rainbow Garden" (Base) project, in the east is the Yihu N Road, in the west is Polka International Garden, in the south is Yinhu Lake, and in the north is Wuhu Sixth People's Hospital.

Polka International Garden: overall floorage: 270,000m^2, total number of households: over 2,500 households. The buildings here are all 5 or 6-storey garden houses. The building closest to the project is the 76# Building, a 6-storey residential building.

Wuhu Sixth People's Hospital: The hospital covers an area of 26,700m^2, with construction area of over 50,000m^2. It has nearly 500 beds.

The environmental sensitive spots around the project site are shown in Figure 3.3-5 and Table 3.3-1 Schedule of Sensitive Spots.

Figure 3.3-5 Current Situation of Sensitive Spots of Project

Table 3.3-1 Sensitive Spots around the Project Site

Subproject name	Environmental protection target	Distance (m)	Orientation	Scale	Environmental impact factors	Applicable standard
Haoyan Rainbow Garden (Base)	Wuhu Sixth People's Hospital	60	N	400 beds	Construction noise	Class-2 *Standard in Environmental Quality Standard for Noise* (GB3096-2008).
	Polka International Garden	40	W	1000 households /3500 people		

3.3.1.2 Current status and surrounding sensitive spots of other four projects

Xuri Tiandu Comprehensive Aged-care Service Center project is located in Xuri Tiandu Community, Chizhushan M Road, Jinghu District, Wuhu City. The project is to rent the building of governmental aged-care service center, decorate and upgrade the building, including decoration and improvment of walls, floors, water and power facilities, installment of fire-fighting barrier-free facilities and purchase of equipment (including elevators), with area of 4540m^2.

The Xuri Tiandu Community was completed in 2012, with overall floorage of about 760,000m^2. It has 67 buildings, with 8,566 households, totaling 25,000 people or so.

Situation of sensitive spots: through the investigation of project site and visit to units concerned, we find that the sensitive spots around the project are residential buildings, and the main impact factor of the project on the sensitive spots is the decoration noise. Reasonable arrangements shall be made for the use of noise producing equipment, and construction shall be avoided during the nap and at night; and strict avoidance, prevention and mitigation measures shall be taken throughout the project in the light of possible pollution impacts.

About 50m to the east of project area is 1# Building of Xiuri Tiandu 4th Cluster, a 16-storey residential building. About 15m to the south of project area is 1# Building of Xiuri Tiandu 5th Cluster, a 16-storey residential building. About 140m to the west of project area is Xuri Tiandu Kindergarten with 150 students. And 40m to the north of project area are the 9# Building and 10# Building of Xuri Tiandu Cluster, both of which are 11-storey residential buildings.

The details of project status and surrounding sensitive spots are shown in Figure 3.3-7 and Figure 3.3-8 respectively.

Figure 3.3-7 Current Situation of Project Site

Figure 3.3-8 Sensitive Spots of Project

Binjiang Shimao Care Center Project is located in Block B, Shimao Binjiang Meiguifang, Jinghu District. The Jinjie · Jinkaiyuan Hotel is leased, and decoration renovation and equipment allocation are carried out, including housing renovation of walls, floors, and utilities, setting of fire-fighting barrier-free facilities, and purchase of equipment (e.g. medical elevators and medical equipment are added). The project covers an area of 2980.8 m^2.The project status is shown in the figure below:

Situation of sensitive spots: Through investigating the project site and visiting the relevant units, we find that the sensitive spots around the project are residential buildings, and the main impact factor of the project on the sensitive spots is the decoration noise. Reasonable arrangements are made for the use of noise producing equipment, and construction is avoided during the nap and at night; and strict avoidance, prevention and mitigation measures are taken throughout the project in the light of possible pollution impacts.

Shimao Riviera Garden is located in the south of West Beijing Road, and east of Stone Road of Jinghu District. It's constructed by Shanghai Shimao Co., Ltd., and

opened in December 2016, with a total floor area of 186676 m^2, a construction area of 565000 m^2, a total of 1088 households, and a total population of about 3482.

The project status and surrounding sensitive spots are shown in Figure 3.3-8.

Figure 3.3-9 Project Status and Surrounding Sensitive Spots

Duchun Road Care Center Project is located in No.16 Building of Duchun Garden beside the Second People's Hospital, Duchun Road, Jinghu District, Wuhu City. The housing property is obtained in the form of purchase, and the decoration renovation and equipment allocation are carried out, including housing renovation of walls, floors, and utilities, setting of fire-fighting barrier-free facilities, and purchase of equipment (living equipment and medical equipment like elevator). The project covers a total construction area of 1747.9 m^2.

Situation of sensitive spots: Through investigating the project site and visiting the relevant units, we find that the sensitive spots around the project are residential buildings, and the main impact factor of the project on the sensitive spots is the decoration noise. Reasonable arrangements are made for the use of noise producing equipment, and construction is avoided during the nap and at night; and strict avoidance, prevention and mitigation measures are taken throughout the project in the light of possible pollution impacts.

About 10m east of the project area is Wuhu Labor and Social Security Building; about 50m south of it is No.18 Building of Duchun Garden; about 30m west of it is J.S Meisu Shuijing Hotel; and about 20m north of it is the Second People's Hospital of Wuhu (Duchun Road hospital area).

Duchun Garden is located in No.7, Duchun Road, Jinghu District, Wuhu City. It's completed for living in 2000, with a total of 294 households and about 941 people.

Figure 3.3-10 Project Status and Surrounding Sensitive Spots

Yijiang Comprehensive Aged-care Service Center Project is located at the entrance of Bai Ma Qian Wan Community in the south of Zhanghe Roadin the Yijiang District of Wuhu City. It's leased from the Government of Yijiang District by Anhui Haoyan Old-age Service Industry Investment Co., Ltd., and completed in 2010. The project status is vacant housing, and only decoration renovation and equipment allocation are carried out, including housing renovation of walls, floors, and utilities, setting of fire-fighting barrier-free facilities, and purchase of equipment (e.g. medical elevators and medical equipment are added). The project covers a total construction area of 5974 m^2.

Situation of sensitive spots: Through investigating the project site and visiting the relevant units, we find that the sensitive spots around the project are residential buildings, and the main impact factor of the project on the sensitive spots is the decoration noise. Reasonable arrangements are made for the use of noise producing equipment, and construction is avoided during the nap and at night; and strict

avoidance, prevention and mitigation measures are taken throughout the project in the light of possible pollution impacts.

The east of the project area is a green belt; the south of it is Bai Ma Qian Wan Residential Area; and the north of it is a vacant lot.

The details are shown in Figure 3.3-11 Project Status and Surrounding Sensitive Spots.

Figure 3.3-11 Project Site Status and Surrounding Sensitive Spots

3.3.1.3 Supporting projects

1. Sewage treatment plant

The waste water from “Haoyan Rainbow Garden” (Base) Yinhu Old People's Home, “Haoyan Rainbow Garden” (Base) Yinhu Nursing Home, “Haoyan Rainbow Garden” (Base) Yinhu Medical Care Center, and Smart Health and Aged-care Service Management Center flows into the proposed sewage treatment facilities (including oil separation tank, septic tank, and disinfection tank (ClO2)) for treatment, and then it flows into Wuhu Zhujiaqiao Sewage Treatment Plant for treatment through connection pipe of municipal sewage pipe network. Xuri Tiandu Comprehensive Aged-care Service Center Project, Binjiang Shimao Care Center Project, and Duchun Road Care Center Project are relying on the existing connection pipe of sewage pipe network for treatment in Wuhu Zhujiaqiao Sewage Treatment Plant. Yijiang Comprehensive Aged-care Service Center Project relies on the existing connection pipe of sewage pipe network for treatment in Wuhu Chengnan Sewage Treatment Plant.

(1) Wuhu Zhujiaqiao Sewage Treatment Plant

Wuhu Zhujiaqiao Sewage Treatment Plant is located in the north of Zhujiaqiao Foreign Trade Port, and the west of the Yangtze River Road, covering an area of 23 hectares. The Phase I Project of Zhujiaqiao Sewage Treatment Plant has a daily capacity of 100,000 m^3. It has been built and put into use, which adopts improved

A2/O biochemical pool sewage treatment process. The mechanical centrifugal thickening and dewatering machine is used for sludge treatment process. The discharge standard of wastewater after treatment is the primary standard B of the *Discharge Standard of Pollutants for Municipal Wastewater Treatment Plant* (GB18918-2002).

By consulting with the construction unit and Wuhu Environmental Protection Bureau, Wuhu Zhujiaqiao Sewage Treatment Plant has strictly implemented the "three simultaneous" system of environmental protection and carried out the pollution control measures in EIA Report and met the standards of pollutants discharge in EIA Report during construction. And the Wuhu Environmental Protection Bureau has received no report from the masses. So, there is no environmental problem left.

(2) Wuhu Chengnan Sewage Treatment Plant

Wuhu Chengnan Sewage Treatment Plant is located in No.4, East Eshan Road, Yijiang District, Wuhu City. Chengnan Sewage Treatment Plant covers an area of 300,000 m^2, with a total scale of 300,000 tons of daily sewage treatment. The service scope includes the urban land use area from the north to the Qinyijiang River, from the west to the Yangtze River and the Zhanghe River, from the east and the south to the Zhongjiang Avenue and the Wuhu-Tongling Railway. The project is planned by one time and constructed by several phases.

The design capacity of Phase I is treatment of 100,000 m^3 wastewater per day. The Phase I Project covers an area of 45 square kilometers, from the east to the Nanri Community, from the north to the Qinyijiang River, from the south to the Huolonggang, from the west to the Yangtze River, serving a population of about 300,000. The main construction contents include civil construction, process equipment and process pipe installation, electrical and automatic control system installation, lighting, lightning protection and grounding, heating, ventilation, road construction and greening in the plant, etc.. Since Wuhu Kaifa Xinquan Water Co., Ltd. (Wuhu Chengnan Sewage Treatment Plant) is officially put into operation in July 2012, its sewage treatment equipment has been working well, with an average daily sewage treatment capacity of 39700 m^3. The advanced sewage treatment equipment is used in the project, and the oxidation ditch treatment process is adopted as the main process of the plant. The discharge standard of wastewater after treatment is the primary standard B of the *Discharge Standard of Pollutants for Municipal Wastewater Treatment Plant* (GB18918-2002).

By consulting with the construction unit and Wuhu Environmental Protection Bureau, Wuhu Chengnan Sewage Treatment Plant has strictly implemented the "three simultaneous" system of environmental protection and carried out the pollution control measures in EIA Report and met the standards of pollutants discharge in EIA Report during construction. And the Wuhu Environmental Protection Bureau has received no report from the masses. So, there is no environmental problem left.

2. Wuhu Lansheng Centralized Medical Waste Disposal Co., Ltd.

Wuhu Lansheng Centralized Medical Waste Disposal Co., Ltd. is located in Wuhu Waste Sanitary Landfill Site of Longhua Administrative Village, Lugang Town, Wuhu City. The main construction content of the project is the construction of medical waste disposal facilities with incineration capacity of 5 tons/day, and the total actual investment of the project is 13,272,700 Yuan. The project started construction in February 2008 and was put into trial operation in April 2010. The project has implemented the environmental impact assessment system, and the preliminary environmental protection review and approval procedures are complete, and the technical data and environmental protection archives are complete. The former Environmental Protection Bureau of Anhui Province approved the Environmental Impact Report of the project with the document H. K. H. [2007] No. 1037 in November 2007. The Environmental Protection Department of Anhui Province issued the final acceptance approval of medical waste project on February 16, 2011, and the medical waste project entered the formal operation stage.

By consulting with the construction unit and Wuhu Environmental Protection Bureau, Wuhu Medical Waste Centralized Disposal Project has strictly implemented the "three simultaneous" system of environmental protection and carried out the pollution control measures in EIA Report and met the standards of pollutants discharge in EIA Report during construction. And the Wuhu Environmental Protection Bureau has received no report from the masses. So, there is no environmental problem left.

3. Wuhu Oasis Environmental Protection Energy Co., Ltd.

Wuhu Oasis Environmental Protection Energy Co., Ltd. is located in the north of Wuhu City, south of the Sihe Mountain, south of Wuhu Ronghui Chemical Co., Ltd., east to the Yangtze River Road, west of the Yangtze River levee, and west of Wuhu Economic and Technological Development Zone. The company has a total of 5 boilers in the plant, of which No.1, No.2 and No.3 boilers are domestic garbage incinerators,

each with a capacity of 350t/d. The remaining 2 units are coal-fired heat-supply boilers with a capacity of 75t/h, which are not used any more.

The existing No.1, No.2 and No.3 garbage incinerators were built in 2003, and each unit is a recirculating fluidized bed domestic garbage incinerator with daily treatment of domestic garbage of 200t/d. Wuhu Oasis Environmental Protection Energy Co., Ltd. implemented "Technical Transformation and Energy Saving Project of Garbage Incinerator of Wuhu Oasis Environmental Protection Energy Co., Ltd." in 2009. It carried out technical transformation on 3 existing domestic garbage incinerators, removed 3 200t/d recirculating fluidized bed domestic garbage incinerators, and built 3 350t/d recirculating fluidized bed domestic garbage incinerators. The generator set still uses the original 2 6MW condensing turbine generator sets. Wuhu Environmental Protection Bureau approved the technical transformation project with document No. [2009] 15, and the project was officially put into trial operation in January 2011.

By consulting with the construction unit and Wuhu Environmental Protection Bureau, Wuhu Oasis Environmental Protection Energy Co., Ltd. has strictly implemented the "three simultaneous" system of environmental protection and carried out the pollution control measures in EIA Report and met the standards of pollutants discharge in EIA Report during construction. And the Wuhu Environmental Protection Bureau has received no report from the masses. So, there is no environmental problem left.

Figure 3.3-12 Location of Supporting Projects of Embedded Center Project for Disabled and Semi Disabled Elderly in Wuhu

3.4 Xuancheng City

Xuancheng City has jurisdiction over five counties, one city and one district, 69 offices and towns under jurisdiction of county, city and district, 29 townships and 800 village committees. The city has a total population of 2,742,000, of which 1.01 million are urban, accounting for 37% of the total population. The built-up area of the central city is about 35.85 square kilometers, with a population of 355,000.

This area has a mild and humid subtropical monsoon climate, with four distinct seasons, abundant sunshine, long frost-free period and abundant rainfall, but the variation of rainfall between years, in year and among regions is great. The area has an annual average temperature of 15.7 ºC, relative humidity of 70~90%, annual sunshine duration of 2074 hours, average total solar radiation heat of 115.4 kilocalorie/cm^2, and frost-free period of 240 days.

The annual average rainfall in the whole area is 1367.6mm, but the annual rainfall varies greatly. The maximum annual rainfall is 2105.4mm (year 1954), and the minimum annual rainfall is 760.8mm (year 1978). The annual average water resources of surface water are 3609 million m^3, and the annual average runoff is 1749 million m^3.

East wind is the most frequent in the past five years; the northeast wind prevails in the winter half year, and the east wind prevails in the summer half year, with an average annual wind speed of 2.2 m/s.

3.4.1 Sub-project II - Status and Surrounding Sensitive Spots of Xuancheng Municipal Social Welfare Home Relocation and Reconstruction Project

The project is located in the southwest of Xiadu Xincheng Community of Xuanzhou District. The east side of the project is farmland; the south side is Yu Village; the west side is irrigation pond; the north side is forest. The project site is now farmland, which will be leveled after the autumn harvest.

The details are shown in Figure 3.4-1 Project Site and Surrounding Environment Status.

Figure 3.4-1 Project Site and Surrounding Environment Status

Sensitive spots: According to investigations of project site and visits to units concerned, there are no ecologically sensitive and vulnerable areas, areas requiring special protection, areas of social concerns and other environmental sensitive areas (e.g. graves) within the scope of the project. The sensitive spots surrounding this project are the Xiadu Xincheng Community and Yu Village. The scale and impact area of pollution sources of sub-project are not large, and strict avoidance, prevention and mitigation measures are taken throughout the project in the light of possible pollution impacts.

Xiadu Xincheng Community: It is a complex established in 2014. The construction area of this Community is 100000 m², including 42 blocks of 6-storey

buildings where about 3600 people from 1000 households live there. 6 blocks of buildings and about 500 people therein are near to the project site.

See Table 3.4-1 for environment sensitive spots around the project site and Table 3.4-2 for surrounding environment of project site.

Table 3.4-1 Schedule of Sensitive Spots around the Project Site

Subproject name	Environmental protection target	Distance (m)	Position	Size	Environmental impact factors	Applicable standard
Xuancheng Municipal Social Welfare Home Relocation and Reconstruction Project	Xiadu Xincheng Community	200	E	130 households/ 500 people	Construction dust and noise	Grade 2 Standards as mentioned in *Ambient Air Quality Standards* (GB3095-2012); Class 2 Standards as mentioned in *Environmental Quality Standard for Noise*
	Yu Village	70	S	38 households/ 103 people		

Figure 3.4-2 Environment Surrounding the Xuancheng Social Welfare Service Center Upgrading Project

3.4.2 Supporting projects

1. Xuancheng (Jingtingwei) Sewage Treatment Plant

The sewage in the project flows into the municipal sewage pipe network after being treated at the oil separator, disinfection tank, and septic tank built in the project, and then it will be connected to the Xuancheng (Jingtingwei) Sewage Treatment Plant for treatment.

Xuancheng (Jingtingwei) Sewage Treatment Plant is located in Jingtingwei Area, Haitang Bay, Xuancheng City, which mainly collects sewage from 6 drainage subareas, including Jingtingwei Area, Daocha River Area (including the old city), Qingxi River Area, Meixi River Area, Chengdong Area and Xiadu Area. The plant covers an area of 78,600 m^2, and the tail water is discharged into the Shuiyangjiang River after the sewage treatment reaches the standard. The total designed treatment capacity of the project is 100,000 tons/day, and the main process for sewage treatment is improved A2/O process. The project was implemented in two phases, of which the construction of the first phase (construction scale is 50,000 tons/day) started in January 10, 2009. The water quality of effluent conforms to the primary standard B of the *Discharge Standard of Pollutants for Municipal Wastewater Treatment Plant* (GB18918-2002). The extension (construction scale is 50,000 tons/day) and advanced sewage treatment (construction scale is 100,000 tons/day, including upgrading in Phase I) in Phase II started in January 27, 2016, and the effluent quality meets the primary standard A.

By consulting with the construction unit and Xuancheng Environmental Protection Bureau, Xuancheng (Jingtingwei) Sewage Treatment Plant has strictly implemented the "three simultaneous" system of environmental protection and carried out the pollution control measures in EIA Report and met the standards of pollutants discharge in EIA Report during construction. And the Xuancheng Environmental Protection Bureau has received no report from the masses. So, there is no environmental problem left.

2. Medical waste disposal center

The medical waste produced due to the project is temporarily stored in the completed temporary storage room for hazardous waste in Xuancheng Municipal Social Welfare Home Relocation and Reconstruction Project, and is entrusted to Xuancheng Jiuding Medical Waste Centralized Disposal Center for safe and harmless disposal.

I. Basic situation of Xuancheng Jiuding Medical Waste Centralized Disposal Center

Xuancheng Jiuding Medical Waste Centralized Disposal Center is located within Muma Village, Guquan Town, Xuanzhou District, Xuancheng City, which is adjacent to the Xuancheng Domestic Waste Sanitary Landfill Site, 11.7 kilometers away from the urban area of Xuancheng. The project covers an area of 0.9 hectares, with a total asset of 13 million yuan, and adopts the high temperature and high pressure sterilization process, with treatment capacity of 3 tons/day. Xuancheng Jiuding Medical Waste Disposal Co., Ltd. is responsible for the construction and operation of the project. The project construction was carried out in strict accordance with the construction standards including *Technical Specifications for Centralized Disinfection Treatment Engineering Construction on Medical Waste*, and the project was put into trial operation in December 2011.

3. Xuancheng Domestic Garbage Incineration Power Plant of Xuancheng Zhongke Environmental Protection Power Co., Ltd.

Domestic garbage generated by this project is collected by Xuancheng municipal sanitation department and transported to Xuancheng Domestic Garbage Incineration Power Plant.

Xuancheng Domestic Garbage Incineration Power Plant is located in west of Jinba Changqiao Road, Muma Village, Guquan Town, Xuancheng Economic and Technological Development Zone. "Environmental Impact Report of Xuancheng Domestic Garbage Incineration Power Generation Project" (prepared by Anhui Academy of Environmental Sciences) obtained “Letter of Approval of Environmental Protection Department of Anhui Province on Environmental Impact Report of Xuancheng Domestic Garbage Incineration Power Generation Project” (H. P. H. No. [2012] 1502 of Environmental Protection Department of Anhui Province) in December 18, 2012. The main construction contents are 1 new 400t/d recirculating fluidized bed incinerator, and 1 7.5MW sub-high temperature and sub-high pressure pure condensing turbine generator set. The supporting construction includes garbage receiving, storing and conveying system and chemical water treatment station, ashpit, slag pool, water supply and oil storage tank, flue gas purification, fly ash curing, initial rainwater collection, sewage treatment, odor control, noise control, and other public assistance and environmental protection projects. The acceptance of the project was carried out by Xuancheng Environmental Protection Bureau in May 24, 2017.

By consulting with the construction unit and Xuancheng Environmental Protection Bureau, Xuancheng Zhongke Environmental Protection Power Co., Ltd. has strictly implemented the "three simultaneous" system of environmental protection and carried out the pollution control measures in EIA Report and met the standards of pollutants discharge in EIA Report during construction. And the Xuancheng Environmental Protection Bureau has received no report from the masses. So, there is no environmental problem left.

Figure 3.4-3 Position Relationship Map between Supporting Project and the Project

3.5 Ningguo City

Ningguo City is located in the southeast of Anhui Province, with an area of 2487 square kilometers, with 13 townships and 6 subdistrict offices, and with a total population of 387,000. The mineral resources include limestone, pottery clay and coal. Anhui-Jiangxi Railway, 104 Provincial Highway and 215 Provincial Highway run through the city.

Ningguo City is located in the mountainous and hilly region of South Anhui, which enjoys a north subtropical monsoon humid climate. The annual average rainfall is 1468 mm, and the annual average temperature is 15.4 ºC. Northerly wind occurs the most, followed by south wind.

Ningguo region enjoys a north subtropical humid monsoon climate, and its main climatic characteristics are: obvious monsoon, four distinct seasons, mild climate, abundant rainfall, and abundant sunlight. The precipitation varies greatly in time and space; droughts and floods are frequent; and it rains a lot in some years that it's waterlogged.

3.5.1 Sub-project III - Status and Surrounding Sensitive Spots of Ningguo Social Welfare Service Center Upgrading Project

The project is located in No.15, Middle Ningyang Road, Ningguo City, Anhui Province, and the old houses have not yet been removed. The east of the project is the Nanshan Yayuan and Green Spring Residential Communities across Middle Ningyang Road; the south is Ningguo Municipal Senile Apartment; the west is existing projects of Ningguo Municipal Social Welfare Home; the north is Ningguo Municipal Children Welfare Home.

The details are shown in Figure 3.5-1 Project Site and Surrounding Environment Status.

Figure 3.5-1 Project Site and Surrounding Environment Status

Situation of sensitive spots: According to investigations of project site and visits to units concerned, there are no ecologically sensitive and vulnerable areas, areas requiring special protection, areas of social concerns and other environmental sensitive areas (e.g. graves). The sensitive spots surrounding this project are the Nanshan Yayuan Community, Green Spring Community, Ningguo Vocational High School, etc.. The scale and impact area of pollution sources of sub-project are not large, and strict avoidance, prevention and mitigation measures are taken throughout the project in the light of possible pollution impacts.

Nanshan Yayuan Community: It's built in 2008, which is 70m away from the southeast of the project site, with a construction area of 28000 m². The building nearest to the project has 6 floors, with 264 households.

Green Spring Community: It's built in 2009, which is 70m away from the northeast of the project site, with a construction area of 6400 m². The building nearest to the project has 6 floors, with 576 households.

Ningguo Vocational High School: It's built in 1985, covering an area of 93 acres. It's located in the north side of the project, with 2700 teachers and students.

Children Welfare Home: It's built in 2011, with a construction scale of 1270 m² and 48 beds.

Senile apartment: It's built from 1995 to 2013 in four phases, with a construction scale of 18500 m² and 420 beds.

See Table 3.5-1 for environment sensitive spots around the project site and Table 3.5-2 for surrounding environment of project site.

Table 3.5-1 Schedule of Sensitive Spots around the Project Site

Subproject name	Environmental protection target	Distance (m)	Position	Size	Environmental impact factors	Applicable standard
Ningguo Social Welfare Service Center Upgrading Project	Nanshan Yayuan Community	70	SE	264 households/ 800 people	Construction dust and noise	Grade 2 Standards as mentioned in *Ambient Air Quality Standards* (GB3095-2012); Class 2 Standards as mentioned in *Environmental Quality Standard for Noise*
	Green Spring Community	70	NE	576 households/ 1500 people		
	Ningguo Vocational High School	100	N	1000 teachers and students		
	Children Welfare Home	20	N	42 beds		
	Existing projects of Ningguo Municipal Social Welfare Home	20	W	18 beds		
	Ningguo Municipal Senile Apartment	20	S	420 beds		

Figure 3.5-2 Environment Surrounding the Ningguo Social Welfare Service Center Upgrading Project

3.5.2 Supporting projects

The waste water in the project flows into the municipal sewage pipe network after being pretreated in self-built septic tank, and then it will be connected to the Ningguo Sewage Treatment Plant for treatment.

1. Ningguo Sewage Treatment Plant

Ningguo Sewage Treatment Plant is located in the east of Ningguo Avenue, Ningguo City, and the north of Wufang Road, with an area of 5 acres, and a treatment scale of 40,000 tons/day. The oxidation ditch treatment process is adopted, and the wastewater after treatment meets the primary standard B of the *Discharge Standard of Pollutants for Municipal Wastewater Treatment Plant* (GB18918-2002). According to "Special Planning of Urban Drainage Engineering in Ningguo City 2004-2020", the service scope of Ningguo Sewage Treatment Plant is the whole urban area of Ningguo City, including Xijin, Nanshan, Helixi street areas and provincial development zones Nanshan and Helixi. The planned service area is 28 square kilometers. According to the overall urban planning, present terrain condition, and urban development direction of Ningguo City, the service scope of the project is divided into 10 sewage drainage subareas, respectively: South Economic Area, North Economic Area, West City Area, Middle City Area, Xiaonanhe River Area, Fengxing Area, Old City Area, East City Area, Helixi Area, and North City Area. Ningguo Sewage Treatment Plant was built and operated in 2010, with daily treatment capacity of 40,000 tons and 53.5 kilometers of supporting pipe network. In the 12th Five-Year, another 37 kilometers of supporting pipe network was built and the service scope of water collection reached 22.6 square kilometers. At present, the daily treatment capacity is 32,000 m^3, and there is still surplus capacity of 6000 m^3 per day.

By consulting with the construction unit and Ningguo Environmental Protection Bureau, Ningguo Sewage Treatment Plant has strictly implemented the "three simultaneous" system of environmental protection and carried out the pollution control measures in EIA Report and met the standards of pollutants discharge in EIA Report during construction. And the Ningguo Environmental Protection Bureau has received no report from the masses. So, there is no environmental problem left.

2. Ningguo Domestic Garbage Treatment Center

Ningguo Domestic Garbage Treatment Center is located in the Zhufeng Village, Zhufeng Street, Ningguo City, which is the west of urban area of Ningguo. It’s built in July 2010, with a design capacity of 1750,000 m^2. 780,000 m^2 has been used now, and

970,000 m² is still available. The process is modified anaerobic sanitary landfill treatment, and the project has passed the approval and acceptance of EIA and environmental protection bureaus.

The project was approved by Xuancheng Environmental Protection Bureau in 2006 (X. H. Z. H. (2006) No.2) and started operation in July 2010. It was completed and accepted by Xuancheng Environmental Protection Bureau in 2015 (X. H. Z. H. (2015) No.124).

By consulting with the construction unit and Ningguo Environmental Protection Bureau, Ningguo Domestic Garbage Treatment Center has strictly implemented the "three simultaneous" system of environmental protection and carried out the pollution control measures in EIA Report and met the standards of pollutants discharge in EIA Report during construction. And the Ningguo Environmental Protection Bureau has received no report from the masses. So, there is no environmental problem left.

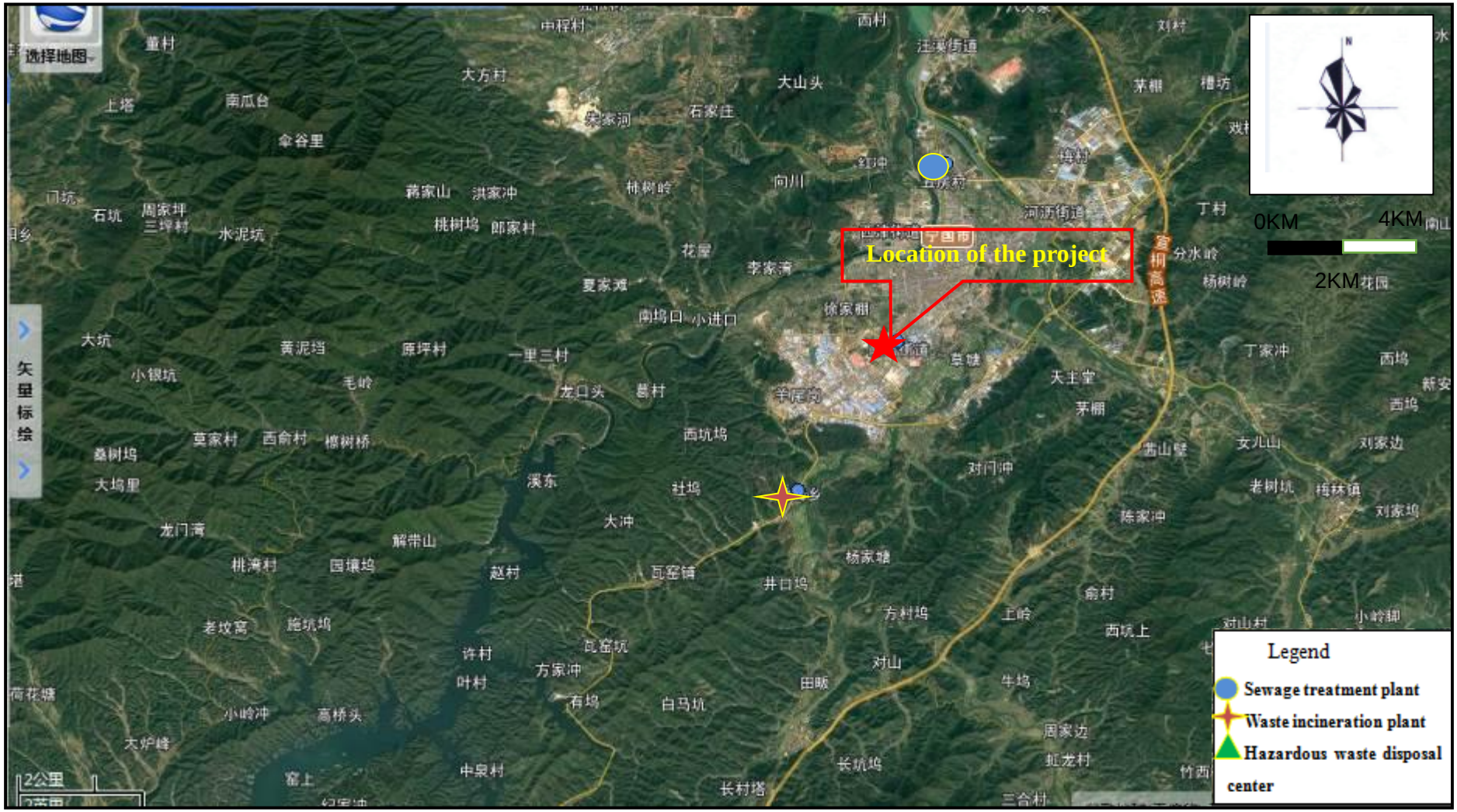


Figure 3.5-3 Status of Supporting Projects of Ningguo Social Welfare Service Center Upgrading Project

3.6 Suzhou City

Suzhou City is located in the north of Anhui Province. It's located in 116°09′-118°10 east longitude, and 33°18′-34°38′ north latitude. It’s located in the northeast of Anhui Province, which is connected with the coast, and backed by the Central Plains. It's known as the north gate of Anhui Province. It borders on Suqian and Xuzhou of Jiangsu Province from east to northeast; it's adjacent to Shangqiu of Henan Province, and Heze of Shandong Province from west to northwest; and it's connected with Bengbu and Huaibei of Anhui Province in the south. It covers a total area of 9787 square kilometers. It has a total population of 6.17 million (2007). It has jurisdiction over 1 municipal district and 4 counties. The municipal government locates at Yongqiao District.

Suzhou is a warm temperate semi-humid monsoon climatic region in North China according to climatic regionalization of China. Its main climatic characteristics are: obvious monsoon, four distinct seasons, mild climate, moderate rainfall, changeable spring temperature, hot and rainy summer, invigorating autumn climate, cold and dry winter, abundant sunlight, and long frost-free period.

The total amount of solar radiation in this area is 126.1 kcal/cm^2, and the amount is 90 kcal/cm^2 when daily average temperature is higher than 10 ºC; the annual average sunshine hours are between 2021.3-2648.1 hours. The average temperature over years is 14.4 ºC; the average temperature in January is 2 ºC; the average temperature in July is 26.8 ºC; the extreme maximum temperature over years is 40.3 ºC, the extreme minimum temperature over years is -23.4 ºC; the average maximum temperature of the hottest days over years is 32.4 ºC; the average temperature of the coldest months over years is -6.2 ºC.

The annual average rainfall over years in Suzhou is 890.10mm; the rainfall is 647mm under 80% guarantee rate; the maximum rainfall over years is 1481.30mm; the minimum rainfall over years is 564.4mm; the maximum monthly rainfall over years is 960.80mm; the maximum daily rainfall over years is 216.90mm; the maximum snow depth over years is 220mm; the rainfall from June to August accounts for 55% of the year, of which, the rainfall in July accounts for 28.4% of the year. The maximum frozen soil depth over years is 150mm, and the annual average relative humidity is 71%.

The prevailing wind direction in Suzhou is ENE, whose wind direction

frequency fluctuates between 11.0-16.0, and the annual average wind speed is 2.3m/s. The east wind is the secondary prevailing wind direction, whose wind direction frequency accounts for 10%, and the annual average static wind frequency is about 5%. The maximum wind speed in spring is 3.1m/s. The average annual days with high wind (wind speed >17.2m/s) is 10.3 days.

3.6.1 Subproject III - Status and Surrounding Sensitive Spots of Rural Nursing Homes

There are 35 rural nursing homes in Suzhou City, including 5 in Dangshan County, 8 in Lingbi County, 5 in Si County, 6 in Xiao County, and 11 in Yongqiao District. The occupied area of this project remains unchanged; some area is expanded on the basis of the original land, and the existing buildings are upgraded. See Figure 3.6-1, 3.6-2, 3.6-3, 3.6-4 and 3.6-5 for the detailed locations of projects in various districts and counties of Suzhou City.

Table 3.6-1 Location of Rural Nursing Homes in Suzhou

Region	SN	Name	Location	Upgrading construction area (m^2)
Dangshan County	1	Guandimiao Nursing Home	Guandimiao	1125
	2	Nursing Home of Zhulou Town	Zhulou Town	1125
	3	Nursing Home of Lizhuang Town	Lizhuang Town	1610
	4	Nursing Home of Linchang, Xuanmiao Town	Linchang, Xuanmiao Town	1610
	5	Nursing Home of Jiangzhuang, Zhaotun Town	Jiangzhuang, Zhaotun Town	1610
Lingbi County	6	Nursing Home of Lingcheng Town Center	Lingcheng Town	700
	7	Fengmiao Nursing Home	Fengmiao Town	1400
	8	Nursing Home of Huangwan Town	Huangwan Town	700
	9	Nursing Home of Qiumiao, Yangtuan Town	Yangtuan Town	700
	10	Nursing Home of Yugou Town	Yugou Town	700
	11	Nursing Home of Fuzhai, Xialou Town	Xialou Town	700
	12	Nursing Home of Gaolou Town	Gaolou Town	700
	13	Nursing Home of Yuji Township	Yuji Township	700
Si County	14	Nursing Home of Caomiao Town	Caomiao Town	560
	15	Nursing Home of Changgou Town	Changgou Town	615
	16	Nursing Home of Dalukou Township	Dalukou Township	195
	17	Nursing Home of Pingshan Town	Pingshan Town	230
	18	Nursing Home of Dazhuang Town	Dazhuang Town	180
Xiao County	19	Nursing Home of Sanlizhuang, Longcheng Town	Sanlizhuang, Longcheng Town	428

	20	Nursing Home of Shengquan Township	Xiezhuang, Shengquan Township	275
	21	Nursing Home of South Huangkou Town	Zhuzhuang Village, Huangkou Town	100
	22	Nursing Home of South Wangzhai Town	Wangzhai Village, Wangzhai Town	205
	23	Nursing Home of Xinzhuang Town	Douzhuang, Xinzhuang Town	380
	24	The First Nursing Home of Zhangzhuangzhai Town	Jinqiao, Zhangzhuangzhai Village, Zhangzhuangzhai Town	308.5
Yongqiao District	25	Beiyangzhai Nursing Home	Beiyangzhai	1536
	26	Bianhe Aged-care Service Center	Bianhe	2170
	27	Caocun Sihou Nursing Home	Caocun Sihou	924
	28	Nursing Home of Chengdong Township	Chengdong Township	1221.8
	29	Fuli Hengkou Nursing Home	Fuli Hengkou	0
	30	Fuli Shenwei Nursing Home	Fuli Shenwei	1308
	31	Langan Luding Nursing Home	Langan Luding	0
	32	Nursing Home of Qibei Xincheng, Qi County	Qibei Xincheng, Qi County	1210
	33	Yongan Daxu Nursing Home	Yongan Daxu	768
	34	Nursing Home of Shunhe Township	Shunhe Township	0
	35	Nursing Home of Shichun Town	Shichun Town	0

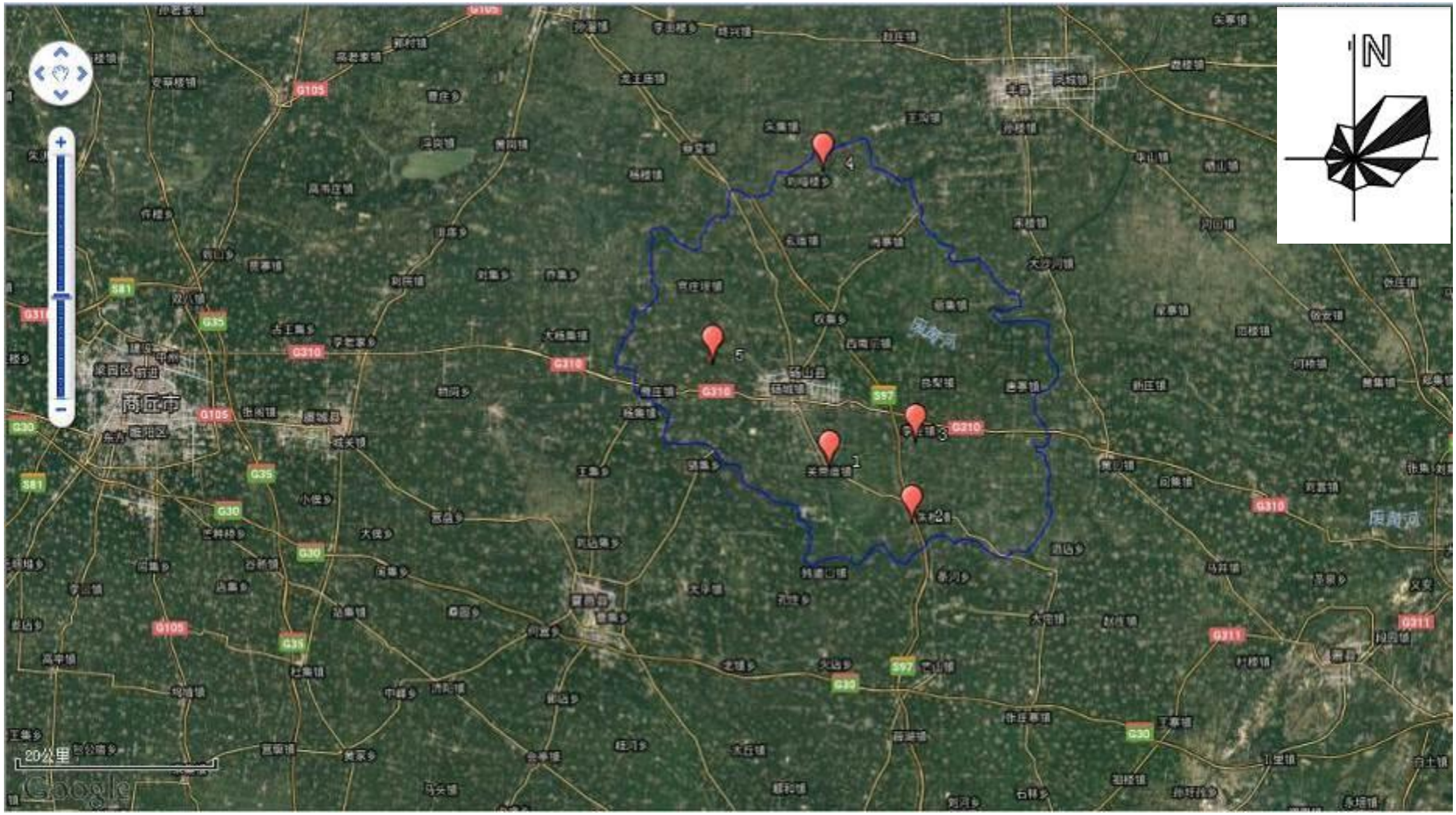


Figure 3.6-1 Location of 5 Rural Nursing Homes in Dangshan County, Suzhou City

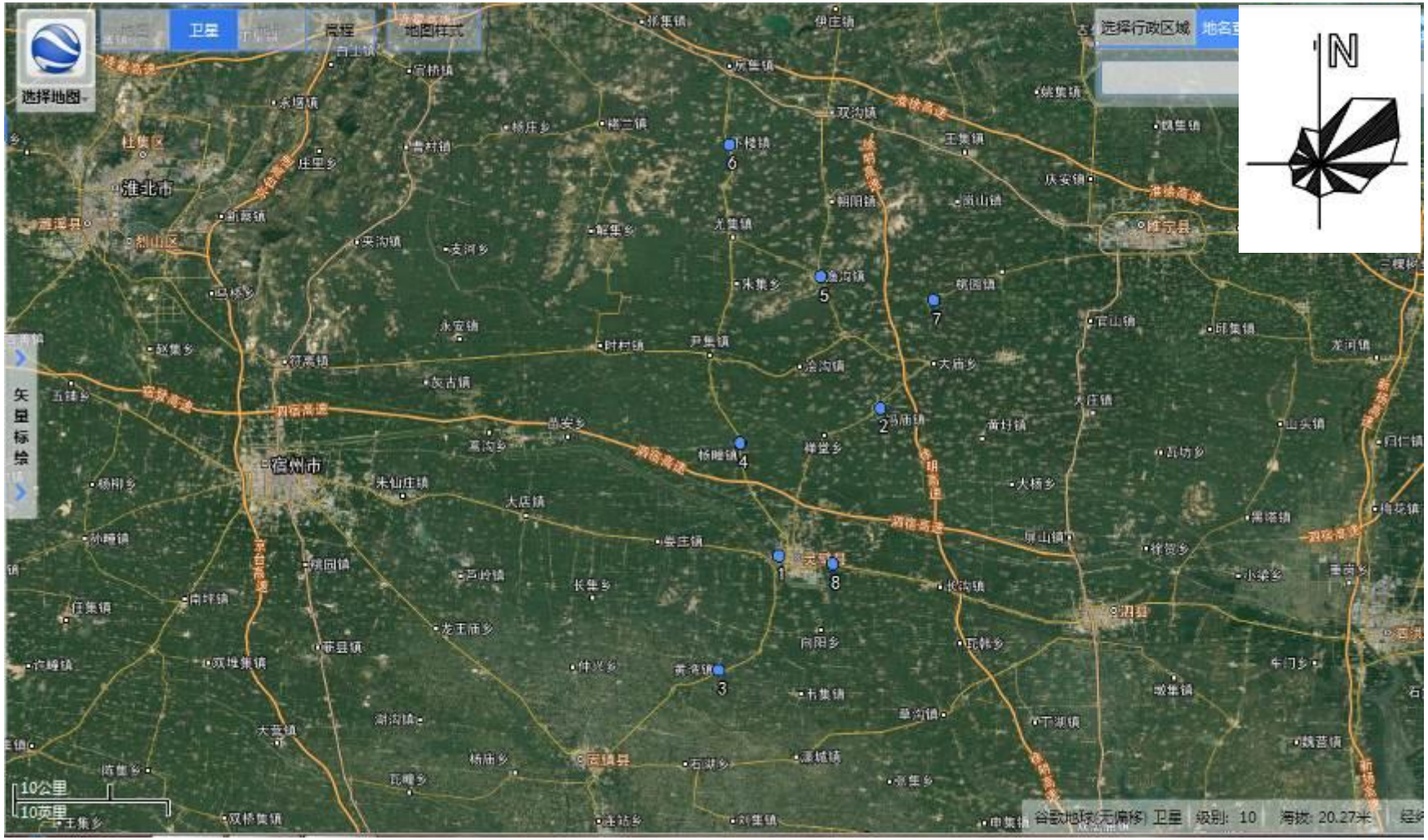


Figure 3.6-2 Location of 8 Rural Nursing Homes in Lingbi County, Suzhou City

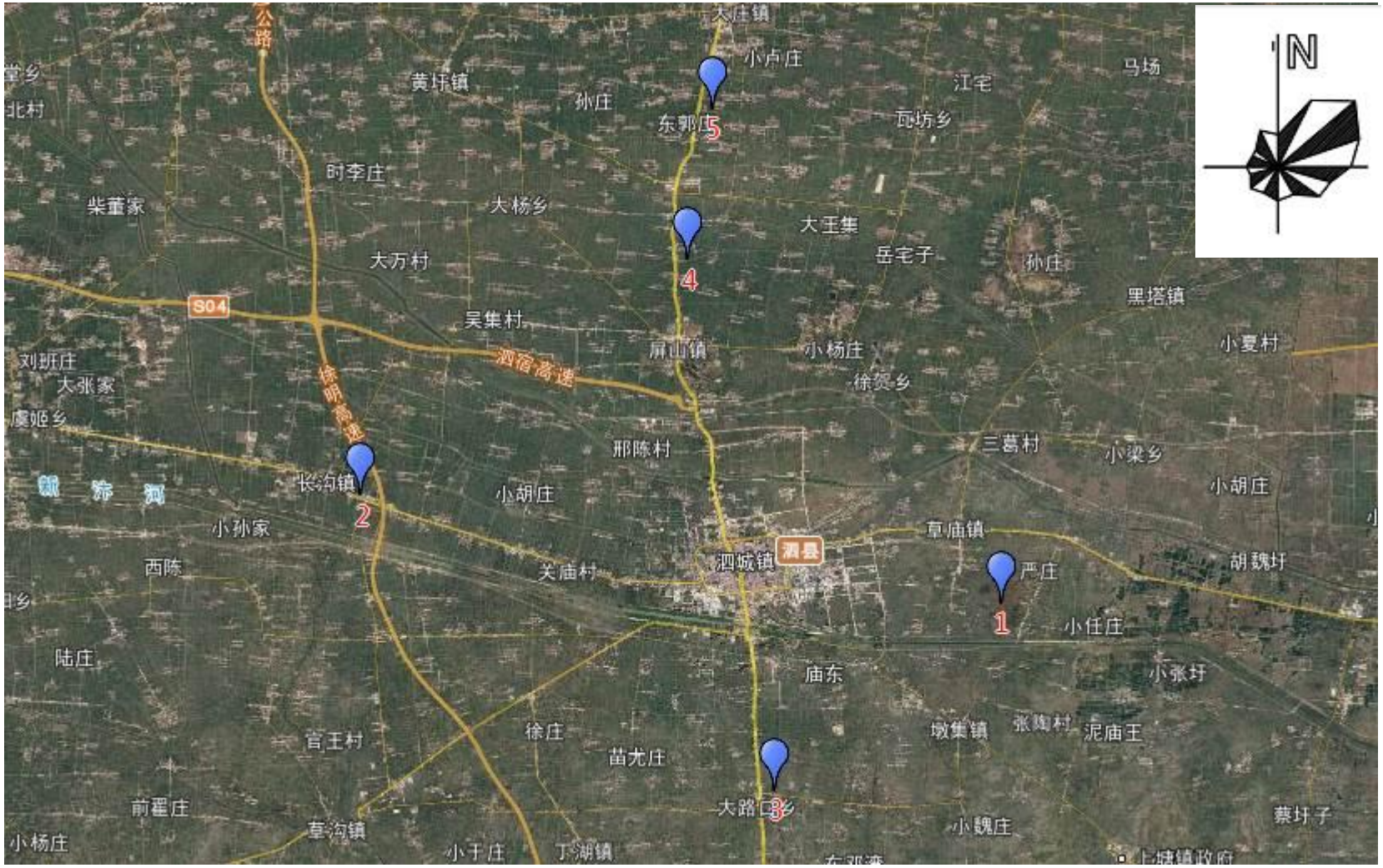


Figure 3.6-3 Location of 5 Rural Nursing Homes in Si County, Suzhou City

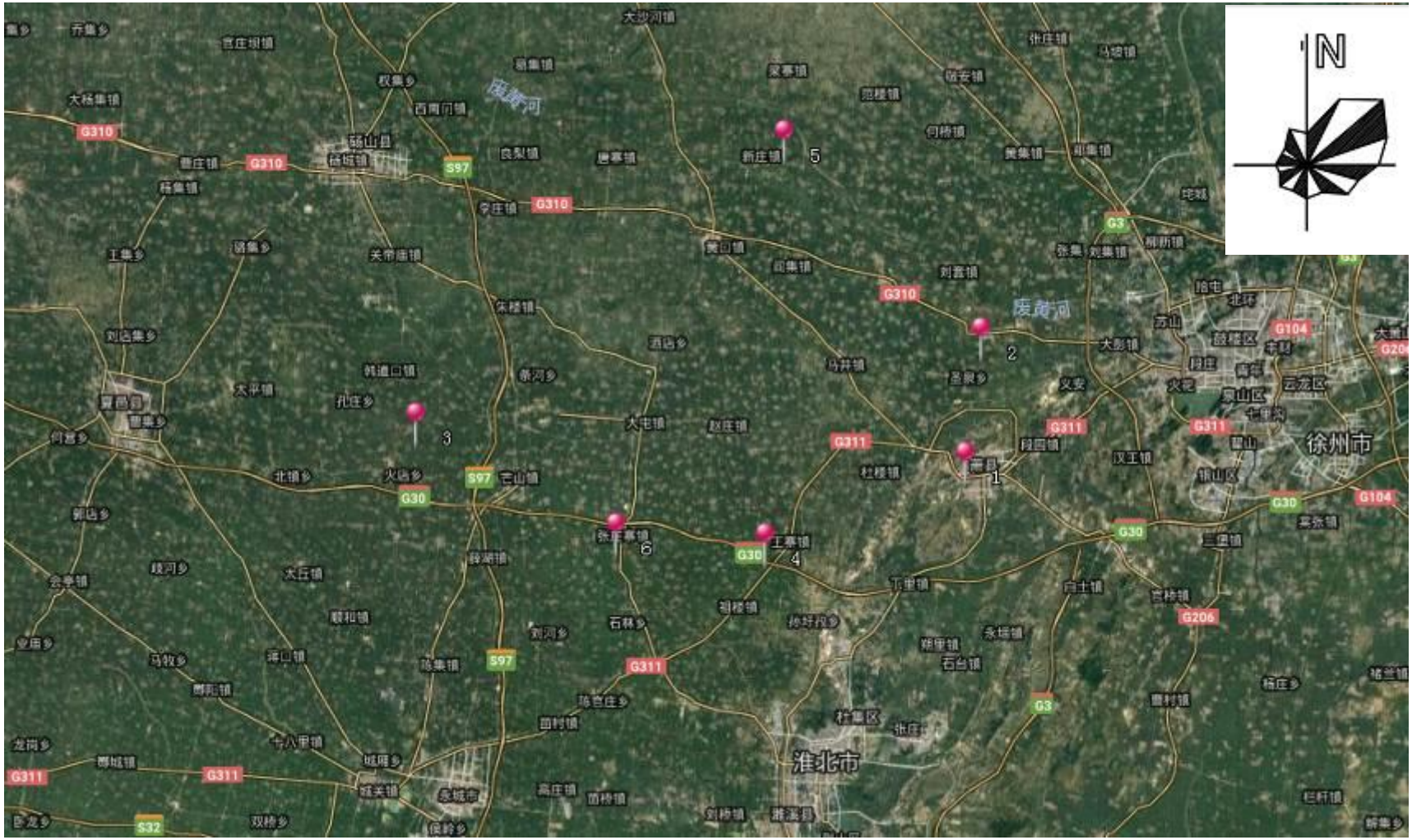


Figure 3.6-4 Location of 6 Rural Nursing Homes in Xiao County, Suzhou City

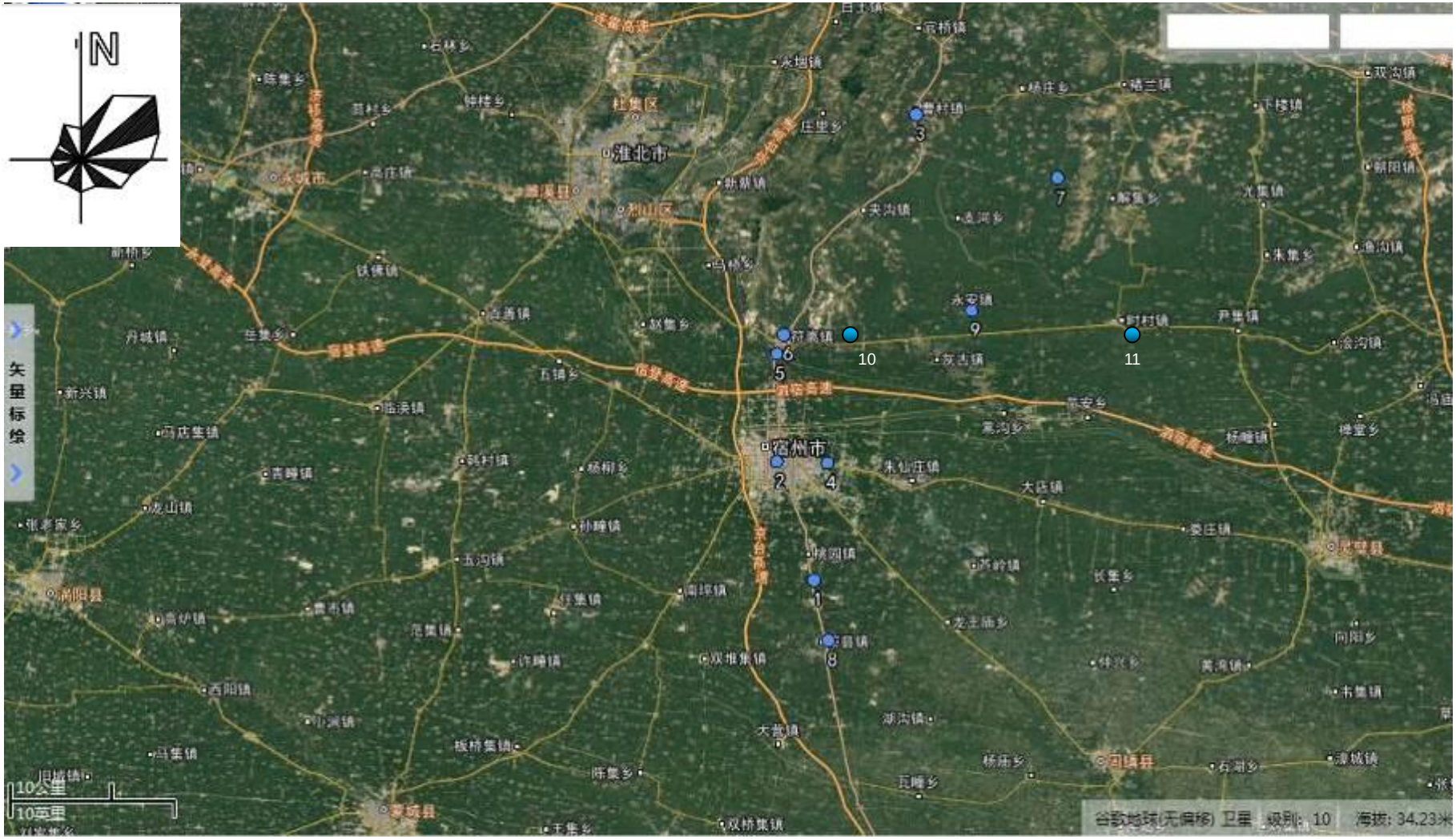


Figure 3.6-5 Location of 11 Rural Nursing Homes in Yongqiao District, Suzhou City

The existing 35 rural nursing homes in Yongqiao District, Dangshan County, Lingbi County, Xiao County, and Si County of Suzhou City will be upgraded, including building renovation and equipment upgrading. The increased floor area is 25,994.3 m^2; 1446 additional beds will be arranged in these nursing homes. Therefore, the EIA will be represented by the status and surrounding sensitive spots of Nursing Home of Linchang, Xuanmiao Town, Dangshan County.

The Nursing Home of Linchang, Xuanmiao Town, Dangshan County is located in the former site of the Nursing Home of Linchang, Xuanmiao Town, Suzhou City, and the renovation and expansion are carried out on the basis of the former site. The Nursing Home of Linchang, Xuanmiao Town was built in October 2004, with an area of 3960m^2, brick-concrete structure, and 76 elderly. Since the building has been built for a long time, the appearance and internal facilities have been aging, the circuit has been seriously aging, and fire and safety and other facilities are not perfect. The project intends to carry out exterior and interior renovation and decoration of existing buildings, set up related aged-care service facilities, expand 1610m^2 of area, add 60 new beds, build 100m of road, make green of 200m^2, and purchase a total of 1240 sets of living service facilities. During the renovation and expansion of the project, the elderly will be resettled on the spot or in nearby nursing homes. The details are shown in Figure 3.3-7 Project Status and Surrounding Sensitive Spots.

3.6-6 Details of Project Status and Surrounding Sensitive Spots

According to investigations of project site, the project is surrounded by forest land, with beautiful environment, which is suitable for the living of retired people. The project drainage is treated by septic tank, which is cleaned regularly for fertilization. No asbestos waste was generated in the renovation and expansion. The

project has little impact on the environment, however, decoration waste shall be timely removed, reasonable arrangements shall be made for the use of noise producing equipment, and construction shall be avoided during the nap and at night; and strict avoidance, prevention and mitigation measures shall be taken throughout the project in the light of possible pollution impacts.

4 Main Environmental Impact and Mitigation Measures

4.1 Environmental Impact Analysis and Mitigation Measures during Construction Period

4.1.1 Brief on common construction impact

The construction of the Project will have some impact on the surrounding environment, which will be mainly from dust and wastewater generated during construction and transport, noise from construction machinery and vehicles and construction wastes piled.

(I) Analysis on environmental impact of wastewater during construction

The wastewater generated during the construction mainly includes the domestic sewage from construction workers and construction wastewater. Construction wastewater includes the effluent from earthwork and concrete curing and flush water of construction materials on the site and vehicles, with the main pollutant being SS. The main pollutants in the domestic sewage are SS, BOD_5, and CODcr.

A small amount of domestic sewage will be generated and discharged into the municipal sewage pipe network after treatment in the septic tank.

The construction wastewater will be discharged in an intermittent way with unstable discharging amount. Therefore, the construction will feature excessive water use and a large amount of discharging wastewater. And if no appropriate measures are taken, the water will flow freely on the construction site, having adverse impacts on the surrounding water environment and landscape.

For construction wastewater, it is suggested that a temporary effluent settling chamber should be provided on the construction site to collect various wastewater generated and discharged during construction. The wastewater after settling may be reused for construction, thus saving water and reducing the pollution on the surface water environment.

(II)Analysis on atmospheric environmental impact during construction

During construction of the Project, main atmospheric pollutants are:

(1) Exhaust gas

It is mainly the exhaust gas from construction machinery and vehicles.

(2) Flying powder and dust

During construction, the dust pollution is mainly from:

Flying powder of construction materials (such as cement, lime and sand) borne

by the wind during handling, transport and piling;

Flying dust from the ground caused by running vehicles;

Flying dust from construction wastes during their piling, removing and transport;

The exhaust gas and flying dust and powder generated during construction will cause atmospheric pollution, especially flying powder and dust. The flying powder and dust pollution during construction mainly depends on construction methods, piling of materials and wind in particular. According to analogy of on-site measurements, under general meteorological conditions, the average wind velocity is 3.2m/s, TSP concentration is 1.28-0.16 times its control point upwind, the affecting range of flying dust from construction is 96m down the wind, TSP average concentration in the affecting range is 0.31mg/m^3. Where the fence is provided, the affecting range under same conditions is shortened by 40%. When the wind velocity is greater than 5m/s, TSP concentration on the construction site and the area down the wind will exceed Grade II criteria of air quality standards. And with the increase of wind velocity, the pollution and above-standard degree of construction dust will go up.

The flying power and dust generated during construction will have adverse impact on the surrounding atmosphere. The wind velocity of the Project site is relatively slow, and therefore the flying power and dust occurs only on windy and dry days on the construction site and the area down the wind. As construction dust is main contributor to atmospheric pollution during construction, the following measures to control construction dust shall be taken:

1. Specifications and content of construction signs. During construction, the Contractor shall provide the general layout plan of construction site and signboards for project overview, safe production, fire fighting and security, housekeeping, environment protection, and supervision telephone sign and the list of management.

2. Provision of enclosures, fences and anti-overflow device. During construction, the civil works sites are located at urban trunk roadsand bustling area, and shall be provided with enclosures with the height of over 2.5m; and the fences with the height of over 1.8m shall be provided for other works sites. The height of these enclosures and fences may be increased in line with local regulatory requirements. The bottom of the enclosures and fences shall be provided with anti-overflow device, and no gap is allowed between two enclosures and between each enclosure and its anti-overflow device. Where it is impossible to provide

enclosures, fences and anti-overflow devices, warning signs must be provided.

3. Measures of dust prevention for earthwork. The earthwork includes earth excavation, transport and filling and such possible preparation as drainage, dewatering and soil wall support. In case of dry and dusty earthwork, watering is necessary and the operations generating dust shall be shortened as possible. On days with moderate breeze or above, earthwork shall be suspended and the earthwork sites shall be covered with dust screens.

4. Dust prevention measures for construction materials. For such construction materials easy to generate flying powder during construction, such as cement, lime, sand, stones, paintings, and paving materials, one of the following measures shall be taken:

a) Enclosed storage;

b) Provision of fences or enclosures;

c) Covering with dust tarpaulin; and

d) Other effective dust prevention measures.

5. Dust prevention measures for construction wastes. The spoil, discarded materials and other construction wastes generating during construction shall be removed and transported. In case of piling on the construction site for more than one week, one of the following measures shall be taken to prevent aeolation, dusting and ablation:

a) Covering with dust tarpaulin or dust screens;

b) Regular spraying of dust suppressant;

c) Regular watering to prevent dust;

d) Other effective dust prevention measures.

6. Provision of vehicle wash platforms and improving drainage facilities to prevent sludge adhering to the vehicles. During construction, vehicle wash platforms shall be set up at the inner side of the exit of the construction site, and all vehicles (tire and body) shall be washed till no sludge is found. Around the car wash platform be provided with anti-overflow device, drainage ditch, wastewater tank, settling tank, and other related device to collect the wastewater and slurry generated from vehicle washing, construction and dewatering. The paved road at the exit of the construction site with visible clay left by traveling vehicles shall be shorter than 10 m, and shall be cleaned in a timely manner.

7. Dust prevention measures and transport route and time of vehicles carrying

materials, slag and spoil, and wastes into and out of the construction site. The vehicles carrying materials, slag and spoil, and wastes into and out of the construction site shall adopt an enclosed bucket to prevent leakage of load. If the enclosed bucket is unavailable, the loading height of materials, slag and spoil, and wastes shall not exceed the upper edge of the bucket walls, and the vehicle bucket shall be covered with tarpaulin tightly. The tarpaulin shall cover at least the area of 15cm below the upper edge of the bucket walls to prevent exposure of materials, slag and spoil, and wastes. The vehicles shall transport materials, slag and spoil, and wastes in line with approved route and time.

8. Dust prevention measures for access roads on the construction site. During construction, one of the following measures shall be taken on the roads for vehicles within the construction site and from the exit of the construction site to the road to be paved to keep the road clean and prevent dust from running vehicles:

a) Paving of steel plates;

b) Paving of cement concrete;

c) Paving of asphalt concrete;

d) Paving of reef slag, fine stones and equivalent materials, and taking such auxiliary measures as watering and spraying of dust suppressants; and

e) Other effective dust prevention measures.

9. Dust cleaning measures for construction roads. Dust collection or flushing may be adopted to remove the dust accumulated on the access roads on the construction site, and dust suppression measures such as watering must be taken before cleaning.

10. Dust prevention measures for bare ground within the construction site. During construction, one of the following measures shall be taken for bare ground within the construction site:

a) Covering with dust tarpaulin or dust screens;

b) Paving of reef slag, fine stones and equivalent materials;

c) Vegetation;

d) Watering twice to seven times a week as the case may be on sunny days, and watering more in case of severe flying dust;

e) Regular spraying of dust suppressant based on its performance;

f) Other effective dust prevention measures.

11. During construction, the effective dense-mesh dust screen (no less than 2000

meshes/ 100 cm^2) and dust tarpaulin shall be provided at the outer side of the scaffold around the structure under construction.

12. Dust prevention measures for concrete. When concrete is required during construction, ready-mixed concrete may be used or enclosed mixing may be adopted with the provision of dust prevention and removal device. Concrete mixing, lime slaking and mixing of lime soil in open air on the construction site are not allowed. Finished products or semi-finished products made of stones or wood shall be used as possible for fabricated construction to minimize pollution from flying powder and dust from cutting of stones and wood.

13. Dust prevention measures for longitudinal conveying of materials, slag and spoil, and wastes. During construction, materials, slag and spoil, and wastes easy to generate powder or dust on the superstructure of the building under construction shall be conveyed to the ground or underground via elevator shaft, internal pipelines or enclosed conveying pipelines or be packed and boxed before removing. Dropping in the air is prohibited.

14. Full-time personnel shall be designated for implementation and supervision of dust prevention measures at large and medium construction sites. At each construction site, there shall be personnel dedicated for enclosing, covering, watering of fugitive materials, wastes, slag and spoil and ground, vehicle washing, and recording the dust prevention measures taken.

15. Keep the surrounding area of the construction sites clean. The size of area around the construction site where the Contractor shall keep clean depends on the affecting range of flying dust from construction, generally 20m from the construction site.

(III) **Analysis on environmental impact of noise during construction**

1. Construction noise pollution source

During construction, a number of construction machinery and vehicles will be used and constitute the largest contributor to construction noise. The noise from construction machinery is characterized by high sound pressure level and continuous emission, while the traffic noise from running vehicles is featured by multiple sound sources and high mobility.

During construction, the noise is mainly from construction machinery, field operations and running vehicles. The noise from construction machinery is from excavators and hoists etc., featuring multiple sound sources; operation noise is from

occasional striking, crash from loading and unloading construction materials, yo-heave-ho of construction workers, and crash from installation and removing of formwork, featuring instantaneity. The noise from running vehicles is traffic noise. Among them, the noise from construction machinery has biggest impact on the surrounding acoustic environment.

According to *Guideline for Environmental Noise and Vibration Control Technologies* (HJ 2034—2013), the noise source intensity of main construction machinery to be used for construction are shown in Table 4.1-1. When multiple machinery and equipment are in operation at the same time, the noise will be superimposed. According to the analogy survey, superimposed noise will increase by 3-8dB (A), generally not exceeding 10dB (A).

Table 4.1-1 Construction Noise Source Intensity

Construction STAGE	Noise source	From sound source 5 m	From sound source 10 m	Construction stage	Sound source	From sound source 5 m	From sound source 10 m
Earthwork and stonework phase	Bulldozer	83~88	80~85	Fitting-out and installation phase	Electric hammer	100~105	95~99
	Electrical excavator	80~86	75~83		Woodwork and electric saw	93~99	90~95
	Road roller	80~90	76~86		Angle grinder	90~96	84~90
	Heavy duty carrier vehicle	82~90	78~86		Cutting tools	90~96	84~90
	Vibratory rammer	92~100	86~94		Air compressor	88~92	83~88
	Wheel loader	90~95	85~91				
Base plate and structure phase	Concrete pump	88~95	84~90				
	Concrete vibrator	80~88	75~84				
	Electric saw	93~99	90~95				
	Commercia l concrete mixer tank	85~90	82~84				
	Air compressor	88~92	83~88				
	Static pile driver	70~75	68~73				

2. Analysis on environmental impact of noise during construction

During construction, the running construction machinery and equipment and vehicles will inevitably generate noise pollution, and constitute the source of noise. The noise impact value under the most adverse condition is analyzed, namely the

noise impact value of single noise-generating equipment on the boundary of the Project site with the shortest distance from the sensitive site at each construction phase. According to related data, the noise source intensity of main construction machinery is listed in Table 4.1-1.

Based on the sound source features of proposed construction machinery and equipment and acoustics environment and equipment sound source as point source and according to *Technical Guide for Environmental Impact Assessment - Acoustics Environment (HJ 2.4-2009)*, the geometric divergence and attenuation prediction mode for non-directional sound source is adopted to predict noise from the construction site.

Prediction method and mode

The prediction mode is as follows:

$$L_P = L_{P_0} - 20\lg r - \Delta L$$

Where: L_P—sound pressure level of prediction points, dB (A);

L_{P0}— noise source intensity, dB (A);

r— distance between prediction point and noise source, m;

ΔL — extra attenuation (not considered).

If sound barriers are not considered on the construction site, the noise levels and influence distance of construction machinery are shown in Table 4.1-2 as predicted based on the announced point sound source attenuation.

Table 4.1-2 Noise Transmission of Construction Machinery

Construction equipment	Noise levels at different distances from sound source, dB (A)								
	20m	40m	60m	80m	100m	120m	150m	200m	300m
Bulldozer	79	73	69	67	65	63	61	59	55
Electrical excavator	77	71	67	65	63	61	59	57	53
Road roller	80	74	70	68	66	64	62	60	56
Heavy duty carrier vehicle	80	74	70	68	66	64	62	60	56
Vibratory rammer	88	82	78	76	74	72	70	68	64
Wheel loader	85	79	75	73	71	69	67	65	61
Concrete pump	84	78	74	72	70	68	66	64	60
Concrete vibrator	88	82	78	76	74	72	70	68	64
Electric saw	89	83	79	77	75	73	71	69	65
Commercial concrete	88	82	78	76	74	72	70	68	64

mixer tank									
Air compressor	82	76	72	70	68	66	64	62	58
Static pile driver	67	61	57	55	53	51	49	47	43
Electric hammer	93	87	83	81	79	77	75	73	69
Woodwork and electric saw	89	83	79	77	75	73	71	69	65
Angle grinder	84	78	74	72	70	68	66	64	60
Cutting tools	84	78	74	72	70	68	66	64	60

As shown in Table 4.1-2, single noise attenuates with the increase of distance from the sound source. According to construction site boundary noise control requirements, average A sound level at 200m from construction equipment in the daytime and nighttime fails to comply with *Emission Standard of Environment Noise for Boundary of Construction Site* (GB12523-2011), namely 70 dB (A) for daytime and 55dB(A) for night. Therefore, countermeasures must be taken for construction noise. This EIA requires the Employer to strictly implement the noise control measures during construction.

Coverings shall be provided for the construction sites, and mobile sound barriers shall be provided around high-noise equipment (vibratory rammer, concrete vibrator, electrical saw, electrical hammer and commercial concrete mixer tanker), with the average sound insulation no less than 30 dB (A). For the Project, all of the noise levels of nearest sensitive points fail to comply with *Emission Standard of Environment Noise for Boundary of Construction Site* (GB12523-2011), namely 70 dB(A) in the daytime. The acoustic environment of the Project site is subject to the criteria for Zone II in the daytime under the *Environmental Quality Standard for Noise* (GB3096-2008). High-noise equipment must not be used at night. During construction, there will be a number of construction machines in operation at the same time, various noise source radiations will be superposed, with higher noise level and broader radiation scope. In order to protect the acoustic environment quality of surrounding sensitive points of the Project site, the emission of noise to the neighborhood during the construction shall meet the requirements of the *Law of the People's Republic of China on the Prevention and Control of Environmental Noise Pollution* and be strictly subject to *Emission Standard of Environment Noise for Boundary of Construction Site* (GB12523-2011) so as to reduce the impact of noise on the lives of surrounding residents during the construction.

(1) The advanced low-noise equipment shall be selected by the Contractor, and the noise barrier shall be properly set around high-noise equipment to reduce the influence of noise on the surrounding environment. In addition, the noises in boundary of construction site shall be controlled and not exceed limit specified in *Emission Standard of Environment Noise for Boundary of Construction Site* (GB12523-2011). The Contractor may monitor and record the noise level on the construction sites.

(2) Make arrangement carefully to reduce the duration of impact by construction noise, excluding continuous works (for example drilling, hole cleaning and concreting by cast in-situ piling machine, foundation ditch excavation, basement concreting and roof concreting) due to construction technology, and forbid the construction at night. Where the night works generating above-standard noise is necessary for production or other special needs, the Employer shall apply to relevant departments for approval three days in advance. The night works shall not be started until it is approved.

(3) During construction, the maintenance of construction machinery shall be strengthened to avoid higher mechanical noise due to poor performance of the equipment.

(4) The vehicles carrying materials into the construction site at night must not sound sirens, and materials shall be loaded and unloaded with care.

(5) In order to minimize the impact of construction noise on the surrounding environment, the following control measures shall be taken:

① Strengthen construction management, make reasonable arrangement of working time, and forbid high-noise operation at night;

② Construction machinery shall be placed as possible at positions with least impact on the surrounding environment;

③ Use hydraulic tools instead of pneumatic tools;

④ Provide coverings on the construction site, and provide mobile sound barriers around high-noise equipment;

⑤ Minimize the number and density of vehicles running on the construction site, and control sirens of the vehicles.

(IV) Analysis on environmental impact of solid waste during construction

The solid wastes generated during the construction mainly includes spoil, construction wastes and domestic waste from construction workers.

Spoil is from grooving earthwork. The excavated earth will be discarded except

for use for backfilling. The spoil shall be strictly disposed at the place designated by competent environmental sanitation department.

The construction wastes are the solid wastes from construction, such as residual or hardened cement, lime, sand and stones, bricks and tiles. These wastes contain no toxic and harmful ingredients; however their powder will be blown into air by wind, causing secondary pollution. Arbitrary piling of these wastes will have adverse impact on surrounding landscape, traffic and residents' traveling.

Therefore, control measures shall be taken for solid wastes during construction, such as removing construction wastes and domestic wastes in a timely manner, no arbitrary discarding and piling, protection against wind and rain, and avoiding drop from vehicles during transport.

4.1.2 Environmental impact and countermeasures for major sub-projects (Anqing, Lu'an, Wuhu, Xuancheng, Ningguo)

For construction period, the environmental impact of five major sub-projects (Elderly Care Institution of Anqing First People's Hospital, Multi-functional Medical Building Project of Lu'an Hospital of Traditional Chinese Medicine, Haoyan Rainbow Garden Wuhu health Aged-care Service Industry Base of Haoyan Rainbow Garden, Relocation Project of Xuancheng Municipal Social Welfare Home, and Improvement Project of Ningguo City Social Welfare Service Center)is analyzed.

4.1.2.1 Elderly Care Institution of Anqing First People's Hospital

The Subproject of Elderly Care Institution of Anqing First People's Hospital is part of construction of Longshan Branch of Anqing First People's Hospital, for which the *Environmental Impact Assessment Report for Project of Longshan Branch of Anqing First People's Hospital* has been prepared. The Project was approved by Yixiu District Environment Protection Bureau of Anqing City on December 31, 2015 (YXHJH [2015] No. 75). For the Project, the civil works period is from August 2016 to September 2018 and the fitting-out (the fitting-out period is 1 year) and procurement of equipment is to be commenced in October of 2018. This World Bank Loan Project involves no civil works and only internal fitting-out and procurement of equipment.

The main influences of the Project, which is mainly built buildings, are waste gas and water, solid waste and noise.

1. **Exhaust gas**

The air pollution during construction of the Project is mainly from flying dust generated during foundation restructuring and organic gases generated during internal fitting-out.

For the Project, construction dust is mainly flying dust and power generated during foundation transformation. According to analogy analysis and calculation based on monitor data of similar projects, the construction dust concentration on a construction site is around 0.5~0.7mg/m^3.

The fitting-out works include paving of floor tiles and porcelain pieces, painting of walls and ceilings (melamine paint), and installation of doors and cabinets. The paints to be used contain calcium carbonate and polyvinyl alcohol, and polyvinyl alcohol generates a small amount of organic waste gas. The emission of such waste gas is fugitive and not subject to quantitative analysis.

For the Project, construction dust is mainly flying dust and power generated during foundation transformation. According to analogy analysis and calculation based on monitor data of similar projects, the construction dust concentration on a construction site is around 0.5~0.7mg/m^3.

The settling speed of particle increases rapidly as the particle size increases. When the particle size is 250μm, the settling speed is 1.005m/s, so it can be inferred that when the particle size is over 250μm, the main affected range is within the downwind close area of the dust point, while what really affects external environment is some small dust and particle. The affected range will vary with whether conditions on the site.

A simple and effective measure for suppressing flying dust is watering. Sprinkling the roads where vehicles run 4-5 times per day during the construction will reduce dust emission by around 70%.

Air storage and mixing of construction materials also generates a large amount of flying dust, which is significantly affected by wind velocity when the works is under way. Therefore, such works is prohibited on windy days and air storage of construction materials shall be reduced.

The sensitive site around 200m of the Project is Zongpu Community (Beiyuan Estate), which will be certainly influenced by the waste gas during construction period. Hence, sprinkling measures (four-five times a day) shall be applied momentarily to the roads in the Project for dust control. In addition, the Employer shall enhance management on each section that possibly generates flying dust on the construction

site to control the impact of flying dust on surrounding environment and environment-sensitive targets.

As construction dust is main contributor to atmospheric pollution during construction, the following measures to control construction dust shall be taken:

1. Specifications and content of construction signs. During construction, the Contractor shall provide the general layout plan of construction site and signboards for project overview, safe production, fire fighting and security, housekeeping, environment protection, and supervision telephone sign and the list of management.

2. Dust prevention measures for construction materials. For such construction materials easy to generate flying powder during construction, such as cement, lime, sand, stones, paintings, and paving materials, one of the following measures shall be taken:

a) Enclosed storage;

b) Provision of fences or enclosures;

c) Covering with dust tarpaulin; and

d) Other effective dust prevention measures.

3. Dust prevention measures for construction wastes. The spoil, discarded materials and other construction wastes generating during construction shall be removed and transported. In case of piling on the construction site for more than one week, one of the following measures shall be taken to prevent aeolation, dusting and ablation:

a) Covering with dust tarpaulin or dust screens;

b) Regular spraying of dust suppressant;

c) Regular watering to prevent dust;

d) Other effective dust prevention measures.

4. Dust cleaning measures for construction roads. Dust collection or flushing may be adopted to remove the dust accumulated on the access roads on the construction site, and dust suppression measures such as watering must be taken before cleaning.

5. Keep the surrounding area of the construction sites clean. The size of area around the construction site where the Contractor shall keep clean depends on the affecting range of flying dust from construction, generally 20m from the construction site.

(2) Waste gas from fitting-out

The air pollution at the fitting-out phase is mainly from such gases as methanal volatilized from fitting-out material, building materials and paints. Therefore, indoor ventilation shall be strengthened. In addition, there are cooking fumes discharged from ovens used by construction teams. It is suggested that clean fuel, such as coal gas and liquefied gas should be used to minimize the impact on surrounding atmosphere. If conditions allow, it is suggested that the Contractor organize the workers to order takeouts or eat at nearby restaurants. Avoid dropping or flying dust when loading, unloading and storing materials. The construction wastes will be transported sealed. Watering and other dust suppressing measures shall be taken to control flying dust from traveling vehicles and temporary storage yards.

At the fitting-out phase, the indoor environmental pollution control shall be subject to the code for fitting-out works of residences and conform to relevant provisions under the *Code for Indoor Environmental Pollution Control of Civil Building Engineering*. The low-toxic and low-pollution environmental-friendly fitting-out materials shall be adopted as possible in the design and construction.

2. Waste water

The water pollution source during fitting-out is mainly the flushing water in construction area.

The flushing water is mainly generated from cleaning of building materials like stones, and the main pollutant is SS.

The flushing water will be discharged in an intermittent way with unstable discharging amount. The construction will feature excessive water use and a large amount of discharging wastewater. And if no appropriate measures are taken, the water will flow freely on the construction site, having adverse impacts on the surrounding water environment. There will be quite a small amount of domestic sewage generated during fitting-out, but if not properly treated, it will also cause environmental degradation of the construction area. Especially in summer, it will generate mosquitoes and flies which spread pathogen, having adverse impact on the health of construction workers. The Project is the re-fitting-out of houses, and the fitting-out works is conducted indoors. Part of flushing water to be discharged shall be precipitated before reuse for production, and arbitrary discharging is prohibited.

3. Solid waste

For the Project, the building wastes generated are mainly from consuming of construction materials, including sand, stones, cement, scrap wood, sawdust, scrap

metal, rebar, wire and other wastes. A small amount of building wastes (50t) will be generated, of which the rebar heads and scrap wood take up 20% (10t) and will be all recycled. The rest building wastes (40t) shall stacked at the designated place which is approved by the government department of city appearance and environmental sanitation.

During fitting-out, the solid wastes are mainly building wastes generated by fitting-out workers. Part of solid wastes shall be recycled, and those unable to recycle shall be transferred to the environment and sanitation department of the development area for disposal. In addition, the waste paints and waste solvent bottles generated during fitting-out are hazardous, and shall be centralized and transferred to a qualified organization for disposal. Arbitrary discarding is prohibited.

According to the *Regulations on Management of Urban Building Wastes* (Decree No. 139 of the Ministry of Construction, 2005), building wastes shall be disposed subject to the principles of minimization, reutilization, hazard-free and who generates shall dispose. The organization disposing building wastes shall apply to competent environment and sanitation department (waste disposal office) of the municipal government for approval of disposing urban building wastes before disposal. The Contractor shall not transfer the building wastes to individuals or the organizations not approved to engage in transport of building wastes for transport.

4. Noise

During fitting-out, main noise sources are fitting-out machinery, such as electric saw, abrasive-disk cutter, cutting machine, and electric drill. According to *Guideline for Environmental Noise and Vibration Control Technologies* (HJ 2034—2013), the noise source intensity of main construction machinery to be used for fitting-out are shown in Table 5.3-1. When multiple machinery and equipment are in operation at the same time, the noise will be superimposed. According to the analogy survey, superimposed noise will increase by 3-8dB (A), generally not exceeding 10dB (A).

According to *Guideline for Environmental Noise and Vibration Control Technologies* (HJ 2034—2013), the noise source intensity of main construction machinery to be used for construction are shown in Table 4.1-3.

Table 4.1-3 Sound Pressure Levels at Different Distances from Noise Sources of Construction Equipment (dB (A))

Construction stage	Noise source	From sound source	From sound source

		5 m	10 m
Fitting-out and installation phase	Electric hammer	100~105	95~99
	Woodwork and electric saw	93~99	90~95
	Angle grinder	90~96	84~90
	Grinder	90~96	84~90
	Electric drill	90~96	84~90
	Air compressor	88~92	83~88

During fitting-out, the running of fitting-out equipment will inevitably generate noise pollution. The noise impact value under the most adverse condition is analyzed, namely the noise impact of single noise-generating equipment used for fitting-out on the boundary of the Project site with the shortest distance from the sensitive site at each construction phase. According to related data, the noise source intensity of main fitting-out equipment is listed in Table 4.1-3.

Based on the sound source features of fitting-out equipment to be used for the Project and acoustics environment and equipment sound source as point source and according to *Technical Guide for Environmental Impact Assessment - Acoustics Environment* (HJ 2.4-2009), the geometric divergence and attenuation prediction mode for non-directional sound source is adopted to predict noise from the construction site.

Prediction method and mode

The prediction mode is as follows:

$$L_P = L_{P_0} - 20\lg r - \Delta L$$

Where: L_P—sound pressure level of prediction points, dB (A);

L_{P0}— noise source intensity, dB (A);

r— distance between prediction point and noise source, m;

ΔL — extra attenuation (not considered).

As the fitting-out works is indoor, the sound insulation of the building will be considered (reduction of 20dB (A)). The noise levels and influence distance of fitting-out equipment are shown in Table 4.1-4 as predicted based on the announced point sound source attenuation.

Table 4.1-4 Noise Transmission of Fitting-out Equipment

Construction equipment	Noise levels at different distances from sound source, dB (A)								
	20m	40m	60m	80m	100m	120m	150m	200m	300m
Grinder	68	62	58	56	54	52	50	48	44
Electric drill	73	67	63	61	59	57	55	53	49
Grinder	47	41	37	35	33	31	29	27	23
Electric hammer	73	67	63	61	59	57	55	53	49
Woodwork and electric saw	69	63	59	57	55	53	51	49	45
Angle grinder	64	58	54	52	50	48	46	44	40

As shown in Table 4.1-4, single noise attenuates with the increase of distance from the sound source. According to construction site boundary noise control requirements for the Project, average A sound level at 34m from fitting-out tools in daytime and at night fails to comply with *Emission Standard of Environment Noise for Boundary of Construction Site* (GB12523-2011), namely 70 dB (A) for daytime and no operation for night.

According to the field investigation, Anqing First People's Hospital is nearest to the Project and will be put into operation at the same time as the Project. Therefore, the impact of fitting-out noise on the Hospital is not considered. However, Zongpu Community (Beiyuan Estate) is 60m from the east side of the Project, and the noise impact value during fitting-out will exceed the criteria for Zone II under *Environmental Quality Standard for Noise* (GB3096-2008). It can be known from the above prediction that the equipment shall be kept indoors during fitting-out and that various machines and equipment shall not be used at the same time so as to reduce the impact on acoustic environment of Zongpu Community (Beiyuan Estate).

In order to minimize the impact of fitting-out on surrounding acoustic environment, it is suggested that the following measures should be taken to minimize noise pollution: The Contractor shall arrange the operation time of fitting-out machines reasonably, minimize high-noise fitting-out machines in operation at the same time, minimize the impact of sound source superposition as possible; the equipment with obvious vibration shall be provided with damping foundation; for noise sources such as material conveying and striking, the Contractor shall follow the housekeeping principle and strengthen effective management to minimize the impact. In order to minimize the impact of the construction on surrounding residents' life, it is recommended taking the following control measures:

(1) During fitting-out, the Contractor shall strictly implement *Emission Standard of Environment Noise for Boundary of Construction Site* (GB12523-2011) and regulations of Anqing City on construction noise control, avoiding disturbance to nearby residents from construction.

(2) The Contractor shall arrange construction time reasonably and forbid to use high-noise equipment for construction at 12:00-14:00 and 19:00-22:00, and forbid construction at 22:00-6:00 to avoid disturbance to surrounding residents taking rest. In order to further ensure no disturbance to surrounding residents, the Contractor shall make reasonable arrangement of the positions of construction machines to keep them far away from sensitive sites as possible.

(3) As the noises from fitting-out equipment normally feature suddenness, irregularity, discontinuity and high intensity, the Contractor shall arrange the operation time of fitting-out machines reasonably, minimize high-noise fitting-out machines in operation at the same time, and minimize the impact of sound source superposition as possible.

(4) The high-noise equipment shall be arranged reasonably, far away from east boundary of the Project.

(5) For noise sources such as material conveying and striking, the Contractor shall follow the housekeeping principle and strengthen effective management to minimize the impact.

(6) The PIU shall mark complaint call number at construction site; in case of receiving complaints, the PIU shall timely contact local environment protection department, so as to handle environmental disputes promptly.

4.1.2.2 Multi-functional Medical Building of Lu'an Hospital of Traditional Chinese Medicine

The Project of Multi-functional Medical Building of Lu'an Hospital of Traditional Chinese Medicine is part of the construction of Comprehensive Building and Multi-functional Medical Building of Lu'an Hospital of Traditional Chinese Medicine, for which the *Environmental Impact Assessment Report for Project of Comprehensive Building and Multi-functional Medical Building of Lu'an Hospital of Traditional Chinese Medicine* has been prepared. The Project was approved by Environment Protection Bureau of Lu'an City on February 27, 2015 (L.H.P.H. [2015] No. 20). For the Project, the civil works period is from October 2018 to October 2021.

1. Waste gas from construction

(1) Dust from running vehicles

During construction, the flying dust from running vehicles takes up over 60% of total flying dust. The table below lists the amount of flying dust generated by a 10t truck traveling on a road of 1km at different road cleanliness and running speed. As shown in the table, flying dust increases with the increase of the truck's speed at same road conditions; the dustier the road, the more the flying dust at same speed of the truck.

Table 4.1-5 Dust Emission of Vehicle at Different Speed and Under Different Ground Cleanliness (Unit: kg/km Vehicle)

Cleanliness / Speed	0.1 (kg/m^2)	0.2 (kg/m^2)	0.3 (kg/m^2)	0.4 (kg/m^2)	0.5 (kg/m^2)	1.0 (kg/m^2)
5(km/h)	0.0511	0.0859	0.1164	0.1444	0.1707	0.2871
10(km/h)	0.1021	0.1717	0.2328	0.2888	0.3414	0.5742
15(km/h)	0.1532	0.2576	0.3491	0.4332	0.5121	0.8613
25(km/h)	0.2553	0.4293	0.5819	0.7220	0.8536	1.4355

Watering roads where vehicles run 4-5 times per day during the construction will reduce dust emission by around 70%. The following table shows the result of tests of sprinkling for dust control at the construction site.

Table 4.1-6 Test Result of Sprinkling for Dust Control at Construction Site (Unit: mg/m^3)

Distance (m)		5	20	50	100
TSP Hour Average Concentration	No watering	10.14	2.89	1.15	0.86
	Sprinkling water	2.01	1.40	0.67	0.60

It can be concluded from the table above that watering 4-5 times per day will effectively control dust emission and narrow down the pollution distance of TSP to 20-50m. There are many sensitive objects around the construction site of the Project. According to test results, all sensitive site are within the affected range stated above. Therefore, the Contractor shall strength the sprinkling dust control measure in the construction site and on the roads where vehicles run to keep roads wet and prevent dust emission. On dry or windy days, times of watering the ground must be guaranteed. Meanwhile, sealing measures must be taken to prevent vehicles that are used to transport muck and building materials from running with leakage, and throwing while loading is prohibited. Vehicle wash platforms shall be set up at the inner side of the entrance and exit of the construction site, and all vehicles (tire and body) shall be washed and rinsed until no sludge is found. Transport vehicles shall be

parked away from sensitive sites when possible, and trolleys shall be used to transport materials to construction spots near these sensitive sites.

(2) Dust emission during construction

For the whole construction period, dust is emitted mainly at the civil construction stage. Causes of dust emission include dust emission by wind and dust emission by force. Dust emission by wind refers to dust caused by road digging, building materials stacking and on the surface of bare construction areas under dry and windy weather, while dust emission by force refers to dust caused by external forces such as spoil loading and unloading, building materials loading, unloading and mixing, among which dust caused by construction and loading and unloading vehicles are the most severe. Of the two causes, dust emission by wind is the main cause of pollution. This kind of dust emission is affected by the speed of the wind during construction. Generally speaking, the ranged affected by dust caused by natural wind at construction sites is within 100m.

The speed of wind that causes dust is related to the particle size and water content. The diffusion and dilution of dust in the air is related to weather conditions such as wind speed, as well as the settling speed of the dust itself. Take dust as an example. Settling speed of dust of different particle sizes is shown on Table 4.1-7.

Table 4.1-7 Settling Speed of Dust of Different Particle Sizes

Particle size of dust (μm)	10	20	30	40	50	60	70
Settling speed (m/s)	0.003	0.012	0.027	0.048	0.075	0.108	0.147
Particle size of dust (μm)	80	90	100	150	200	250	350
Settling speed (m/s)	0.158	0.170	0.182	0.239	0.804	1.005	1.829
Particle size of dust (μm)	450	550	650	750	850	950	1050
Settling speed (m/s)	2.211	2.614	3.016	3.418	3.820	4.222	4.624

It can be concluded from the above table that the settling speed of dust increases as the particle size increases. When the particle size is 250μm, the settling speed is 1.005m/s, so it can be inferred that when the particle size is over 250μm, the main affected range is within the downwind close distance range of the dust point, while what really affects external environment is some dust of small particle size. According to analogy survey analysis, if no effective dust prevention measures are taken during construction, dust emission will for sure affect the construction site and the area

nearby, especially during seasons when it rains less and dust pollution is more severe.

There are sensitive sites around the construction site, so dust prevention during the construction of the Project shall be paid special attention to, and dust prevention measures shall be taken. Especially during the period of earth excavation, backfilling and site leveling, management shall be reinforced and dust prevention shall be intensified to reduce the affected range and degree on adjacent surroundings caused by dust during the construction. Since the impact of dust ends with the completion of the construction, it is suggested that the construction progress be sped up and construction period be shortened as much as possible to reduce the time affected by the dust. In order to reduce the pollution of construction dust on the adjacent area, the following shall be paid attention to during the construction:

① Dust control measures at the construction site shall be worked out before the commencement of the construction by the construction company;

② The construction site shall be enclosed by enclosures with a height of no less than 1.8m. The bottom of the enclosures, where anti-overflow settling basins shall be set up, shall be sealed to prevent mud pumping;

③ The entrance and exit roads of the construction site shall be hardened by concrete and vehicle washing facilities shall be equipped. Vehicles leaving the site must be washed and rinsed well before it leaves;

④ Bare areas within the site shall be covered or greened;

⑤ Sprinklers and dust reducing facilities shall be provided at the construction site to sprinkle water to working planes and earth stacks when excavating and drilling, to keep a certain degree of humidity and reduce flying dust quantity. Excavated earth and building waste shall be carried away in a timely manner to prevent dust emission caused by dry surface due to long time of stacking or being washed out by rain. Loose and dried surface soil shall also be watered often to prevent dust emission. During backfilling, water dry surface soil to stop dust from floating around. Personnel shall be assigned to water regularly to reduce dust;

⑥ After excavation begins, backfilling shall be completed as soon as possible. Management of backfill stacking site shall be reinforced, and measures such as compacting backfill surface, sprinkling backfill with water and covering backfill shall be worked out. For sites that cannot be backfilled in time, dust-proof measures such as covering shall be taken. Granular materials such as gravels shall be stacked together and covered. For transporting spoil and waste residues, enclosed transport vehicles

shall be used, and discharging waste residues along the road is prohibited;

⑦ For trucks transporting soil and vehicles transporting building materials, special covered vehicles shall be used, or anti-leakage facilities shall be equipped. Overloading shall be avoided, and covering and enclosing measures shall be taken. Transport route and time shall be planned ahead of time. Discharging along the road shall be reduced, and soil and building materials left on the road shall be cleaned in a timely manner. Rinse tires and spray water regularly to suppress dust to reduce dust emission during transport. Construction waste such as spoil shall be classified, stacked together, well enclosed, and carried away in closed pipes or bags. Throwing them away from height is prohibited.

⑧ It is prohibited to burn asphalt, asphalt felt, rubber, plastic, leather, rubbish and materials that produce toxic smoke, dust and odor at the construction site;

⑨ Materials entering or leaving the construction site that are prone to creating dust, such as earthworks, gravels and construction waste shall be transported in enclosed vehicles. In the event of strongly windy weather, operations shall be paused and building materials such as stacked gravels shall be covered. According to *Heavy Pollution Weather Emergency Plan of Anhui Province*, when Level Three (Yellow) alert is put on or forecast wind speed reaches over Level Five, operations that are prone to creating dust emission such as backfilling and transporting, removal and air blower blowing ashes on the road shall all be prohibited.

If above measures are taken, waste gas caused during the construction will not have an obvious adverse impact on the adjacent surroundings, and the impact will fade away as the construction ends.

2. Construction wastewater

Wastewater includes domestic sewage, and the water for sprinkling on site, curing and for washing facilities.

① Construction wastewater refers mainly to wastewater caused by vehicle rinsing and material mixing, main pollutants of which are SS and oils. During the construction, temporary oil-separating tanks and sedimentation tanks shall be set up where construction wastewater will be treated and then be reused for the construction, and the bottom sediment left will be carried out of the site and disposed.

② Domestic sewage refers mainly to the sewage caused by construction workers dining and toilet flushing. It goes into the municipal sewage pipe network.

Wastewater discharge mainly comes from the domestic sewage from the

construction workers and mud and wastewater from the construction. Say there are 100 construction workers on average, and each may use 120L/p·d of domestic water. That gives a total 12m^3/d of domestic water. Assuming the discharge of domestic sewage is 0.85 of domestic water, it would be 10.2m^3/d. Pollutants of such sewage are mainly COD, SS and ammonia nitrogen. Compared to domestic sewage content of the same kind, the pollutant concentrations of COD, SS and ammonia nitrogen are respectively around 350mg/L, around 200mg/L and around 35mg/L. Discharge of domestic sewage on site will be conducted via existing facilities.

Construction of high building foundation and basement often creates plenty of wastewater with mud. Main pollutant is SS, and the discharge is hard to estimate. Such wastewater shall be dammed up and treated altogether, or else it will bring onsite sediment into the urban sewage system and block the municipal pipe network.

(2) Precautions

① Reinforce management during the construction. Take applicable measures to effectively control the production of pollutants in the wastewater based on the discontinuous and single type nature of the wastewater.

② Everything at the construction site shall be adjusted properly. Temporary wastewater treatment facilities such as sedimentation tanks and oil-separating tanks shall be built. Water that have been used to wash or rinse construction machines with high oil content or other wastewater with high suspended solids content must be treated before it is discharged. Waste liquid such as mortar and lime slurry shall be treated together and disposed with solid waste after being dried.

③ Building materials such as cement, yellow sand and lime shall be stored together, and certain rain-proof measures shall be taken. The above-mentioned materials spilled over or thrown out during construction or transport shall be cleaned up in time to prevent them from being carried away by rain and thus polluting adjacent water.

④ Apparatus of small flow shall be installed to reduce water consumption during the construction.

The above-mentioned measures will effectively help control wastewater pollution during the construction and the measures are practical and feasible.

3. Solid waste

Most of the construction waste is solid waste produced during the construction or demolition. If every 100m^2 construction area produces 2t construction waste, the

Project is estimated to produce 1,842t construction waste. The Employer shall entrust a qualified company to transport the residue soil in a timely manner. In the Project, the cut is 187,000 m^3, the fill 62,000 m^3, and the spoil 125,000 m^3. Constructors will also produce a certain amount of domestic waste during the construction. Assuming there are 100 construction workers and each of them will produce domestic waste of 0.8kg/p·d, that gives a total production of domestic waste of 80kg/d. Such domestic waste shall be collected and be transported and disposed by the Sanitation Department.

Construction waste refers to any substance produced or discarded during the demolition and construction of subgrade or channels. The content of such waste is rather complicated, mainly including waste gravels, bricks and tiles, waste concrete, waste metal and packaging materials. Domestic waste mainly includes plastic and waste paper. Not only is construction waste, if not taken care of in a timely manner, a pain to look at, it will also raise dust on windy and dry days. Domestic waste from construction workers, if not taken care of in a timely manner, will stink, attract mosquitoes and bugs and spread diseases under certain weather, and have an adverse impact on the surroundings nearby.

① Enclosed vehicles shall be used for the transport of construction waste. Tossing is prohibited. Construction waste shall be classified as required by applicable regulations and shall be recycled as much as possible and transported and disposed in a timely manner.

② Domestic waste shall be collected by the waste cans or bags on site and transported to the domestic waste landfill of the Project for disposal.

③ Spoil (residues) can be used for either backfilling or bedding for the subgrade of nearby road. Separate spoil disposal area will not be set up to reduce land occupation.

④ Toxic and harmful materials cannot be burned on site. Disposal of such materials shall be in compliance with applicable regulations.

4. Noise

In the environmental impact assessment, it is predicted based on the geometric divergent attenuation mode and noise superposition mode of the point source in *Technical Guide for Environmental Impact Assessment — Acoustic Environment* (HJ2.4--2009). The prediction software is the calculation software developed by Ningbo Scientific Research and Design Institute of Environmental Protection.

The evanescent formula of the point acoustic source is as follows:

L(r)= L(r0)-20lg(r/r0)-△L

Where, L(r) refers to the sound pressure level of the noise source at the prediction point;

L(r0) refers to the sound pressure level of the reference position;

△L refers to evanescent volume caused by factors such as shading.

The noise superposition mode is as follows:

$$L_{\Sigma} = 10\lg(\sum_{i=1}^{n} 10^{Li/10})$$

Where, $L_{\sum}$ refers to the noise source intensity after the addition;

N refers to the number of the sound sources;

Li refers to the sound pressure level of the ith noise source

The noise superposition mode is as follows:

$$L_{\Sigma} = 10\lg(\sum_{i=1}^{n} 10^{Li/10})$$

Where, $L_{\sum}$ refers to the noise source intensity after the addition;

N refers to the number of the sound sources;

Li refers to the sound pressure level of the ith noise source

During the construction, when a single construction machine is working, it can be regarded as a point acoustic source. The noise of the machine decreases as the distance gets further. Decreasing of noise of construction machine can be seen at Table 4.1-8. Impact that noise of machine has on sensitive sites during all construction stages can be seen at Table 4.1-8.

Table 4.1-8 Noise disturbing radius of all construction machineries (Unit: m)

Stage	Noise sources	r75	r70	r65	r60	r55
Earthwork and stonework	Excavator	16	29	50	89	159
	Bulldozer	10	17	30	54	95
	Dumper	10	17	30	54	95
	Loader	18	32	57	100	178
Foundation	Crane	9	15	27	48	85
	Cast in-situ piling machine	Forbidden	63	35	11	/
	Static pressure piling machine	Forbidden	55	28	6	/
	Air compressor	22	38	68	120	213

Structure	Crane	9	15	27	48	85
	Vibrator (50mm)	8	15	26	45	80
	Eddy-type mixer	-	3	5	8	15
	Electric saw	26	45	80	142	252

Note: ①r is disturbing radius, for instance r55 means distance to sound source when noise of equipment decrease to 55dB (A).

All noises, which are produced by all mechanical equipment in all construction stages, exceed standard limit in day and night specified in *Emission Standard of Environment Noise for Boundary of Construction Site* (GB12523-2011). From Table 4.1-6, it can be concluded that: The predicted noise level at the sensitive point (the first and second phases of Lu'an Hospital of Traditional Chinese Medicine) near the Project caused by the noises produced by all operating mechanical equipment in construction stage exceed the daytime criteria for Zone II as specified in *Environmental Quality Standard for Noise* (GB3096-2008).

Thus, the Contractor shall strictly implement *Emission Standard of Environment Noise for Boundary of Construction Site* (GB12523-2011), avoiding disturbing residents due to construction. The following measures are suggested to be taken in the Project:

(1) The advanced low-noise equipment shall be elected by the Contractor, and the noise barrier shall be properly set around high-noise equipment to reduce the influence of noise on the surrounding environment. In addition, the noises in boundary of construction site shall be controlled and not exceed limit specified in *Emission Standard of Environment Noise for Boundary of Construction Site* (GB12523-2011). The movable noise barrier shall be set to reduce impact of noise during constructing near the sensitive site.

(2) Make preparation carefully to reduce the duration of impact by construction noise, excluding continuous works (for example drilling, hole cleaning and concreting by cast in-situ piling machine, foundation ditch excavation, basement concreting and roof concreting) due to construction technology, and forbid the construction at night (22:00-6:00). Where the night work that produces excessive noise is necessary for production or other special needs, the Employer should apply to relevant departments for approval in advance and get permission of neighboring residents. The night work shall not be started until it is approved.

(3) During construction, the maintenance of construction machinery shall be

strengthened to avoid higher mechanical noise due to poor performance of the equipment.

(4) The vehicles carrying materials into the construction site at night must not sound sirens, and materials shall be loaded and unloaded with care.

(5)The Contractor and PIU shall mark complaint call number at construction site; in case of receiving complaints, the PIU shall timely contact local environment protection department, so as to handle environmental disputes promptly.

(6) Reasonably arrange construction site, try to put high-noise equipment in the center of the lot.

If above measures are taken, construction noises caused during construction of the Project will not have an obvious adverse impact on the adjacent surroundings, and the impact will fade away as the construction ends.

5. Social impact analysis

Short-term impact on around social environment during construction mainly include:

① The construction will occupy roads, which will enhance load of existing roads and influence transportation of neighboring residents;

② The construction vehicles will frequently pass the densely populated areas (like residential quarters and hospitals), which may cause hidden peril of accident.

③ Uncivilized behavior of partial construction personnel will also influence the local residents.

All influences above can be greatly avoided or totally eliminated by reasonably arranging construction plan and housekeeping; hence the Contractor shall make perfect construction plan and strictly manage construction personnel, so as to relieve social impact caused by construction.

(2) Precautions

① Make traffic control plan in advance and release notice.

② Leave road and evacuate and guide pedestrian and vehicles to avoid traffic jam; or apply other method to inform related institutions to choose other roads and set significant mark of temporary detouring road lines in main crossings.

③ Reasonably arrange construction time, forbid to use high-noise equipment for construction during 12:00-14:00 and 19:00-22:00, and forbid to constructing during 22:00-6:00.

④ Hang signs in dangerous areas, devices and materials to remind the local

residents.

4.1.2.3 "Haoyan Rainbow Garden" (Base)

The main influences of the Project, which is mainly built buildings (one-year's decoration period), are waste gas and water, solid waste and noise.

1. Waste gas from construction

The actual influence analysis of construction waste gas shall refer to 4.1.2.1 - multi-functional medical building of Elderly Care Institution of Anqing First People's Hospital. And this chapter only analyzes influence on sensitive sites.

The sensitive sites around 200m of the Project are Wuhu Sixth People's Hospital and Polka International Garden, which will be certainly influenced by the waste gas during construction period. Hence, sprinkling measures (four-five times a day) shall be applied momentarily to the roads in the Project for dust control. In addition, the Employer shall enhance management on each section that possibly generates flying dust on the construction site to control the impact of flying dust on surrounding environment and environment-sensitive targets.

As construction dust is main contributor to atmospheric pollution during construction, the measures to control construction dust shall refer to 4.1.2.1 - Elderly Care Institution of Anqing First People's Hospital.

2. Construction wastewater

The waste water during construction mainly are construction waste water in construction site.

The water pollution source during decoration mainly is the washing waste water in construction area.

The washing waste water is mainly produced by cleaning of building materials like stones and the main waste pollutant is SS; and the washing waste water will be discharged in an intermittent way with unstable discharging amount. The construction will feature excessive water use and a large amount of discharging wastewater. And if no appropriate measures are taken, the water will flow freely on the construction site, having adverse impacts on the surrounding water environment. There will be quite a small amount of domestic sewage generated during fitting-out, but if not properly treated, it will also cause environmental degradation of the construction area. Especially in summer, it will generate mosquitoes and flies which spread pathogen, having adverse impact on the health of construction workers. The Project is the redecoration of the rental housing and the decoration project is conducted indoors;

and the partial washing waste water shall be discharged to urban sewage pipeline through sewer lines without randomly discharging.

The domestic sewage shall be discharged to urban sewage pipeline through sewer lines, and then sent to Wuhu Zhujiaqiao Sewage Treatment Plant through municipal sewage pipe network for treatment, for no influencing quality of the surface water.

3. Solid waste

For the Project, the building wastes generated are mainly from consuming of construction materials, including sand, stones, cement, scrap wood, sawdust, scrap metal, rebar, wire and other wastes. With low quantity generated, the produced building wastes are 75t. Among which, the steel heads and waste woods take up 20% (15t) which are recycled totally, and the rest building wastes (60t) shall stacked at the designated place which is approved by the government department of city appearance and environmental sanitation.

The management of solid wastes shall refer to Elderly Care Institution Project of Anqing First People's Hospital.

4. Noise

The actual influence analysis of construction noise shall refer to 4.1.2.1 - Elderly Care Institution of Anqing First People's Hospital. And this chapter only analyzes influence on sensitive sites.

According to the field investigation, the nearest sensitive points from the Project are Wuhu Sixth People’s Hospital (60m from the north) and Polka International Garden (40m from the west); and the noise impact value during fitting-out will exceed the criteria for Zone II specified in *Environmental Quality Standard for Noise* (GB3096-2008). It can be known from the above predictive results that the equipment shall be ensured to be in the room during construction and all machines and equipment shall not be used at the same time, so as to reduce acoustic environmental influence on sensitive sites.

In order to minimize the impact of fitting-out on surrounding acoustic environment, it is suggested that the following measures should be taken to minimize noise pollution: The Contractor shall arrange the operation time of fitting-out machines reasonably, minimize high-noise fitting-out machines in operation at the same time, minimize the impact of sound source superposition as possible; the equipment with obvious vibration shall be provided with damping foundation; for

noise sources such as material conveying and striking, the Contractor shall follow the housekeeping principle and strengthen effective management to minimize the impact. This evaluation recommend to take the following control measures in accordance with section 4.1.2.1 - Elderly Care Institution of Anqing First People's Hospital, in order to reduce bad influence of the Project construction on surrounding residents' lives.

4.1.2.4 The Project of Relocation and Rebuilding of Xuancheng Municipal Social Welfare Home

The main influences of the Project are waste gas and water, solid waste and noise.

1. Waste gas from construction

The actual influence analysis of construction waste gas shall refer to 4.1.2.2 "Multi-functional Medical Building Project of Lu'an Hospital of Traditional Chinese Medicine". And this chapter only analyzes influence on sensitive sites.

There are sensitive sites around the construction site, so dust prevention during the construction of the Project shall be paid special attention to, and dust prevention measures shall be taken. Especially during the period of earth excavation, backfilling and site leveling, management shall be reinforced and dust prevention shall be intensified to reduce the affected range and degree on adjacent surroundings caused by dust during the construction. Since the impact of dust ends with the completion of the construction, it is suggested that the construction progress be sped up and construction period be shortened as much as possible to reduce the time affected by the dust. In order to reduce the pollution of construction dust on the adjacent area, the environment-protection measures for construction shall refer to 4.1.2.2 "Multi-functional Medical Building Project of Lu'an Hospital of Traditional Chinese Medicine".

2. Construction wastewater

Wastewater includes sprinkling water on site, maintenance water and water used to wash facilities.

① Construction wastewater refers mainly to wastewater caused by vehicle rinsing and material mixing, main pollutants of which are SS and oils. During the construction, temporary oil-separating tanks and sedimentation tanks shall be set up where construction wastewater will be treated and then be reused for the construction, and the bottom sediment left will be carried out of the site and disposed.

The Project will not set construction camps. And the construction workers shall

rent the existing houses in Xiaduxincheng Residential Quarter.

(2) Precautions

① Reinforce management during the construction. Take applicable measures to effectively control the production of pollutants in the wastewater based on the discontinuous and single type nature of the wastewater.

② Everything at the construction site shall be adjusted properly. Temporary wastewater treatment facilities such as sedimentation tanks and oil-separating tanks shall be built. Water that have been used to wash or rinse construction machines with high oil content or other wastewater with high suspended solids content must be treated before it is discharged. Waste liquid such as mortar and lime slurry shall be treated together and disposed with solid waste after being dried.

③ Building materials such as cement, yellow sand and lime shall be stored together, and certain rain-proof measures shall be taken. The above-mentioned materials spilled over or thrown out during construction or transport shall be cleaned up in time to prevent them from being carried away by rain and thus polluting adjacent water.

④ Apparatus of small flow shall be installed to reduce water consumption during the construction.

The above-mentioned measures will effectively help control wastewater pollution during the construction and the measures are practical and feasible.

3. Solid waste

Most of the construction waste is solid waste produced during the construction or demolition. If every 100m^2 construction area produces 2t construction waste, the Project is estimated to produce 348t construction waste. The Employer shall entrust a qualified company to transport the residue soil in a timely manner. In the Project, the cut is 20,000 m^3, the fill 10,000 m^3, and the spoil 10,000 m^3. Constructors will also produce a certain amount of domestic waste during the construction. Assuming there are 50 construction workers and each of them will produce domestic waste of 0.8kg/p·d, that gives a total production of domestic waste of 40kg/d. Such domestic waste shall be collected and be transported and disposed by the Sanitation Department.

The environmental management for solid wastes in the Project shall refer to 4.1.2.2 “Multi-functional Medical Building Project of Lu'an Hospital of Traditional Chinese Medicine”.

4. Noise

All noises, which are produced by all mechanical equipment in all construction stages, exceed standard limit in day and night specified in *Emission Standard of Environment Noise for Boundary of Construction Site* (GB12523-2011). The noises, which are produced by all mechanical equipment in construction stage, affect the sensitive sites around the Project - Xiaduxincheng Residential Area and Yucun Village. And the predictive value of noise exceeds the daytime criteria for Zone II as specified in *Environmental Quality Standard for Noise* (GB3096-2008).

Thus, the Contractor shall strictly implement *Emission Standard of Environment Noise for Boundary of Construction Site* (GB12523-2011), avoiding disturbing residents due to construction. The control measures for noises in the Project shall refer to 4.1.2.2 “Multi-functional Medical Building Project of Lu'an Hospital of Traditional Chinese Medicine”.

5. Ecological environment impact

The influence of the Project construction on environment mainly is water and soil loss caused by surface excavation, transportation and stack of construction materials and production equipment. Water and soil loss means the process the soil dispersion, movement and deposition under eroding force of precipitation. Factors influencing water and soil loss are varied, mainly including rainfall, soil, vegetation, landforms and project construction and so on. As far as construction of the Project, the main factors influencing water and soil loss during construction are rainfall and project construction.

Strengthen management during earthwork excavation and filling, so as to decrease scattering as far as possible to avoid water and soil loss. And the main bad environmental influences are:

① Affect landscape effect inside the zone; and

② Bring bad impact, damages and losses and so on to the local residents and safety operation of the Project.

(2) Precautions

① Reasonably arrange construction time, try to avoid rain and flood season; and in case of no way to avoid it, conduct the production and drainage work during rainy season to ensure the smooth drainage during construction without any water-immersed working surface.

② Timely protect the earthwork works, convey it since it was excavated, and

ram it since it was filled without any loosened soil, so as to reduce exposed time of the loosened surface. Make sure that protect once section when constructed the section to reduce the new water and soil loss.

③ Reasonably optimize arrangement of the construction site and reduce the construction ranges to decrease degree of damage of project construction on vegetation. The construction machines and construction workers shall operate in the planned construction plane position and channel, and shall not disorderly occupy lands; and the construction machines, earth and stones and other construction materials shall not be placed mussily, so as to prevent vegetation deterioration (which will aggravate water and soil loss); and

④ The outsourced materials for construction, which integrates bricks, stones, sand, cement, wood and so on, shall be transported when it is required to reduce occupied lands and as far as possible with less damage to vegetation; and after the completion of the Project, the construction site shall be timely cleaned up and afforested, restoring the damaged vegetation to the greatest extent.

6. Social impact analysis

Short-term impact on around social environment during construction mainly include:

① The construction will occupy roads, which will enhance load of existing roads and influence transportation of neighboring residents;

② The construction vehicles will frequently pass the densely populated areas (like residential quarters and hospitals), which may cause hidden peril of accident.

③ Uncivilized behavior of partial construction personnel will also influence the local residents.

All influences above can be greatly avoided or totally eliminated by reasonably arranging construction plan and housekeeping; hence the Contractor shall make perfect construction plan and strictly manage construction personnel, so as to relieve social impact caused by construction.

(2) Precautions

① Make traffic control plan in advance and release notice.

② Leave road and evacuate and guide pedestrian and vehicles to avoid traffic jam; or apply other method to inform related institutions to choose other roads and set significant mark of temporary detouring road lines in main crossings.

③ Reasonably arrange construction time, forbid to use high-noise equipment for

construction during 12:00-14:00 and 19:00-22:00, and forbid to constructing during 22:00-6:00.

④ Hang signs in dangerous areas, devices and materials to remind the local residents.

4.1.2.5 Improvement Project of Ningguo City Social Welfare Service Center

Removal of the existing buildings

Removal of the old buildings concerned with the Project has been verified with the Ningguo City Social Welfare Service Center, no asbestos materials during removal. The removed waste bricks, bamboos and woods and other materials shall be transported by the special vehicles for waste soil transportation of municipal companies.

During the removal of existing buildings, the Employer shall take sufficient measures to protect workers and the public from the dropping detritus and gravels. These measures include:

(1) Leave a designated wastes-dropping zone or discharge chute to guarantee the safety pouring of the wastes;

(2) Control the processes, like sawing, digging, grinding, sand paving and cutting, and take reasonable anchoring method to guide dropping of the waste stones;

(3) Keep clean during transporting and avoid polluting pavement and atmosphere due to wastes dropping caused by overloading of vehicles;

(3) Employ the temporary dropping-protection measures (like handrails and toe boards) in the boundary of the lifting scaffolds to prevent dropping of wastes; and

(4) Provide safety glasses, side shields, masks, helmets, safety boots or shoes to all relevant staff.

The main influences of the Project are waste gas and water, solid waste and noise.

1. Waste gas from construction

The actual influence analysis of construction waste gas shall refer to 4.1.2.2 “Multi-functional Medical Building Project of Lu'an Hospital of Traditional Chinese Medicine”. And this chapter only analyzes influence on sensitive sites.

There are sensitive sites around the construction site, so dust prevention during the construction of the Project shall be paid special attention to, and dust prevention measures shall be taken. Especially during the period of earth excavation, backfilling and site leveling, management shall be reinforced and dust prevention shall be

intensified to reduce the affected range and degree on adjacent surroundings caused by dust during the construction. Since the impact of dust ends with the completion of the construction, it is suggested that the construction progress be sped up and construction period be shortened as much as possible to reduce the time affected by the dust. In order to reduce the pollution of construction dust on the adjacent area, the environment-protection measures for construction shall refer to 4.1.2.2 “Multi-functional Medical Building Project of Lu'an Hospital of Traditional Chinese Medicine”.

2. Construction wastewater

Wastewater includes domestic sewage, and the water for sprinkling on site, curing and for washing facilities.

① Construction wastewater refers mainly to wastewater caused by vehicle rinsing and material mixing, main pollutants of which are SS and oils. During the construction, temporary oil-separating tanks and sedimentation tanks shall be set up where construction wastewater will be treated and then be reused for the construction, and the bottom sediment left will be carried out of the site and disposed.

② Domestic sewage refers mainly to the sewage caused by construction workers dining and toilet flushing. It goes into the municipal sewage pipe network.

The Project will not set construction camps. And the construction workers shall rent the existing houses in the surrounding residential quarters.

Wastewater discharge mainly comes from the domestic sewage from the construction workers and mud and wastewater from the construction. Say there are 50 construction workers on average, and each may use 120L/p·d of domestic water. That gives a total 6m^3/d of domestic water. If the discharge of domestic sewage is 0.85 of domestic water, it would 5.1m^3/d. Pollutants of such sewage are mainly COD, SS and ammonia nitrogen. Compared to domestic sewage content of the same kind, the pollutant concentrations of COD, SS and ammonia nitrogen are respectively around 350mg/L, around 200mg/L and around 35mg/L. The domestic sewage during construction period shall be discharged to Ningguo City Sewage Treatment Plant for treatment. The control measures for waste water shall refer to section 4.1.2.2 “Multi-functional Medical Building Project of Lu'an Hospital of Traditional Chinese Medicine”.

3. Solid waste

Most of the construction waste is solid waste produced during the construction or

demolition. If every 100m^2 construction area produces 2t construction waste, the Project is estimated to produce 180t construction waste. The Employer shall entrust a qualified company to transport the residue soil in a timely manner. In the Project, the cut is 5,000 m^3, the fill 3,000 m^3, and the spoil 2,000 m^3. Constructors will also produce a certain amount of domestic waste during the construction. Assuming there are 50 construction workers and each of them will produce domestic waste of 0.8kg/p·d, that gives a total production of domestic waste of 40kg/d. Such domestic waste shall be collected and be transported and disposed by the Sanitation Department.

The environmental management for solid wastes in the Project shall refer to 4.1.2.2 “Multi-functional Medical Building Project of Lu'an Hospital of Traditional Chinese Medicine”.

4. Noise

All noises, which are produced by all mechanical equipment in all construction stages, exceed standard limit in day and night specified in *Emission Standard of Environment Noise for Boundary of Construction Site* (GB12523-2011). The noises, which are produced by all mechanical equipment in construction stage, affect the sensitive sites around the Project. And the predictive value of noise exceeds the daytime criteria for Zone II as specified in *Environmental Quality Standard for Noise* (GB3096-2008).

Thus, the Contractor shall strictly implement *Emission Standard of Environment Noise for Boundary of Construction Site* (GB12523-2011), avoiding disturbing residents due to construction. The control measures for noises in the Project shall refer to 4.1.2.2 “Multi-functional Medical Building Project of Lu'an Hospital of Traditional Chinese Medicine”.

4.1.3 Environmental impact of other sub-projects during decorating

Home-based Elderly Care Site, Rural Nursing Homes, Embedded Center for Disabled or Semi-disabled Elders (the other four sub-projects not included in the Base). This project possesses small scale and its main influence on surroundings mainly is waste gas and noises caused by decoration.

The Contractor shall meet the following requirements to control noise and dust:

1. Try to keep noise of machines and equipment under 90 db;
2. More stringent measures need to be implemented in sensitive areas

(including residential areas, hospitals, etc.) to prevent harsh noise;

3. Try to reduce dust and particulate matters, so as to avoid influence on residents' lives and commercial activities around, and focus on protection of vulnerable people (like children and the elderly);

4. Forbid to use high-noise equipment for construction during 12:00-14:00 and 19:00-22:00, and forbid to constructing during 22:00-6:00;

5. Take the correct measures to reduce influence of noises and vibration produced by construction on surroundings; and

6. It has been verified by all PMOs that the old houses have not asbestos materials. In case of finding asbestos wastes during rebuilding and decorating, the Employer shall draw up a management plan for dangerous wastes (it shall include field investigation for decreasing exposed asbestos wastes; the specially-trained personnel for collecting and handling asbestos wastes; and the processes for conveying and treating asbestos), in accordance with management of hazardous wastes. This plan shall be approved by the Project Engineer and be applicable to all personnel taking part in operation and transportation. The hazardous wastes in construction site shall be removed and handled by specially-trained personnel on the basis of national and provincial regulations or internationally-recognized process.

4.2 Environmental Influence and Protection Measures during Operational Period

4.2.1 Environmental impact and countermeasures for major sub-projects (Anqing, Lu'an, Wuhu, Xuancheng, Ningguo)

In this operation period, environmental influence and protection measures of five major sub-projects are detailedly analyzed (Elderly Care Institution of Anqing First People's Hospital, Multi-functional Medical Building Project of Lu'an Hospital of Traditional Chinese Medicine, "Haoyan Rainbow Garden" (base), Relocation Project of Xuancheng Municipal Social Welfare Home, and Improvement Project of Ningguo City Social Welfare Service Center).

4.2.1.1 Elderly Care Institution of Anqing First People's Hospital

1. Waste water

1000 beds and 300 staffs are added. Based on the consumption of domestic water of 0.2t/person·d, 365 days, and the generation coefficient of domestic wastewater of 0.85, the total generation volume of wastewater of the project is 221m^3/ d. See Table

4.2-1 for generation and emission of waste water

In accordance with *Environmental Impact Assessment Report of Construction Project of Anqing First People's Hospital (Longshan Branch*, after the treatment supported by hospital's oil separator, septic tank and sewage treatment station, the domestic sewage generated of the project meets the pretreatment in Table 2 of *Discharge Standard of Water Pollutants for Medical Organization* (GB18466-2005) and the acceptance criteria of Anqing North New Town Sewage Treatment Plant, and then discharged into Anqing North New Town Sewage Treatment Plant.

The wastewater discharge volume of the Project is 221m^3/d, and the capacity of Phase I of Anqing North New Town Sewage Treatment Plant is 20,000m^3/d, so there is room for sewage storage. The sewage volume of the Project accounts for 1.1% of its treatment capacity, which is a relatively small proportion. Meanwhile, the water quality of the Project is simple without pollution factors affecting the water quality of sewage treatment plants, so the acceptance of the Project's sewage to Anqing North New Town Sewage Treatment Plant won't impact the plant's water quality.

Based on the above analysis, the sewage of the Project can be discharged into Anqing North New Town Sewage Treatment Plant after being treated by self-built sewage treatment facilities, and will have little effect on the sewage treatment plant.

2. Solid waste

① Domestic waste

1,000 beds are added, and the domestic waste generated per bed per day is calculated at 1.0 kg, which results in domestic waste generated of 1t/d. The domestic waste generated per person per day of the staffs (based on 300 persons) is calculated at 0.5 kg, which results in domestic waste generated of 0.15 t/d, so the total amount of the domestic waste generated of the Project is 1.15 t/d (about 420t/a). The several waste collection buckets are uniformly cleared and transported by the environmental sanitation department every day. The domestic waste generated by the Project is uniformly collected by the Municipal Environmental Sanitation Department and sent to Domestic Waste Incineration Power Plant of Anqing Wenergy Zhongke Environmental Protection Power Co., Ltd.

② Medical waste

A certain amount of medical wastes will be added after project operation, and the generating amount is calculated as follows:

If the medical waste is calculated at 0.1 kg per bed per day, the medical waste

generated shall be 0.1t/d (about 36.5t/a). The main medical waste of the Project is infectious waste, injury waste, drug waste, chemical waste, etc. Set several medical solid waste collection buckets (all corners in hospital) near medical waste's temporary storage place of Anqing First People's Hospital (basement of 3# Inpatient Building, construction area: 64m^2).

The medical waste shall be managed in accordance with *Regulations on the Administration of Medical Waste* strictly, and the medical waste produced by the institution shall be timely collected and separately set in anti-seep and anti-piercing special packing materials or sealed containers by type. The special packing materials and containers for medical waste shall be equipped with significant signs and warning messages.

The Project shall apply anti-seep and anti-scattering special conveying tools and collect and convey medical wastes to temporary storage location in accordance with determined internal conveying time and lines for medical waste. The conveying tools shall be disinfected and cleaned in designated location of the hospital after being used. Medical waste transport vehicle shall be subject to requirements stipulated in *Technical Standard for Medical Waste Transport Vehicle* (GB19217-2003). Temporary storage facilities and equipment for medical waste shall be disinfected and cleaned termly, and be subject to *Standard for Pollution Control on Hazardous Waste Storage* (GB18597-2001) and its revision in 2013. The medical waste generated of the construction project is entrusted to be treated by Environmental Protection and Technology Co., Ltd. of Anqing Development and Investment (Group) Corporation.

③ Sludge from the wastewater treatment plant

In accordance with *Discharge Standard of Water Pollutants for Medical Organization* (GB18466-2005), the sludge generated by the wastewater treatment system of the hospitalis hazardous solid wastes and its quantity is related to the suspended solids in the original water and the treatment process. The quantity of sludged of this project is about 0.1% of the wastewater. So the sludge generated after operation of this project will be about 80t/a (80% of the water content). The sludge will be about 40t/a (60% water content) after treatment by mud suction truck of the qualified professional companies. Together with medical wastes, the sludge will be regarded as hazardous wastes and treated by Environmental Protection and Technology Co., Ltd. of Anqing Development and Investment (Group) Corporation

upon entrustment.

See Table 4.2-2 for generation and disposal of solid waste of the Project.

4.2.1.2 Multi-functional Medical Building Project of Lu'an Hospital of Traditional Chinese Medicine

1. Waste water

600 beds and 180 staffs are added. Based on the consumption of domestic water of 0.2t/person·d, 365 days, and the generation coefficient of domestic wastewater of 0.85, the total generation volume of wastewater of the project is 133m^3/ d. See Table 4.2-1 for generation and emission of waste water.

In accordance with *Environmental Impact Assessment Report for Project of Comprehensive Building and Multi-functional Medical Building of Lu'an Hospital of Traditional Chinese Medicine,* after the treatment supported by hospital's oil separator, septic tank and sewage treatment station, the domestic sewage generated of the project meets the pretreatment in Table 2 of Discharge Standard of Water Pollutants for Medical Organization(GB18466-2005) and the acceptance criteria of Lu'an Chengbei Sewage Treatment Plant, and then discharged into Lu'an Chengbei Sewage Treatment Plant.

The wastewater discharge volume of the Project is 133m^3/d, and recent construction scale of Lu'an Chengbei Sewage Treatment Plant is 80,000m^3/d, so there is room for sewage storage. The sewage volume of the Project accounts for 0.16% of its treatment capacity, which is a relatively small proportion. Meanwhile, the water quality of the Project is simple without pollution factors affecting the water quality of sewage treatment plant, so the acceptance of the Project's sewage to Lu'an Chengbei Sewage Treatment Plant won't impact the plant's water quality.

The Project is located in the central area of the city, which is included in the treatment range of Chengbei Sewage Treatment Plant. After the sewage of the Project has been treated by the self-built sewage treatment station up to standard, it will discharge into the municipal sewage pipe network of Renmin Road, then import into the urban sewage main pipe of Meishan Middle Road, and at last import into Chengbei Sewage Treatment Plant. The sewage is discharged into Lu'an Chengbei Sewage Treatment Plant to be retreated, which makes it will not have obvious effect on the water quality of the Pihe River.

Based on the above analysis, the sewage of the Project can be discharged into the Lu'an Chengbei Sewage Treatment Plant after being treated of self-built sewage

treatment facilities, and will have very small effect on the sewage treatment plant.

2. Solid waste

① Domestic waste

600 beds are added, and the domestic waste generated per bed per day is calculated based on 1.0 kg, which results in domestic waste generated of 0.6t/d. The domestic waste generated per person per day of the staffs (based on 180 persons) is calculated based on 0.5 kg, which results in domestic waste generated of 0.09 t/d, so the total amount of the domestic waste generated of the Project is 0.69 t/d (about 252t/a). The several waste collection buckets are uniformly cleared and transported by the environmental sanitation department every day. The domestic waste generated by the Project is uniformly collected by the Municipal Environmental Sanitation Department and sent to the Lu’an City Domestic Waste Incineration Power Plant.

② Medical waste

A certain amount of medical wastes will be added after project operation, and the generating amount is calculated as follows:

If the medical waste is calculated at 0.1 kg per bed per day, the medical waste generated shall be 0.06t/d (about 21.9t/a). The main medical waste of the Project is infectious waste, injury waste, drug waste, chemical waste, etc. The medical waste generated of the Project is temporarily stored in the completed medical waste storage room of Lu'an Hospital of Traditional Chinese Medicine, and the medical waste has been conducted safe and harmless treatment that is entrusted to Lu'an Jiekang Environmental Protection Medical Waste Concentration Disposal Limited Liability Company.

The medical waste shall be managed in accordance with *Regulations on the Administration of Medical Waste* strictly, and the medical waste produced by the institution shall be timely collected and separately set in anti-seep and anti-piercing special packing materials or sealed containers by type. The special packing materials and containers for medical waste shall be equipped with significant signs and warning messages.

The Project shall apply anti-seep and anti-scattering special conveying tools and collect and convey medical wastes to temporary storage location in accordance with determined internal conveying time and lines for medical waste. The conveying tools shall be disinfected and cleaned in designated location of the hospital after being used. Medical waste transport vehicle shall be subject to requirements stipulated in

Technical Standard for Medical Waste Transport Vehicle (GB19217-2003). Temporary storage facilities and equipment for medical waste shall be disinfected and cleaned termly, and be subject to *Standard for Pollution Control on Hazardous Waste Storage* (GB18597-2001) and its revision in 2013. The medical waste generated of the construction project is treated by Lu'an Jiekang Environmental Protection Medical Waste Concentration Disposal Limited Liability Company.

③ Sludge from the wastewater treatment plant

In accordance with *Discharge Standard of Water Pollutants for Medical Organization* (GB18466-2005), the sludge generated by the wastewater treatment system of the hospitalis hazardous solid wastes and its quantity is related to the suspended solids in the original water and the treatment process. The quantity of sludged of this project is about 0.1% of the wastewater. So the sludge generated after operation of this project will be about 48t/a (80% of the water content). The sludge will be about 24t/a (60% water content) after treatment by mud suction truck of the qualified professional companies. Together with medical wastes, the sludge will be regarded as hazardous wastes and treated by Lu'an Jiekang Environmental Protection Medical Waste Concentration Disposal Limited Liability Company.

See Table 4.2-2 for generation and disposal of solid waste of the Project.

4.2.1.3 "Haoyan Rainbow Garden" (Base)

1. Waste water

780 beds and 262 staffs are added. Based on the consumption of domestic water of 0.2t/person·d, 365 days, and the generation coefficient of domestic wastewater of 0.85, the total generation volume of wastewater of the project is 208.4m^3/ d. See Table 4.2-1 for generation and emission of waste water.

The sewage entered into disinfection tank (design scale: 40m^3) after being pretreated by the canteen wastewater oil separator of base project (design scale: 60m^3) and before entering into the septic tank (design scale: 320m^3) for treatment, and then entered into Wuhu city Zhujiaqiao sewage treatment plant through municipal pipelines.

The wastewater discharge volume of the Project is 208.4m^3/d, and Phase I project (100,000 t/d) of the sewage treatment plant of Wuhu Zhujiaqiao has been put into use, so there is room for sewage storage. The sewage volume of the Project accounts for 0.2% of its treatment capacity, which is a relatively small proportion.

Meanwhile, the water quality of the Project is simple without pollution factors affecting the water quality of sewage treatment plant, so the acceptance of the Project's sewage to Wuhu Zhujiaqiao sewage treatment plant won't impact the plant's water quality.

Based on the above analysis, the sewage of the Project can be discharged into the Wuhu Zhujiaqiao sewage treatment plant after being treated of self-built sewage treatment facilities, and will have very small effect on the sewage treatment plant.

2. Solid waste

① Domestic waste

780 beds are added, and the domestic waste generated per bed per day is calculated based on 1.0 kg, which results in domestic waste generated of 0.78t/d. The domestic waste generated per person per day of the staffs (based on 262 persons) is calculated based on 0.5 kg, which results in domestic waste generated of 0.131 t/d, so the total amount of the domestic waste generated of the Project is 0.911 t/d (about 333t/a). The several waste collection buckets are uniformly cleared and transported by the environmental sanitation department every day. The domestic waste generated by the Project is uniformly collected by the Municipal Environmental Sanitation Department and sent to the domestic waste incineration power plant of Wuhu Oasis Environmental Protection Energy Co., Ltd.

② Medical waste

A certain amount of medical wastes will be added after project operation, and the generating amount is calculated as follows:

If the medical waste is calculated at 0.1 kg per bed per day (it is the nursing home for the aged that generates the medical wastes and has 160 beds), the medical waste generated shall be 0.016t/d (about 75.84t/a). The main medical waste of the Project is infectious waste, injury waste, drug waste, chemical waste, etc. Set several medical solid waste collection buckets.

The hospital shall set temporary storage facilities and equipment for medical waste, and shall not store medical waste in the open air; the storage period of the medical waste at normal temperature shall not exceed one day and shall be refrigerated under 5 degrees Celsius within 7 days. The temporary storage facilities and equipment of medical waste shall be far away from the medical area, food processing area, staff activity area and domestic waste storage places, and set up clear warning signs. And anti-leakage, rat proof, flies proof, cockroach proof, thievery

prevention, children's exposure prevention and other safety measures shall be taken. Temporary storage facilities and equipment for medical waste shall be disinfected and cleaned termly, and be subject to *Standard for Pollution Control on Hazardous Waste Storage* (GB18597-2001) and its revision in 2013. The medical waste generated of the construction project is treated by Wuhu City Medical Waste Concentration Disposal Engineering Limited Liability Company.

The medical waste shall be managed in accordance with *Regulations on the Administration of Medical Waste* strictly, and the medical waste produced by the institution shall be timely collected and separately set in anti-seep and anti-piercing special packing materials or sealed containers by type. The special packing materials and containers for medical waste shall be equipped with significant signs and warning messages.

The Project shall apply anti-seep and anti-scattering special conveying tools and collect and convey medical wastes to temporary storage location in accordance with determined internal conveying time and lines for medical waste. The conveying tools shall be disinfected and cleaned in designated location of the hospital after being used. Medical waste transport vehicle shall be subject to requirements stipulated in *Technical Standard for Medical Waste Transport Vehicle* (GB19217-2003).

See Table 4.2-2 for generation and disposal of solid waste of the Project.

4.2.1.4 The Project of Relocation and Rebuilding of Xuancheng Municipal Social Welfare Home

1. Waste water

400 beds and 100 staffs are added. Based on the consumption of domestic water of 0.2t/person·d, 365 days, and the generation coefficient of domestic wastewater of 0.85, the total generation volume of wastewater of the project is 85m^3/ d. See Table 4.2-1 for generation and emission of waste water.

The sewage entered into disinfection tank (design scale: 10m^3) after being pretreated by the canteen wastewater oil separatorof base project (design scale: 30m^3) and before entering into the septic tank (design scale: 100m^3) for treatment, and then entered into Xuancheng city (Jingtingwei) sewage treatment plant through municipal pipelines.

The wastewater discharge volume of the Project is 85 m^3/d, and the sewage treatment plant (100,000 t/d) of Xuancheng city (Jingtingwei) has been put into use, so there is room for sewage storage. The sewage volume of the Project accounts for

0.1% of its treatment capacity, which is a relatively small proportion. Meanwhile, the water quality of the Project is simple without pollution factors affecting the water quality of sewage treatment plant, so the acceptance of the Project's sewage to Xuancheng city (Jingtingwei) sewage treatment plant won't impact the plant's water quality.

Based on the above analysis, the sewage of the Project can be discharged into the sewage treatment plant in Xuancheng city (Jingtingwei) after being treated of self-built sewage treatment facilities, and will have very small effect on the sewage treatment plant.

2. Solid waste

① Domestic waste

400 beds are added, and the domestic waste generated per bed per day is calculated based on 1.0 kg, which results in domestic waste generated of 0.4t/d. The domestic waste generated per person per day of the staffs (based on 100 persons) is calculated based on 0.5 kg, which results in domestic waste generated of 0.05 t/d, so the total amount of the domestic waste generated of the Project is 0.45 t/d (about 164t/a). The several waste collection buckets are uniformly cleared and transported by the environmental sanitation department every day. The domestic waste generated by the Project is uniformly collected by the Municipal Environmental Sanitation Department and sent to the Xuancheng domestic waste incineration power plant.

② Medical waste

A certain amount of medical wastes will be added after project operation, and the generating amount is calculated as follows:

If the medical waste is calculated at 0.1 kg per bed per day (it is the infirmatorythat generates medical waste and has 40 beds), the medical waste generated willbe 0.004t/d (about 1.46t/a). The main medical waste of the Project is infectious waste, injury waste, drug waste, chemical waste, etc. Set several medical solid waste collection buckets.

The hospital shall set temporary storage facilities and equipment for medical waste, and shall not store medical waste in the open air; the storage period of the medical waste at normal temperature shall not exceed one day and shall be refrigerated under 5 degrees Celsius within 7 days. The temporary storage facilities and equipment of medical waste shall be far away from the medical area, food processing area, staff activity area and domestic waste storage places, and set up clear

warning signs. And anti-leakage, rat proof, flies proof, cockroach proof, thievery prevention, children's exposure prevention and other safety measures shall be taken. Temporary storage facilities and equipment for medical waste shall be disinfected and cleaned termly, and be subject to *Standard for Pollution Control on Hazardous Waste Storage* (GB18597-2001) and its revision in 2013. The medical waste generated of the construction project is treated by Xuancheng City Jiuding Medical Waste Concentration Disposal Center.

The medical waste shall be managed in accordance with *Regulations on the Administration of Medical Waste* strictly, and the medical waste produced by the institution shall be timely collected and separately set in anti-seep and anti-piercing special packing materials or sealed containers by type. The special packing materials and containers for medical waste shall be equipped with significant signs and warning messages.

The Project shall apply anti-seep and anti-scattering special conveying tools and collect and convey medical wastes to temporary storage location in accordance with determined internal conveying time and lines for medical waste. The conveying tools shall be disinfected and cleaned in designated location of the hospital after being used. Medical waste transport vehicle shall be subject to requirements stipulated in *Technical Standard for Medical Waste Transport Vehicle* (GB19217-2003).

See Table 4.2-2 for generation and disposal of solid waste of the Project.

4.2.1.5 Improvement Project of Ningguo City Social Welfare Service Center

1. Waste water

260 beds and 100 staffs are added. Based on the consumption of domestic water of 0.2t/person·d, 365 days, and the generation coefficient of domestic wastewater of 0.85, the total generation volume of wastewater of the project is 61.2m^3/ d. See Table 4.2-1 for generation and emission of waste water

The canteen wastewater of the Project entered into the septic tank (design scale: 80m^3) after being pretreated by the oil separator (design scale 20m^3), the wastewater of the Project entered into Ningguo City Sewage Treatment Plant through municipal pipelines after being pretreated by self-built oil separatorand septic tank.

The wastewater discharge volume of the Project is 61.2m^3/d, and the treatment capacity of Ningguo Sewage Treatment Plant is 40,000m^3/d and it has been put into use since February 2010, so there is room for sewage storage. The sewage volume of the Project accounts for 0.15% of its treatment capacity, which is a relatively small

proportion. Meanwhile, the water quality of the Project is simple without pollution factors affecting the water quality of sewage treatment plant, so the acceptance of the Project's sewage to Ningguo City Sewage Treatment Plant won't impact the plant's water quality.

Based on the above analysis, the sewage of the Project can be discharged into the Ningguo City Sewage Treatment Plant after being treated of self-built sewage treatment facilities, and will have very small effect on the sewage treatment plant.

2. Solid waste

① Domestic waste

260 beds are added, and the domestic waste generated per bed per day is calculated based on 1.0 kg, which results in domestic waste generated of 0.26t/d. The domestic waste generated per person per day of the staffs (based on 100 persons) is calculated at 0.5 kg, which results in domestic waste generated of 0.05 t/d, so the total amount of the domestic waste generated of the Project is 0.31 t/d (about 113t/a). The several waste collection buckets are uniformly cleared and transported by the environmental sanitation department every day. The domestic waste generated by the Project is uniformly collected by the Municipal Environmental Sanitation Department and sent to the Ningguo domestic waste disposal center.

Table 4.2-1 Generation and emission of water pollutant of the Construction Project

Sub-project activity	Sewage quantity (m^3/a)	Contaminant Name	Generation volume of pollutant		Preprocessing Measures	Pollutant emission volume		Acceptance criteria
			Concentration (mg/L)	Quantity of output (t/a)		Concentration (mg/L)	Discharge amount (t/a)	
Elderly Care Institution of the First People's Hospital of Anqing	80665	COD	300	24.22	Supported by hospital oil separator, septic tank, sewage treatment station and pipe network	280	22.60	The sewage discharge meets the pretreatment standards in Table 2 of *Discharge Standard of Water Pollutants for Medical Organization* (GB18466-2005) and the acceptance criteria of Anqing North New Town Sewage Treatment Plant.
		SS	180	14.52		120	9.67	
		Ammonia-nitrogen	25	2.03		25	2.03	
		Animal and vegetable oil	35	2.82		20	1.62	
		BOD_5	150	12.11		150	12.11	
Multi-functional Medical Building Project of Lu'an Hospital of Traditional Chinese Medicine	48545	COD	300	14.56	Supported by hospital oil separator, septic tank, sewage treatment station and pipe network	280	13.59	The sewage discharge meets the pretreatment standards in Table 2 of *Discharge Standard of Water Pollutants for Medical Organization* (GB18466-2005) and the acceptance criteria of Lu'an Chengbei Sewage Treatment Plant.
		SS	180	8.73		120	5.81	
		Ammonia-nitrogen	25	1.22		25	1.22	
		Animal and vegetable oil	35	1.70		20	0.98	
		BOD_5	150	7.28		150	7.28	
"Haoyan Rainbow Garden" (Base)	76066	COD	300	22.77	Self-built oil separator (design scale: $60m^3$), disinfection tank (design scale: $40m^3$)m septic tank (design scale: $320m^3$) and pipe network of the construction unit	280	21.24	The sewage meets the requirements of Grade III criteria under Table 4 of *Integrated Wastewater Discharge Standard* (GB8978-1996)
		SS	180	13.66		120	9.11	
		Ammonia-nitrogen	25	1.89		25	1.89	
		Animal and vegetable oil	35	2.66		20	1.52	
		BOD_5	150	11.40		150	11.40	
The Project of	36500	COD	300	9.31	Oil separator	280	8.69	The sewage meets the

Relocation and Rebuilding of Xuancheng Municipal Social Welfare Home		SS	180	5.58	(design scale: 30m^3),disinfection tank (design scale: 10m^3)and septic tank (design scale: 100 m^3) and pipe network	120	3.72	requirements of Grade III criteria under Table 4 of *Integrated Wastewater Discharge Standard* (GB8978-1996)
		Ammonia-nitrogen	25	0.77		25	0.77	
		Animal and vegetable oil	35	1.09		20	0.62	
		BOD_5	150	4.66		150	4.66	
Improvement Project of Ningguo City Social Welfare Service Center	22338	COD	300	6.70	Oil separator (design scale: 20m^3), septic tank (design scale: 80m^3) and pipe network	280	6.26	Meet the requirements of Grade III criteria under Table 4 of *Integrated Wastewater Discharge Standard* (GB8978-1996)
		SS	180	4.02		120	2.68	
		Ammonia-nitrogen	25	0.56		25	0.56	
		Animal and vegetable oil	35	0.78		20	0.45	
		BOD_5	150	3.36		150	3.36	

Table 4.2-2 Generation and disposal of solid waste of the Construction Project

Sub-project activity	Name	Quantity of output (t/a)	Proposed disposal way
Elderly Care Institution of the First People's Hospital of Anqing	Domestic waste	420	The several waste collection buckets are uniformly cleared and transported by the environmental sanitation department every day and finally sent to Domestic Waste Incineration Power Plant of Anqing Wenergy Zhongke Environmental Protection Power Co., Ltd.
	Medical waste	36.5	Set several medical solid waste collection buckets, depend on medical waste's temporary storage place of Anqing First People's Hospital and entrust Environmental Protection and Technology Co., Ltd. of Anqing Development and Investment (Group) Corporation.
	Sludge of wastewater treatment plant	40	Rely on the temporary sludge storage tank of the First People's Hospital of Anqing and entrust Environmental Protection and Technology Co., Ltd. of Anqing Development and Investment (Group) Corporation to treat it
Elderly Care Center of Lu'an Hospital of Traditional Chinese Medicine	Domestic waste	252	The several waste collection buckets are uniformly cleared and transported by the Environmental Sanitation Department every day and finally sent to the Lu'an City Domestic Waste Incineration Power Plant.
	Medical waste	21.9	Set several medical solid waste collection buckets, depend on medical waste's temporary storage place of Lu'an Hospital of Traditional Chinese Medicine and entrust Lu'an City Medical Waste Concentration Disposal Engineering Limited Liability Company.
	Sludge of wastewater treatment plant	24	Rely on temporary sludge storage tank of Traditional Chinese Hospital of LuAn and entrustLu'an Jiekang Environmental Protection Centralized Medical Waste Disposal Co., Ltd. to treat it.
"Haoyan Rainbow Garden" (Base)	Domestic waste	333	The several waste collection buckets are uniformly cleared and transported by the environmental sanitation department every day and finally sent to the domestic waste incineration power plant of Wuhu Oasis Environmental Protection Energy Co., Ltd.
	Medical waste	5.84	Set several medical solid waste collection buckets and entrust Wuhu City Medical Waste Concentration Disposal Engineering Limited Liability Company to dispose them.
The Project of Relocation and Rebuilding of Xuancheng Municipal Social Welfare Home	Domestic waste	1.46	The several waste collection buckets are uniformly cleared and transported by the environmental sanitation department every day and finally sent to the Xuancheng Guquan domestic waste landfill site.
	Medical waste	14.6	Set several medical solid waste collection buckets and entrust Xuancheng City Jiuding Medical Waste Concentration Disposal Center to dispose them.
Improvement Project of	Domestic waste	113	The several waste collection buckets are uniformly cleared and transported by the environmental

Ningguo City Social Welfare Service Center			sanitation department every day and finally sent to the Ningguo domestic waste disposal center.

4.2.2 Environmental impact of other sub-projects

Rural nursing homes in Suzhou

Sewage water: domestic sewage is cleared regularly and used as fertilizer after treatment in the septic tank.

Solid waste: domestic waste is collected and transported by sanitation workers to the waste disposal units of the district. Check with the PMOs of the corresponding district or county that no medical waste is included.

Home-based elderly care sites in Anqing and Lu'an.

Sewage water: domestic sewage is discharged into the sewage treatment plant through municipal sewage pipe network after treatment in the septic tank of the residential quarters.

Solid waste: domestic waste is collected and transported by sanitation workers to the municipal waste disposal units. Check with the Municipal Project Management Office that no medical waste is included.

Embedded Center for Disabled or Semi-Disabled Elders (the other four sub-projects not included in the Base)

Sewage water: after disinfection, medical wastewater is discharged together with domestic sewage into Wuhu Zhujiaqiao Sewage Treatment Plant or Wuhu South Sewage Treatment Plant.

Solid waste: domestic waste is collected and transported by sanitation workers to the municipal waste disposal units in Wuhu city. Set up a number of medical solid waste collection buckets, and entrust Wuhu Medical Waste Centralized Disposal Engineering Co. Ltd. for the disposal of the collected waste.

4.3 Design Requirements for Facilities for Fire Control, Safety, Accessibility, Sewage Collection and Treatment

4.3.1 Fire fighting

As per the requirements in *Code for Fire Protection Design of Building,* the project is equipped with an outdoor fire hydrant system and an outdoor fire water supply system which is combined with the domestic water supply system. The fire water consumption is calculated as 10L/s as per the fire frequency of one time in the same time. The outdoor ground-type fire hydrants shall be installed along the road of the project site with a distance between every two hydrants less than 120m and no more than 2.0m from the curb line.

Fire water supply system: the outdoor fire water supply system is arranged into a loop pipe network with two water inlets, which is a shared water supply network with the domestic water supply system; the indoor fire hydrant system is a temporary high pressure system with no vertical zoning, which is also designed into a loop pipe network. Set up a pump room for regional fire water supply in the basement of the outpatient building, where the water supply pumps for indoor fire hydrant of high and low areas and automatic fire sprinkler system are installed. The fire pump room in the basement is equipped with two fire hydrant water pumps (one working pump, one spare pump) for the building's indoor hydrant water supply. In addition, a fire water tank with an effective volume of $18m^3$ is installed on the roof for storage of fire water for beginning extinguishing of a fire. Outdoor fire water pump adapters, with the flow volume of 15L/s each, are equipped for the fire truck to feed water to the indoor fire hydrant system.

Independent pressurization air supply system is provided respectively for smoke-proof staircase, lift elevator antechamber or common antechamber. The underground garage is equipped with a mechanical exhaust system and a supporting air supply system. The corridor with a length of more than 20m is designed with a mechanical exhaust system as well. As per applicable specifications, mechanical exhaust facilities are provided for underground rooms more than $50m^2$ large and aboveground rooms with a size of more than $100m^2$. The smoke exhaust fan is specialized for fire system.

The fire protection design of this project is carried out as per applicable codes and standards to ensure the accessibility of the fire engine and configure the indoor and outdoor fire hydrant system as well as the portable fire extinguishers.

Fire-fighting measures to be taken:

1. Fire water supply

Configure independent fire water pipes and domestic water pipes, while the former is in a loop configuration around the building body.

2. Outdoor fire-fighting facilities

As per the requirements in *Code for Fire Protection Design of Building*, the layout of the project of multistory buildings is designed to ensure the proper fire separation distance and the absolute accessibility of the fire engine with a circular fire lane and meanwhile the proper location of outdoor fire hydrant is designed for the fire water system to ensure the fire water supply.

3. Indoor fire-fighting facilities

As per requirements for multistory building in *Code for Fire Protection Design of Building*, fire zoning, interior fire hydrant system and regional gas extinguishing system for key parts are designed for the project.

4. Other fire-fighting measures

(1) According to the applicable specifications, design sufficient space around the buildings for fire-fighting and allocate sufficient fire extinguishing equipment and facilities.

(2) The buildings in use should be attended by designated personnel who are in charge of the daily maintenance and inspection of the fire-fighting facilities.

(3) Establish a strict fire control system and carry out extensive and profound fire-fighting education to avoid possible fires;

(4) Keep good communication with the fire safety management department that is in charge of the district and report immediately in case of fire.

Fire safety facilities

1. To avoid fires, in addition to the fire-fighting education, it is very important to establish and constantly perfect the fire control system to ensure that all fire safety facilities work properly.

2. To ensure the accessibility of the fire engine to each building, a road grid is required with sufficient space between buildings as per the standards of *Code for Fire Protection Design of Building.*

3. The outdoor fire hydrants are installed in accordance with the applicable specifications and the water main is also the main fire water supply pipe.

4. Provide indoor fire hydrants and fire extinguishers according to the applicable provisions of *Code for Design of Fire Extinguisher Distribution in Buildings* and ensure that the fire water is available 24h and that the flow volume and hydraulic pressure satisfy the requirements for fire water supply.

5. In the process of selection and installation of electrical equipment, the grounding and explosion-proof function should be considered as part of lightning protection and explosion-proof measures for the buildings.

6. According to applicable specifications, all the buildings shall be designed with evacuation exits which should be unblocked all the time and an escape stair, the width and evacuation distance of which shall meet the requirements of specifications.

7. Provide automatic fire alarm system for the service rooms and mechanical

exhaust system for closed corridors.

8. Evacuation distance and evacuation crowd are calculated according to applicable specifications. The most disadvantageous evacuation crowd shall meet the standard and the evacuation width should not be less than 2.4 meters.

9. Fire prevention construction: all the doors in the building are A-class fire proof doors.

10. The fire resistance rating of the building is Grade II, and the fire endurance of non-load-bearing walls is 1.5 hours. All the walls should meet the requirements of the code.

4.3.2 Safety and accessibility of home-based elderly care sites and service centers for disabled or semi-disabled elders

Develop home-based elderly care projects in communities including the upgrading or extension of 147 home-based elderly care sites in Anqing and Lu'an; Build and rebuild or extend 8 community-embedded service centers for disabled or semi-disabled elders (7 community-embedded service centers for disabled or semi-disabled elders and 1 smart health elderly care management center).

Despite the large amount, wide distribution and different community situation of home-based elderly care sites, their architectural design should conform to the provisions of *Code for Design of Residential Building for the Aged* and *Codes for Design on Accessibility of Urban Roads and Buildings*: The building is decorated neatly, beautifully and practically with eco-friendly and easy-to-clean materials both inside and outside; According to the characteristics of aged-care service and function requirements of different facilities, the elderly care center shall be planned uniformly with easy communication between function distributions, necessary compartments, and sufficient access space for fire engine; Control the area of auxiliary parts of the building such as the lobbies, corridors and stair halls to a reasonable percentage to ensure a minimum usable area coefficient of 60%; The story height of the building is generally not less than 3m.

The size of the bedroom should be right for 2-4 elders, with sufficient space between beds and furniture for wheelchairs and daily care; The bedroom should include washroom and the washroom floor should be easy to clean and anti-skid; The balcony and closet are also necessary as well as the call system; The site should be enclosed with fences which are 2.5-3.0m high.

Community service institutions for the aged should be decorated to meet the

demand of the elders and their physical conditions, most importantly barrier-free. The respective net width of outer doors and inner doors should be 1.10m and 0.8m minimally with no threshold for the access of wheelchairs; The stair slope should be suitable for the aged, with smooth yet anti-skid stair treads and also handrails are absolutely necessary in staircases as well as corridors; Make sure the furniture and equipment have no obvious sharp corners and protruding parts; All rooms should be equipped with screen windows to ensure ventilation and anti-mosquito measures in hot season.

Use warm tone for the indoor decoration. Inflammable or fragile materials or chemical fiber materials that emit poisonous gases are not allowed. Use wood or plastic flooring for bedrooms and corridors; Lay anti-skid tiles for the kitchen and washroom; Use high-quality wood or other materials that feels good for handrails; Equip the washroom with toilet and for men's room pedestal urinal is also needed; At the height of 0.7m, mount a L-shaped hand bar on the wall near the toilet for the aged to hold, or a floor mounted Π-shaped hand bar with the same height. The door of the washroom should have an observation window and a door bolt which can be opened both inside and outside. Necessary fire-fighting facilities and installations shall be provided.

A zone of 1.5m×1.5m or more is required for the wheelchair to turn both inside and outside the entrance of the building. Design and mark the entrance to be easily recognized by the aged.

The hallway shall have sufficient space for wheelchairs and stretchers to turn and no threshold or height difference is allowed in the hallways, corridors and rooms that the aged use. Consider the physical and mental condition of the aged when determine the slope rate of the stairs; In addition to the public dining room, a small shared kitchen is also needed as well as a shared washroom, a shared bathroom and a shared laundry room. Design a private washroom in the ward for the aged.

Local air conditioning system is provided to improve the life quality of the aged.

All rooms are included in the mechanical exhaust system. For the bathroom, the ventilation volume is calculated based on the parameter of 9 times/h and for the changing room, 4 times/h. Air inlet is non-mechanical.

4.3.3 Safety and accessibility of medical and aged-care institutions and welfare homes

The medical and aged-care institution projects include enlarging the nursing

home for the elderly people in Anqing First People's Hospital and expanding the multi-functional medical building in Lu'an Hospital of Traditional Chinese Medicine. This project includes rebuilding Xuancheng Municipal Social Welfare Home at a new location and building an additional social welfare center in Ningguo Welfare Institution.

This project has the function of aged-care institutions and rehabilitated medical institutions. The overall building style is neat, modern and of warm tone. The project stands with large body of skirt building, which gives a message of steadiness and trustworthiness to the aged. Good lighting, ventilation and vision, green roofs, and warm color appearances transmit an aesthetic of comfort and peace.

The institution is semi-closure, which looks good from the street as well as form a courtyard, providing a safe and comfortable environment for the elderly. The concept of resort hotel is taken into the plan design which distinguish our project from the common ward. The layout of the nursing room is single corridor, which means open space and good vision.

Considering the theme of the building and the harmonious appearance of the integral neighborhood, the color of the building is mainly white vertically to emphasize its modesty and dignity, with unique style yet not too different or special.

Split type air conditioners shall be installed for heating.

The design of exhaust system and calculation of exhaust volume shall be based on the function and fresh air volume of the section. Also the exhaust system shall be able to control the air flow direction. Mechanical ventilation systems shall be adopted in the underground garage, refrigeration plant room, transformer room and pump room. The exhaust outlet of the garage shall avoid crowded places and its height shall be no less than 3m.

4.3.4 Safety and accessibility of rural nursing homes

Rural nursing home projects include the upgrading, and expansion of 35 nursing homes in Yongqiao District, Lingbi County, Dangshan County, Xiao County, and Si County under Suzhou.

The plan design of the buildings for nursing home shall meet the demand of the elderly care and also conform to national compulsory standards and specifications and other relevant standards or specifications. The civil engineering parts of the project consist of bedrooms, dining rooms and recreation rooms.

The section design of the buildings shall consider their functions, their

architectural images and the landform or height differences of the site. The story height shall be 3.60m.

As for the elevation design, give personality to every single building while keeping in mind the consistency and harmony of the complex in style which shall be neat and modest. Apply fireproof and energy-saving bricks for the outer wall and for facing brick, machine made tiles like ceramic tiles, clay tiles, splitting tiles and dry-mixed tiles shall be suitable. The color of the facing brick is traditional gray.

The architectural design of the entrances, corridors, living rooms, washrooms and doors and windows in this project shall meet the standards of *Code for design of Residential Building for the Aged* (GB 50340-2016).

The accessibility design of the project shall conform to *Codes for Accessibility Design* (GB50763-2012).

In the building, it is necessary to install a mechanical ventilation system that meets the requirements of indoor sanitation, and adopt a bidirectional ventilation device with heat recovery function. In the shared kitchen, shared washroom and private washroom, ventilation ducts and mechanical devices with the function of air reversing prevention shall be provided. For the shared kitchen, natural ventilation that fully ventilates the room shall also be provided.

The designed indoor heating temperature of buildings of elderly facilities shall not be lower than the standard stipulated in *Design Code for Buildings of Elderly Facilities* (GB 50867-2013)

4.3.5 Design requirements for facilities for sewage collection and treatment

The wastewater of the project canteen is pretreated in the oil separatorand the medical wastewater enters int to the septic tank for treatment after being pre-treated by the sterilizing poor and then enters into the urban wastewater treatment plant via the municipal pipe network for treatment.

5 Social management plan

World Bank-financed Anhui Aged Care System Demonstration PMO hired dedicated experts from Involuntary Resettlement Research Center of China Three Gorges University to conduct the investigation and assessment for the possible social impact of the Project, and has completed the *Social Impact Assessment Report*. By fully understanding the relevant laws and regulations at all levels, and after fully discussed with the affected primary stakeholder like the residents / villagers, the relevant administrative departments and enterprises in the proposed Project region of counties and cities in Anhui Province, the SIA team identified the main social risks which may affect the Project construction, development goals achievements regarding the Project implementation based on field surveys and statistical analysis. Accordingly, the following action plans and suggestions of mitigation and avoidance were proposed.

In order to promote the realization of Project benefits and goals and on the premise of the full discussion with such primary stakeholders as the civil administration department, the employees and the elderly in the elderly care sites and elderly care institutions covered by the Project as well as the family members of the elderly, the social judgment group has put up with some measures to relieve and avoid risks regarding the possible major social impacts and risks which are identified on the basis of the field investigation and data analysis, and are relevant to the design and implementation of the Project, and may affect the development goals of the Project. The measures mainly involve the following aspects:

5.1 Reasonably arrange the spatial location of the elderly care sites in community

The layout of standard social elderly care sites should be planned reasonably. In the places where the demand for elderly care is large, the sites may be constructed a little more, while in the places where the demand for elderly care is small, such as industrial area, commercial area, the sites might be less.

5.2 Reduce the workload of government staff

Hire experienced experts or expert team as soon as possible to effectively reduce the workload of government staff.

5.3 Reduce the negative impact of the project on elderly care service practitioners

The implementation of the project involves civil engineering, government's purchasing healthcare service, and training of new employees, which may increase the workload of some existing staff in nursing homes, welfare institutions and social elderly care institutions.

Suggestions

1) Formulate the transition plan for the implementation period of the Project, eliminate the environmental impact and potential risks during construction, and reasonably arrange the work of staff and the transition of the elderly;

2) Develop talent motivation and training programs as soon as possible to address the need for human resources during the implementation and operation of the Project;

5.4 Reduce the negative impact of the project on the elderly

1) Formulate temporary transition plan for the construction period to help the elderly to adapt to the new environment as soon as possible and to reduce the environmental impact and potential risks during the construction;

2) Deliberate the change of service price.

5.5 Reduce the negative impact on other residents in community

1) The existing community activities can’t be weakened. When the conditions permit, the community place for activities should be of multi-purpose.

2) The construction unit is required to strengthen publicity and training on public sanitation and health knowledge to the construction workers, especially the migrant construction workers and set free-of-charge condom distribution or automatic condom sales facilities in the construction site. Meanwhile, the health department and maternal and child health department in the project area provide equipment support and technical guidance to strengthen the publicity on prevention and control of AIDs in the project area, especially the publicity in the rural areas; take full advantage of newspapers, broadcast, TV and other traditional media on the basis of pasting the post and the catch-phrase, distributing the leaflets and holding AIDs-prevention lectures, expand the publicity channels of new media such as Microblog, WeChat and SMS and carry out publicity on knowledge of AIDs and education on risks of communicating AIDs to popularize the knowledge of AIDs prevention and control

and let the villagers/residents in the project area know the harm of AIDs and master the prevention knowledge, creating a good social environment for the AIDs prevention and control.

5.6 Reduce the resettlement influence of the project

Formulate the “Resettlement Action Plan”.

5.7 Establish the complaint mechanism

During the preparation, implementation and operation of the project, the complaint channel should be established to provide people affected by the project with the opportunity to complain when they meet any problems or they are dissatisfied with the project. Therefore, it is suggested that the project institutions assign specific officer to handle the complaints and keep the complaint record and remedial measures.

During the preparation, implementation and operation of the project, the complaint channel should be established to provide people affected by the project with the opportunity to complain when they meet any problems or they are dissatisfied with the project. Therefore, it is suggested that the project institutions assign specific officer to handle the complaints and keep the complaint record and remedial measures.

Level-by-level accountability system for dealing with the grievance should be implemented. The PMO of various levels should immediately make detailed record of the grievance after receiving it and records the complete treatment process, results and related data. In principle, the PMO should complete the treatment within 15 working days, inform the complainant of the results and disclose them in the relevant institutions and communities. The grievance handling staff should keep the grievant strictly confidential and is not allowed to inform the respondent of the information.

5.8 Vigorously publicize the World Bank-financed Projects

The survey results show that only a very small portion of the aged, their family members and the aged-care service workers know this project, and people who are familiar with this project are even less. In order to make the World Bank-financed Project known to more people and allow them to actively participate in and supervise the project, it is suggested that:

1) In all the community aged-care service sites, nursing homes, social welfare homes and hospitals funded by the project, there should be a board to publicize the

project.

2) On the uniforms of the staff of the government's purchased service, there should be the mark showing the support of World Bank loan.

3) Publicize the World Bank-financed Projects on various media.

4) Regularly hold symposiums and information conferences to promote a series of hot and cutting-edge topics, such as the socialization of aged-care services, and the combination of medical and health care.

5.9 Vigorously cultivate the ability of the social work organizations and volunteer organizations to provide community aged-care service

1) Encourage the social work organizations and volunteer organizations to closely cooperate with each other in the community and form the community service mode of social workers + volunteers.

2) Give economic and reputational incentives to the key organizer and activists in the interaction among the community, volunteers and social workers to improve their ability of aged-care service.

5.10 Give priority to women in terms of opportunities

Although women account for the majority of aged-care service workers, they are inferior to men in terms of post, income and degree of education. Suggestions:

1) Give priority to women in terms of training and promotionopportunities;

2) Make sure that the women and men are equally paid when they do the same work.

See Appendix 3 for the List of Social Management Plan.

6 Environmental monitoring plan

6.1 Monitoring purpose

Environmental protection monitoring includes the construction period and operation period, which is designed to control the dynamic pollution situation of the proposed Project in a comprehensive and timely manner, and to acknowledge the environmental quality variation and the effect within the affected area and the dynamic change during the operation period, so that feedback information can be submitted to the competent department as a scientific basis for environmental management of the Project.

6.2 Monitoring Implementation

Based on the environmental impact forecast results, the sensitive site where the pollution may be significant shall be selected as the monitoring site. Select the surface water environment, groundwater environment, soil environment which have been affect by the environment significantly; determine the monitoring factors according to the characteristic contaminant obtained in the engineering analysis; adopt the monitoring and analysis methods in accordance with the *Environmental Monitoring Technical Specifications* issued by the State Environmental Protection Administration for the specific items; implement the evaluation criteria based on the national standard of the environmental impact assessment. The local environmental monitoring stations or the social environment monitoring agencies with the qualification for monitoring shall be selected as the monitoring organization. Department of Civil Affairs of Anhui Province shall be responsible for the monitoring, and the Environmental Protection Authority of the cities and counties at the Projects sites shall act as the supervisory agency.

6.3 Monitoring Plan

The Project has a certain impact on the environment during the construction and operation period. To protect the environment, effectively controlling the pollution and remaining attentive to the operating condition of the environmental facilities and equipment to prevent the pollution accident.

See Table 6.3-1 for the Suggested Environmental Monitoring Plan.

Table 6.3-1 Environmental Monitoring Plan for the Sub-Projects

Sub-project activity	Monitoring period	Environment element	Monitoring place	Monitored items	Monitoring frequency	Unit Price (CNY_/Year)	Totalcost (CNY)	Monitoring organization	Unit in charge	Supervising agency
Improvement Project of Ningguo City Social Welfare Service Center	Construction period	Ambient air	2 monitoring sites shall be set up at: existing works at social welfare institution, Gelin Chuntian	PM_{10}	4 periods / year, 1 day / period, 1 time / day, increase the monitoring frequency once the situation of exceeding permitted levels are found	2000	6000	Qualified environmental monitoring organization	Ningguo Municipal Social Welfare Home	Ningguo Environmental Protection Bureau
		Noise	4 monitoring sites shall be set up at: existing works at children welfare institution, Ningguo Municipal Social Welfare Home, and Ningguo senile apartment, Gelin Chuntian	LeqdB(A)	4 periods / year, 1 day / period, 2 times / day, 1 time / day or night Increase the monitoring frequency once the situation of exceeding permitted levels are found	1500	6000			
	Operation period	Water quality	1 monitoring site shall be set up at the water outlet of the wastewater treatment plant	CODCr, BOD_5, NH_3-N, SS	Pollutants are monitored once every quarter. Increase the monitoring frequency once the situation of exceeding permitted levels are found	1500	7500			
The Project of Relocation and Rebuilding of Xuancheng Municipal	Construction period	Ambient air	2 monitoring sites shall be set up at: Xiadu Xincheng and Yucun Village	PM_{10}	4 periods / year, 1 day / period, 1 time / day, increase the monitoring frequency once the situation of exceeding permitted levels are found	2000	6000	Qualified environmental monitoring organization	Xuancheng Municipal Social Welfare Home	Xuancheng Environmental Protection Bureau
		Noise	2 monitoring sites shall be set up at:	LeqdB(A)	4 periods / year, 1 day / period, 2 times / day, 1 time	1000	3000			

Social Welfare Home			Xiadu Xincheng and Yucun Village		/ day or night Increase the monitoring frequency once the situation of exceeding permitted levels are found					
		Water quality	1 monitoring site shall be set up at the water outlet of the wastewater treatment plant	CODCr, BOD_5, NH_3-N, SS, Number of coliform bacteria	The number of coliform bacteria is monitored once every month and other pollutants are monitored once every quarter. Increase the monitoring frequency once the situation of exceeding permitted levels are found	3000	15000			
"Haoyan Rainbow Garden" (Base)	Construction period	Ambient air	2 monitoring sites shall be set up at: Wuhu Sixth People's Hospital and Polka International Garden	PM_{10}	4 periods / year, 1 day / period, 1 time / day, increase the monitoring frequency once the situation of exceeding permitted levels are found	2000	2000	Qualified environmental monitoring organization	Anhui Haoyan Aged-care Service Investment Co. Ltd.	Wuhu Environmental Protection Bureau
		Noise	2 monitoring sites shall be set up at: Wuhu Sixth People's Hospital and Polka International Garden	LeqdB(A)	4 periods / year, 1 day / period, 2 times / day, 1 time / day or night Increase the monitoring frequency once the situation of exceeding permitted levels are found	1000	1000			
		Water quality	1 monitoring site shall be set up at the water outlet of the wastewater treatment plant	CODCr, BOD_5, NH_3-N, SS, number of coliform bacteria	Number of coliform bacteria is monitored once every month and other pollutants are monitored once every quarter. Increase the monitoring frequency once the situation of exceeding permitted levels are found	3000	15000			
Elderly Care Institution of the First People's Hospital of	Construction period	Ambient air	1 monitoring site shall be set up at: Zongpu Community (Beiyuan Estate)	PM_{10}	4 periods / year, 1 day / period, 1 time / day, increase the monitoring frequency once the situation of exceeding permitted	1000	1000	Qualified environmental monitoring organization	Anqing First People's Hospital	Anqing Environmental Protection Bureau

Anqing					levels are found					
		Noise	2 monitoring sites shall be set up at: Zongpu Community (Beiyuan Estate) and Project site	LeqdB(A)	4 periods / year, 1 day / period, 2 times / day, 1 time / day or night Increase the monitoring frequency once the situation of exceeding permitted levels are found	750	3000			
	Operation period	Medical waste	Temporary storage yard for medical solid waste and temporary sludge storage tank relying on hospital	Monitoring / supervision of waste disposal		—	—			
		Water quality	1 monitoring site shall be set up at the water outlet of the wastewater treatment plant	CODCr, BOD_5, NH_3-N, SS, number of coliform bacteria	Number of coliform bacteria is monitored one every month and other pollutants are monitored once every quarter. Increase the monitoring frequency once the situation of exceeding permitted levels are found	3000	15000			
Multi-functional Medical Building of Lu'an Hospital of Traditional Chinese Medicine	Construction period	Ambient air	2 monitoring sites shall be set up at: Jinan Lijingyuan Resettlement Complex under construction, and Lu'an Hospital of Traditional Chinese Medicine (Phase I)	PM_{10}	4 periods / year, 1 day / period, 1 time / day, increase the monitoring frequency once the situation of exceeding permitted levels are found	2000	6000	Qualified environmental monitoring organization	Traditional Chinese Hospital of Lu’an	Lu'an Environmental Protection Bureau
		Noise	2 monitoring sites shall be set up at: Jinan Lijingyuan Resettlement Complex under construction, and Lu'an Hospital of	LeqdB(A)	4 periods / year, 1 day / period, 2 times / day, 1 time / day or night Increase the monitoring frequency once the situation of exceeding permitted levels are found	1000	3000			

			Traditional Chinese Medicine (Phase I)							
	Operation period	Medical waste	Temporary storage yard for medical solid waste and temporary sludge storage tank relying on hospital	Monitoring / supervision of waste disposal		—	—			
		Water quality	1 monitoring site shall be set up at the water outlet of the wastewater treatment plant	CODCr, BOD_5, NH_3-N, SS, number of coliform bacteria	Number of coliform bacteria is monitored once every month and other pollutants are monitored once every quarterIncrease the monitoring frequency once the situation of exceeding permitted levels are found	3000	15000			

Sub-project activity	Monitoring period	Environment element	Monitoring place	Monitored items	Monitoring frequency	Unit Price (CNY_/period)	Annual cost (CNY_/year)	Monitoring organization	Unit in charge	Supervising agency
Improvement Project of Ningguo City Social Welfare Service Center	Construction period	Ambient air	2 monitoring sites shall be set up at: existing works at social welfare institution, Gelin Chuntian	PM_{10}	4 periods / year, 1 day / period, 1 time / day, increase the monitoring frequency once the situation of exceeding permitted levels are found	3000	12000	Qualified environmental monitoring organization	Ningguo Municipal Social Welfare Home	Ningguo Environmental Protection Bureau
		Noise	4 monitoring sites shall be set up at: existing works at children welfare institution, Ningguo Municipal Social Welfare Home,	LeqdB(A)	4 periods / year, 1 day / period, 2 times / day, 1 time / day or night Increase the monitoring frequency once the situation of exceeding permitted levels are found	1500	6000			

			and Ningguo senile apartment, Gelin Chuntian							
	Operation period	Water quality	1 monitoring site shall be set up at the water outlet of the wastewater treatment plant	pH, CODCr, BOD_5, NH_3-N, SS	4 periods / year, 1 day / period, 4 times / day, 1 time / 6 hours Increase the monitoring frequency once the situation of exceeding permitted levels are found	6000	12000			
The Project of Relocation and Rebuilding of Xuancheng Municipal Social Welfare Home	Construction period	Ambient air	2 monitoring sites shall be set up at: Xiadu Xincheng and Yucun Village	PM_{10}	4 periods / year, 1 day / period, 1 time / day, increase the monitoring frequency once the situation of exceeding permitted levels are found	3000	12000	Qualified environmental monitoring organization	Xuancheng Municipal Social Welfare Home	Xuancheng Environmental Protection Bureau
		Noise	2 monitoring sites shall be set up at: Xiadu Xincheng and Yucun Village	LeqdB(A)	4 periods / year, 1 day / period, 2 times / day, 1 time / day or night Increase the monitoring frequency once the situation of exceeding permitted levels are found	750	3000			
	Operation period	Medical waste	1 temporary storage yard for medical solid waste (construction area $10m^2$)	Monitoring / supervision of waste disposal		—	—			
		Water quality	1 monitoring site shall be set up at the water outlet of the wastewater treatment plant	pH, CODCr, BOD_5, NH_3-N, SS	2 periods / year, 1 day / period, 2 times / day, 1 time / day or night Increase the monitoring frequency once the situation of exceeding permitted levels are found	6000	12000			
“Haoyan Rainbow Garden” (Base)	Construction period	Ambient air	2 monitoring sites shall be set up at: Wuhu Sixth People’s Hospital and Polka International Garden	PM_{10}	4 periods / year, 1 day / period, 1 time / day, increase the monitoring frequency once the situation of exceeding permitted levels are found	3000	12000	Qualified environmental monitoring organization	Anhui Haoyan Aged-care Service Investment Co. Ltd.	Wuhu Environmental Protection Bureau

		Noise	2 monitoring sites shall be set up at: Wuhu Sixth People's Hospital and Polka International Garden	LeqdB(A)	4 periods / year, 1 day / period, 2 times / day, 1 time / day or night Increase the monitoring frequency once the situation of exceeding permitted levels are found	750	3000			
	Operation period	Medical waste	1 temporary storage yard for medical solid waste (construction area 10m^2)	Monitoring / supervision of waste disposal		—	—			
		Water quality	1 monitoring site shall be set up at the water outlet of the wastewater treatment plant	pH, CODCr, BOD_5, NH_3-N, SS	2 periods / year, 1 day / period, 2 times / day, 1 time / day or night Increase the monitoring frequency once the situation of exceeding permitted levels are found	6000	12000			
Elderly Care Institution of the First People's Hospital of Anqing	Construction period	Ambient air	1 monitoring site shall be set up at: Zongpu Community (Beiyuan Estate)	PM_{10}	4 periods / year, 1 day / period, 1 time / day, increase the monitoring frequency once the situation of exceeding permitted levels are found	1500	6000	Qualified environmental monitoring organization	Anqing First People's Hospital	Anqing Environmental Protection Bureau
		Noise	2 monitoring sites shall be set up at: Zongpu Community (Beiyuan Estate) and Project site	LeqdB(A)	4 periods / year, 1 day / period, 2 times / day, 1 time / day or night Increase the monitoring frequency once the situation of exceeding permitted levels are found	750	3000			
	Operation period	Medical waste	Temporary storage yard for medical solid waste relying on hospital	Monitoring / supervision of waste disposal		—	—			
		Water quality	1 monitoring site shall be set up at the water outlet of the wastewater	pH, CODCr, BOD_5, NH_3-N, SS	2 periods / year, 1 day / period, 2 times / day, 1 time / day or night Increase the monitoring frequency once	6000	12000			

			treatment plant		the situation of exceeding permitted levels are found					
Elderly Care Center of Lu'an Hospital of Traditional Chinese Medicine	Construction period	Ambient air	2 monitoring sites shall be set up at: Jinan Lijingyuan Resettlement Complex under construction, and Lu'an Hospital of Traditional Chinese Medicine (Phase I)	PM_{10}	4 periods / year, 1 day / period, 1 time / day, increase the monitoring frequency once the situation of exceeding permitted levels are found	3000	12000	Qualified environmental monitoring organization	Traditional Chinese Hospital of Lu'an	Lu'an Environmental Protection Bureau
		Noise	2 monitoring sites shall be set up at: Jinan Lijingyuan Resettlement Complex under construction, and Lu'an Hospital of Traditional Chinese Medicine (Phase I)	LeqdB(A)	4 periods / year, 1 day / period, 2 times / day, 1 time / day or night Increase the monitoring frequency once the situation of exceeding permitted levels are found	750	3000			
	Operation period	Medical waste	Temporary storage yard for medical solid waste relying on hospital	Monitoring / supervision of waste disposal		—	—			
		Water quality	1 monitoring site shall be set up at the water outlet of the wastewater treatment plant	pH, CODCr, BOD_5, NH_3-N, SS	2 periods / year, 1 day / period, 2 times / day, 1 time / day or night Increase the monitoring frequency once the situation of exceeding permitted levels are found	6000	12000			

Note: 1. The total cost in the construction period is calculated on the basis of construction years (the civil works and decoration of improvement Project of Ningguo City Social Welfare Service Center will last three years; the civil works and decoration of The Project of Relocation and Rebuilding of Xuancheng Municipal Social Welfare Home will last three years; the construction period of "Haoyan Rainbow

Garden” (Base) mainly consists of the decorationperiod and is one year; the construction period of Elderly Care Institution of the First People's Hospital of Anqing also mainly consists of the decorationperiod and is one years; the civil works and decoration of Complex Building of Lu'an Hospital of Traditional Chinese Medicine also lasts three years.)

2. The total cost in the operation period is calculated on the basis of five-year’s operation period.

6.4 Environmental Supervision Scheme

Environmental supervision during the construction period is the environmental protection measure implemented during the construction period of the Project. During the construction period, the environmental supervision work shall be entrusted by the Employer with the corresponding qualified construction supervision organization. The construction supervision organization is required to be equipped with full-time environmental protection supervision engineer, who is responsible for the environmental management and supervision during the construction period. Environmental supervision organization shall set up environmental monitoring working group to implement the specific work for environmental monitoring audit. The environmental supervision working group shall propose the environmental supervision work plan according to the contents of environmental supervision of the *Environmental Management Plan* and the actual situation of the Project construction and submit it to relevant environmental management department and the Employer.

6.4.1 Environmental Supervision Scope

(1) Environmental supervision scope

Project construction area and the areas directly affected by the Project, including the construction site and construction access of the main works and temporary works.

Supervision contents: including environmental protection work in terms of ecological protection, greening, pollution prevention and social environment.

(2) Scope of project

The construction site, construction Project and the areas of environmental pollution caused by construction in the above mentioned scopes.

(3) Supervision period

The engineering environmental supervision of the Project is consisted of construction preparation, construction and Project acceptance and defect liability.

6.4.2 Specific Working Method for the Environmental Supervision

Environmental supervision is a third party independent to the PIU and the Contractor, and it works independently by strictly following the terms of the contract and relevant environmental laws, regulations. As an important part of engineering supervision, the environmental supervision is closely related to engineering supervision and relatively independent with its own characteristic. Specific Working Method for the Environmental Supervision

are as follows:

(1) Review whether the environmental protection measures in the preliminary design of the Project and the construction drawing design correctly implement the environmental protection measures put forward by the approved environmental impact report.

(2) Assist the Employer in organizing the environmental protection training for the engineering construction, design and management personnel.

(3) Review relevant environmental protection provisions in the bidding documents and engineering contracts.

(4) Give improvement suggestions in the respect of environmental protection on the construction organization design, the construction technology plan and the construction schedule proposed by the Contractor and review the environmental index for the mobilized construction equipment etc.

(5) Reduce the measures affecting the environment protection to protect the ecological, water, gas, sound environment during the construction process. Supervise the construction quality for the environmental protection Project and carry out the intermediate acceptance and signature in accordance with the standard.

(6) Carry out the daily inspection supervision for the construction site and keep systematic records of the environmental impact of the construction, the effectiveness of environmental protection measures, environmental protection construction quality.

(7) Record the environmental problems found in the supervision, and require the Contractor to make rectifications within a time limit by oral or memorandum.

(8) The pollution sources causing serious environmental pollution to the construction site are required to be monitored, if necessary, the PIU shall be suggested to hire professionals and qualified monitoring organization to monitor, and targeted measures against the existing environmental problem shall be carried out by the Contractor based on the monitoring result. Require the Contractor to solve the major environmental problems within a time limit, and distribute the "environmental issues rectification notice "after negotiating with the PIU.

(9) Timely bring the unexpected problems regarding the environmental protection and design to the environmental supervision leading group and propose solutions.

(10) Responsible for drafting work plan and summary of the Project environmental supervision.

6.4.3 Project Environmental Supervision Scheme

Based on the characteristics of the construction of the Project, environmental supervision shall implement dynamic management in accordance with the construction process. Environmental supervision working is mainly based on the routine patrol, supplemented by the necessary environmental monitoring so as to timely adjust the environmental monitoring. The main pollution process applies the principle of control from the time of manufacture to that of obsolescence to ensure that the Contractor's construction behavior is subject to environmental protection provisions of relevant environmental laws, regulations and contracts.

(1) Construction preparation stage

Check the implementation of environmental protection provisions in the construction contract, review the environmental protection measures in the construction organization design, and carry out on-site inspection, optimization and examination for the construction site along with the Employer, the design unit, the Engineer and the Contractor. See Table 6.4-1 for Supervision Scheme

Table 6.4-1 Environmental Supervision Emphasis in Construction Preparation Stage

Construction Activities	Supervision emphasis	Supervision method	Means
Construction tendering and bidding	Prepare work plan of the Project environmental supervision		
	Review the environmental terms in the construction contract	Documents review	
	Review the sensitive sites and protection objectives at the construction segment site	Patrol	on-spot record
	Review the Contractor's environmental protection measures in organizational arrangement for construction	Documents inspection	
	Review the Contractor's environmental management plan during the construction period		
	Review the construction plan and the corresponding environmental protection measures in commencement permit for the sub-divisional works		

(2) Construction stage

The environmental supervision of the construction process shall be carried out

combined with the construction process. See Table 6.4-2 for the supervision pan.

Table 6.4-2 Main environmental supervision content during the construction

Environment element	Supervision Subjects	Main supervision content	Main supervision method	Disposal method against excessive discharge or violation
Water environment	Construction sites	1. The reasonability of the construction site selection, strengthen the management and construction machinery to maintain waste water operations to prevent the waste water flow into river. 2. Reasonable treatment for domestic sewage	Construction temporarily occupied land patrol	Notify the Employer and the Contractor to take remedial measures
Ambient air	1. Building materials transportation, stacking; 2. Topsoil storage yard	1. Transport vehicles adopts closed product transfer for the material cover and the material uploading and unloading site shall be provided with dust suppression measures and regulated watering; 2. The topsoil yard is at least 300m away from the residential area	Monitor ambient air, inspect the construction site and the temporary construction site during the construction	Notify the Employer and the Contractor to take remedial measures
Acoustic environment	1. Construction Access 2. Construction site	1. Rationally arrange the construction schedule 2. Use of low-noise equipment 3. Arrange temporary fence at the sensitive site 4. Sound environment quality monitoring during construction	Monitor sound environment, inspect the construction site and the temporary construction site during the construction	Notify the Employer and the Contractor to take remedial measures
Solid waste	Construction sites	1. Surface soil stripping utilization 2. Domestic waste disposal 3. Construction waste disposal	Monitor sound environment, inspect the construction site and the temporary construction site during the	Notify the Employer and the Contractor to take remedial measures

			construction	
Social environment	Main construction sites	1. By transporting at off-peak transportation hours etc. to reduce the impact on traffic of the location	During the construction, visit the local residents for the opinions of the Project construction.	Notify the Employer and the Contractor to take remedial measures
Ecological environment	Temporarily occupied land	1. Ecological recovery of the temporarily occupied land 2. The rationalities of site selection for borrow yard and waste slag plant 3. Waste processing is rational or not 4. The rationalities of site selection for construction access and construction camp	Before the construction, specify the temporarily occupied land location of each section and the patrol during the construction, check the recovery condition for the construction temporarily occupied land after the construction finished.	Notify the Employer and the Contractor to take remedial measures

(3) Supervision in handover and defects liability period

This working of this stage mainly consists of the data gathering for the environmental protection acceptance upon the completion of the Project, the construction of environmental protection Projects, as well as the supervision for the recovery and maintenance for the temporarily used land like construction site during the defects liability period.

7 Institutional Arrangement

World Bank-financed Anhui Aged Care System Construction Demonstration Project will be implemented at Anhui provincial, city, county levels, and the Department of Civil Affairs of Anhui Province will be responsible for the implementation coordination of the Project and the implementation of the provincial level Project. In order to strengthen the Project management and implementation, as well as the coordination between departments to have the Project to be completed as scheduled, the Project will introduce a leading group involves many departments to guide the Project. At the same time, strengthen the institutional capacity at all levels by carrying out Project implementation management consulting services, security monitoring and the corresponding training and investigate study.

7.1 Environmental Management System Arrangement

The Project is composed of 17 implementing agencies, including: the province's Project implementation agencies are Department of Civil Affairs of Anhui Province; Anqing First People's Hospital; Lu'an Hospital of Traditional Chinese Medicine; Wuhu City; the implementation agencies for Wuhu City are Wuhu Bureau of Civil Affairs; Anhui Haoyan Aged-care Service Investment Co., Ltd.; the implementation agencies for Xuanzhou District are Xuanzhou District Civil Affairs Bureau, Xuanzhou District Social Welfare Home; the implementation agencies for Ningguo City are Xuancheng Ningguo Civil Affairs Bureau, Ningguo Municipal Social Welfare Home; the implementation agencies for Suzhou City are: Suzhou Municipal Civil Affairs Bureau, Yongqiao District Civil Affairs Bureau, Dangshan County Civil Affairs Bureau, Xiao County Civil Affairs Bureau, Lingbi County Civil Affairs Bureau and Si County Civil Affairs Bureau.

7.1.1 Provincial Level

The provincial leading group, headed by the leader in charge of the office of Department of Civil Affairs of Anhui Province, is composed of the member units like Anhui Provincial Department of Finance, Anhui Development and Reform Commission and Environmental Protection Department of Anhui Province, which provides guidance and coordination of the policies and institutions relating to the Project. Anhui Provincial Department of Finance is responsible for Project financial management, including financial management guidance for the PMO, Project municipal finance bureau and PIU, and the management of the Project special

account. Anhui Development and Reform Commission (LPDRC) will be responsible for the overall planning of the Project facilities, the feasibility study and design approval of each sub-Project, and provide relevant policy guidance for the Project to promote economic reform and development. Environmental Protection Department of Anhui Province will be responsible for organizing relevant experts on technical review for the Project environmental impact assessment.

Provincial PMO: relevant departments of Department of Civil Affairs of Anhui Province and the Environmental Protection Department of Anhui Province jointly set up a PMO for the Project overall management during the Project implementation period.

7.1.2 Municipal and County Level

Municipal PMO: relevant regional civil affairs bureau and regional environmental protection bureau subsidiary to the Department of Civil Affairs of Anhui Province jointly set up a PMO for the Project overall management during the Project implementation period.

Implementation organization of each city and county (PIU): the Employers of 5 cities where the Project located are the executive body (PIU) who manages the execution of each Project.

The PMO will: (1) be responsible for the overall Project implementation management; (2) Project owners and relevant agencies coordination; (3) progress and quality of the Project supervision, text preparation agency work assessment; (4) Liaison and communication with World Bank and relevant government agencies.

The municipal PMO and the performing organization of each city and county will be responsible for the implementation of routine environmental management throughout the Project (including construction period and operation period), including the implementation, inspection, supervision and reporting of the environmental management plans, social action plans and RAP inspection, and implementation of mitigation measures for the environmental influence. The specific organization is shown as follows.

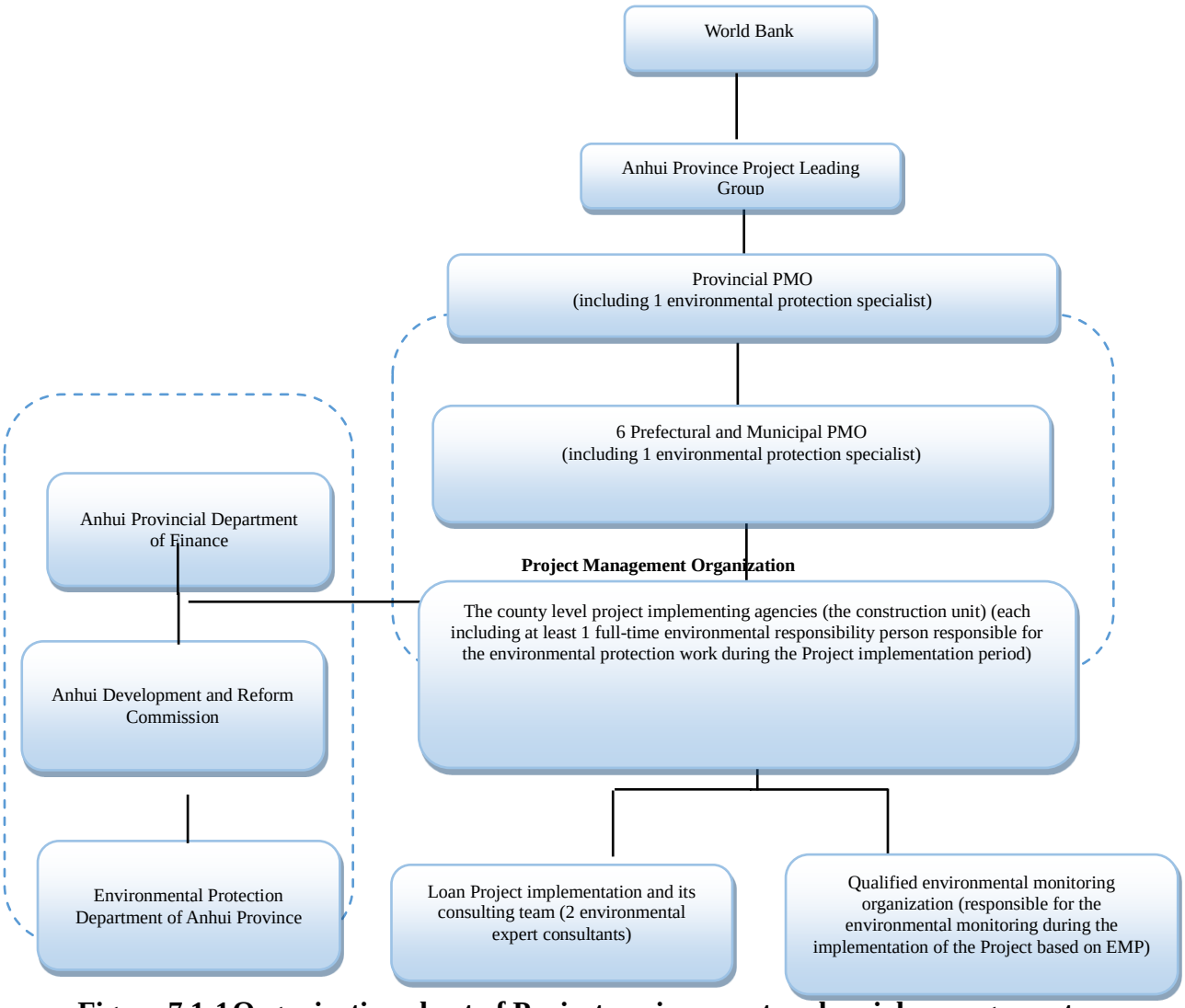


Figure 7.1-1 Organization chart of Project environment and social management organization

Provincial PMO (1) the full implementation of the environmental management plan; (2) report The implementation of the environmental management plan to the leading group office and the World Bank; (3) supervise and inspect the progress, implementation and effectiveness of environmental impact assessment during the Project construction and operation period.

Environmental protection specialist of the municipal PMO the Environmental leader of the Project owner: The municipal PMO and the Project PIU unit appoint at least one full time environmental responsible person of their own during the implementation of the Project: (1) the specific implementation of the environmental management plan; (2) the supervision and inspection of implementation and result of the environment impact mitigation measures during the construction and operation period; (3) supervise the internal environmental inspection

of the Contractor and The Engineer, and supervise, inspect and coordinate external monitoring and target reaching supervision; (4) ensuring that the Project implementation operations manual including relevant clauses of environmental management, monitoring and mitigation; (5) report the implementation of the environmental management plan to the municipal PMO and the World Bank; (6) work with the social commissioner of the PMO to deal with public complaints; (7) make emergency response and disposal to the effect and damage on the environment which are unforeseen by the environmental impact assessment and environmental management plan. The environmental consultants from the loan implementation consultant panel will provide technical support to the environmental specialist of the urban construction PMO and PIU unit. The Environmental professionals will receive supervision from the Provincial Environmental Protection Office and the Municipal Environmental Protection Bureau of each Project.

During the construction drawing design stage, the municipal PMO provides the environmental management plan to the design institute through the PIU unit to ensure that the environmental protection and environmental impact mitigation measures are included in the construction drawing design. The environmental management plan will be updated according to the changes in the design of the construction drawings and become a component of the Project construction management.

Expert consult of loan implementation environment: The contract for the environmental consulting expert is included in the technical assistance consulting service contract of the loan implementation. The expert will provide advisory services in terms of environmental management and monitoring to municipal PMO, PIU, the Contractor and construction supervisor during the Project implementation period. The expert will: (1) assist the municipal PMO and the PIU to update the environmental management plan and the environmental monitoring plan according to the actual situation; (2) implement and continuously improve the environmental impact mitigation measures in the environmental management plan; (3) review the internal environment monitoring reports, semi-annual external environmental monitoring report; (4) direct and conduct training for the PMO, PIU, construction supervision unit and the Contractor, and the content of training includes China's environmental laws and regulations, policies and standards, the Bank's security policy, environmental management plan and public complaints mechanism etc. (5) determine all the environmental issues at the implementation stage of the Project, and develop the

necessary governance and corrective measures to implement it in action plan; (6) assist the municipal PMO and PIU in writing the semi-annual environmental monitoring and progress report which is submitted to the World Bank; (7) implement regular and irregular environment inspection for The Project site.

The Contractor: the Contractor will be responsible for implementing the environmental impact mitigation measures and internal environmental inspection / monitoring during the construction period with the help of the Engineer and under the supervision of the municipal environmental protection bureau.

The Engineer: The engineer shall arrange at least 1 environmental engineer at each construction site to responsible for: (1) supervise the implementation of the Contractor's environmental management plan; (2) guide the internal environmental inspection and monitoring; (3) complete the monthly environmental performance report and submit it to the urban construction PMO, implement the technical assistance experts and PIU by loan; (4) prepare the environmental management section of the monthly progress report submitted to the municipal PMO with the Contractor.

Environmental monitoring stations of the Project location city: ensure that the environmental monitoring stations of each Project location city shall be subject to the external monitoring of the Project and target reaching monitoring in accordance with the related environmental standards, norms in China, and according to the requirements of the environmental management and monitoring plans during the construction period and operation period.

Table 7.1-1 Project office and Project implementation institution list

	PMOs	**PIUs**
1	PMO of Department of Civil Affairs of Anhui Province	Department of Civil Affairs of Anhui Province
2	PMO of Anqing Municipal Civil Affairs Bureau	Anqing Municipal Civil Affairs Bureau Anqing First People's Hospital
3	PMO of Lu'an Municipal Civil Affairs Bureau	Lu'an Municipal Civil Affairs Bureau Traditional Chinese Hospital of Lu’an
4	PMO of Suzhou Municipal Civil Affairs Bureau	Suzhou Municipal Civil Affairs Bureau Yongqiao District Municipal Civil Affairs Bureau Lingbi County Civil Affairs Bureau Dangshan County Civil Affairs Bureau Xiao County Civil Affairs Bureau Si County Civil Affairs Bureau
5	PMO of Wuhu Civil Affairs Bureau	Wuhu Civil Affairs Bureau Anhui Haoyan Aged-care Service Investment Management Co., Ltd.
6	PMO of Xuanzhou District Civil	Xuanzhou District Civil Affairs Bureau, Xuancheng

	PMOs	PIUs
	Affairs Bureau, Xuancheng City	City Social Welfare Institution in Xuanzhou District
7	PMO of Civil Affairs Bureau of Ningguo City, Xuancheng City	Civil Affairs Bureau in Ningguo City, Xuancheng City Ningguo Municipal Social Welfare Home

7.2 Responsibility and personnel staffing of environmental management system organization

In the environmental management system of the Project, some are internal organizations of the Project, some are engaged advisory services of the Project, and some are external organizations of the Project. These organizations together constitute a complete Project environmental management system, but have different work contents and different scopes of official duty. The constituent organization of environmental management system, and content and personnel staffing of environmental management at different stages are shown in Table 7.2-1.

Table 7.2-1 Schedule of the Phased Environmental Management organization, Content and Personnel Staffing of the Project

Stage	Institution name	Main environmental management content	Allocation of personnel
Design & preparation	Provincial, Municipal and County Environmental Protection Bureau	Government organization of administrative supervision and administration shall conduct supervision and management of the environment in the whole process for the Project in accordance with the law, including the approval of Project environmental impact assessment report, and the environmental supervision and management of Project construction, and final acceptance and operation of environmental protection Project, etc.	Unlimited
	Provincial PMO	Be responsible for contacting with the environment agencies of government at all levels and coordinating to implement environmental management matters.	1
	Municipal PMO	Be responsible for the implementation and management of sub-Project in each city, including management of Project environment, environmental monitoring and environmental supervision, and for the supervision and inspection and report of implementation of environmental management plan.	One person in each city
	Designer	1. Incorporate environmental protection measures into the design plan and budget; 2. Write the mitigation measures in the environmental management plan in the technical specifications of the biding document.	2
	Environmental Impact Assessment Organization	1. Provide technical support for the environmental protection of Project design; 2. Prepare the environmental impact assessment report; 3. Make environmental management plan.	6
Construction period	Sub-Projects	1. Be responsible for a series of environmental protection management during the Project	One person for each

		construction period, and implement the expenditure of environmental protection; 2. Manage and supervise the environmental protection during the construction period, as well as investigate and deal with the problems of nuisance or pollution in the construction process; 3. Be responsible for coordinating with the environment agencies of government to implement environmental management matters; 4. Follow up the implementation of environmental management plan, and regularly report to the competent department of same level, Provincial PMO, County PMO and World Bank; 5. Accept and handle public complaints.	sub-Project
	Contractor	1. Carry out environmental protection measures and work in accordance with the bidding document, contract and environmental management plan; 2. Accept the guidance and supervision of County PMO of the Project, environment management personnel of community service center, environment supervision engineer and relevant functional department of government; 3. Accept the technical support from the environmental protection advisory body; 4. Adopt safety protection measures, such as setting up information sign on the construction site, and make fence for the boundary on the construction site to build up the communication channels with the public and to ensure the construction safety; 5. Implement environmental management plan; 6. Before the mobilization, prepare specific environmental management plan (including construction activities management, traffic management, occupational safety and health, environmental and social impact management, complaints mechanism, etc.) in accordance with EMP. 7. Arrange staffs to be responsible for the environemtnal safety management issues; 8. Arrange staffs to be responsible for dealing with and recording the feedback report; 9. If there is construction campsite, the management over the construction works residing in the campsite shall be indicated in the construction contract; 10. The construction unit should have infectious diseases management over the construction workers in the campsite.	Two persons for each Project
	Project/environmental supervision	1. Supervise the Contractor to implement the environmental management plan, and perform the environmental mitigation measures in the Contract; 2. Supervise the implementation of the Contractor on site; 3. Cooperate with the Employer for environmental management; 4. Record the implementation of the environmental management plan to produce a report, and regularly report the same to the	5

		operator;	
	Environmental monitoring organization	Complete the monitoring work according to the entrustment of Project operator and the environmental monitoring plan proposed in the evaluation.	5
	Municipal and County Environmental Protection Bureau	1. Supervise and inspect the environmental protection measures of the operator and Contractor; 2. Receive the report on the implementation of environmental management plan submitted by the operator and PMO, and conduct administrative management according to the report; 3. Arrange emergency measures if abnormal environmental conditions occur in the construction; 4. Accept public complaints, and coordinate and handle them.	1
	Technical assistance/consultation	1. Provide technical support for the environmental protection of Project during the construction period in accordance with the entrustment of Project operator and the environmental impact report as well as the environmental protection design results; 2. Provide technical guidance to the Contractor on environmental protection, and conduct environmental protection training well during the construction period;	Unlimited
Operation period	Operating institution	1. Be responsible for the environmental protection management after operation, the environmental management plan during the implementation period as well as the mitigation measures and monitoring during the operation period; 2. Be responsible for contacting with the governmental authorities and coordinating to implement environmental management matters; 3. Be responsible for emergency treatment of environmental accidents; 4. Carry out training for personnel regularly to improve their capabilities and actively conduct exchange activities on environmental technology and experience to further improve environmental management at the same time; 5. Responsible for maintaining the wastewater treatment facilities.	2
	Environmental monitoring organization	1. According to the entrustment of Project operator, complete the environmental monitoring during the Project operation period in accordance with the environmental monitoring plan; 2. Conduct routine monitoring related to the Project.	On the basis of entrusted task
	Municipal and County Environmental Protection Bureau	1. Conduct the acceptance of environmental protection Project; 2. Manage and supervise the environmental protection standards during the operation period; 3. Carry out supervision and inspection on the operation of existing environmental protection facilities.	2
	Social citizen	Social supervision	Unlimited

	and civil organization		

7.3 Environmental management training

1. Objective of Training

The purpose of environmental management training is to ensure the smooth and effective implementation of environmental management, make relevant personnel familiar with the content and procedure of environmental management, improve the environmental management capacity of environment managers, and ensure the effective implementation of environmental protection measures.

Table 7.3-1 Enhancement and Training Plan for Provincial Environmental Management Organization

Training	Participants	Contents	Times	Days	Number of Attendees	Budget (CNY 10,000)
Environmental laws, regulations and policies of World Bank and China	PMO, PIU, the Contractor and relevant personnel of Municipal Environmental Protection Bureau	● Security policy of World Bank and EHS; ● Relevant Chinese environmental laws, policies, regulations and standards; ● Best case of environmental management of civil works;	2	1	30	10.0
Public complaints mechanism	PMO, PIU, the Contractor, the Engineer, representatives of residents and villagers in the vicinity of the Project, and relevant personnel of Municipal Environmental Protection Bureau	● The composition, principle, responsibility and time frame of complaints mechanism; ● Type and qualification of complaints; ● Complaint filing and report procedure.	2	1	30	10.0
Implementation of environmental management plan	PMO, PIU, the Contractor, the Engineer, Environmental Protection Bureau, environmental expert consultant	● Responsibilities and specific implementation methods stipulated in the environmental management plan; ● Main environmental protection contents during the construction	2	1	30	10.0

Training	Participants	Contents	Times	Days	Number of Attendees	Budget (CNY 10,000)
		period and operation period; ● Environmental forms and reports (daily and monthly report); ● Update of environmental management plan.				
Environmental monitoring, inspection and report	The Contractor, the Engineer, monitoring station, Environmental Protection Bureau, environmental expert consultant	● Project environmental monitoring of World Bank, method of inspection, data collection and processing, as well as interpretive and reporting program; ● QA/QC of environment monitoring	1	1	20	4
Total						**34**

Department of Civil Affairs of Anhui Province is responsible for the implementation of the whole Project. Department of Civil Affairs of Anhui Province has set up the provincial PMO, which is responsible for the overall implementation of the Project during the implementation period. Civil Affairs Bureau of relevant city under the Department of Civil Affairs of Anhui Province has set up Municipal PMO, which is responsible for the comprehensive daily management of the Project during the implementation period. Provincial PMO will be responsible for the overall coordination with PMO of various regions during the Project preparation and implementation. Provincial PMO appoints one person as the environmental manager and get Project management company involved in it, including environmental experts. All PMO will be equipped with sufficient personnel (including designated environmental management personnel). PMO will employ external monitoring agency and on-site Engineer to supervise the implementation of environmental management plan. The institutional capacity shall be enhanced according to the environmental management plan, including training for PMO and civil works contractor, to achieve satisfactory results in the implementation process of the Project. Anhui Province has successfully implemented many Projects funded by the World Bank. During the

planning and implementation of the Project, the Provincial Department of Finance of Anhui Province and Provincial Development and Reform Commission will provide support and guidance to the Department of Civil Affairs of Anhui Province and the PMO.

8 Estimation of execution cost for environmental management plan

8.1 Project description of execution cost

The costs associated with environmental protection of the Project consists of three parts: the costs of environmental protection measures (including the operation cost), and the costs of environmental monitoring and supervision, and capacity reinforcement (including environmental management training, environmental consulting). Relevant environmental protection costs included in the civil works costs shall not be listed repeatedly in the plan. The costs incurred in the implementation of the *Construction Environment Management Regulations* shall be counted in the total Project cost by the Contractor and shall not be listed separately in the plan.

8.2 Execution cost estimation

The costs of Project implementation environmental management plan have been included in the total investment of the Project. Table 8.1-1 lists the implementation costs for environmental management plan of the Project.

Table 8.2-1 Schedule of Environmental Management Costs of the Project Unit: CNY 10,000

Sub-project activity	Costs of environmental protection measures								Costs of environmental monitoring and supervision			Costs of capacity reinforcement		Total
	Cost of environmental protection facilities in the construction period				Cost of environmental protection facilities in the operation period		Operation cost		Environment monitoring		Environmental supervision	Environmental consulting	Environmental management training	
	Air	water	Noise	Soild waste	water	Solid waste	water	Solid waste	Construction period	Operation period	Onstruction period	–	–	
The Project of Relocation and Rebuilding of Xuancheng Municipal Social Welfare Home	20	10	10	20	50	20	10	2.5	0.9	1.5	2	4	2	152.9
Improvement Project of Ningguo City Social Welfare Service Center	20	10	10	20	40	10	5.6	0.2	1.2	0.75	2	4	2	125.75
Haoyan Rainbow Garden - Wuhu Health Aged-care Service Industry Base	40	10	20	40	0	0	25	9	0.3	1.5	0	2	1	148.8
Embedded Center for Disabled or Semi-Disabled Elders (the other four Projects not included in the Base)	5	0	5	10	0	0	10	0.3	0	0	0	2	1	33.3
Elderly Care Institution of Anqing First People’s Hospital	40	10	20	30	0	0	80	55	0.2	1.5	0	2	1	239.7
Construction of Anqing Home-based Care Services Station	10	0	5	10	0	0	0	0	0	0	0	10	5	40
Construction of Lu’an Home-based Care Services Station	2	0	1	2	0	0	0	0	0	0	0	2	1	8
Elderly Care Center of Lu'an Hospital of Traditional Chinese Medicine	50	20	50	90	0	0	48	33	0.9	1.5	5	10	5	313.4
Transformation and Upgrading of Suzhou Rural Nursing Homes	14	0	14	28	155	70	0	0	0	0	0	10	5	296

Total	646				623.6		19.25			69		1357.85
Sub-project activity	Costs of environmental protection measures						Costs of environmental monitoring and supervision			Costs of capacity reinforcement		Total
	Construction period				Operation period		Environment monitoring		Environmental supervision	Environmental consulting	Environmental management training	
	Atmosphere	Water	Noise	Solid waste	Water	Solid waste	Construction period	Operation period	Construction period	—	—	
The Project of Relocation and Rebuilding of Xuancheng Municipal Social Welfare Home	20	10	10	20	30	20	2	1	2	2	2	119
Improvement Project of Ningguo City Social Welfare Service Center	20	10	10	20	20	10	2	1	2	2	2	99
Haoyan Rainbow Garden - Wuhu Health Aged-care Service Industry Base	40	10	20	40	20	20	1	2	7	5	5	170
Embedded Center for Disabled or Semi-Disabled Elders (the other four Projects not included in the Base)	5	0	5	10	10	10	—	—	—	10	20	70
Elderly Care Institution of Anqing First People's Hospital	40	10	20	40	10	30	1	2	7	5	5	170
Construction of Anqing Home-based Care Services Station	10	0	5	10	10	5	—	—	—	10	2	52
Construction of Lu'an Home-based Care Services Station	2	0	1	2	2	1	—	—	—	1	1	10
Elderly Care Center of Lu'an Hospital of Traditional Chinese Medicine	100	20	50	40	10	30	1.5	1.5	5	5	5	268
Transformation and Upgrading of Suzhou Rural Nursing Homes	14	0	14	28	155	70	0	0	0	17.5	17.5	316
Total	1119						38			117		1274

Note: the cost of environmental protection facilities in the construction period: calculated according to the construction period fo the

sub-project activities; cost of environmental protection facilities: calculated according to lump-sum investment; operation cost in the operationperiod: calculated on the basis of five-year's operation; cost of environmental monitoring:calculated according to the construction period of the sub-project activities; or on the basis of five-year's operation period.

9 Information management of environmental management plan plan

9.1 Information Exchange

Environmental management requires the necessary information exchange between different departments and different positions within the organization, and the PMO shall report relevant information to the outside party (interested party, the public, etc.).

Internal information exchange could be conducted in various ways, such as meeting and internal briefing, but there must be one formal meeting every month, and all communication information shall be recorded and archived.

External information exchange shall be carried out every six months or once a year, and information exchange with the cooperative unit shall be made into meeting minutes and archived.

9.2 Records mechanism

In order to make the effective operation of environmental management system, it is necessary to establish a perfect recording system and keep the following records:

(1) Legal and regulatory requirements;

(2) Permits;

(3) Environmental factors and relevant environmental impacts;

(4) Training.

(5) Inspection, verification and maintenance activities;

(6) Monitoring data;

(7) Effectiveness of corrective and preventive measures

(8) Information of interested party;

(9) Approved by:

(10) Review.

In addition, necessary control for the above records must be carried out, including: the identification, collection, cataloging, archiving, storage, management, maintenance, querying, retention period, disposal of records and other aspects.

9.3 Reporting mechanism

The Contractor, monitoring organization and the PMO shall record the Project progress, implementation of the management plan (EMP) and environmental quality

monitoring results during the Project implementation process and report to relevant departments in time. Including the following three aspects:

(1) Monitoring organization and the Contractor shall carry out detailed records for the implementation of EMP, and report to the PMO in time;

(2) The Project progress report (such as monthly, quarterly and annual report, etc.) prepared by the PMO shall include the content of EMP progress, such as the implementation progress and effect of EMP;

(3) The implementation report of environmental management plan shall be submitted to the Department of Civil Affairs of Anhui Province every six months and the report consists of two parts, including summary report on the implementation of environmental management plan and a professional monitoring report, that is, environmental quality monitoring report.

(4) The implementation report of Project EMP must be completed by the Department of Civil Affairs of Anhui Province every six months and submitted to the World Bank.

The EMP implementation report could include the followings:

(1) Project progress;

(2) Implementation and monitoring of EMP plan;

(3) Implementation of training plan;

(4) Whether there are public complaints. In case of complaints, record the main contents, solutions of complaints and public satisfaction; regular consultation to the public and public consultation;

(5) EMP implementation plan of the next year.

9.4 Grievance and Complaint Mechanism

In order to better maintain satisfactory environmental quality and interests of local villagers, the Project has established a convenient, open and effective complaint mechanism, and affected persons could lodge complaints at any time on any issue in the environmental management plan.

(1) Complaint acceptance institution

The PMO at all levels shall arrange special personnel to take charge of public complaints, publish complaint hotline, and receive public consultation and complaints.

(2) Complaint procedures

① Phase 1

If the residents in the Project area are dissatisfied with the environmental management plan, or if the local environmental quality is affected by the construction and operation of the Project, oral or written complaints could be submitted to the County PMO; the County PMO shall deal with these complaints and make written records, and shall handle them within two weeks upon receipt of complaints for reasonable request or suggestion.

② Phase 2

If the complainant is still dissatisfied with the handling decision of County PMO, he could lodge a complaint to the Provincial PMO after receiving the decision; the Provincial PMO shall make a decision within two weeks upon receipt of the complaint.

③ Phase 3

If the complainant is still dissatisfied with the handling decision of Provincial PMO, he could report or lodge a complaint to the local environmental protection department after receiving the decision.

(3) Feedback mechanism of complaints

The feedback mechanism of complaints includes the standardized recording, tracking and periodic report system.

Standardized recording: the complaint record sheet mainly includes the basic information of complainants, basic information of complaints, basic information of repliers, solutions, and effects achieved.

Tracking: interview the complainant again for investigating whether the complaint is dealt with, and whether the complainant is satisfied with the result of handling, etc.

Periodic report: the complaints shall be reported in writing regularly to the upper management office and written in the plan of next year to avoid the occurrence of similar events.

10 Public consultation and public notification

Public consultation and public notification are an important part of Project environmental impact assessment. The purpose of public notification is to keep the public and interested party probably affected by the Project informed of relevant information of the Project, so that Project PIU and management organization could understand the cognition and comprehension degree of the public and interested party on the Project and their attitudes towards the Project and concerns about environmental and social impacts, and their views and suggestions on the Project. The purpose of public consultation is to obtain the views of the public and relevant organization in the area affected by the Project, so that the Project PIU and decision-making department could discover potential problems and modify, improve the design and Project plan in time. Therefore, the problems proposed by the public could be properly resolved, and the design, construction methods, environmental protection measures, environmental monitoring and management will be more perfect and reasonable, so as to optimize the Project construction in terms of environmental, social and economic benefits. The object of public consultation and public notification is mainly the unit and individual within the scope of Project environmental impact.

The public notification and public consultation of the Project are based on the legal provisions in: 1) Regulation of Chinese Environmental Protection; 2) *Ordinance on Administration for Environmental Protection of Construction Projects* (Decree No. 253 of the State Council); 3) the *Temporary Act of Environmental Impact Assessment of Public Participating of Ministry of Environmental Protection* (HF 2006 [28]); 4) *Social Risk Assessment on Large Investment Projects* (August 2012) of NDRC; 5) BP17.50 Information Disclosure in OP/BP4.01 Environmental Assessment of the World Bank. The media of public notification of the Project is website and newspaper; public consultation is mainly conducted in the form of discussion and questionnaires.

10.1 Public notification of the Project

The public notification of sub-Project in each city is carried out on the website of Department of Civil Affairs of Anhui Province by the environmental impact assessment organization and PMO. The contents of public notification include: 1) the Project name, PIU, management organization and financial sourcing; 2) construction contents of the Project and planned construction methods (introduction); 3) expected Project construction period (commencement and completion time); 4) the scope of

Project and expected types and scope of environmental impact; 5) environmental impact, environmental measures and monitoring plan proposed in the environmental management plan; 6) main contents of environmental management plan; and 7) contact information of relevant departments for Municipal PMO, Provincial PMO, environmental impact assessment organization and local Environmental Protection Bureau (telephone, E-MAIL, etc.).

The public notification of the Project is published on July 21, 2017 at the website of the Department of Civil Affairs of Anhui Province (http://www.ahmz.gov.cn/list_Show.asp?id=24745). The contents consist of the participating city of the Project and brief introduction to the Project content, as well as the link to the Project's environmental management plan. On July 20, 2017, the public notification was conducted in the Xin'an Evening News. The time and media of public notification is shown in Table 10.1-1, and the public screenshots are shown in Figure 10.1-1 to Figure 10.1-2.

Table 10.1-1 Date and media of public notification

Date	Public media
July 20, 2017	Xin'an Evening News
July 21, 2017	Website of Department of Civil Affairs of Anhui Province

Future consultation: during the entire Project implementation period, the conversation of Project PIU and management organization with the affected population and interested party will be effectively conducted in a public consultation manner, which will ensure that the concerned issues of the public are fully understood and dealt with in time. The public consultation and participation plan during the construction and operation period are a constituent part of the Project's environmental management plan. Future consultation will be conducted through: (1) questionnaire survey, home visit, discussion and public hearing (consulting conference); (2) participation of affected population and interested party during the inspection and monitoring of environmental management plan; (3) public consultation after the completion of the Project. The consultation will help evaluate public attitudes and perspectives towards the Project performance.

公告

世界银行贷款安徽养老服务体系建设示范项目
环境影响评价公众参与信息公告

根据世行OP/BP4.01环境评价(Environmental Assessment)中BP17.50信息公开(InformationDisclosurn)，环发2006【28】号文《环境影响评价公众参与暂行方法》等有关规定，现对该项目环境影响评价的主要内容、评价结论等进行公告，以便征求相关部门和广大公众的意见和建议，公示内容如下：

一、项目概况

本项目建设内容包括省本级养老服务综合支撑项目、增强社区居家养老服务项目、增强专业护理服务的提供和管理能力项目、项目管理、监测评估及能力建设四个子项目。

项目资金来源主要由世行贷款、地方政府配套资金、建设单位自筹三部分构成。其中，世界银行贷款96538.40万元；地方政府配套资金14118.89万元；建设单位自筹66115.66万元。

二、预防或减轻不良环境影响的对策和措施的要点

施工期：施工废水处理后回用，生活污水经临时管网排入市政污水处理厂；合理安排设施的使用，减少噪声设备的使用时间；在材料堆放和运输时应采取洒水和遮盖等抑尘措施，防止二次扬尘的产生；注意清洁运输，防止在装卸、运输过程中的撒漏、扬尘及噪声。

运营期：水污染控制措施：生活污水采取化粪池措施后通过市政污水管网排放市政污水处理厂，医务室废水采取消毒池措施后通过市政污水管网排放至市政污水处理厂。固体废物处理措施：生活垃圾实行袋装分类收集，进入垃圾填埋场。医疗废物需要进行消毒后定期送往委托具危险废物处理资质的专业单位处理。

三、环境影响评价文件的查阅方式

安徽省民政厅网站，网址为http://www.ahmz.gov.cn/。

四、征求公众意见的范围和注意事项

范围：受建设项目直接影响或间接影响的单位和个人以及关注项目建设的单位和个人。注意事项：意见包括工程建设的意见、对本报告提出的环保对策与减缓影响措施的意见、对项目环境影响文件的意见、对项目环境保护的建议、要求；对本报告综合评价结论的意见。

五、征求公众意见的具体形式、公众提出意见的起止时间

请在公告发布后10日内，公众可向建设单位或环评单位通过E-mail、传真、信函或其他便利的形式提交书面意见。

建设单位：安徽省民政厅

联系人：徐主任15395056900邮箱：275603172@qq.com

环评单位：北京中咨华宇环保技术有限公司

联系人：王总010-67162828邮箱：xmb403@163.com

Figure 10.1-1 Screenshot of Xin’an Evening News

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2017年7月24日 星期一 农历丁酉年(鸡) 闰六月初二 中时 马鞍山 今天(周一): 30~39℃ 明天(周二): 29~40℃

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世界银行贷款安徽养老服务体系建设示范项目环境影响评价公众参与信息公告

字体[大 中 小]【发布日期：2017/7/21】 信息来源： 本站原创 【视力保护色：】 浏览次数：437

根据世行OP/BP4.01环境评价(Environmental Assessment)中 BP17.50信息公开(InformationDisclosure)，环发2006【28】号文《环境影响评价公众参与暂行方法》等有关规定，就对该项目环境影响评价的主要内容、评价结论等进行公告，以便征求相关部门和广大公众的意见和建议，公示内容如下：

一、项目概况

本项目建设内容包括省本级养老服务综合支撑项目、增强社区居家养老服务项目、增强专业护理服务的提供和管理能力项目、项目管理、监测评估及能力建设四个子项目。

子项目一包含养老服务综合信息系统建设、老年人能力评估及需求评估体系、养老服务标准体系建设、养老服务专业人才培养。子项目二包含安庆市、六安市新建改扩建161个居家养老服务站；安庆市、六安市开展2个政府购买服务；芜湖市新建及改扩建8个社区嵌入式失能半失能老年服务站点。子项目三包含安庆市、六安市各扩建1个医养结合机构；宣城市宣州区福利院迁址重建以及宁国市扩建1个社会福利服务中心；滁州市琅琊区、凤山县、来安县、君县、天长市县共33个农村敬老院进行升级改造和改扩建。子项目四支持项目管理和机构能力建设，确保有效的执行世界银行的政策、程序以及国内规则，提升项目管理办公室和实施机构的工程建设和管理水平，从而确保该项目的顺利完成。

项目资金来源主要由世行贷款、地方政府配套资金、建设单位自筹三部分构成。其中，世界银行贷款96538.40万元，折合14000.00万美元，占总投资54.61%；地方政府配套资金14118.89万元，占总投资7.99%；建设单位自筹66115.66万元，占总投资37.40%。

二、预防或减轻不良环境影响的对策和措施的要点

施工期：

施工废水处理后回用，生活污水经临时管网排入市政污水处理厂；合理安排设施的使用，减少噪声设备的使用时间；在材料堆放和运输时应采取洒水和遮盖等扬尘措施，防止二次扬尘的产生；注意清洁运输，防止在装卸、运输过程中的撒漏、扬尘及噪声。

运营期：

1、水污染控制项目：生活污水采取化粪池措施后通过市政污水管网排放市政污水处理厂，医务室废水采取消毒池措施后通过市政污水管网排放至市政污水处理厂。

2、固体废物处理措施：生活垃圾实行袋装分类收集，进入垃圾填埋场。医疗废物需要进行消毒后定期送往委托具危险废物处理资质的专业单位处理。

三、征求公众意见的范围和注意事项

范围：受建设项目直接影响或间接影响的单位和个人以及关注项目建设的单位和个人。注意事项：意见包括工程建设的意见，对本报告提出的环保对策与减缓影响措施的意见对项目环境影响文件的意见对项目环境保护的建议、要求；对本报告综合评价结论的意见。

四、征求公众意见的具体形式、公众提出意见的起止时间

请在公告发布后10日内，公众可向建设单位或环评单位通过E-mail、传真、信函或其他便利的形式提交书面意见。

1、建设单位：安徽省民政厅

联系人：徐主任 联系方式：15395056900 邮箱：275603172@qq.com

2、环评单位：北京中咨华宇环保技术有限公司

联系人：王总 联系电话：010-87162828 邮箱：xmb403@163.com

五、环境影响评价文件的查阅方式

附件：1.世界银行贷款安徽省养老服务体系建设项目环境管理计划

2.世界银行贷款安徽省养老服务体系建设项目环境管理框架

Figure 10.1-2 Screenshot of the website of Department of Civil Affairs of Anhui Province

10.2 Survey of public consultation

The public consultation adopts the methods of discussion and questionnaire survey and the survey time is conducted on June 29, 2017 to July 7, 2017. The statistics of gender, age and occupational information of participants are shown in Table 10.2-1; the opinions of the public consulted are shown in Table 10.2-2.

Table 10.2-1 Information statistics for public consultation participants

Information of public participants		Anqing		Lu'an		Wuhu		Xuancheng		Ningguo		Suzhou	
		Total number of people: 85	(%)	Total number of people: 41	(%)	Total number of people: 30	(%)	Total number of people: 46	(%)	Total number of people: 34	(%)	Total number of people: 40	(%)
Gender	Male	59	69.47	24	58.54	15	50.00	21	45.65	18	53	24	60.00
	Female	26	30.59	17	41.46	15	50.00	25	54.35	16	47	16	40.00
Age	<20	0	0	12	29.27	0	0	0	0	0	0	0	0
	20-40	49	57.64	13	31.71	14	46.67	7	15.22	15	44	16	40.00
	41-59	31	36.47	9	21.95	14	46.67	26	56.52	13	38	19	47.50
	≥60	5	5.89	7	17.07	2	6.67	13	28.26	6	18	5	12.50
Educational level	Primary school and below	12	14.11	11	26.83	0	0	10	21.74	1	3	1	2.5
	Middle school (senior middle school and junior middle school)	17	20.00	17	41.46	3	10.00	28	60.87	19	56	32	80.00
	College degree or above	56	65.89	6	14.63	23	76.67	8	17.39	14	41	6	15.00
	Incomplete	0	0	7	17.07	4	13.33	0	0	0	0	1	2.5
Occupation	Worker	37	43.52	6	14.63	6	20.00	15	32.61	11	32	3	7.5
	Peasant	16	18.82	0	0	0	0	6	13.04	1	3	26	65
	Cadres / teachers / doctors	10	11.76	6	14.63	3	10.00	6	13.04	12	35	10	25
	Migrant workers	0	0	0	0	18	60.00	0	0	0	0	0	0
	Retirees	0	0	6	14.63	0	0	13	28.26	0	0	0	0
	Incomplete	22	25.88	23	56.10	3	10.00	6	13.04	10	29	1	2.5

Table 10.2-2 Results summary on questionnaire survey of public consultation

Problems	Choice of reply	Anqing		Lu'an		Wuhu		Xuancheng		Ningguo		Suzhou	
		Total number of people: 85	**(%)**	**Total number of people: 41**	**(%)**	**Total number of people: 30**	**(%)**	**Total number of people: 46**	**(%)**	**Total number of people: 34**	**(%)**	**Total number of people: 40**	**(%)**
1. What's your attitude towards the Project? (Single selection)	Agree	85	100	40	97.56	30	100.00	42	91.30	34	100	40	100
	Disagree	0	0	0	0	0	0	0	0	0	0	0	0
	Neutral	0	0	1	2.44	0	0	4	8.70	0	0	0	0
2. What are your suggestions for the environmental impact assessment document?	See the following paragraph												
3. Can you accept the negative environmental impact during the renovation of the Project? (Single selection)	Yes	72	84.71	21	51.22	16	53.33	20	43.48	34	100	38	97.5
	Basically acceptable	5	5.89	18	43.90	6	20.00	19	41.30	0	0	2	5
	Basically unacceptable	5	5.89	2	4.88	8	26.70	7	15.22	0	0	0	0
	No	3	3.51	0	0	0	0	0	0	0	0	0	0
4. The greatest difficulty of the Project in the further development of combination of medical and health care (multiple choice)	Insufficient government attention	39	45.89	20	48.78	26	86.67	29	63.04	4	12	10	25
	Insufficient capital investment	30	35.29	21	51.22	2	6.67	12	26.09	25	74	3	7.5
	Lack of talents	43	50.59	8	19.51	1	3.33	10	21.74	3	9	13	32.5
	Imperfect infrastructure	71	83.52	0	0	0	0	8	17.39	23	68	14	35
5. After the completion of the Project, what is the improvement for the current	Reduce the cost	77	90.59	15	36.59	21	70.00	28	60.87	12	35	0	0
	Relieve the bed pressure	69	81.18	18	43.90	1	3.33	8	17.39	18	53	18	45
	Rich	2	2.35	10	24.39	6	20.00	6	13.04	15	44	2	5

situations of aged-care service institutions in the region? (multiple choice)	entertainment												
	Convenient to see the doctor	80	94.18	8	19.51	2	6.67	6	13.04	27	79	20	50
6. If your work and life are affected by the construction of this Project, what way will you choose to reflect it?	To the Contractor	60	70.59	18	43.90	5	16.67	21	45.65	28	82.4	4	10
	To the Civil Affairs Bureau	15	17.64	8	19.51	17	56.67	9	19.56	2	5.8	1	2.5
	To the Environmental Protection Bureau	10	11.76	15	36.59	8	26.66	16	34.78	4	11.8	35	87.5
7. What is the impact of this Project on your life? (multiple choice)	Noise from decoration	68	80.00	18	43.90	21	70.00	27	58.70	22	65	6	15
	Dust from decoration	49	57.64	12	29.27	6	20.00	12	26.09	8	24	9	22.5
	Transport vehicle	25	29.41	8	19.51	6	20.00	8	17.39	4	12	8	20
	Waste disposal	63	74.11	6	14.63	2	6.67	6	13.04	4	12	17	42.5
8. What are your suggestions or requirements for the Project?	See below												

A total of 276 copies of public questionnaires are handed out in six cities, and 276 copies are taken back, with women accounting for 43.9% (comprehensive statistics of six cities, the same as below); in terms of age structure, the number of people under 20 years old accounts for 4.9%, 39.2% between 20 and 40 years old, 41.2% between 41 and 59 years old and 14.7% at age of 60 and above; in terms of the composition of educational level, the elementary school students and the unfilled public account for 8.4% of the total, 44.7% of junior and high school students, and 46.9% of bachelor or higher degree; in terms of occupational structure, workers account for 25%, 16.6% of cadres/teachers/doctors, 10% of migrant workers, 7.1% of retirees, and 22.6% of the unfilled.

The questionnaire survey of public consultation in six cities indicates that

1) 98.1% of the surveyed public is in favor of the construction of the Project, and 1.9% is neutral. They believe that the Project is conducive to the construction of aged-care service institutions for the local elderly, providing professional practice location of rehabilitation care and medical care for the disabled and semi-disabled elders.

2) 71.7% of the surveyed public can accept the negative environmental impact during the renovation of the Project, 18.4% can basically accept, 9% basically cannot accept, and 0.9% cannot accept.

3) For the greatest difficulty of the Project in the further development of combination of medical and health care (multiple choice), 46.9% of the surveyed public choose the option of insufficient government attention, 33.5% choose insufficient capital investment, 22.8% choose lack of talents, and 34% choose imperfect infrastructure.

4) For the improvement for the current situations of aged-care service in the region after the completion of the Project (multiple choice), 48.8% of the surveyed public holds the idea that it can reduce the cost, 40.6% holds the idea that it can relieve the bed pressure, 18.1% chooses the option of rich entertainment and 43.7% thinks it is convenient to see the doctor.

5) For the problem that the work and life are affected by the construction of this Project, 44.9% of the surveyed public will reflect it to the Contractor, 20.3% will reflect to the Civil Affairs Bureau and 34.8% will reflect to the Environmental Protection Bureau.

6) For the impact of the construction of the Project on their own lives (multiple choice), 55.4% of investigated public chose the impact from decoration noise; 29.9% of investigated public chose the impact from decoration dust; 19.7% of investigated public chose the impact from transport vehicles; and 27.2% of investigated public chose the impact from waste disposal.

Other opinions of the public including: 1) they hope that the Project will be completed as soon as possible and the construction period will be shortened; 2) they

hope that the current situation of the local aged-care service construction will be improved by the Project; 3) they hope that incoming and outgoing vehicles will be properly managed and washed for disinfection during the construction to reduce the impact on the lives of residents; 4) they hope that the Project will be implemented as soon as possible to benefit the public; 5) the impact of the construction of all Projects on the surrounding residents shall be clearly put forward in the environmental impact assessment document of the Project.

Among the opinions and advice proposed by the public on the construction of the Project, the key requirements are:

(1) The Employer shall ensure that the environment and sanitation of the construction site meet the corresponding standards during the construction. The emission of noise to the neighborhood during the construction shall meet the requirements of the *Law of the People's Republic of China on the Prevention and Control of Environmental Noise Pollution* and be strictly controlled in accordance with the *Emission Standard of Environment Noise for Boundary of Construction Site* (GB12523-2011) so as to reduce the impact of noise on the lives of surrounding residents during the construction.

(2) The greening work shall be carried out to create an eco-friendly living environment;

(3) The laws and regulations of the related national departments shall be followed to safeguard the vital interests of residents and the related standards shall be strictly executed; and

(4) The construction schedule shall be accelerated.

The Employer promises to refer to the opinions and advice proposed by the public and carry out environment protection in the construction process of the Project to minimize the impact on the surrounding environment.

At the symposium, some residents also asked about the arrangement of incoming and outgoing vehicles, flying dust and the noise in the process of decoration. Besides, some residents asked about the construction schedule of the Project. The representatives of the environmental impact assessment unit and the PMO explained the issues concerned by residents. For the proposed environmental issues during the construction and decoration, the representatives of the Designer and the Employer gave an explanation in terms of construction site layout, transport route of construction vehicles and construction schedule arrangement.


Figure 10.2-1 Public Participation Consulting Meeting for the Project of Nursing Home for the Elderly People of Anqing First People's Hospital


Figure 10.2-2 Public Participation Consulting Meeting for the Project of Multi-functional Medical Building Construction of Lu'an Hospital of Traditional Chinese Medicine


Figure 10.2-3 Public Participation Consulting Meeting for "Haoyan Rainbow Garden" (Base)


Figure 10.2-4 Public Participation Consulting Meeting for the Project of Relocation and Rebuilding of Xuancheng Municipal Social Welfare Home


Figure 10.2-5 Public Participation Consulting Meeting for the Improvement Project of Ningguo City Social Welfare Service Center

Table 10.2-3 List of Public Consultation

Time	Location	Object of consultation	Content of consultation	Main opinions	How to reflect the opinions in EMP and design
2017.06.29	PMO of Anqing First People's Hospital (Longshan Branch)	Employees of the First People's Hospital of Anqing, Municipal Civil Affairs Bureau and Beiyuan Estate	Public participated questionnaire, design scheme and the draft for the environmental management plan of World Bank-financed Anhui Aged Care System Demonstrative Project	**Person in charge**: The funds and government attention of the Project are insufficient. **Residents**: 1) Individual aged-care service is not acceptable and continuous aged-care service is expected. 2) Construction at night is not allowed to avoid the impact of noise on residents' normal night rest. 3) The construction of the Project is supported for the increasingly prominent aged-care service.	EMP: For the noise impact during the construction, construction at night is prohibited. Design plan: The list of construction schedule shall be improved and the construction period shall be controlled strictly.
20.17.07.04	PMO of Lu'an Hospital of Traditional Chinese Medicine	Employees of Lu'an Hospital of Traditional Chinese Medicine, Municipal Civil Affairs Bureau and residents of Sunny Venice Estate	Public participated questionnaire, design scheme and the draft for the environmental management plan of World Bank-financed Anhui Aged Care System Demonstrative Project	**The Employer**: The construction of the Project has small impacts on the surroundings and will not influence the travel of the neighboring residents. **Residents**: 1) Sewage and garbage shall be disposed at a fixed place in accordance with strict requirements after the completion of the Project. 2) The periphery greening shall be carried out during the construction. 3) The construction of the Project is supported because it brings the convenience of seeing a doctor to the neighboring residents.	EMP: The sewage and solid waste of the Project can be disposed by relying on the sewage treatment station and temporary storeroom for medical waste built by Lu'an Hospital of Traditional Chinese Medicine. Design plan: Fences will be built and greening will be properly increased during the construction.

2017.07.06	Office Building of "Haoyan Rainbow Garden" (Base)	Employees of Anhui Haoyan Aged-care Service Investment Co., Ltd. and residents of Polka International Garden	Public participated questionnaire, design scheme and the draft for the environmental management plan of World Bank-financed Anhui Aged Care System Demonstrative Project	**Residents**: The Project is supported and attention shall be paid to noise control and the centralized treatment of garbage during the construction. They hope that the Project can be implemented as soon as possible to let the elderly in their homes enjoy the service at an early date. **The Employer**: Support. The civil engineering of the Project has finished and the decoration works are going to start. The decoration noise will not influence the surrounding residents and the health and elderly care center will be established to bring convenience of seeing a doctor to nearby residents. The Project is expected to be boosted as soon as possible.	EMP: The Project includes decoration and equipment purchase. Decoration shall not be carried out at night and garbage shall be intensively collected and delivered to Wuhu Oasis Environmental Protection Co., Ltd. Design plan: The decoration time shall be strictly controlled.
2017.07.06	Ningguo senile apartment Yijingyuan	Anhui Materials Engineering School, Municipal Civil Affairs Bureau, representatives of Ningguo Municipal Social Welfare Home and residents of Nanshanyayuan Estate	Public participated questionnaire, design scheme and the draft for the environmental management plan of World Bank-financed Anhui Aged Care System Demonstrative Project	**Person in charge**: The funds and government attention of the Project are insufficient. **The elderly**: They are quite satisfied with the diet and sanitary conditions of current welfare homes. **Nearby residents:** For the dust produced during the construction, spray equipment shall be provided to prevent flying dust. They hope that the Project can be completed as soon as possible. **Teachers of Anhui Materials Engineering School**: They support the construction of the Project for the small impact of the Project on the school.	EMP: The chapters on environmental impact analysis shall clearly put forward specific requirements on construction period management. Design plan: Sprinklers and dust reducing facilities shall be provided at the construction site to sprinkle water to working planes and earth stacks when excavating and drilling, to keep a certain degree of humidity and reduce flying dust quantity.

2017.07.07	Xuancheng Municipal Social Welfare Home	Xuancheng Municipal Social Welfare Home, residents of Yuzhaung Village, Municipal Civil Affairs Bureau, Neighborhood Committee of Xiangyang Community and residents of Xiadu Xincheng Estate	Public participated questionnaire, design scheme and the draft for the environmental management plan of World Bank-financed Anhui Aged Care System Demonstrative Project	**Person in charge:** The aging problem is severe. The position of the home is suitable but rooms are insufficient, so the home is overcrowded. The home hopes to obtain the financial support of the World Bank. **Residents:** They want to negotiate with the Contractor about flying dust, noise and the avoidance of construction at rest time.	EMP: Design plan: The construction at night is prohibited and the construction site management shall be standardized.

After the public investigation, the environmental impact assessment unit reflected the above public opinions to the PMO and the Designer respectively. Targeted measures to mitigate the impact on environment have been added to the revised environmental management plan, including: 1) the noise barrier shall be installed during the construction of high noise equipment; 2) measures, such as sprinkling water at the construction site and covering transport vehicles and the temporarily stacked earthwork and construction materials at the construction site, are adopted to control the flying dust during the construction; 3) the installation of temporary separating walls, control of construction time (8:00-18:00) and other ways are adopted to reduce the impact of noise on residents; and 4) public notices shall be posted before construction and decoration to specify the construction schedule.

Appendixes

Appendix 1:General Management Specifications of Construction Environment

1 Overview

I. The Employer and construction personnel shall implement various mitigation measures proposed in the Specifications to prevent the Project from causing impact and inconvenience to local people's life during the implementation and reduce the impact of the Project on the environment during the construction period and operation period.

II. The remedial measures that cannot be implemented effectively during the construction shall be carried out when the Project is completed:

1. The vegetation landscape of all affected regions shall be repaired in time, such as planting grass and trees;
2. The debris and silt left over after the construction shall be cleaned to ensure the smooth flowing of water; and
3. The crushed stones and waste materials left over at all construction sites shall be cleaned and the surplus construction materials left over shall be properly disposed.

2 Conduct code for Construction Personnel and Environmental Standards

This part is formulated to guide the behavior of construction personnel by combining national and local laws and regulations. The Employer shall draw up a Project construction plan for the Project before the construction and clarify the implementing rules to follow the Specifications in the plan. The construction of the Project shall be carried out after the plan is approved by the responsible engineer of the Project.

2.1 Prohibited actions:

The following actions are prohibited at the construction sites or peripheral areas of the Project:

1) Logging for any reason outside the allowed range of the Project;
2) Hunting, fishing, capturing wild animals and picking plants;
3) Using unapproved toxic materials, including leady paint and asbestos;
4) Affecting other art buildings and buildings with historical value;
5) House fire; and
6) Construction after drinking.

2.2 Transportation

The selection of the route to the construction site shall obtain the approval of the responsible engineer of the Project. Appropriate vehicles with limited load shall be selected in accordance with the local road grade to prevent damage to local roads and bridges. The Employer shall repair the damage to local roads and bridges caused by overload with the approval of the responsible engineer of the Project.

The Employer shall not use vehicles with heavy exhaust emission and strong noise. Noise reduction devices shall be installed in the completed areas and the normal operation of the devices shall be guaranteed.

During the execution of the contract, the Employer could take necessary transportation control measures with the approval of the responsible engineer of the Project.

2.3 Construction Personnel and Construction Camps

The Employer shall recruit workers locally as much as possible and provide proper training.

The Employer shall build temporary septic tanks for workers who live on the site and the excrement shall be disposed intensively to avoid affecting nearby rivers.

The Employer shall establish a set of systems and methods for the storage of construction materials and the production and disposal of solid waste at the construction site.

The Employer shall arrange the construction personnel to eat out or adopt the system of food delivery.

The Employer shall ensure that the construction site and material stacking site are in the right place, at least 500m far away from settlements and that the asphalt manufacturing point shall be at least 1,000m far away from settlements; meanwhile, the arrangement plan shall obtain the approval of the responsible engineer of the Project.

The Employer shall dig trenches around the construction site and build settling ponds and catcher grooves at the exit.

Areas for construction production and living shall be independently arranged in accordance with sub-Projects. All sub-Projects shall be arranged at higher places according to the practical conditions of the Project.

2.4 Waste Management and Water and Soil Loss

Solid waste, sanitation facilities and hazardous waste can be effectively controlled by implementing the following measures:

2.4.1 Management of wastes

1. The amount of waste to be disposed and removed shall be reduced.

2. Produced waste shall be identified and classified. For hazardous waste, appropriate storage, collection, transportation and treatment procedures must be taken.

3. Treatment areas shall be identified and divided and the materials and substances that can be stored shall be indicated clearly.

4. The construction waste (including excavated earth) shall be transported to the designated place for storage and disposal (the place shall be at least 300m far away from rivers, lakes or wetlands). The system for the recycling, separation and classification of solid waste shall be set up at the designated disposal place to dispose the produced waste during the construction and the surplus construction materials.

2.4.2 Control of water and soil loss

1. The use of damaged land shall be minimized and the damaged land that has been used shall be reinforced as soon as possible. The regions sewage will flow through shall be controlled and the sediment shall be disposed locally. The barrier for water and soil loss shall be provided around the groove, well and road.

2. The leaf cover and organic matter that protect the topsoil shall be backfilled to the damaged regions to promote the growth of native plants. The eroded barren regions shall be covered with native grass and plants or the soil surface of the region shall be hardened.

3. Erosion control measures shall be carried out before the rainy season to better implement the following work. The corresponding erosion measures shall be perfect after the completion of each construction site.

4. Deposition control measures shall be provided at all construction sites to slow the runoff speed, change the flow direction and deposit mud and sand before the recovery of vegetation. Those deposition control facilities include material piles, stone roads, grit chambers, straw bales, hedges and hedge piles.

5. Measures of setting ditches, berms, grass fences and piling up stones shall be taken to prevent the water flow from flowing into or disturbing the construction site.

6. Erosion control measures shall be maintained and used till the complete recovery of vegetation.

7. Dirt roads, excavated regions and the regions for padding and soil storage shall be watered when necessary to reduce soil erosion.

2.4.3 Protection zone

The protection zone of equipment shall be identified and classified (15m far away from rivers, lakes and wetlands). It shall be ensured that all equipment shall be used only in the protection zone. All overspill should be treated in accordance with standard environmental procedures/instructions.

2.5 Earthworks and Slope Excavation and Filling Works

The construction of earthworks shall be arranged reasonably, especially in the rainy season. The fastness of the slope excavation and filling works shall be ensured at any time during the construction to reduce the interference to the regions beyond the restricted regions of the construction as much as possible. Especially in the rainy season, the construction shall be continuous to finish the excavation and filling works of the same section as soon as possible to try to avoid the slope surface erosion caused by the interruption of construction because of the rain.

Intercepting ditches and drains shall be built and turfs or other plants shall be planted at the top and bottom of the slope surface in accordance with the drawings to protect the excavated and filled slope from being eroded. Intercepting ditches shall be built at places that are higher than the excavation place of the slope to reduce the erosion of the slope caused by the water flow.

The excavated soil and stones and other materials that cannot be used shall be transported to the designated place for disposal with the approval of the responsible engineer of the Project.

The disposal place shall not be built at places that may cause landslides and not affect other farmland or private land. At the same time, the flowing of stacked substances into the surface water by the rain shall be avoided. Drains shall be built around the stacking area in accordance with the instructions of the responsible engineer of the Project.

2.6 Setting of Temporary Soil Stacking Areas

1. The selection of temporary soil stacking areas shall be identified and classified. It shall be ensured that temporary soil stacking areas are more than 15m far away from sensitive areas (high steep slopes, the soil that can be eroded easily and the areas where draining water directly flows into sensitive water).

2. If there are drains in construction regions, the trenches shall be prevented from being blocked by ingoing soil.

3. All waste residues generated during the construction should be cleaned from the construction site after the completion of the construction.

2.7 Construction Waste and Transportation

The Contractor shall establish and implement the treatment procedures for daily waste of the construction site and provide enough treatment facilities of construction waste.

The rubble generated from demolishing old buildings can be recycled properly as the building materials of other Projects (for example, laying the subgrade). Those waste materials shall be recycled with the approval of the Project Engineer after being identified and evaluated at the construction site. The Contractor shall meet the following requirements:

1. Do not construct within the established forest areas.
2. Do not influence natural water.
3. Do not influence endangered or rare flora.
4. Do not dispose any waste material in any environmentally sensitive area. The residue or sludge stacked at the ground near the construction site during the construction shall be removed at once. The stacking ground shall be repaired to its original conditions and the repair shall obtain the approval of the Project Engineer.

The planning of transport arrangement of the whole construction period (including the preparation period, the repair period, and the period of demolishing and residue cleaning) shall be carried out and the treatment measures of emergencies shall be considered under the guidance of the Project Engineer.

2.8 Safety Issues during the Construction

The responsibility of the Contractor includes protecting every person at the construction site and surrounding areas and avoiding the impact of the construction on the personal and property safety. The Contractor is responsible for complying with all national and local safety regulations, and taking any necessary measure to avoid the accidents, including the followings:

1. Signs for pedestrian safety shall be clearly provided at the transportation roads and the inlet and outlet of the construction site;
2. Enough traffic warning signboards (including figures, frames and markers), road signs and protective handrails shall be provided to ensure the pedestrian safety during the construction;
3. Safety training for construction workers shall be carried out before the construction;
4. Personal protective equipment and clothing (goggles, gloves, masks, dust

masks, helmets, etc.) for construction workers shall be provided and the use of those equipment shall be mandatory;

5. There shall be bulletin boards for safety information at each construction site;

6. All workers shall be asked to know about safety information of various materials, the risk caused by the use of various materials to construction personnel and their families, especially the pregnant families or families having a pregnant plan, shall be explained to construction personnel, and workers shall be encouraged to share the related information;

7. It shall be ensured that the specially trained workers remove or dispose the asbestos-containing materials or other toxic substances;

8. The construction shall be suspended in case of heavy rain or other emergencies; and

9. Power equipment and mechanical equipment should be able to withstand the seismic impact of a certain level.

2.9 Control of Noise and Dust

The Contractor shall meet the following requirements to control damage and dust:

1. The speed of all construction vehicles on the road outside the construction site shall not exceed 25km/h;

2. The speed of vehicles at the construction site shall not exceed 15km/h;

3. Try to keep noise of machines and equipment under 90 db;

4. More stringent measures need to be implemented in sensitive areas (including residential areas, hospitals, etc.) to prevent harsh noise;

5. Try to reduce dust and particulate matters, so as to avoid influence on residents' lives and commercial activities around, and focus on protection of vulnerable people (like children and the elderly);

6. The working time of various construction machinery shall be arranged properly during the construction to try to avoid the simultaneous construction of plentiful high noise equipment and avoid the sensitive time of surroundings to noise. The construction of high noise equipment shall be arranged in the daytime and night transportation shall be reduced. Night construction (22:00~6:00) shall be forbidden. For the construction must be carried at night, the approval of the related local environment protection departments shall be obtained.

7. Plants shall be removed periodically to prevent the extensive exposure of

land;

8. For the construction at the sites generating much dust, such as roads, excavation areas and spoil grounds, water can be properly sprinkled to reduce dust; and

9. Take the correct measures to reduce influence of noises and vibration produced by construction on surroundings; and

2.10 Removal of Existing Waste Piles

During the removal of existing waste piles, the Employer shall take sufficient measures to protect workers and the public. These measures include:

1. Keep clean during transporting and avoid polluting pavement and atmosphere due to wastes dropping caused by overloading of vehicles;
2. Provide safety glasses, masks, helmets, safety shoes to all workers.

2.11 Removal of the existing buildings

During the removal of existing buildings, the Employer shall take sufficient measures to protect workers and the public from the dropping detritus and gravels. These measures include:

1. Leave a designated wastes-dropping zone or discharge chute to guarantee the safety pouring of the wastes;
2. Control the processes, like sawing, digging, grinding, sand paving and cutting, and take reasonable anchoring method to guide dropping of the waste stones;
3. Keep clean during transporting and avoid polluting pavement and atmosphere due to wastes dropping caused by overloading of vehicles;
4. Employ the temporary dropping-protection measures (like handrails and toe boards) in the boundary of the lifting scaffolds to prevent dropping of wastes; and
5. When blasting work is carried out near populated areas and other buildings, all personnel at the areas that are influenced by the blasting should be evacuated and blasting mats and other deflection methods shall be used to minimize the impact of flying rocks and spattering materials.
6. Provide safety glasses, side shields, masks, helmets, safety boots or shoes to all relevant staff.

2.12 Pipeline and Road Works

1. When the soil is temporarily stacked on the road side, the corresponding protection measures should be taken. The construction time shall be reasonably allocated during the construction to avoid rainfall concentration periods and try to

shorten the exposure time;

2. In order to prevent the Project being influenced by the water and soil loss caused due to the construction or the ingoing rainwater that is flushed into excavated pipelines, the surface soil near the excavated soil shall be covered and protected with soil containing straw bags to prevent soil collapse. The surface soil shall be temporarily covered with cloth of colored strip in the rainy season or strong wind weather.

3. Pipeline and road works shall be carried out by stages and the excavation and filling shall be completed as soon as possible;

4. For the construction near public facilities, pay special attention to build temporary access roads and the transportation of materials shall avoid peak traffic hours to reduce the traffic pressure of cities; for the construction near villages, try to build special access roads for construction to reduce the use of village roads and avoid the damage of the running of large equipment and vehicles to roads;

5. Before the construction, tell the public about the time and road section of the construction of the Project in advance, and place warning boards and relevant signs. Explain the Project content and construction time, kindly ask the public's understanding of the inconvenience caused by the construction, and tell the contact person and hotline for complaints and other information.

2.13 Social Influence

The Contractor shall do the following things to reduce the adverse impact on social life during the construction:

1. Inform the public of information in time such as the construction plan, explanation of environmental impacts, information on construction roads, information on temporary bus routes, and announcements of blasting and demolition;

2. Restrict the construction at night; when the construction must be carried out at night, reasonably arrange the night construction and inform the masses to be affected in advance to take necessary precaution measures.

3. If public facilities (water pipes, power, telephone and bus routes) cannot work normally due to the construction, inform the public at construction sites, bus stations and affected areas at least five days before the abnormal operation of facilities.

2.14 Treatment of the Cultural Relics and Remains Found during the Construction

The historical sites, remains, tombs or personal graveyards found during the excavation and construction shall be disposed in accordance with the following procedures:

1. Stop the construction at the place where the cultural relics and remains are located;
2. Draw the places and areas where the signs are found;
3. Protect the site to avoid any damage to cultural relics. When finding movable cultural relics or sensitive fossil remains, send protection personnel to ensure the safety of cultural relics till the they are taken by relevant departments of the local government or national administrative department of cultural relics;
4. After the cultural relics are found, report to the patrol Engineer within 24 hours who shall contact relevant departments of the local government and national administrative department of cultural relics;
5. Before deciding the subsequent working procedures, relevant departments of the local government or national administrative department of cultural relics shall protect the finding places or cultural relics. The experts of national administrative department of cultural relics will, according to various relevant assessment standards for cultural relics, analyze the aesthetic, historical, scientific, social and economic value and importance of cultural relics, and then issue a preliminary assessment report.
6. Relevant departments of the local government and national administrative department of cultural relics will decide how to dispose the cultural relics. They will also decide how to modify the construction scheme (for example when finding immovable cultural relic or archaeological relics), and how to preserve, repair and use the cultural relics;
7. Relevant departments of the local government shall report the disposal decision on cultural relics in writing to the construction Project manager;
8. To protect the safety of cultural relics, the Project construction shall continue after approval of local government or national administrative department of cultural relics.

2.15 Hazardous wastes

If the construction site may produce hazardous wastes or suspected hazardous wastes, the Employer shall develop a hazardous waste management plan. This plan shall be approved by the Project Engineer and be applicable to all personnels taking

part in operation and transportation. The hazardous wastes in construction site shall be removed and handled by specially-trained personnels on the basis of national and provincial regulations or internationally-recognized process.

2.16 Health Services and AIDS Education

The Contractor shall provide the workers with basic first aid services and emergency relief facilities, including medical equipment and operation mode for the individual, and the degree of treatment to the injured worker before being delivered to the hospital.

The Contractor has the responsibility to develop a plan for prevention the spread of diseases between workers, especially including HIV / AIDS.

The Contractor shall include a health plan outline in the construction scheme to provide health advice to the construction workers, and shall obtain the approval of the Project engineers before the start of the Project.

Table 1-1 Common Environmental Protection Regulations and Mitigation / Prevention Measures at the Infrastructure Construction Stage

Stage	Major negative impact		Mitigation / prevention measures	Unit in charge	Supervision unit
Design period	Project site selection, occupation of land, construction operation and impact on sensitive sites around the Project -		The design of fire safety facilities and traffic safety shall meet the national regulations, norms and standards. The design plan shall include qualified traffic safety facilities, fire-fighting equipment and waste water and garbage collection / treatment facilities. All buildings of the infrastructure Project will use outsourcing materials. No stockyard and borrow area will be set. The excavated earthwork and stonework will be backfilled, so there is no need to set spoil area. According to the site investigation, the Project does not occupy the basic farmland, fertile farmland and woodland, so the vegetation will not be damaged.	The Designer	PMO (the Employer)
Construction period	Ecological environment	Earthwork and stonework excavation, site leveling, stacking of spoil and waste stone and other construction activities, destruction of vegetation, water and soil loss, etc.	1. The arrangement of construction site shall be correct, the construction period shall be reasonable, and the earthwork and stonework excavation shall not be performed in rainy season and on rainy days. The construction procedures shall be reasonable, i.e., the earthwork excavated shall be timely backfilled and used to minimize the stacking time of temporary earth and rock. 0-30 cm mellow soil layer of farmland or woodland for temporary use shall be removed or collected and preserved for rehabilitation of lands after the construction is completed. The soil shall be transported, paved and compacted timely to reduce loose soil. 2. A soil drainage ditch shall be set according to the topography and landform of construction site, and a soil grit chamber shall be set at the outlet of soil drainage ditch, so that catchment slows down and the sediment subsides in the grit chamber. 3. Engineering measures and vegetation measures shall be taken for water and soil conservation and surface protection. Engineering measures are major measures, which work quickly and have safeguard function. Vegetation measures are supplementary measure for water conservation and shall be taken to conserve water and soil for long time, and afforest and beautify the surrounding environment of the Project. 4. Scientific and reasonable soil and water conservation measures	The Contractor and the Project construction and implementation management unit	County Environmental Protection Bureau, Bureau of Housing and Construction and Forestry Bureau, and Municipal Urban Administration Bureau

			shall be taken during construction. Occupation of land shall be minimized. Temporary facilities shall be removed timely after the construction is completed. 5. Publicity and education for environmental protection shall be done.		
	Ambient air	Environment and air will be affected by aggregate processing, concrete mixing and material transportation that produce dust, blasting, transport vehicle that exhausts emissions, road dust, residential energy consumption of construction team and other activities.	1. Advanced construction technology and low-dust blasting technology shall be adopted. The aggregate processing system and concrete system shall use wet crushing and be equipped with dust collection equipment. The vehicle speed, vehicle exhaust and coal combustion exhaust shall be controlled. The road in the construction area shall be watered on time. The construction team shall use liquefied petroleum gas, electricity and other clean energy. The greening of construction area shall be strengthened and construction workers shall be provided with labor protection to reduce impact on the environment and air. 2. During the construction, a vehicle washing platform shall be set on the inside of the entrances of materials and waste soil transport vehicle. The platform shall meet the following requirements: an anti-overflowing base shall be set around the platform to prevent the waste water from overflowing from the construction site, and a waste water collection pit and grit chamber shall be set. Before leaving the construction site, the tires and body of vehicle shall be washed on the platform and the surface of vehicle shall be free of sludge. The height of materials and waste soil loaded in the transport vehicle shall not exceed the upper margin of ledge of vehicle. The vehicle hopper shall be covered with tarpaulin or be closed.	The Contractor and the Project construction and implementation management unit	County Environmental Protection Bureau and Bureau of Housing and Construction
	Solid waste	Construction spoil, building debris, domestic waste and so on	I. Earthwork and stonework: 1. At the beginning of the construction, the site shall be excavated. The Project construction shall make full use of the natural terrain gap and high excavation and deep filling shall be avoided. 2. Excavated earthwork can be used for leveling of planting land at later stages, and excavated stonework can be used for foundation of irrigation canal and side ditch. Excavated earthwork and stonework shall not be stacked in the farmlands because that will affect the agricultural production and operation of irrigation ditches.	The Contractor and the Project construction and implementation management unit	County Environmental Protection Bureau and Bureau of Housing and Construction, and Municipal Urban

			3. Temporary stockyard of earthwork and stonework shall be arranged rationally, keeping far away environment sensitive sites (peasant households). The earthwork and stonework piled temporarily shall be tamped and compacted, and covered with felt. Retaining wall and drainage facility shall be set around the piled earthwork and stonework so as to minimize the dust and water and soil loss due to piling of earthwork and stonework. 4. A soil drainage ditch shall be set around the temporary stockyard of waste soil, and a soil grit chamber shall be set at the outlet of soil drainage ditch, so that catchment slows down and the sediment subsides in the grit chamber. II. Construction spoil: 1. Recyclable waste shall be classified and recycled (waste iron, scrap steel and material packing bags shall be sold to recycling station, and waste brick shall be used for road base material); 2. Unrecyclable waste shall be transported to the designated construction spoil stockyard for stacking in a timely manner, and the transport vehicle shall be sealed during transportation to avoid the waste from spilling; 3. Temporary stockyard shall be provided with waterproof and windproof measures. Domestic waste of construction workers: a domestic waste storage tank shall be set in the construction area, and the waster shall be cleaned away, collected and classified by special person, and regularly be transported to the nearby domestic waste landfill for disposal.		Administration Bureau and Health Bureau
	Water environment	Production wastewater	1. Waste water of aggregate processing system: grit chamber + flocculation and sedimentation basin. The processed waste water will be used for concrete mixing, construction anti-dust watering, etc., and will not be discharged; 2. Washing waste water of concrete system: grit chamber + adding flocculant for processing + reservoir. The waste water will automatically flow into the reservoir after precipitation for more than 6h, and be used for concrete mixing, construction anti-dust watering, etc., and will not be discharged;	The Contractors of sub-Projects at county (city, district) level and the Project construction and implementation management unit	County Environmental Protection Bureau and Water Affairs Management Department

			3. Waste water of foundation pit: grit chamber + flocculation and sedimentation basin. The processed waste water will be used for concrete curing, concrete mixing, construction anti-dust watering, etc., and will not be discharged; 4. Waste water of dry pail latrine used by the construction team and domestic sewage will be used as farming fertilizer after disinfection in the septic tank.		
		Pollution of ground water	1. Strengthen observation of the surrounding surface and building settlement. In case of any abnormality, immediately stop groundwater pumping and drainage and construction. 2. During the construction of the Project, the operating area shall keep clean, and the sewage and pollutants shall not enter the excavated grooves because that will cause sewage penetration. 3. The warehouse for oil storage on site shall be provided with anti-seepage measures. Measures for oil storage and usage shall be taken to prevent water pollution due to oil escaping, emitting, leaking and dripping. 4. Temporary storage room of domestic waste shall be provided with anti-seepage and anti-loss measures to prevent pollution of underground water due to sewage and leachate infiltration. 5. The construction of site foundation shall be carried out in non-flood season to reduce impact of shallow groundwater on the construction.		
	Acoustic environment	Noise produced by construction machinery, transport vehicle, aggregate processing system and other construction activities have a certain impact on the acoustic environment of	1. Signs of “No horn” shall be set in the road that is sensitive to sound environment, and low-noise equipment shall be used. The noise source, mode of transmission, traffic noise and blasting noise shall be controlled. The construction staff shall be provided with anti-noise earplugs. The construction schedule shall be arranged reasonably. 2. The construction schedule shall be arranged reasonably according to *Emission Standard of Environment Noise for Boundary of Construction Construction Site (GB12523-2011)*. Construction is not allowed at nights or only low-noise construction is allowed at night. Construction machinery producing noise (such as pile drivers) shall stop operation at night (22: 00-6: 00). At sensitive sites, construction shall not be carried out at night or only low-noise construction is allowed. At the same time,	The Contractor and the Project construction and implementation management unit	County Environmental Protection Bureau and Bureau of Housing and Construction

		nearby village and construction workers.	noise reduction measures shall be taken to minimize the impact of construction noise on resident. Continuous night construction shall be approved by relevant departments, and communication with resident in advance is necessary.		
	Impact on society (such as travel of resident, going to school and farm work)		Impact on traffic: 1. The vehicle frequently in and out the site shall drive according to specified route, shall be washed before entering the road. The vehicle for transport of materials that are likely to spill and leak shall be sealed to effectively prevent dust pollution. 2. Overloaded vehicle and vehicle with mud are not allowed to drive on the road so as to prevent pollution of the road and reduce the secondary dust pollution. 3. Special personnel shall be assigned to direct the traffic in one-way road and in the neighborhood of the entrance of construction site to prevent road traffic jam. At the same time, traffic wardens shall be assigned to command safe traffic of transport vehicles. 4. Before construction, the construction information shall be published on mass media, including the construction sections in which traffic jams may occur and related solutions (such as time-limited traffic). 5. The Contractor shall set warning signs in the construction sections, such as signs of "Construction Ahead, Slow Down" and "Construction Ahead, Changing Route" to remind the drivers to pay attention to the situation and facilitate traveling of residents. 6. To facilitate the passing of vehicles at night and reduce accident rate, warning lights shall be set in the construction sections to guide the vehicles. Impact on landscape: after the completion of the main Project, site clearing, greening and road rehabilitation and other ancillary works shall be completed as soon as possible so that to ensure coordination with the environment.	The Contractor and the Project construction and implementation management unit	Road Transport Bureau, Education Bureau, Culture Bureau, Urban Management Bureau and Health Bureau

Appendix 2: Specific Protection Measures

Table 2-1 Specific Environmental Protection Regulations and Mitigation / Prevention Measures during Constriction Period

Sub-project activity	Contaminant	Pollutant source	Pollution prevention and control measures	Treatment effect, executive standard or proposed requirements	Unit in charge	Supervision unit	Costs of environmental protection measures (CNY 10,000)
Multi-functional Medical Building of Lu'an Hospital of Traditional Chinese Medicine	Atmospheric pollutant	Raised dust	Strengthen the construction site management and set construction signs	Satisfy the limit for uncontrolled emission concentration in Table 2 of *Integrated Emission Standard of Air Pollutants (GB16297-1996).*	Anqing First People's Hospital	Anqing Environmental Protection Bureau	10
			During the construction period, water the roads where the vehicle is driving for dust depression and cover the roads with dust-proof cloth.				25
			Clear the stacked construction waste in a timely manner to reduce dust, and asbestos is strictly prohibited.				25
	Noise	Noise	Make appropriate arrangements for operation of construction machinery; no night construction; use low-noise mechanical equipment or sound-insulation and noise-absorption equipment; and make appropriate arrangements for construction and construction sites	Noise for boundary of construction site during construction period shall be in accordance with *Emission Standard of Environment Noise for Boundary of Construction Site (GB12523-2011)*			20
	Waste water	Flushing wastewater	Be used for production after sedimentation	—			10
	Solid waste	Domestic waste	Be stacked at designated sites, classified, and timely cleared	General solid waste shall be in accordance with *Standard for Pollution Control on the Storage and*			10
		Construction waste	Transportation of construction waste shall be approved by the government				20

			department of city appearance and environmental sanitation (municipal construction waste office), and shall not be transported by individual or units who don't get approval for construction waste transportation	*and Disposal Site for General Industrial Solid Waste (GB18599-2001)*			
Elderly Care Center of Lu'an Hospital of Traditional Chinese Medicine	Atmospheric pollutant	Raised dust	Strengthen the construction period management, strengthen watering and dust suppression measures on site and vehicle in and out of the site, and set a vehicle washing platform	Satisfy the limit for uncontrolled emission concentration in Table 2 of *Integrated Emission Standard of Air Pollutants (GB16297-1996).*	Traditional Chinese Hospital of Lu'an	Lu'an Environmental Protection Bureau	50
			Close the construction site with fence; cover or green the exposed site; reduce dust by watering; backfill the excavated earthwork as soon as possible; and adopt closed transport for spoil				50
	Noise	Noise	Use low-noise mechanical equipment or sound-insulation and noise-absorption equipment; make appropriate arrangements for construction and construction sites; set up mobile sound barriers on the west side of the Project; and no night construction	Noise for boundary of construction site during construction period shall be in accordance with *Emission Standard of Environment Noise for Boundary of Construction Site (GB12523-2011)*			50
	Waste water	Domestic wastewater	Be discharged to municipal sewage pipe network	Meet the acceptance criteria of Lu'an Chengbei Sewage Treatment Plant			—
		Construction wastewater	Be used for construction water after treatment of grid, grit chamber and oil-water separator	—			20
	Solid waste	Domestic waste	Be stacked at designated sites, classified, and timely cleared	General solid waste shall be in accordance with			10

		Construction waste	Be transported by closed vehicle and can be used for pavement of road subgrade. Toxic and hazardous substances shall not be burned.	*Standard for Pollution Control on the Storage and and Disposal Site for General Industrial Solid Waste (GB18599-2001)*			80
The Project of Relocation and Rebuilding of Xuancheng Municipal Social Welfare Home	Atmospheric pollutant	Raised dust	Strengthen the construction period management, strengthen watering and dust suppression measures on site and vehicle in and out of the site, and set a vehicle washing platform	Satisfy the limit for uncontrolled emission concentration in Table 2 of *Integrated Emission Standard of Air Pollutants (GB16297-1996).*	Xuancheng Municipal Social Welfare Home	Xuancheng Environmental Protection Bureau	20
			Close the construction site with fence; cover or green the exposed site; reduce dust by watering; backfill the excavated earthwork as soon as possible; and adopt closed transport for spoil				20
	Noise	Noise	Use low-noise mechanical equipment or sound-insulation and noise-absorption equipment; make appropriate arrangements for construction and construction sites; set up mobile sound barriers on the northeast side of the Project; and no night construction	Noise for boundary of construction site during construction period shall be in accordance with *Emission Standard of Environment Noise for Boundary of Construction Site (GB12523-2011)*			20
	Waste water	Domestic wastewater	Be discharged to municipal sewage pipe network after pretreatment of septic tanks of Xiadu Xincheng Estate	Meet the acceptance criteria of Jingtingwei Sewage Treatment Plant			—
		Construction wastewater	Be used for construction water after treatment of grid, grit chamber and oil-water separator	—			10
	Solid waste	Domestic waste	Be classified and stacked at designated sites of Xiadu Xincheng	General solid waste shall be in accordance with			—

			Estate, and be timely cleared	*Standard for Pollution Control on the Storage and and Disposal Site for General Industrial Solid Waste (GB18599-2001)*			
		Construction waste	Be transported by closed vehicle and can be used for pavement of road subgrade. Toxic and hazardous substances shall not be burned.				20
Improvement Project of Ningguo City Social Welfare Service Center	Atmospheric pollutant	Raised dust	Strengthen the construction period management, strengthen watering and dust suppression measures on site and vehicle in and out of the site, and set a vehicle washing platform	Satisfy the limit for uncontrolled emission concentration in Table 2 of *Integrated Emission Standard of Air Pollutants (GB16297-1996).*	Ningguo Municipal Social Welfare Home	Ningguo Environmental Protection Bureau	10
			Close the construction site with fence; cover or green the exposed site; reduce dust by watering; backfill the excavated earthwork as soon as possible; and adopt closed transport for spoil				10
	Noise	Noise	Use low-noise mechanical equipment or sound-insulation and noise-absorption equipment; make appropriate arrangements for construction and construction sites; set up mobile sound barriers around the Project; and no night construction	Noise for boundary of construction site during construction period shall be in accordance with *Emission Standard of Environment Noise for Boundary of Construction Site (GB12523-2011)*			10
	Waste water	Domestic wastewater	Be discharged to municipal sewage pipe network after pretreatment of septic tanks of surrounding residential quarter	Meet the acceptance criteria of Ningguo City Sewage Treatment Plant			—
		Construction wastewater	Be used for construction water after treatment of grid, grit chamber and oil-water separator	—			10
	Solid waste	Domestic waste	Be classified and stacked at designated sites of surrounding	General solid waste shall be in accordance with			—

			residential quarter, and be timely cleared	*Standard for Pollution Control on the Storage and and Disposal Site for General Industrial Solid Waste (GB18599-2001)*			
		Construction waste	Waste bricks, bamboos and woods and other materials produced by demolition of original buildings shall be transported by the special vehicles for waste soil transportation of municipal companies, and all workers shall be provided with necessary security equipment, such as helmets and masks.				50
			The vehicles for transportation of waste soil during construction shall be sealed, and the waste soil can be used for subgrade pavement. Toxic and hazardous substances shall not be burned. Cement, sand and other building materials shall be stacked at one specific location, and measures shall be taken to prevent the materials from rain.				10
Haoyan Rainbow Garden - Wuhu Health Aged-care Service Industry Base	Atmospheric pollutant	Raised dust	Strenghten the construction site management, set up construction signs, the stocked building wastes shall be timely transported out and reduce the generated amount of raised dust. The asbestos and other mateirals are prohibited in use.	Satisfy the limit for uncontrolled emission concentration in Table 2 of *Integrated Emission Standard of Air Pollutants (GB16297-1996).*	Anhui Haoyan Aged-care Service Investment Co. Ltd.	Wuhu Environmental Protection Bureau	20
			Sprinkling water and use the dust cover to restrain the dust from generation on the roads that the vehicles drive through in the construction period.				20

	Noise	Noise	Use low-noise mechanical equipment or sound-insulation and noise-absorption equipment; make appropriate arrangements for construction and construction sites; and do not carry on construction at night	Noise for boundary of construction site during construction period shall be in accordance with *Emission Standard of Environment Noise for Boundary of Construction Site (GB12523-2011)*			30
			Mark the complaint hotline at construction site; in case of any complaint, timely contact local environment protection department.				5
	Waste water	Flushing wastewater	Be used for production after sedimentation	—			20
	Solid waste	Domestic waste	Be stacked at designated sites, classified, and timely cleared	General solid waste shall be in accordance with *Standard for Pollution Control on the Storage and Disposal Site for General Industrial Solid Waste (GB18599-2001)*			20
		Construction waste	The construction waste produced during the renovation can be recycled and cannot be disposed by the sanitation department. Coating and waste paint are hazardous waste, so shall be treated by qualified units. It is strictly prohibited to dispose the hazardous waste carelessly.				40

Table 2-2 Environmental Protection Regulations and Mitigation / Prevention Measures during Operation

Subitem	Pollutant source	Control measures	Treatment effect, executive standard or proposed requirements	Unit in charge	Supervision unit	Costs of environmental protection measures (CNY 10,000)
Elderly Care Institution of Anqing First People's Hospital	Waste water	Build a new sewage treatment station (treatment capability: 3080m^3 / d) with support of Anqing First People's Hospital. The waste water produced by the Project is 221m^3 / d, accounting for 1.1% of treatment capability of Anqing North New Town Sewage Treatment Plant. Therefore, the plant can accept it.	Meet the pretreatment standards in Table 2 of *Discharge Standard of Water Pollutants for Medical Institutions (GB18466-2005)*	Anqing First People's Hospital	Anqing Environmental Protection Bureau	—
	Solid waste	The amount of domestic waste is about 420t/a and medical waste is about 36.5t/a. The sludge generated will be 40t/a,A large number of garbage cans and medical solid waste collecting tanks will be set, and the temporary medical solid waste storage site and the temporary sludge storage tank of Anqing First People's Hospital will also be used. Domestic waste will be sent to the sanitation department for centralized disposal, and shall be disposed timely. Medical waste and the sludge will be disposed by Environmental Protection and Technology Co., Ltd. of Anqing Development and Investment (Group) Corporation.	Harmless treatment			
Multi-functional Medical Building of Lu'an Hospital of Traditional Chinese Medicine	Waste water	Build sewage treatment station (treatment capability: 1200 m^3/d) in Lu'an Hospital of Traditional Chinese MedicineThe waste water produced by the Project is 133 m^3/d, accounting for 0.2% of treatment capability of Lu'an Chengbei Sewage Treatment Plant. Therefore, the plant can accept it.	Meet the pretreatment standards in Table 2 of *Discharge Standard of Water Pollutants for Medical Institutions (GB18466-2005)*	Traditional Chinese Hospital of Lu'an	Lu'an Environmental Protection Bureau	—
	Solid waste	The amount of domestic waste is about 252 t/a and medical waste is about 21.9 t/a. The sludge generated	Harmless treatment			

		will be 24t/a. A large number of garbage cans and medical solid waste collecting tanks will be set, and the temporary medical solid waste storage site and temporary sludge storage tank of Lu'an Hospital of Traditional Chinese Medicine will also be used. Domestic waste will be sent to the sanitation department for centralized disposal, and shall be disposed timely. Medical waste and the sludge will be disposed by Lu'an Jiekang Environmental Protection Centralized Medical Waste Disposal Co., Ltd.				
The Project of Relocation and Rebuilding of Xuancheng Municipal Social Welfare Home	Waste water	The Project is located in the Project areaTreated by oil separator (design scale: 30m^3), disinfection tank (design scale: 10m^3), septic tank (design scale: 100m^3) and pipe network, then discharged intoJingtingwei Sewage Treatment Plant for treatment.	The medical waste water after treatment in disinfection tank and domestic sewage after pretreatment shall meet Level 3 standard in Table 4 of *Integrated Discharge Standard (GB8978-1996)*	Xuancheng Municipal Social Welfare Home	Xuancheng Environmental Protection Bureau	50
	Solid waste	The amount of domestic waste is about 164 t/a, and the amount of medical waste is about 1.46 t/a. Domestic waste will be uniformly collected and disposed by sanitation department. Medical waste produced by infirmary will be collected and disposed by Xuancheng Jiuding Medical Waste Disposal Co., Ltd.	Harmless treatment			20
Improvement Project of Ningguo City Social Welfare Service Center	Waste water	The Project is located in the Project area, and the amount of waste water produced by the Project is 61.2 m^3 / d. The waste water will be pretreated by oil separator (20 m^3 / d) and septic tank (80 m^3 / d) and then be treated by Ningguo City Sewage Treatment Plant.	Domestic sewage pretreated shall meet Level 3 standard in Table 4 of *Integrated Discharge Standard (GB8978-1996)*	Ningguo Municipal Social Welfare Home	Ningguo Environmental Protection Bureau	40
	Solid waste	The amount of domestic waste is about 113 t / a. The domestic waste will be collected uniformly and treated by the sanitation department.	Harmless treatment			10

Haoyan Rainbow Garden - Wuhu Health Aged-care Service Industry Base	Waste water	The Project is located in “Haoyan Rainbow Garden”, and the amount of waste water produced by the Project is 208.4m^3/d. The waste water will be pretreated by oil separator (design scale:60m^3), septic tank (design scale:320m^3) and disinfection tank (40m^3) which are self-built by Anhui Haoyan Elederly Care Service Industry Co., Ltd., and then be discharged into Zhujiajiao Sewage Treatment Plant for treatment.	The disinfected medical wastewater and domestic sewage pretreated shall meet Level 3 standard in Table 4 of *Integrated Discharge Standard (GB8978-1996)*	Anhui Haoyan Aged-care Service Investment Co. Ltd.	Wuhu Environmental Protection Bureau	–
	Solid waste	The amount of domestic waste is about 333 t/a, and the amount of medical waste is about 5.84 t/a. Domestic waste will be uniformly collected and disposed by sanitation department. Medical waste and sludge produced by infirmary will be collected and disposed by Wuhu Lansheng Medical Waste Centralized Disposal Co., Ltd.	Harmless treatment			—

Appendix 3: List of Social Management Plan

3-1List of Social Management Plan

Action suggestions	Target group	Specific measures or actions	Actor	Action time	Monitoring index
Reasonably arrange the spatial location of the elderly care sites	Operating institution	In the places where the demand for elderly care is large, the sites may be constructed a little more, while in the places where the demand for elderly care is small, such as industrial area, commercial area, the sites might be less.	Project office, implementation institution and operating institution at each city	2018-	
Reduce the workload of government staff	Personnel of relevant department	Hire experienced experts or expert team as soon as possible to effectively reduce the workload of government staff.	Project Office	2018-	Degree of satisfaction of government staff
Reduce the negative impact of the project on elderly care service practitioners during its implementation	Employees	1) Formulate the transition plan for the implementation period of the Project, eliminate the environmental impact and potential risks during construction, and reasonably arrange the work of staff and the transition of the elderly; 2) Develop talent motivation and training programs as soon as possible to address the need for human resources during the implementation and operation of the Project;	Project implementation institution	2018-	1) See the relevant content of environmental impact assessment 2) The implementation plan and the number of trainers of the training program
Reduce the negative impact of the project on the elderly during its implementation	The elderly	1) Formulate temporary transition plan for the construction period to help the elderly to adapt to the new environment as soon as possible and to reduce the environmental impact and potential risks during the construction; 2) Deliberate the change of service price.	Project implementation institution	2018-	1) See the relevant content of environmental impact assessment 2) Public price hearing 3) Formulate the transition plan for the elderly

Reduce the impact on other residents in community	Community residents and migrant workers	1) The existing public activities of the community are not affected. 2) Prevent the infectious diseeases	PMO, community, the health department and maternal and child care department	2018-	1) Number and content of community activities; 2) Changes in cases of infectious diseases in the project area
Reduce the resettlement influence of the project	Immigrant	Formulate the Resettlement Action Plan	Project Office	2018-	See the external monitoring of resettlement of immigrants
Establish the complaint mechanism	All the people in project area	It is suggested that the Project institutions assign specific officer to handle the complaints and keep the complaint record and remedial measures.	Project office and implementation institution	2018-	The complaint record and handling.
Vigorous publicize the World Bank projects	All the people in project area	1) In all the community-based elderly care service sites, nursing homes, social welfare institutions and hospitals funded by the Project, there should be a board to publicize the Project. 2) On the uniforms of the staff of the government's purchasing health-care service, there should be the mark showing the support of World Bank loan; 3) Publicize the World Bank Projects with various media; 4) Hold information disclosure meeting and discussion meetings to publicize the hot and cutting-edge topics, such as the socialization of elderly care services, and the combination of medical and health care.	Project Office, implementation institution and operating institution	2018-	1) Various publicity materials 2) Seminars and symposiums
Vigorously cultivate the community social work organizations and volunteer organization	Community elderly care management and service personnel, social	1) encourage the social work organizations and volunteer organizations to closely cooperate with each other in the community and form the community service mode of	PMO, community, volunteers and social organizers	2018-	1) Number of the communities that implement the service mode of “social

to improve their abilityof offer community elderly care service	worker organizations	“social workers + volunteers”; 2) Give incentives to the key organizers and activists to improve their elderly care service ability			workers + volunteers”; 2) The number of volunteers that have obtained the relevant qualification certificates
Give priority to women in terms of opportunities	Female employees	1) Give priority to women in terms of training, promotion, and post; 2) Make sure that the women and men are equally paid when the they do the same work.	Project operating institution, Project Office	2018-	1) Women’s salary 2) The percentage of female managers and female technicians in all the female employees

Appendix 4: Due Diligence Report

See Table 4-1 for sewage treatment plants related to the Project; see Table 4-2 for waste landfills related to the Project; see Table 4-3 for medical waste disposal units related to the Project.

Table 4-1 List of Sewage Treatment Plants Related to the Project

S/N	Description	Project Site	Amount of sewage (m^3/d)	Percentage of amount of sewage in sewage treatment capacity (%)	Access to sewage treatment plant recently?	Introduction to the Sewage Treatment Plants Related to the Project						
						Name of sewage treatment plant	Completion time (year)	Treatment capacity (ten thousand t / d)	Treatment process	EIA acceptance or not?	Whether the emissions meet standards	Whether there are remaining environmental problems
1	Elderly Care Institution of Anqing First People's Hospital	Anqing North New Town	221	1.1%	Yes	Anqing North New Town Sewage Treatment Plant	2009.09	6	Oxidation ditch process	Yes. HJH [2011] No. 420	Yes	No
2	Multi-functional Medical Building of Lu'an Hospital of Traditional Chinese Medicine	East side of Lu'an Hospital of Traditional Chinese Medicine	133	0.17%	Yes	Lu'an Chengbei Sewage Treatment Plant	2004.6	8	Improved A2 / O	Yes. Accepted on March 12, 2015	Yes	No
3	Haoyan Rainbow Garden - Wuhu Health Aged-care Service Industry Base	North side of Yinhu Lake, Yuexiu Road, Economic and Technological Development Zone	208.4	0.27%	Yes	Wuhu Zhujiaqiao Sewage Treatment Plant	2009.9	6	Oxidation ditch process	Yes. Accepted in October 2010	Yes	No
4	Improvement Project of Ningguo City Social Welfare	No. 15, Ningyang Middle Road, Ningguo City,	61.2	0.15%	Yes	Ningguo City Sewage Treatment	2009	4	Use Orbal oxidation ditch sewage treatment	Yes	Yes	No

	Service Center	Anhui Province				Plant			process			
5	The Project of Relocation and Rebuilding of Xuancheng Municipal Social Welfare Home	Southwestern Xiaduxincheng, Xuanzhou District	85	0.1%	Yes	Jingtingwei Sewage Treatment Plant	2009.10	10	Improved A2 / O	Yes. Accepted in June 2010 for Phase I and in November 2010 for Phase II.	Yes	No

Table 4-2 List of Waste Landfills Related to the Project

S/N	Description	Project Site	Introduction to the Waste Landfills Related to the Project							
			Description	Completion time (year)	Amount of solid waste (t / d)	Treatment capacity (t/d)	Treatment process	EIA acceptance or not?	Whether the emissions meet standards	Whether there are remaining environmental problems
1	Elderly Care Institution of Anqing First People's Hospital	Anqing North New Town	Domestic Waste Incineration Power Plant of Anqing Wenergy Zhongke Environmental Protection Power Co., Ltd.	2011	1.15	800	Incineration power generation	Yes. Accepted on December 31, 2012. HJH [2012] No. 1583	Yes	No
2	Multi-functional Medical Building of Lu'an Hospital of Traditional Chinese Medicine	East side of Lu'an Hospital of Traditional Chinese Medicine	Lu'an City Domestic Waste Incineration Power Plant	2014.9	0.7	600 for Phase I, and 1200 for Phase II	Incineration power generation	Yes	Yes	No
3	Haoyan Rainbow Garden - Wuhu Health Aged-care Service Industry Base	North side of Yinhu Lake, Yuexiu Road, Economic and Technological Development Zone	Wuhu Lvzhou Environmental Protection Energy Co., Ltd.	2011.1	0.91	600	Incineration	Yes	Yes	No
4	Improvement Project of Ningguo City Social Welfare Service Center	No. 15, Ningyang Middle Road, Ningguo City, Anhui Province	Domestic Waste Disposal Center of Ningguo	2010.7	0.31	175	Modified anaerobic sanitary landfill	Yes. XHZH (2015) No. 124	Yes	No
5	The Project of Relocation and Rebuilding of Xuancheng Municipal Social Welfare Home	Southwestern Xiaduxincheng, Xuanzhou District	Xuancheng City Domestic Waste Incineration Power Plant	2017.5	0.23	400	Incineration power generation	Yes	Yes	No

Table 4-3 List of Medical Waste Disposal Units Related to the Project

S/N	Description	Project Site	Introduction to the Medical Waste Disposal Units Related to the Project.							
			Description	Completion time (year)	Amount of medical waste (t / d)	Treatment capacity (t/d)	Treatment process	EIA acceptance or not?	Whether the emissions meet standards	Whether there are remaining environmental problems
1	Elderly Care Institution of Anqing First People's Hospital	Anqing North New Town	Environmental Protection and Technology Co., Ltd. of Anqing Development and Investment (Group) Corporation	2011.4	0.10	5	Incineration	Yes. Accepted on April 23, 2013	Yes	No
2	Multi-functional Medical Building of Lu'an Hospital of Traditional Chinese Medicine	East side of Lu'an Hospital of Traditional Chinese Medicine	Lu'an Jiekang Environmental Protection Centralized Medical Waste Disposal Co., Ltd.	2007	0.06	4.	High temperature and high pressure steam sterilization	Yes. WHW [2008] No. 5	Yes	No
3	Haoyan Rainbow Garden - Wuhu Health Aged-care Service Industry Base	North side of Yinhu Lake, Yuexiu Road, Economic and Technological Development Zone	Wuhu Lansheng Centralized Medical Waste Disposal Co., Ltd.	2010.4	0.078	15	Incineration	Yes. Accepted in February 2011	Yes	No
4	The Project of Relocation and Rebuilding of Xuancheng Municipal Social Welfare Home	Southwestern Xiaduxincheng, Xuanzhou District	Xuancheng Jiuding Medical Waste Disposal Co., Ltd.	2011.12	0.04	3	High temperature steaming	Yes	Yes	No